Documentation for Confluence 7.15

Contents

Confluence installation and upgrade guide

About the installation and upgrade guide

This guide covers how to install and upgrade Confluence.

Information on the features and changes in specific Confluence releases can be found in theConfluence Release Notes.

For information on using and administering Confluence refer to the Confluence Documentation.

Enterprise releases

A Long Term Support release is a feature release that gets backported critical security updates and critical bug fixes during its entire two-year support window. If you can only upgrade once a year, consider upgrading to a Long Term Support release.Learn more

Long Term Support releases were originally referred to as Enterprise Releases.

- System Requirements
    - Server Hardware Requirements Guide
    - Running Confluence in a Virtualized Environment
- Confluence Installation Guide
    - Installing Confluence
    - Installing Confluence Data Center
    - Installing Java for Confluence
    - Creating a Dedicated User Account on the Operating System to Run Confluence
- Confluence Setup Guide
    - Configuring Jira Integration in the Setup Wizard
- Upgrading Confluence
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    - Confluence Post-Upgrade Checks
    - Migration from Wiki Markup to XHTML-Based Storage Format
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    - Upgrading Confluence Manually
    - Create a staging environment for upgrading Confluence
    - Upgrade Confluence without downtime
- Supported Platforms
    - End of Support Announcements for Confluence
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    - Supported Platforms FAQ

Downloads

Download the Confluence documentation in PDF format.

Other resources

Confluence Release Notes

Confluence administrator's guide

Confluence Knowledge Base

Atlassian Answers

System Requirements

Confluence can run on a wide range of operating systems and databases, on physical or virtualized servers.

SeeSupported Platformsfor the full list of platforms that we support in this version of Confluence orSupported Platforms FAQfor details on our support handling procedures.

On this page:

Software requirements

Operating systems

Atlassian supports the operating systems listed on theSupported Platformspage.

If you would like to run Confluence on virtualized hardware, please read ourRunning Confluence in a Virtualized Environmentdocument first.

Application server

We only support running Confluence on the version of Apache Tomcat that is bundled with the Confluence distribution.

Databases

You'll need an external database to run Confluence. See the Supported Platforms page for a list of all the databases we support.

When evaluating Confluence, you can use the embedded H2 database included in the Confluence installation, but you will need to migrate to a supported external database once you're ready to roll Confluence out to your team.

Java

The Java Runtime Environment (JRE) is packed up and ready to go when you install Confluence using the Windows or Linux installer. You don't need to install Java yourself.

If you choose to install Confluence from an archive file, you'll need asupportedJRE or JDK, and your JAVA_HOME variable set correctly. SeeInstalling Java for Confluencefor more information.

Antivirus considerations

Antivirus software on the operating system running Confluence can greatly decrease the performance of Confluence. Antivirus software that intercepts access to the hard disk is particularly detrimental and may even cause errors in Confluence.This is particularly important if you are running Confluence on Windows. No matter how fast your hardware is, antivirus software will almost always have a negative impact on Confluence's performance.

You should configure your antivirus software to ignore the following directories:

- Confluence home directory
- Confluence's index directory
- All database-related directories

Hardware requirements

Please be aware that while some of our customers run Confluence on SPARC-based hardware, Atlassian only officially supports Confluence running on x86 hardware and 64-bit derivatives of x86 hardware.

See Server Hardware Requirements Guide for more information.

You may also like to check out our tips on reducing out of memory errors, in particular the section on Permanent Generation Size.

Hosted solutions Confluence Cloud

If you do not have the resources to set up and maintain a Confluence installation locally, consider trying Confluence Cloud. Atlassian can run and maintain your installation of Confluence, handling all the testing, monitoring and upgrading processes for you.

Server Hardware Requirements Guide

Server administrators can use this guide in combination with the free Confluence trial period to evaluate their server hardware requirements. Because server load is difficult to predict, live testing is the best way to determine what hardware a Confluence instance will require in production.

Peak visitors are the maximum number of browsers simultaneously making requests to access or update pages in Confluence. Visitors are counted from their first page request until the connection is closed and if public access is enabled, this includes internet visitors as well as logged in users. Storage requirements will vary depending on how many pages and attachments you wish to store inside Confluence.

On this page:

Related pages:

- Confluence Installation Guide
- Managing Application Server Memory Settings
- Running Confluence in a Virtualized Environment

ⓘ **Enterprise-scale Confluence sites**

These recommendations are designed for small or medium sized Confluence sites. For guidance on large or extra large sites, read our enterprise-scale infrastructure recommendations.

We've also created load profiles to help you determine the size of your site.

Minimum hardware requirements

The values below refer to the minimum available hardware required to run Confluence only; for example, the minimum heap size to allocate to Confluence is 1 GB and 1 GB for Synchrony (which is required for collaborative editing). You'll need additional physical hardware, of at least the minimum amount required by your Operating System and any other applications that run on the server.

ⓘ On small instances, server load is primarily driven by peak visitors, so minimum system requirements are difficult to judge. We provide these figures as a guide to the absolute minimum required to run Confluence, and your configuration will likely require better hardware.

Here is our minimum hardware recommendation:

- **CPU:**Quad core 2GHz+ CPU
- **RAM:**6GB
- **Minimum database space:** 10GB

Note: Please be aware that while some of our customers run Confluence on SPARC-based hardware, we only officially support Confluence running on x86 hardware and 64-bit derivatives of x86 hardware. Confluence typically will not perform well in a tightly constrained, shared environment - examples include an AWS micro.t1 instance. Please be careful to ensure that your choice of hosting platform is capable of supplying sustained processing and memory capacity for the server, particularly the processing-intense startup process.

Example hardware specifications

These are example hardware specifications for non-clustered Confluence instances. It is not recorded whether the amount ofRAM refers toeither the totalservermemoryor memoryallocated to the JVM, while blank settings indicate that the information was not provided.

Accounts	Spaces	Pages	CPUs	CPU (GHz)	RAM (MB)	Notes

150	30	1,000	1	2.6	1,024	
350	100	15,000	2	2.8	1,536	
5,000	500		4	3	2,048	
10,000	350	16,000	2	3.8	2,048	
10,000	60	3,500	2	3.6	4,096	
21,000	950		2	3.6	4,096	
85,000	100	12,500	4	2.6	4,096	3 machines total: application server, database server, Apache HTTPD + LDAP tunnel server.

Server load and scalability

When planning server hardware requirements for your Confluence deployment, you will need to estimate the server scalability based on peak visitors, the editor to viewer ratio and total content.

- The editor to viewer ratio is how many visitors are performing updates versus those only viewing content
- Total content is best estimated by a count of total spaces

Confluence scales best with a steady flow of visitors rather than defined peak visitor times, few editors and few spaces. Users should also take into account:

- Total pages is not a major consideration for performance. For example, instances hosting 80K of pages can consume under 512MBof memory
- Alwaysuse an external database, and check out theperformance tuning guides.

Maximum reported usages

These values are largest customer instances reported to Atlassian or used for performance testing. Clustering, database tuning and other performance tuning is recommended for instances exceeding these values.

Most Spaces	1700
Most Internal Users	15K
Most LDAP Users	100K
Most Pages	80K

Hard disk requirements

All page content is stored in the database, while attachments are stored in the file system.The more attachments you have, the more disk space you will require.

Private and public comparison

Private instances manage their users either internally or through a user repository such as LDAP, while online instances have public signup enabled and must handle the additional load of anonymous internet visitors. Please keep in mind that these are examples only, not recommendations:

Use Case	Spaces	User Accounts	Editors	Editor To Viewer Ratio	Pages	Page Revisions	Attachments	Comment

Online Documentation	140	11,500	1,000	9%	8,800	65,000	7,300	11,500
Private Intranet	130	180	140	78%	8,000	84,000	3,800	500
Company-Wide Collaboration	100	85,000	1,000+	1%+	12,500	120,000	15,000	

Professional assistance

For large instances, it may be worthwhile contacting anAtlassian Solution Partnerfor expertise on hardware sizing, testing and performance tuning.

Example site

Here's a breakdown of the disk usage and memory requirements of a large documentation site as at April 2013:

Database size	2827 MB
Home directory size	116 GB
Average memory in use	1.9 GB

Size of selected database tables

Data	Relevant Table	Rows	Size
Attachment metadata	`attachments`	193903	60 MB
Content and user properties	`os_propertyentry (?)`	639737	255 MB
Content bodies (incl. all versions of blogs, pages and comments)	`bodycontent`	517520	1354 MB
Content metadata (incl. title, author)	`content`	623155	459 MB

Labels	`label (5982, 1264 kB),`
	`content_label (134151, 46 MB)`
		140133	47.2 MB

Users	`users`	38766	6200 kB

Note: not all database tables or indexes are shown, and average row size may vary between instances.

Size of selected home directory components

Data	Files	Size
Attachments (incl. all versions)	207659	105 GB

Did-you-mean search index	10	14 MB
Office Connector cache	3506	456 MB
Plugin files	1851	669 MB
Search index	448	3.9 GB
Temporary files	14232	5 GB
Thumbnails	86516	1.7 GB
Usage index (now disabled)	239	2.6 GB

Note: not all files are shown, and average file size may vary between instances.

Running Confluence in a Virtualized Environment

This page provides pointers for things to look at when running Confluence on virtualized hardware.

On this page:

Related pages:

- Server Hardware Requirements Guide
- Confluence Installation Guide
- Confluence Data Center documentation
- AWS Quick Start (Data Center only)

Summary

Running Confluence in a virtual machine (VM) requires specialized skills to set up and manage the virtualized environment. In particular, the performance of Confluence can be affected by the activity of other VMs running on the same infrastructure, as well as how you configure the Confluence VM itself.

Atlassian supports running Confluence and Confluence Data Center in a virtualized environment, but we cannot offer support for problems which are related to the environment itself.

Recommendations

The following recommendations come from our experience in running and testing Confluence in virtualized environments like VMWare and KVM, and our experience in working with customers running on these platforms.

- **Know your platform.** Consult the documentation for your operating system and your chosen virtualization technology, for details on setting up a reliable VM (virtual machine) image.
- **Allocate enough memory.** As a Java web application, Confluence requires a relatively large memory allocation, compared to some other web technologies. Ensure that your VM images have enough physical memory allocated to run Confluence without swapping.
- **Handle high I/O.** Under normal usage, Confluence requires a significant number of input/output (I/O) operations to the database and home directory for each web request. Ensure that you use the correct drivers and consider how you make storage available to your VMs to optimize this access.
- **Handle peak CPU and memory usage.** For certain operations (including PDF export, Office document processing, and displaying large pages) Confluence requires a significant amount of CPU and memory. Ensure that your virtualization infrastructure has the flexibility and capacity to deal with peak load, not just idle load.
- **Synchronize time correctly.** Some customers have had problems with time synchronization between the VM and the host system. This causes problems in Confluence due to irregularities in the execution of scheduled tasks. We strongly recommend checking your VM time sync if you have issues with scheduled tasks in a virtualized environment.

Further help

For further assistance in setting up a virtualized environment for running Confluence, you may want to consult an Atlassian Solution Partner. Several experts have experience with installation and performance tuning, and can help you with your Confluence configuration.

Confluence Installation Guide

Before you start

Before installing Confluence, please check that you meet the minimum system requirementsandSupported Platforms.

If you're planning to run Confluence in a virtualized environment seeRunning Confluence in a Virtualized Environment.

Choose your installation method

There are a number of ways to install Confluence. Choose the method that is best for your environment.

Install method	Is this right for you?
Install a Confluence trial - Windows, Linux or OS X	This is the fastest way to get a Confluence site up and running. If you want to see what Confluence can do, use this option or try Confluence Cloud free.
Install Confluence using an installer - Windows - Linux	This option uses an installer, and is the most straightforward way to get your production site up and running on a Windows or Linux server.
Install Confluence from a zip or archive file - Windows - Linux	This option requires you to manually install files and configure some system properties. It gives you the most control over the install process. Use this option if there isn't an installer for your operating system.
Run Confluence Server in a Docker container - Docker	This option gets Confluence Server up and running using a pre-configured Docker image. Head to https://docs.docker.com/ to find out more about Docker. Atlassian supports running Confluence in a Docker container, but we cannot offer support for problems which are related to the environment itself.
Install Confluence Data Center in a cluster - Windows and Linux - Kubernetes - AWS Quick Start - Azure	You can deploy a Confluence Data Center cluster on your own infrastructure or a public cloud platform like AWS or Azure. Read the Confluence Data Center Technical Overview for more details on clustering

Note:we do not support installing Confluence as a production system on OS X. An OS X download is available for the purposes of evaluating Confluence only. There are no limitations to using Confluence on a mac with any one of thesupported browsers.

The EAR/WAR distribution is no longer available, you'll need to install Confluence from a zip or archive file if you previously deployed Confluence into an existing application server.

Installing Confluence

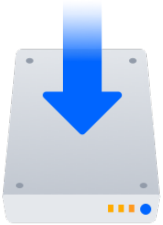
There are a number of ways to install Confluence. Choose the method that is best for your environment.

Install method	Is this right for you?
Install a Confluence trial • Windows, Linux or OS X	This is the fastest way to get a Confluence site up and running. If you want to see what Confluence can do, use this option or try Confluence Cloud free.
Install Confluence using an installer • Windows • Linux	This option uses an installer, and is the most straightforward way to get your production site up and running on a Windows or Linux server.
Install Confluence from a zip or archive file • Windows • Linux	This option requires you to manually install files and configure some system properties. It gives you the most control over the install process. Use this option if there isn't an installer for your operating system.
Run Confluence Server in a Docker container • Docker	This option gets Confluence Server up and running using a pre-configured Docker image. Head to https://docs.docker.com/ to find out more about Docker. Atlassian supports running Confluence in a Docker container, but we cannot offer support for problems which are related to the environment itself.
Install Confluence Data Center in a cluster • Windows and Linux • Kubernetes • AWS Quick Start • Azure	You can deploy a Confluence Data Center cluster on your own infrastructure or a public cloud platform like AWS or Azure. Read the Confluence Data Center Technical Overview for more details on clustering

Installing a Confluence trial

Want to get up and running with Confluence quickly? This page will guide you through the steps to install and set up an evaluation Confluence Data Center site.

On this page:



ⓘ We no longer offer server evaluation licenses, but you can still trial our Data Center products. Learn more about these changes

If you're ready to set up a production Confluence site or you want more control, check out ourfull installation guides.

Before you begin

Our installers come with all the bits and pieces you need to run the application, but there's a few thingsyou'll need to get up and running:

- A computer or laptop with a supported operating system - you'll be installing Confluence so you'll need admin rights.

  You can install Confluence on a Windows or Linux operating system.

  Apple Mac isn't supported for production sites, but if you're comfortable setting up applications on your Mac from scratch, you can download the `tar.gz` file and follow the instructions forInstalling Confluence on Linux from Archive File as the process is similar.
- A supported web browser - you'll need this to access Confluence, we support the latest versions of Chrome and Mozilla Firefox, Internet Explorer 11, and Microsoft Edge.
- A valid email address - you'll need this to generate your evaluation license and create an account.
- An external database.To run Confluence you'll need an external database. Check the Supported Platforms page for the version you're installing for the list of databases we currently support. If you don't already have a database, PostgreSQL is free and easy to set up.

  Good to know:

  - Set up your database before you begin. Step-by-step guides are available for PostgreSQL, Oracle, MySQL, and SQL Server.
  - If you're using Oracle or MySQL you'll need to download the driver for your database.
  - To use a datasource seeConfiguring a datasource connection as there are some steps you need to perform before running the setup wizard.

Ready to get going? Let's start with grabbing the installer.

1. Download the installer

Head to www.atlassian.com/software/confluence/download and download the installer for your operating system.

2. Install Confluence

The installer allows you to choose Express or Custom installations.

The Custom installation allows you to pick some specific options for Confluence, but for this guide we'll use the Express installation.

1. Run the installer - we recommend running with a Windows administrator account.
   If prompted, make sure you allow the installer to make changes to your computer. This will allow you to install Confluence as a service.
2. Choose **Express Install**, then click **Next**.
3. Once installation is complete, it will ask you if you want to open Confluence in your browser. Make sure this option is selected then click **Done**.
4. Confluence will open in your default browser, and you're ready to start the set up wizard.

1. Change to the directory where you downloaded Confluence then execute this command to make it executable:

   ```
   $ chmod a+x atlassian-confluence-X.X.X-x64.bin
   ```

   Where `X.X.X` is is the Confluence version you downloaded.
2. Run the installer - we recommend using `sudo` to run the installer as this will create a dedicated account to run Confluence and allow you to run Confluence as a service.

   ```
   $ sudo ./atlassian-confluence-X.X.X-x64.bin
   ```

3. When prompted, choose **Express Install** (option 1).
4. Once installation is complete head to http://localhost:8090/ in your browser to begin the setup process.

3. Set up Confluence

The set up wizard is the last step in getting Confluence up and running. You'll need your email address to generate your evaluation license.

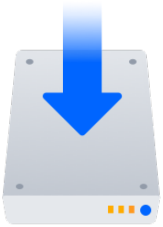
1. Select **Trial**, then select **Next**.
2. Select **Get an evaluation license** and follow the prompts to generate your trial Data Center license.
3. Choose whether you want to try a standalone (single node) or clustered installation. 'Standalone' is the fastest way to get started. If you choose 'Clustered', you'll need to configure your cluster before continuing.
4. Enter the details for your database, or set one up. See the 'Before you begin' section of this page for details and connection options.
   It will take a few minutes to get everything connected and operational.
5. Select **Manage users with Confluence**, and select **Next**.
6. Enter and confirm the details you want to use for your administrator account, and select **Done**.

That's it! You're ready to team up with some colleagues and start using Confluence.

Installing Confluence on Windows

In this guide we'll run you through installing Confluence in a production environment, with an external database, using the Windows installer.

This is the most straightforward way to get your production site up and running on a Windows server.



Other ways to install Confluence:

- Evaluation -get your free trial up and running in no time.
- Zip install Confluence manually from a zip file.
- Linux install Confluence on a Linux operating system

On this page:

Before you begin

Before you install Confluence, there's a few questions you need to answer.

Are you using a supported operating system?	Check the Supported Platforms page for the version of Confluence you are installing. This will give you info on supported operating systems, databases and browsers. **Good to know:** • We don't support installing Confluence on OSX. • The Confluence installer includes Java (JRE) and Tomcat, so you don't need to install these separately.

Do you want to run Confluence as a Windows Service?	Running Confluence as a service in Windows means that Confluence will automatically start up when Windows is started. **If you choose to run Confluence as a service:** • You must run the installer as administrator to be able to install Confluence as a service. • The Confluence service will be run as the Windows 'SYSTEM' user account. To change this user account see Changing the Windows user that the Confluence service uses . • We strongly recommend creating a dedicated user account (e.g. with username 'confluence') for running Confluence. See Creating a Dedicated User Account on the Operating System to Run Confluence to find out what directories this user will need to be able to read and write to. **If you choose not to run Confluence as a service:** • You will start and stop Confluence using the Windows Start menu, or by running a file in your Confluence installation directory. • Confluence will be run as the Windows user account that was used to install Confluence, or you can choose to run as a dedicated user. • Confluence will need to be restarted manually if your server is restarted.
Are ports 8090 and 8091 available?	Confluence runs on port 8090 by default. If this port is already in use, the installer will prompt you to choose a different port. Synchrony, which is required for collaborative editing, runs on port 8091 by default. If this port is already in use, you will need to change the port that Synchrony runs on after your Confluence installation is complete. See Administering Collaborative Editing to find out how to change the port Synchrony runs on.You won't be able to edit pages until Synchrony has an available port. SeePorts used by Atlassian Applicationsfor a summary of all the ports used.
Is your database set up and ready to use?	To run Confluence you'll need an external database. Check the Supported Platforms page for the version you're installing for the list of databases we currently support. If you don't already have a database, PostgreSQL is free and easy to set up. **Good to know:** • Set up your database before you begin. Step-by-step guides are available for PostgreSQL, Oracle, MySQL, and SQL Server. • If you're using Oracle or MySQL you'll need to download the driver for your database. • To use a datasource seeConfiguring a datasource connection as there are some steps you need to perform before running the setup wizard.
Do you have a Confluence license?	You'll need a valid license to use Confluence. **Good to know:** • If you have not yet purchased a Confluence license you'll be able to create an evaluation license during setup. • If you already have a license key you'll be prompted to log in to my.atlassian.com to retrieve it, or you can enter the key manually during setup. • If you're migrating from Confluence Cloud, you'll need a new license. • Weve ended sales for new server licenses and will end support for server on February 2, 2024. Were continuing our investment in Data Center.Learn more

⚠ Theres a known issue during setup where a load balancer (or proxy) pings the server and breaks Confluence installation or migration to Data Center. See

🟥 **CONFSERVER-61189** - Opening the base URL multiple times during Data Center migration will break the migration process. GATHERING IMPACT

During installation, you need to disable load balancer health checks and make sure you dont open multiple tabs that point to the same Confluence URL.

Install Confluence

1.Download Confluence

Download the installer for your operating system -https://www.atlassian.com/software/confluence/download

2. Run the installer

1. Run the installer. We recommend using a dedicated Windows administrator account.
2. Follow the prompts to install Confluence. You'll be asked for the following info:
    a. **Destination directory**this is whereConfluencewill be installed.
    b. **Home directory**this is where Confluence data like logs, search indexes and files will be stored.
    c. **TCP ports**these arethe HTTP connector port and control port Confluence will run on. Stick with the default unless you're running another application on the same port.
    d. **Install as service**this option is only available if you ran the installer as administrator.
3. Confluence will start up in your browser once installation is complete.

Set up Confluence

3. Choose installation type

1. Choose**Production installation**.

2. Choose any**apps**you'd also like to install.

4. Enter your license

Follow the prompts to log in tomy.atlassian.comto retrieve your license, or enter a license key.

5. Connect to your database

1. If you've not already done so, it's time to create your database. See the 'Before you begin' section of this page for details and connection options.

2. For MySQL and Oracle, follow the prompts to download and install the required driver.

3. Enter your database details. Use**test connection** to check your database is set up correctly.

    If you want to specify particular parameters, you can choose to connect **By connection string**. You'll be prompted to enter:

    - **Database URL** the JDBC URL for your database. If you're not sure, check the documentation for your database.
    - **Username and Password** A valid username and password that Confluence can use to access your database.

6. Populate your new site with content

Choose whether you'd like Confluence to populate your site with content:

This option will create a space that you and your users can use to get to know Confluence. You can delete this space at any time.

Use this option if you have a full site export of an existing Confluence site. This is useful when youre migrating to another database or setting up a test site.

Good to know:

- You can only import sites from the **same** or **earlier** Confluence version.
- The system administrator account and all other user data and content will be imported from your previous installation.

In the setup wizard:

- **Upload a backup file** use this option if your site export file is small (25mb or less).
- **Restore a backup file from the file system** use this option if your backup file is large. Drop the file into your `<confluence-home>/restore`directory then follow the prompts to restore the backup.
- **Build Index** well need to build an index before your imported content is searchable. This can take a long time for large sites, so deselect this option if you would rather build the index later.Your content won't be searchable until the index is built.

7. Choose where to manage users

Choose to manage Confluence's users and groups inside Confluence or in a Jira application, such as Jira Software or Jira Service Management:

Choose this option if you're happy to manage users in Confluence, or don't have a Jira application installed.

Good to know:

- If you do plan to manage users in a Jira application, but have not yet installed it, we recommend installing Jira first, and then returning to the Confluence setup.
- You can add external user management (for example LDAP, Crowd or Jira) later if you choose.

Choose this option if you have a Jira application installed and want to manage users across both applications.

Good to know:

- This is a quick way of setting up your Jira integration with the most common options.
- It will configure a Jira user directory for Confluence, and set up application links between Jira and Confluence for easy sharing of data.
- You'll be able to specify exactly which groups in your Jira app should also be allowed to log in to Confluence. Your license tiers do not need to be the same for each application.
- You'll need either Jira 4.3 or later, Jira Core 7.0 or later, Jira Software 7.0 or later, or Jira Service Management 3.0 or later.

In the setup wizard:

- **Jira Base URL** the address of your Jira server, such as `http://www.example.com:8080/jira/` or `http://jira.example.com/`
- **Jira Administrator Login** this is the username and password of a user account that has the Jira System Administrator global permission in your Jira application. Confluence will also use this username and password to create a local administrator account which will let you access Confluence if Jira is unavailable. Note that this single account is stored in Confluence's internal user directory, so if you change the password in Jira, it will not automatically update in Confluence.
- **Confluence Base URL** this is the URL Jira will use to access your Confluence server. The URL you give here overrides the base URL specified in Confluence, for the purposes of connecting to the Jira application.

- **User Groups** these are the Jira groups whose members should be allowed to use Confluence. Members of these groups will get the 'Can use' permission for Confluence, and will be counted in your Confluence license. The default user group name differs depending on your Jira version:
  - Jira 6.4 and earlier: `jira-users`.
  - Jira Software 7.x and later: `jira-software-users`
  - Jira Core 7.x and later: `jira-core-users`
  - Jira Service Management (formerly Jira Service Desk) 3.x and later: `jira-servicedesk-users`
- **Admin Groups** provide one or more Jira groups whose members should have administrative access to Confluence. The default group is `jira-administrators`. These groups will get the system administrator and Confluence administrator global permissions in Confluence.

8. Create your administrator account

Enter details for the administrator account.

Skip this step if you chose to manage users in a Jira application or you imported data from an existing site.

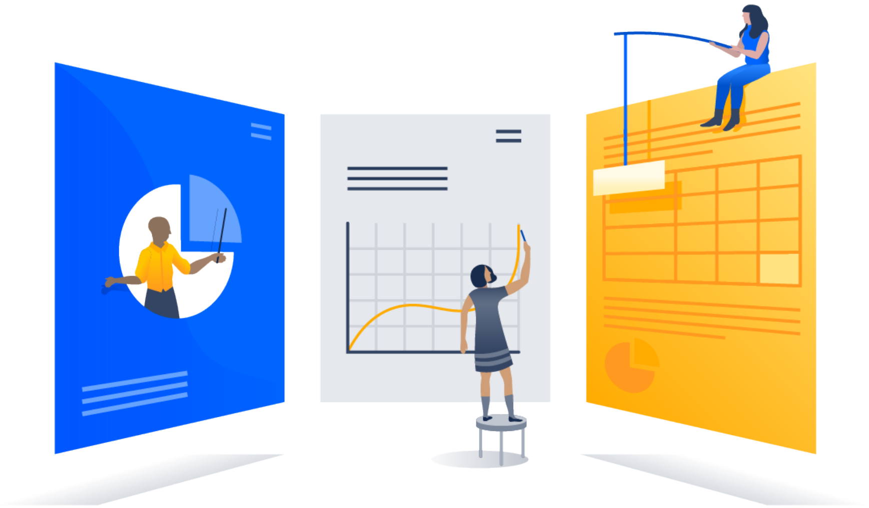
9. Start using Confluence

That's it!Your Confluence site is accessible from a URL like this: http://<computer_name_or_IP_address>:<port>

If you plan to run Confluence behind a reverse proxy, check outProxy and SSL considerationsbefore you go any further.

Here's a few things that will help you get your team up and running:

- Set the server base URL this is the URL people will use to access Confluence.
- Set up a mail server this allows Confluence to send people notification about content.
- Add and invite users get your team on board!
- Start and stop Confluence find out how to start and stop Confluence.



Troubleshooting

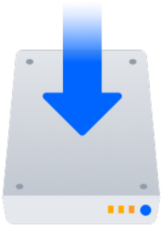
- Some anti-virus or other Internet security tools may interfere with the Confluence installation process and prevent the process from completing successfully. If you experience or anticipate experiencing such an issue with your anti-virus/Internet security tool, disable this tool first before proceeding with theConfluence installation.
- Can't start Confluence? See Confluence does not start due to Spring Application context has not been set .
- Collaborative editing errors? See Troubleshooting Collaborative Editing.

Head to Installation Troubleshooting in our Knowledge Base for more help.

Installing Confluence on Windows from Zip File

In this guide we'll run you through installing Confluence in a production environment, with an external database, manually using a zip file.

This method gives you the most control of the installation process.



Other ways to install Confluence:

- Evaluation-get your free trial up and running in no time.
- Installer install Confluence using the Windows installer.
- Linux install Confluence on a Linux operating system.

On this page:

Before you begin

Before you install Confluence, there's a few questions you need to answer.

Are you using a supported operating system and Java version?	Check the Supported Platforms page for the version of Confluence you are installing. This will give you info on supported operating systems, databases and browsers. **Good to know:** • We don't support installing Confluence on OS X or mac OS for production environments. • You'll need to install either Adoptium OpenJDK (formerly AdoptOpenJDK)or Oracle JDK. We don't support other OpenJDK binaries. • You can use either the JDK (Java Development Kit) or JRE (Java Runtime Environment). • We only support the version of Apache Tomcat that is bundled with Confluence.

Do you want to run Confluence as a Windows Service?	Running Confluence as a service in Windows means that Confluence will automatically start up when Windows is started. You should use the Windows installer if you want to run Confluence as a Service. **If you choose not to run Confluence as a service:** - You will start and stop Confluence by running the `start-confluence.bat` file in your Confluence installation directory. - Confluence will be run as the Windows user account that was used to install Confluence, or you can choose to run as a dedicated user (this user must have full read and write access to the installation directory and home directory). - Confluence will need to be restarted manually if your server is restarted.
Are ports 8090 and 8091 available?	Confluence runs on port 8090 by default. If this port is already in use, the installer will prompt you to choose a different port. Synchrony, which is required for collaborative editing, runs on port 8091 by default. If this port is already in use, you will need to change the port that Synchrony runs on after your Confluence installation is complete. See Administering Collaborative Editing to find out how to change the port Synchrony runs on.You won't be able to edit pages until Synchrony has an available port. SeePorts used by Atlassian Applicationsfor a summary of all the ports used.
What database do you plan to use?	To run Confluence you'll need an external database. Check the Supported Platforms page for the version you're installing for the list of databases we currently support. If you don't already have a database, PostgreSQL is free and easy to set up. **Good to know:** - Set up your database before you begin. Step-by-step guides are available for PostgreSQL, Oracle, MySQL, and SQL Server. - If you're using Oracle or MySQL you'll need to download the driver for your database. - To use a datasource seeConfiguring a datasource connection as there are some steps you need to perform before running the setup wizard.
Do you have a Confluence license?	You'll need a valid license to use Confluence. **Good to know:** - If you have not yet purchased a Confluence license you'll be able to create an evaluation license during setup. - If you already have a license key you'll be prompted to log in to my.atlassian.com to retrieve it, or you can enter the key manually during setup. - If you're migrating from Confluence Cloud, you'll need a new license. - Weve ended sales for new server licenses and will end support for server on February 2, 2024. Were continuing our investment in Data Center.Learn more

Is your JRE_HOME variable set correctly?	Before you install Confluence, check that you're running a supported Java version and that the `JRE_HOME` (or `JAVA_HOME`) environment variable is set correctly. **To check the JRE_HOME variable**: Open a command prompt and type `echo %JRE_HOME%` and hit Enter. • If you see a path to your Java installation directory, the `JRE_Home` environment variable has been set correctly. • If nothing is displayed, or only `%JRE_HOME%` is returned, you'll need to set the `JRE_HOME` environment variable manually. See Setting the JAVA_HOME Variable in Windows for a step by step guide.

⚠ Theres a known issue during setup where a load balancer (or proxy) pings the server and breaks Confluence installation or migration to Data Center. See

CONFSERVER-61189 - Opening the base URL multiple times during Data Center migration will break the migration process. **GATHERING IMPACT**

During installation, you need to disable load balancer health checks and make sure you dont open multiple tabs that point to the same Confluence URL.

Install Confluence

1.Download Confluence

Download the zip file for your operating system https://www.atlassian.com/software/confluence/download.

2. Create the installation directory

1. Create your installation directory (with full control permissionfor thededicated Windows administrator accountyou'll use to run Confluence) this is where Confluence will be installed. Avoid using spaces or special characters in the path. We'll refer to this directory as your`<installation-directory>`.
2. Extract the Confluence zip file to your`<installation-directory>`.We recommend using7ziporWinzip.

3. Create the home directory

1. Create your home directory (with full control permission) this is where Confluence data like logs, search indexes and files will be stored. This should be seperate to your installation directory. We'll refer to this directory as your`<home-directory>`.
2. Edit`<installation-directory>\confluence\WEB-INF\classes\confluence-init.properties`.
3. At the bottom of the file, enter the path to your`<home directory>`.

   You can edit the confluence-init.properties file in Notepad or any other text editor.

   a. Scroll to the bottom of the text and find this line:

   ```
   # confluence.home=c:/confluence/data
   ```

   b. Remove the '#' and the space at the beginning of this line (so Confluence doesn't regard the line as a comment)

   ```
   confluence.home=c:/data/confluence-home
   ```

   c. If you decide to use a different directory as the home directory you should:
      - Avoid spaces in the directory path or file name.
      - Use forward slashes '/' to define the path in this file.

4. Check the ports

By default Confluence listens on port`8090`. If you have another application running on your server that uses the same ports, you'll need to tell Confluence to use a different port.

To change the ports:

1. Edit `<installation-directory>\conf\server.xml`
2. Change the **Server** port (8000) and the **Connector** port (8090) to free ports on your server.

   In the example below we've changed the **Server** port to 5000 and the **Connector** port to 5050.

```
Server port="5000" shutdown="SHUTDOWN" debug="0">
  <Service name="Tomcat-Standalone">
    <Connector port="5050" connectionTimeout="20000" redirectPort="8443"
        maxThreads="48" minSpareThreads="10"
        enableLookups="false" acceptCount="10" debug="0" URIEncoding="UTF-8"
        protocol="org.apache.coyote.http11.Http11NioProtocol" />
```

5. Start Confluence

1. Run`<installation-directory>/bin/start-confluence.bat`to start the install process. We recommend using a dedicated user account.

   A command prompt will open. Closing this window will stop Confluence.

2. Go to `http://localhost:8090/` to launch Confluence in your browser (change the port if you've updated the Connector port).

- If the command prompt window closes immediately, your JAVA_HOME variable may not be set correctly. See Setting the JAVA_HOME Variable in Windows.
- If you see an error, see Confluence does not start due to Spring Application context has not been set for troubleshooting options.

Set up Confluence

6. Choose installation type

1. Choose**Production installation**.

2. Choose any**apps**you'd also like to install.

7. Enter your license

Follow the prompts to log in tomy.atlassian.comto retrieve your license, or enter a license key.

8. Connect to your database

1. If you've not already done so, it's time to create your database. See the 'Before you begin' section of this page for details and connection options.

2. For MySQL and Oracle, follow the prompts to download and install the required driver.

3. Enter your database details. Use**test connection** to check your database is set up correctly.

   If you want to specify particular parameters, you can choose to connect **By connection string**. You'll be prompted to enter:

- **Database URL** the JDBC URL for your database. If you're not sure, check the documentation for your database.
- **Username and Password** A valid username and password that Confluence can use to access your database.

9. Populate your new site with content

Choose whether you'd like Confluence to populate your site with content:

This option will create a space that you and your users can use to get to know Confluence. You can delete this space at any time.

Use this option if you have a full site export of an existing Confluence site. This is useful when youre migrating to another database or setting up a test site.

Good to know:

- You can only import sites from the **same** or **earlier** Confluence version.
- The system administrator account and all other user data and content will be imported from your previous installation.

In the setup wizard:

- **Upload a backup file** use this option if your site export file is small (25mb or less).
- **Restore a backup file from the file system** use this option if your backup file is large. Drop the file into your `<confluence-home>/restore`directory then follow the prompts to restore the backup.
- **Build Index** well need to build an index before your imported content is searchable. This can take a long time for large sites, so deselect this option if you would rather build the index later.Your content won't be searchable until the index is built.

10. Choose where to manage users

Choose to manage Confluence's users and groups inside Confluence or in a Jira application, such as Jira Software or Jira Service Management:

Choose this option if you're happy to manage users in Confluence, or don't have a Jira application installed.

Good to know:

- If you do plan to manage users in a Jira application, but have not yet installed it, we recommend installing Jira first, and then returning to the Confluence setup.
- You can add external user management (for example LDAP, Crowd or Jira) later if you choose.

Choose this option if you have a Jira application installed and want to manage users across both applications.

Good to know:

- This is a quick way of setting up your Jira integration with the most common options.
- It will configure a Jira user directory for Confluence, and set up application links between Jira and Confluence for easy sharing of data.
- You'll be able to specify exactly which groups in your Jira app should also be allowed to log in to Confluence. Your license tiers do not need to be the same for each application.
- You'll need either Jira 4.3 or later, Jira Core 7.0 or later, Jira Software 7.0 or later, or Jira Service Management 3.0 or later.

In the setup wizard:

- **Jira Base URL** the address of your Jira server, such as `http://www.example.com:8080/jira/` or `http://jira.example.com/`

- **Jira Administrator Login** this is the username and password of a user account that has the Jira System Administrator global permission in your Jira application. Confluence will also use this username and password to create a local administrator account which will let you access Confluence if Jira is unavailable. Note that this single account is stored in Confluence's internal user directory, so if you change the password in Jira, it will not automatically update in Confluence.
- **Confluence Base URL** this is the URL Jira will use to access your Confluence server. The URL you give here overrides the base URL specified in Confluence, for the purposes of connecting to the Jira application.
- **User Groups** these are the Jira groups whose members should be allowed to use Confluence. Members of these groups will get the 'Can use' permission for Confluence, and will be counted in your Confluence license. The default user group name differs depending on your Jira version:
  - Jira 6.4 and earlier: `jira-users`.
  - Jira Software 7.x and later: `jira-software-users`
  - Jira Core 7.x and later: `jira-core-users`
  - Jira Service Management (formerly Jira Service Desk) 3.x and later: `jira-servicedesk-users`
- **Admin Groups** provide one or more Jira groups whose members should have administrative access to Confluence. The default group is `jira-administrators`. These groups will get the system administrator and Confluence administrator global permissions in Confluence.

11. Create your administrator account

Enter details for the administrator account.

Skip this step if you chose to manage users in a Jira application or you imported data from an existing site.

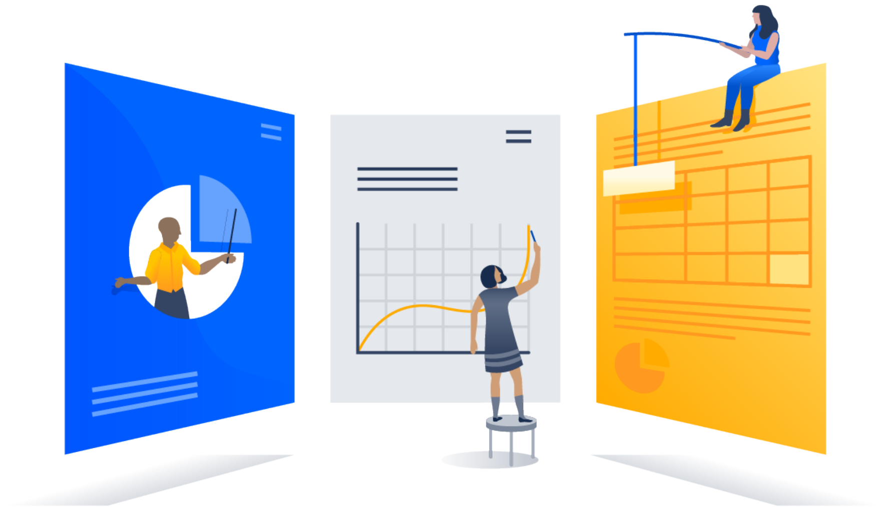
12. Start using Confluence

That's it!Your Confluence site is accessible from a URL like this: http://<computer_name_or_IP_address>:<port>

If you plan to run Confluence behind a reverse proxy, check outProxy and SSL considerationsbefore you go any further.

Here's a few things that will help you get your team up and running:

- Set the server base URL this is the URL people will use to access Confluence.
- Set up a mail server this allows Confluence to send people notification about content.
- Add and invite users get your team on board!
- Start and stop Confluence find out how to start and stop Confluence.



Troubleshooting

- If your web browser window shows an error the first time you try to access Confluence, wait for 30 seconds or so and then refresh the page.

- If the command prompt window closes immediately, your JAVA_HOME variable may not be set correctly. See Setting the JAVA_HOME Variable in Windows.
- If you see an error, see Confluence does not start due to Spring Application context has not been set for troubleshooting options.
- Collaborative editing errors? See Troubleshooting Collaborative Editing.

Head to Installation Troubleshooting in our Knowledge Base for more help.

Uninstalling Confluence from Windows

This page describes the procedure for uninstalling an instance of Confluence which has been installed using the Windows Installer.

To uninstall Confluence from Windows:

1. Log in to Windows as the same user that was used to install Confluence with the Windows Installer.
2. Start the uninstaller by doing either of the following:
    - Click the Windows **Start Menu** > **All Programs** > **Confluence** > **Uninstall Confluence**
      OR
    - Open the Windows Control Panel, choose **Add or Remove Programs** (on Windows XP) or **Programs and Features** on (Windows 7, Vista) and then select **Confluence X.Y** from the list of applications and click **Uninstall/Change**.
      OR
    - Open the Windows command prompt and do the following:
        1. Change directory to your Confluence installation directory
        2. Run the `uninstall.exe` file
3. Follow the prompts to uninstall Confluence from your computer.

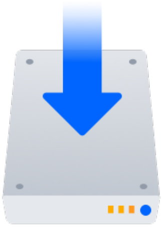
ℹ Please note:

- The uninstaller will not delete the Confluence Home Directory.
- All log files that were generated while Confluence was running will not be deleted.
- All files within the Confluence Installation Directory will be deleted (with the exception of the Tomcat `log` folder located in the Confluence Installation Directory).
- The uninstaller can be made to operate in unattended mode by specifying the `-q` option at the Windows command prompt i.e. `uninstall -q`
- If you wish to re-install Confluence in 'unattended mode', do not uninstall your previous installation of Confluence just yet. See Using the Silent Installation Feature for more information.

Installing Confluence on Linux

In this guide we'll run you through installing Confluence in a production environment, with an external database, using the Linux installer.

This is the most straightforward way to get your production site up and running on a Linux server.



Other ways to install Confluence:

- Evaluation-get your free trial up and running in no time.
- TAR.GZ install Confluence manually from an archive file.
- Windows install Confluence on a Windows server.

On this page:

Before you begin

Before you install Confluence, there are a few questions you need to answer.

Are you using a supported operating system?	Check the Supported Platforms page for the version of Confluence you are installing. This will give you info on supported operating systems, databases and browsers. **Good to know:** • We don't support installing Confluence on OSX for production sites. • The Confluence installer includes Java (JRE) and Tomcat, so you don't need to install these separately. • Confluence can only run on Oracle JDK or AdoptOpenJDK.
Does your Linux server have a font config package installed?	Many Linux distributions don't include a suitable font config package by default, so you will need to install one before you can run the Confluence installer. See Confluence Server 6.13 or later fails with FontConfiguration error when installing on Linux operating systems for commands to install a suitable package on several popular Linux distributions.

Do you want to run Confluence as a service?	Running Confluence as a service means that Confluence will automatically start up when Linux is started. **If you choose to run Confluence as a service:** • You must use `sudo` to run the installer to be able to install Confluence as a service. • The installer will create a dedicated user account, `confluence`, that will run the service. **If you choose not to run Confluence as a service:** • You will start and stop Confluence by running the `start-confluence.sh` file in your Confluence installation directory. • Confluence will be run as the user account that was used to install Confluence, or you can choose to run as a dedicated user. • Confluence will need to be restarted manually if your server is restarted.
Are ports 8090 and 8091 available?	Confluence runs on port 8090 by default. If this port is already in use, the installer will prompt you to choose a different port. Synchrony, which is required for collaborative editing, runs on port 8091 by default. If this port is already in use, you will need to change the port that Synchrony runs on after your Confluence installation is complete. See Administering Collaborative Editing to find out how to change the port Synchrony runs on.You won't be able to edit pages until Synchrony has an available port. SeePorts used by Atlassian Applicationsfor a summary of all the ports used.
Is your database set up and ready to use?	To run Confluence you'll need an external database. Check the Supported Platforms page for the version you're installing for the list of databases we currently support. If you don't already have a database, PostgreSQL is free and easy to set up. **Good to know:** • Set up your database before you begin. Step-by-step guides are available for PostgreSQL, Oracle, MySQL, and SQL Server. • If you're using Oracle or MySQL you'll need to download the driver for your database. • To use a datasource seeConfiguring a datasource connection as there are some steps you need to perform before running the setup wizard.
Do you have a Confluence license?	You'll need a valid license to use Confluence. **Good to know:** • If you have not yet purchased a Confluence license you'll be able to create an evaluation license during setup. • If you already have a license key you'll be prompted to log in to my.atlassian.com to retrieve it, or you can enter the key manually during setup. • If you're migrating from Confluence Cloud, you'll need a new license. • Weve ended sales for new server licenses and will end support for server on February 2, 2024. Were continuing our investment in Data Center.Learn more

⚠ Theres a known issue during setup where a load balancer (or proxy) pings the server and breaks Confluence installation or migration to Data Center. See

CONFSERVER-61189 - Opening the base URL multiple times during Data Center migration will break the migration process. GATHERING IMPACT

During installation, you need to disable load balancer health checks and make sure you dont open multiple tabs that point to the same Confluence URL.

Install Confluence

1.Download Confluence

Download the installer for your operating system https://www.atlassian.com/software/confluence/download

2. Run the installer

1. Make the installer executable.

   Change to the directory where you downloaded Confluence then execute this command:

   ```
   $ chmod a+x atlassian-confluence-X.X.X-x64.bin
   ```

   Where `X.X.X` is is the Confluence version you downloaded.

2. Run the installer we recommend using`sudo`to run the installer as this will create a dedicated account to run Confluence and allow you to run Confluence as a service.

   To use `sudo` to run the installer execute this command:

   ```
   $ sudo ./atlassian-confluence-X.X.X-x64.bin
   ```

   Where `X.X.X` is is the Confluence version you downloaded.

   You can also choose to run the installer as with root user privileges.

3. Follow the prompts to install Confluence. You'll be asked for the following info:

   - **Install type** choose option 2 (custom) for the most control.
   - **Destination directory** this is whereConfluencewill be installed.
   - **Home directory** this is where Confluence data like logs, search indexes and files will be stored.
   - **TCP ports** these arethe HTTP connector port and control port Confluence will run on. Stick with the default unless you're running another application on the same port.
   - **Install as service** this option is only available if you ran the installer as`sudo`.

4. Once installation is complete head tohttp://localhost:8090/in your browser to begin the setup process. (Replace`8090`if you chose a different port during installation).

If you're installing Confluence on a fresh Linux installation seeConfluence throws a Confluence is vacant error on install for troubleshooting options.

FontConfiguration error? See Confluence Server 6.13 or later fails with FontConfiguration error when installing on Linux operating systems to find out how to install a suitable font configuration package.

Set up Confluence

3. Choose installation type

1. Choose **Production installation**.
2. Choose any **apps** you'd also like to install.

4. Enter your license

Follow the prompts to log in to my.atlassian.com to retrieve your license, or enter a license key.

5. Connect to your database

1. If you've not already done so, it's time to create your database. See the 'Before you begin' section of this page for details and connection options.
2. For MySQL and Oracle, follow the prompts to download and install the required driver.
3. Enter your database details. Use **test connection** to check your database is set up correctly.

   If you want to specify particular parameters, you can choose to connect **By connection string**. You'll be prompted to enter:

   - **Database URL** the JDBC URL for your database. If you're not sure, check the documentation for your database.
   - **Username and Password** A valid username and password that Confluence can use to access your database.

6. Populate your new site with content

Choose whether you'd like Confluence to populate your site with content:

This option will create a space that you and your users can use to get to know Confluence. You can delete this space at any time.

Use this option if you have a full site export of an existing Confluence site. This is useful when youre migrating to another database or setting up a test site.

Good to know:

- You can only import sites from the **same** or **earlier** Confluence version.
- The system administrator account and all other user data and content will be imported from your previous installation.

In the setup wizard:

- **Upload a backup file** use this option if your site export file is small (25mb or less).
- **Restore a backup file from the file system** use this option if your backup file is large. Drop the file into your `<confluence-home>/restore` directory then follow the prompts to restore the backup.
- **Build Index** well need to build an index before your imported content is searchable. This can take a long time for large sites, so deselect this option if you would rather build the index later.Your content won't be searchable until the index is built.

7. Choose where to manage users

Choose to manage Confluence's users and groups inside Confluence or in a Jira application, such as Jira Software or Jira Service Management:

Choose this option if you're happy to manage users in Confluence, or don't have a Jira application installed.

Good to know:

- If you do plan to manage users in a Jira application, but have not yet installed it, we recommend installing Jira first, and then returning to the Confluence setup.

- You can add external user management (for example LDAP, Crowd or Jira) later if you choose.

Choose this option if you have a Jira application installed and want to manage users across both applications.

Good to know:

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- It will configure a Jira user directory for Confluence, and set up application links between Jira and Confluence for easy sharing of data.
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- You'll need either Jira 4.3 or later, Jira Core 7.0 or later, Jira Software 7.0 or later, or Jira Service Management 3.0 or later.

In the setup wizard:

- **Jira Base URL** the address of your Jira server, such as `http://www.example.com:8080/jira/` or `http://jira.example.com/`
- **Jira Administrator Login** this is the username and password of a user account that has the Jira System Administrator global permission in your Jira application. Confluence will also use this username and password to create a local administrator account which will let you access Confluence if Jira is unavailable. Note that this single account is stored in Confluence's internal user directory, so if you change the password in Jira, it will not automatically update in Confluence.
- **Confluence Base URL** this is the URL Jira will use to access your Confluence server. The URL you give here overrides the base URL specified in Confluence, for the purposes of connecting to the Jira application.
- **User Groups** these are the Jira groups whose members should be allowed to use Confluence. Members of these groups will get the 'Can use' permission for Confluence, and will be counted in your Confluence license. The default user group name differs depending on your Jira version:
  - Jira 6.4 and earlier: `jira-users`.
  - Jira Software 7.x and later: `jira-software-users`
  - Jira Core 7.x and later: `jira-core-users`
  - Jira Service Management (formerly Jira Service Desk) 3.x and later: `jira-servicedesk-users`
- **Admin Groups** provide one or more Jira groups whose members should have administrative access to Confluence. The default group is `jira-administrators`. These groups will get the system administrator and Confluence administrator global permissions in Confluence.

8. Create your administrator account

Enter details for the administrator account.

Skip this step if you chose to manage users in a Jira application or you imported data from an existing site.

9. Start using Confluence

That's it!Your Confluence site is accessible from a URL like this: http://<computer_name_or_IP_address>:<port>

If you plan to run Confluence behind a reverse proxy, check outProxy and SSL considerationsbefore you go any further.

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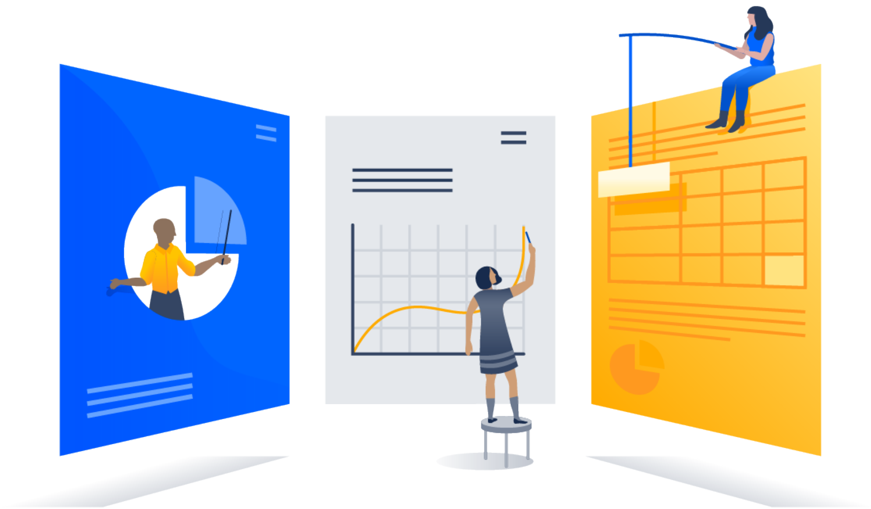


Troubleshooting

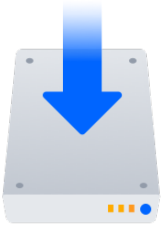
- If the installer fails with a FontConfiguration error, you'll need to install a font package. See Confluence Server 6.13 or later fails with FontConfiguration error when installing on Linux operating systems for info on how to do this.
- Some anti-virus or other Internet security tools may interfere with the Confluence installation process and prevent the process from completing successfully. If you experience or anticipate experiencing such an issue with your anti-virus/Internet security tool, disable this tool first before proceeding with theConfluence installation.
- The Linux OOM Killer can sometimes kill Confluence processes when memory on the server becomes too low. See How to Configure the Linux Out-of-Memory Killer.
- Collaborative editing errors? See Troubleshooting Collaborative Editing.

Head to Installation Troubleshooting in our Knowledge Base for more help.

Installing Confluence on Linux from Archive File

In this guide we'll run you through installing Confluence in a production environment, with an external database, manually using a zip file.

This method gives you the most control over the installation process.



Other ways to install Confluence:

- Evaluation-get your free trial up and running in no time.
- Installer install Confluence using the Linux installer.
- Windows install Confluence on a Windows server.

On this page:

Before you begin

Before you install Confluence, there are a few questions you need to answer.

Are you using a supported operating system and Java version?	Check the Supported Platforms page for the version of Confluence you are installing. This will give you info on supported operating systems, databases and browsers. **Good to know:** • We don't support installing Confluence on OS X or mac OS for production environments. • You'll need to install either Adoptium OpenJDK (formerly AdoptOpenJDK)or Oracle JDK. We don't support other OpenJDK binaries. • You can use either the JDK (Java Development Kit) or JRE (Java Runtime Environment). • We only support the version of Apache Tomcat that is bundled with Confluence.
Do you want to run Confluence as a service?	Running Confluence as a service means that Confluence will automatically start up when your Linux server is started. You should use the Linux installer if you want to run Confluence as a service. **If you choose not to run Confluence as a service:** • You will start Confluence by running the `start-confluence.sh` file in your Confluence installation directory. • We recommend creating a dedicated user to run Confluence. This user must have full read, write and execute access to the installation directory and home directory. • Confluence will need to be restarted manually if your server is restarted.

Are ports 8090 and 8091 available?	Confluence runs on port 8090 by default. If this port is already in use, the installer will prompt you to choose a different port. Synchrony, which is required for collaborative editing, runs on port 8091 by default. If this port is already in use, you will need to change the port that Synchrony runs on after your Confluence installation is complete. See Administering Collaborative Editing to find out how to change the port Synchrony runs on.You won't be able to edit pages until Synchrony has an available port. SeePorts used by Atlassian Applicationsfor a summary of all the ports used.
What database do you plan to use?	To run Confluence you'll need an external database. Check the Supported Platforms page for the version you're installing for the list of databases we currently support. If you don't already have a database, PostgreSQL is free and easy to set up. **Good to know:** • Set up your database before you begin. Step-by-step guides are available for PostgreSQL, Oracle, MySQL, and SQL Server. • If you're using Oracle or MySQL you'll need to download the driver for your database. • To use a datasource seeConfiguring a datasource connection as there are some steps you need to perform before running the setup wizard.
Do you have a Confluence license?	You'll need a valid license to use Confluence. **Good to know:** • If you have not yet purchased a Confluence license you'll be able to create an evaluation license during setup. • If you already have a license key you'll be prompted to log in to my.atlassian.com to retrieve it, or you can enter the key manually during setup. • If you're migrating from Confluence Cloud, you'll need a new license. • Weve ended sales for new server licenses and will end support for server on February 2, 2024. Were continuing our investment in Data Center.Learn more

Is your JAVA_HOME variable set correctly?	Before you install Confluence, check that you're running a supported Java version and that the `JAVA_HOME` environment variable is set correctly.
	Confluence can only run with Oracle JDK or JRE.
	To check your Java version:
	`$ java -version`
	To check your JAVA_HOME variable is set correctly:
	`$ echo $JAVA_HOME`
	If you see a path to your Java installation directory, the `JAVA_Home` environment variable has been set correctly. If a path is not returned you'll need to set your `JAVA_HOME` environment variable manually before installing Confluence.

Have you created a dedicated user to run Confluence?	We strongly recommend running Confluence as a dedicated user. You should create this user before you begin, so that when creating the installation and home directories, you can give this user appropriate read and write permissions. In this example, we'll create a user called `confluence`: `$ sudo /usr/sbin/useradd --create-home --comment "Account for running Confluence" --shell /bin/bash confluence` See Creating a Dedicated User Account on the Operating System to Run Confluence for more information.

⚠ Theres a known issue during setup where a load balancer (or proxy) pings the server and breaks Confluence installation or migration to Data Center. See

CONFSERVER-61189 - Opening the base URL multiple times during Data Center migration will break the migration process. **GATHERING IMPACT**

During installation, you need to disable load balancer health checks and make sure you dont open multiple tabs that point to the same Confluence URL.

Install Confluence

1.Download Confluence

Download the`tar.gz`file for your operating system -https://www.atlassian.com/software/confluence/download.

2. Create the installation directory

1. Create your installation directory this is where Confluence will be installed. Avoid using spaces or special characters in the path. We'll refer to this directory as your`<installation-directory>`.

   In this example we'll call our installation directory `confluence`:

   ```
   $ mkdir confluence
   ```

2. Extract the Confluence`tar.gz`file to your`<installation-directory>`. We recommend using aGNU version of the archive utility, especially on Solaris.

   Change to the directory where you downloaded Confluence then execute these commands:

   ```
   $ tar -xzf atlassian-confluence-X.X.X.tar.gz -C <installation-directory>
   $ cd <installation-directory>
   $ tar -xf atlassian-confluence-X.X.X.tar
   ```

   Replace `x.x.x` with your Confluence version and `<installation-directory>` with the full path to the directory you created in the last step.

3. Give your dedicated Confluence user read, write and execute permission toyour`<installation-directory>`.

   In this example we're changing ownership of the installation directory and giving the user `confluence` read, write and execute permissions.

```
$ chown -R confluence <installation-directory>
$ chmod -R u=rwx,go-rwx <installation-directory>
```

3. Create the home directory

1. Create your home directory this is where Confluence application data like logs, search indexes and files will be stored. This should be separate to your installation directory, with nospaces or special characters in the path. We'll refer to this directory as your`<home-directory>`.

   In this example we'll call our home directory `confluence-home`:

   ```
   $ mkdir confluence-home
   ```

2. Give your dedicated Confluence user read, write and execute permissions to the`<home-directory>`.

   In this example we're changing ownership of the home directory and giving the user `confluence` read, write and execute permissions.

   ```
   $ chown -R confluence <home-directory>
   $ chmod -R u=rwx,go-rwx <home-directory>
   ```

3. Edit`<installation-directory>\confluence\WEB-INF\classes\confluence-init.properties`.
4. At the bottom of the file, enter the absolute path to your`<home-directory>`. This tells Confluence where to find your`<home-directory>`when it starts up.

   You can edit the `confluence.init.properties` file any text editor.

   a. Scroll to the bottom of the text and find this line:

      ```
      # confluence.home=c:/confluence/data
      ```

   b. Remove the # and the space at the beginning of this line (so Confluence doesn't read the line as a comment) and add the absolute path to your home directory (not a symlink). For example:

      ```
      confluence.home=/var/confluence-home
      ```

4. Check the ports

By default Confluence listens on port`8090`. If you have another application running on your server that uses the same ports, you'll need to tell Confluence to use a different port.

To change the ports:

1. Edit `<installation-directory>\conf\server.xml`
2. Change the **Server** port (8000) and the **Connector** port (8090) to free ports on your server.

   In the example below we've changed the **Server** port to 5000 and the **Connector** port to 5050.

```
Server port="5000" shutdown="SHUTDOWN" debug="0">
  <Service name="Tomcat-Standalone">
    <Connector port="5050" connectionTimeout="20000" redirectPort="8443"
        maxThreads="48" minSpareThreads="10"
        enableLookups="false" acceptCount="10" debug="0" URIEncoding="UTF-8"
        protocol="org.apache.coyote.http11.Http11NioProtocol" />
```

Linux won't allow you to bind to ports less than 1024. If you want to run Confluence on port 80, for example, you could use a reverse proxy to redirect traffic from port 80. See Using Apache with mod_proxy.

5. Start Confluence

1. Run`<installation-directory>/bin/start-confluence.sh`to start the setup process.

   We recommend running Confluence as your dedicated user.

   ```
   $ su -u <user>
   $ ./start-confluence.sh
   ```

   If you're using Ubuntu the command is a little different:

   ```
   $ sudo su <user>
   $ ./start-confluence.sh
   ```

2. Go to`http://localhost:8090/`to launch Confluence in your browser (change the port if you've updated the Connector port).

- Check your JAVA_HOME variable is set correctly.
- If you see an error, see Confluence does not start due to Spring Application context has not been set for troubleshooting options.

Set up Confluence

6. Choose installation type

1. Choose**Production installation**.

2. Choose any**apps**you'd also like to install.

7. Enter your license

Follow the prompts to log in tomy.atlassian.comto retrieve your license, or enter a license key.

8. Connect to your database

1. If you've not already done so, it's time to create your database. See the 'Before you begin' section of this page for details and connection options.

2. For MySQL and Oracle, follow the prompts to download and install the required driver.

3. Enter your database details. Use**test connection** to check your database is set up correctly.

   If you want to specify particular parameters, you can choose to connect **By connection string**. You'll be prompted to enter:

   - **Database URL** the JDBC URL for your database. If you're not sure, check the documentation for your database.

- **Username and Password** A valid username and password that Confluence can use to access your database.

9. Populate your new site with content

Choose whether you'd like Confluence to populate your site with content:

This option will create a space that you and your users can use to get to know Confluence. You can delete this space at any time.

Use this option if you have a full site export of an existing Confluence site. This is useful when youre migrating to another database or setting up a test site.

Good to know:

- You can only import sites from the **same** or **earlier** Confluence version.
- The system administrator account and all other user data and content will be imported from your previous installation.

In the setup wizard:

- **Upload a backup file** use this option if your site export file is small (25mb or less).
- **Restore a backup file from the file system** use this option if your backup file is large. Drop the file into your `<confluence-home>/restore`directory then follow the prompts to restore the backup.
- **Build Index** well need to build an index before your imported content is searchable. This can take a long time for large sites, so deselect this option if you would rather build the index later.Your content won't be searchable until the index is built.

10. Choose where to manage users

Choose to manage Confluence's users and groups inside Confluence or in a Jira application, such as Jira Software or Jira Service Management:

Choose this option if you're happy to manage users in Confluence, or don't have a Jira application installed.

Good to know:

- If you do plan to manage users in a Jira application, but have not yet installed it, we recommend installing Jira first, and then returning to the Confluence setup.
- You can add external user management (for example LDAP, Crowd or Jira) later if you choose.

Choose this option if you have a Jira application installed and want to manage users across both applications.

Good to know:

- This is a quick way of setting up your Jira integration with the most common options.
- It will configure a Jira user directory for Confluence, and set up application links between Jira and Confluence for easy sharing of data.
- You'll be able to specify exactly which groups in your Jira app should also be allowed to log in to Confluence. Your license tiers do not need to be the same for each application.
- You'll need either Jira 4.3 or later, Jira Core 7.0 or later, Jira Software 7.0 or later, or Jira Service Management 3.0 or later.

In the setup wizard:

- **Jira Base URL** the address of your Jira server, such as `http://www.example.com:8080/jira/` or `http://jira.example.com/`
- **Jira Administrator Login** this is the username and password of a user account that has the Jira System Administrator global permission in your Jira application. Confluence will also use this username and password to create a local administrator account which will let you access

Confluence if Jira is unavailable. Note that this single account is stored in Confluence's internal user directory, so if you change the password in Jira, it will not automatically update in Confluence.

- **Confluence Base URL** this is the URL Jira will use to access your Confluence server. The URL you give here overrides the base URL specified in Confluence, for the purposes of connecting to the Jira application.
- **User Groups** these are the Jira groups whose members should be allowed to use Confluence. Members of these groups will get the 'Can use' permission for Confluence, and will be counted in your Confluence license. The default user group name differs depending on your Jira version:
  - Jira 6.4 and earlier: `jira-users`.
  - Jira Software 7.x and later: `jira-software-users`
  - Jira Core 7.x and later: `jira-core-users`
  - Jira Service Management (formerly Jira Service Desk) 3.x and later: `jira-servicedesk-users`
- **Admin Groups** provide one or more Jira groups whose members should have administrative access to Confluence. The default group is `jira-administrators`. These groups will get the system administrator and Confluence administrator global permissions in Confluence.

11. Create your administrator account

Enter details for the administrator account.

Skip this step if you chose to manage users in a Jira application or you imported data from an existing site.

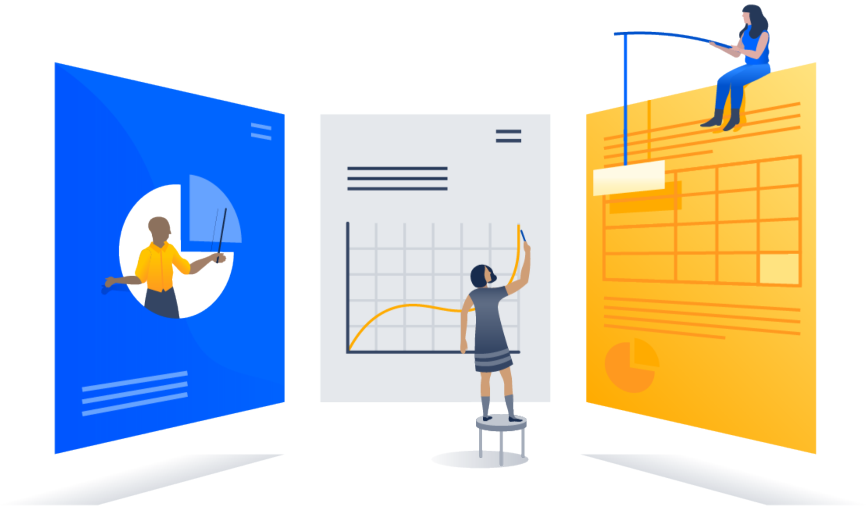
12. Start using Confluence

That's it!Your Confluence site is accessible from a URL like this: http://<computer_name_or_IP_address>:<port>

If you plan to run Confluence behind a reverse proxy, check outProxy and SSL considerationsbefore you go any further.

Here's a few things that will help you get your team up and running:

- Set the server base URL this is the URL people will use to access Confluence.
- Set up a mail server this allows Confluence to send people notification about content.
- Add and invite users get your team on board!
- Start and stop Confluence find out how to start and stop Confluence.



Troubleshooting

- Check your JAVA_HOME is set correctly.
- If you see an error, see Confluence does not start due to Spring Application context has not been set for troubleshooting options.
- Use a GNU version of the unzip utility. There are known issues extracting the `tar.gz` file on Solaris and AIX. See 'extractBundledPlugins Couldn't find atlassian-bundled-plugins.zip on classpath' Due to Solaris TAR Utility.

- Collaborative editing errors? See Troubleshooting Collaborative Editing.

Head to Installation Troubleshooting in our Knowledge Base for more help.

Uninstalling Confluence from Linux

This page describes the procedure for uninstalling Confluence, which had been installed using the Linux Installer.

To uninstall Confluence from Linux:

1. Open a Linux console.
2. Change directory (`cd`) to your Confluence installation directory.
3. Execute the command `uninstall`. This command must be executed as the same user account that was used to install Confluence with the Linux Installer.
4. Follow the prompts to uninstall Confluence from your computer.

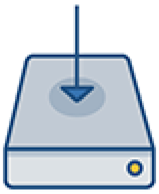
ℹ Please note:

- The uninstaller will not delete the Confluence Home Directory.
- All log files that were generated while Confluence was running will not be deleted.
- All files within the Confluence Installation Directory will be deleted (with the exception of the Tomcat `log` folder located in the Confluence Installation Directory).
- The uninstaller can be made to operate in unattended mode by specifying the `-q` option i.e. `uninstall -q`
- If you wish to re-install Confluence in 'unattended mode', do not uninstall your previous installation of Confluence just yet. See Using the Silent Installation Feature for more information.

Unattended installation

If you've previously installed Confluence using the Windows or Linux installer, you can use a configuration file from your existing Confluence installation (`response.varfile`) to re-install Confluence in unattended mode, no user input required.

This can be useful when you have installed Confluence on a test server and are ready to install on your production server with the same configuration.



Good to know

- The`response.varfile`file contains the options specified during the installation wizard steps of your previous Confluence installation. Don't uninstall your previous Confluence installation until after you've copied this file to your new install location.
- If you decide to modify the`response.varfile`file, make sure all directory paths specified are absolute, for example,`sys.installationDir=C\:\\Program Files\\Atlassian\\Confluence` (Windows) or`sys.installationDir=/opt/atlassian/confluence`(Linux).

  Unattended installations will fail the file contains relative directory paths.
- It's not possible to automate the database configuration step. This must be done via the setup wizard in your browser.

Install Confluence in unattended mode

These steps cover where you have an existing Confluence installation.

1. Downloadthe appropriate installer for your operating system.
2. Copy `<installation-directory>/.install4j/response.varfile`from your existing Confluence installation to where you downloaded the installer.
3. In command prompt or terminal change directory (cd) to where you downloaded the installer.
4. Run the following command to install Confluence:

   Windows

   ```
   > atlassian-confluence-X.X.X-x64.exe -q -varfile response.varfile
   ```

   Linux

   ```
   $ atlassian-confluence-X.X.X-x64.bin -q -varfile response.varfile
   ```

   Where`X.X.X`is the Confluence version you downloaded.

   `-q`instructs the installer to run in unattended mode (quietly). `-varfile`specifies the location and name of the configuration file containing the options used by the installer.
5. Confluence will start automatically once the silent installation finishes.

Once Confluence is installed, you will still need to head to `http://localhost:<port>`to finish setting up Confluence.

See the **Set up Confluence** section onInstalling Confluence on Windows orInstalling Confluence on Linux for more info.

Create your own response.varfile

It is also possible to create your own `response.varfile`, rather than one generated by an existing installation, if you are installing Confluence for the first time.

Example response.varfile

```
app.confHome=/var/atlassian/application-data/confluence6_15_5
app.install.service$Boolean=false
portChoice=custom
httpPort$Long=26112
rmiPort$Long=8001
launch.application$Boolean=false
sys.adminRights$Boolean=true
sys.confirmedUpdateInstallationString=false
sys.installationDir=/opt/atlassian/confluence6_15_5
sys.languageId=en
```

The following parameters can be included in the file.

Parameters	Accepted values	Description
app.confHome		This is the path to your target local home directory.
app.install.service$Boolean	• true • false	Determines whether Confluence should be installed as a service.
portChoice	• custom • default	Determines whether Confluence should be installed with default ports.
httpPort$Long		If portChoice is custom, this sets the HTTP connector port in Tomcat.
rmiPort$Long		If portChoice is custom, this sets the Tomcat server port.
launch.application$Boolean	• true • false	Determines whether the installer should start Confluence once installation is complete
sys.adminRights$Boolean=true	• true • false	Indicates whether the user running the installer has admin privileges on the machine.
sys.confirmedUpdateInstallationString	• true • false	Set this to `false` for a fresh unattended installation. Set to `true` to perform an unattended upgrade. Always back up your existing site before attempting to upgrade.

sys.installationDir	path to install directory	This is the path to your target installation directory for a new install, or existing installation directory to be upgraded.
sys.languageId		Default application language.

Change listen port for Confluence

Problem

This page tells you what to do if you get errors like the following when starting Confluence, when you can't access Confluence on port **8090**.

If you see this error:

```
java.net.BindException: Address already in use: JVM_Bind:8090
```

This means you are running other software on Confluence's default port of **8090**. This may be another other process running on the same port. It may also be a previous instance of Confluence that hasn't been shut down cleanly.

To find out what process is listening on that port, load a command prompt and type: **`netstat -an`**

```
 -a : Displays all active TCP connections and the TCP and UDP ports on which the computer is listening.
 -n : Displays active TCP connections, however, addresses and port numbers are expressed numerically and no
attempt is made to determine names.
```

There is also Process Explorer tool available to determine what is binding port **8090**.

Solution: Change the Ports which Confluence Listens On

To change the ports for Confluence, open the file `conf/server.xml` under your Confluence Installation directory. The first four lines of the file look like this:

Default conf/server.xml

```
<Server port="8000" shutdown="SHUTDOWN" debug="0">
    <Service name="Tomcat-Standalone">
        <Connector className="org.apache.coyote.tomcat4.CoyoteConnector" port="8090" minProcessors="5"
maxProcessors="75"
            enableLookups="true" redirectPort="8443" acceptCount="10" debug="0" connectionTimeout="20000"
useURIValidationHack="false"/>
        ...
```

You need to modify both the **server** port (default is 8000) and the **connector** port (default is 8090) to ports that are free on your machine. The server port is required by Tomcat but is not user facing in any way. The connector port is what your users will use to access Confluence, eg in the snippet above, the URL would be `http://example.com:8090`.

✓ Hint: You can use netstat to identify free ports on your machine. See more information on using netstat on Windows or on Linux.

For example, here are the first four lines of a modified `server.xml` file, using ports '8020' and '8099':

Modified conf/server.xml using ports 8020 and 8099

```
<Server debug="0" shutdown="SHUTDOWN" port="8020">
    <Service name="Tomcat-Standalone">
        <Connector className="org.apache.coyote.tomcat4.CoyoteConnector" port="8099" minProcessors="5"
maxProcessors="75"
            enableLookups="true" redirectPort="8443" acceptCount="10" debug="0" connectionTimeout="20000"
useURIValidationHack="false"/>
        ...
```

To access Confluence in this configuration, point your web browser to `http://localhost:8099/`.

Final Configuration

- If this is the URL your users will use to access Confluence, update your Base URL to point to the new URL.
- You should also ensure at this point that if you are using a firewall, it is configured to allow http/https traffic over the port you have chosen.

NOTES

[1] For more information on netstat, see using netstat on Windows, or netstat man page (Linux).

[2] The Jira distribution runs on port **8080** by default. If you're looking to change the port of your Jira application's distribution, seeChanging JIRA application TCP ports.

[3] You will need to restart Confluence after editing`server.xml`for the changes to take effect.

Start and Stop Confluence

How you start and stop Confluence depends on whether you are running Confluence as a Service.

To check whether Confluence is already running you can go to`http://<base-url>/status`.

Windows

If you installed Confluence as a service, you can **Start Confluence Server** and **Stop Confluence Server** from the Windows Start menu.

You can't start or stop Confluence manually using the `start-confluence.bat` and `stop-confluence.bat` file.

If you didn't install Confluence as a service you'll need to start and stop Confluence manually. The way you do this depends on how Confluence was originally installed.

If you **installed Confluence manually**, and have Java installed on your server:

- To start Confluence run`<installation-directory>\bin\start-confluence.bat`
- To stop Confluence run`<installation-directory>\bin\stop-confluence.bat`

We recommend running Confluence with a dedicated user account. To do this, use use the`runas`command to execute`start-confluence.bat`.

```
> runas /env /user:<DOMAIN>\<confluence> start-confluence.bat
```

Where`<DOMAIN>`is your Windows domain or computer name and `<confluence>` is the name of your dedicated user.

If you **installed Confluence using the installer**, and don't have Java installed, use the Start and Stop Confluence options in the Start menu, or:

- To start Confluence run `<installation-directory>\startup-bundled-jre.bat`
- To stop Confluence run `<installation-directory>\shutdown-bundled-jre.bat`

It is possible to start Confluence Server with user installed apps temporarily disabled. This is useful if you need to troubleshoot problems with your site, particularly if an app may be preventing Confluence from starting up successfully.

To start Confluence with all user installed apps temporarily disabled:

```
> cd <installation-directory>/bin
> start-confluence.bat /disablealladdons
```

To start Confluence with a particular app temporarily disabled:

```
> cd <installation-directory>/bin
> start-confluence.bat /disableaddon=com.atlassian.test.plugin
```

where `com.atlassian.test.plugin` is the app key. To disable multiple apps, use a colon separated list. Regex/wildcards are not permitted, the full key of the plugin must be provided.

These parameters are applied at startup only, they do not persist. If you want to permanently disable an app, go to

⚙ > **Manage apps**

to do this via UPM.

Notes

- If the app key contains a space, disabling the app using this method will not work, you need to manually deal with that app.
- This feature does **not** work for Confluence Data Center.
- replace `/bin/start-confluence.bat` with `startup-bundled-jre.bat` if you installed Confluence using the installer, and are using the bundled JRE (Java Runtime Engine).

Linux

If you installed Confluence as a service, use one of the following commands to **start**, **stop** or **restart** Confluence.

```
$ sudo /etc/init.d/confluence start
$ sudo /etc/init.d/confluence stop
$ sudo /etc/init.d/confluence restart
```

You can't start or stop Confluence manually using the `start-confluence.sh` and `stop-confluence.sh` files.

If you didn't install Confluence as a service you'll need to start and stop Confluence manually.

- To start Confluence run`<installation-directory>\bin\start-confluence.sh`
- To stop Confluence run`<installation-directory>\bin\stop-confluence.sh`

We recommend running Confluence with a dedicated user account:

```
$ su -u <user>
$ ./start-confluence.sh
```

Where`<user>`is the name of your dedicated user.

If you're using Ubuntu the command is a little different:

```
$ sudo su <user>
$ ./start-confluence.sh
```

It is possible to start Confluence with user installed apps temporarily disabled. This is useful if you need to troubleshoot problems with your site, particularly if an app may be preventing Confluence from starting up successfully.

To start Confluence with **all** user installed apps temporarily disabled:

```
$ cd <installation-directory>/bin
$ ./start-confluence.sh --disable-all-addons
```

To start Confluence with a particular app temporarily disabled:

```
$ cd <installation-directory>/bin
$ ./start-confluence.sh --disable-addons=com.atlassian.test.plugin
```

where `com.atlassian.test.plugin` is the app key.

To disable multiple apps, use a colon separated list, for example, `com.atlassian.test.plugin:com.atlassian.another.plugin`. Regex/wildcards are not permitted, the full key of the plugin must be provided.

These parameters are applied at startup only, they do not persist. If you want to permanently disable an app, go to

⚙ > **Manage apps**

to do this via UPM.

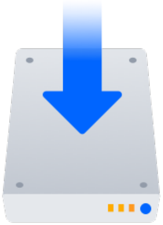
Notes

- If the app key contains a space, disabling the app using this method will not work, you need to manually deal with that app.
- This feature does **not** work for Confluence Data Center.

Installing Confluence Data Center

In this guide we'll run you through installing Confluence Data Center in a Windows or Linux Environment. You can run Data Center as a standalone installation, or in a cluster, depending on your organisation's needs.

This guide covers installing for the first time, with no existing data.If you already have a Confluence Server instance, seeMigrate from Server to Data Center.



On this page:

Other ways to install Confluence Data Center:

- Kubernetes - install on a Kubernetes cluster using our Helm charts
- AWS- hassle free deployment in AWS using our Quick Start
- Azure - reference templates for Microsoft Azure deployment
- Move to Data Center- for existing Confluence Server sites

Interested in learning more about Data Center? Find out more about the benefits of Confluence Data Center.

Before you begin

Supported platforms

See ourSupported Platformspage for information on the database, Java, and operating systems you'll be able to use. These requirements are the same for Server and Data Center deployments.

Requirements

To use Confluence Data Center you must:

- Have a Data Center license (you canpurchase a Data Center licenseor create an evaluation license at my.atlassian.com)
- Use asupportedexternal database, operating system and Java version
- Use OAuth authentication if you haveapplication linksto other Atlassian products (such as Jira)

To run Confluence in a cluster you must also:

- Use a load balancer with session affinity in front of the Confluence cluster. WebSockets support is also recommended for collaborative editing.
- Have a shared directory accessible to all cluster nodes in the same path (this will be your shared home directory). This must be a separate directory, and not located within the local home or install directory.

> Theres a known issue during setup where a load balancer (or proxy) pings the server and breaks Confluence installation or migration to Data Center. See
>
> **CONFSERVER-61189** - Opening the base URL multiple times during Data Center migration will break the migration process. GATHERING IMPACT
>
> During installation, you need to disable load balancer health checks and make sure you dont open multiple tabs that point to the same Confluence URL.

Install Confluence Data Center

If your organization doesn't need high availability or disaster recovery capabilities right now, you can install Confluence Data Center without setting up a cluster.

To install Confluence Data Center, without setting up a cluster, follow the instructions for Confluence Server:

- Installing Confluence on Windows
- Installing Confluence on Linux

The process is almost identical to an ordinary Confluence Server installation, just be sure to choose **Standalone**after you've entered your Data Center license.

Install Confluence Data Center in a cluster

If your organization requirescontinuous uptime, scalability, and performance under heavy load, you'll want to run Confluence Data Center in a cluster.

SeeClustering with Confluence Data Centerfor a complete overview of hardware and infrastructure considerations.

Terminology

In this guide we'll use the following terminology:

- Installation directory The directory where you installed Confluence.
- Local home directory The home or data directory stored locally on each cluster node (if Confluence is not running in a cluster, this is simply known as the home directory).
- Shared home directory The directory you created that is accessible to all nodes in the cluster via the same path.

At the end of the installation process, you'll have an installation and*local*home directory on each node, and a single*shared*home directory (a total of 5 directories in a two node cluster) for Confluence plus directories for Synchrony.

Install and set up Confluence

1. Install Confluence on the first node

1. Install Confluence on node 1
   See Installing Confluence on Windows from Zip Fileor Installing Confluence on Linux from Archive File for more information.
2. Start Confluence on Node 1
3. Follow the prompts to enter your Data Center license then choose **Clustered** as the deployment type.
4. The setup wizard will prompt you to configure the cluster, by entering:
   - A name for your cluster
   - The path to the shared home directory you created earlier
   - The network interface Confluence will use to communicate between nodes
   - How you want Confluence to discover cluster nodes:

        - Multicast - enter your own multicast address or automatically generate one.

- TCP/IP - enter the IP address of each cluster node
- AWS - enter your IAM Role or secret key, and region.

We recommend using our Quick Start or Cloud Formation Template to deploy Confluence Data Center in AWS, as it will automatically provision, configure and connect everything you need.

If you do decide to do your own custom deployment, you can provide the following information to allow Confluence to auto-discover cluster nodes:

Field	Description
IAM Role or **Secret Key**	This is your authentication method. You can choose to authenticate by IAM Role or Secret Key.
Region	This is the region your cluster nodes (EC2 instances) will be running in.
Host header	Optional. This is the AWS endpoint for Confluence to use (the address where the EC2 API can be found, for example 'ec2.amazonaws.com'). Leave blank to use the default endpoint.
Security group name	Optional. Use to narrow the members of your cluster to only resources in a particular security group (specified in the EC2 console).
Tag key and **Tag value**	Optional. Use to narrow the members of your cluster to only resources with particular tags (specified in the EC2 console).

5. Follow the prompts to set up your database and administrator account.
6. Confirm that you can log in to Confluence and everything is working as expected, then stop Confluence on Node 1.

Add more Confluence nodes

2.Copy Confluence to second node

To copy Confluence to the second node:

1. Shut down Confluence on node 1.
2. Copy the installation directory from node 1 to node 2.
3. Copy the local home directory from node 1 to node 2.

Copying the local home directory ensures the Confluence search index, the database and cluster configuration, and any other settings are copied to node 2.

3. Configure load balancer

Configure your load balancer for Confluence. You can use the load balancer of your choice, but it needs to support session affinity and WebSockets.

You can verify that your load balancer is sending requests correctly to your existing Confluence server by accessing Confluence through the load balancer and creating a page, then checking that this page can be viewed/edited by another machine through the load balancer.

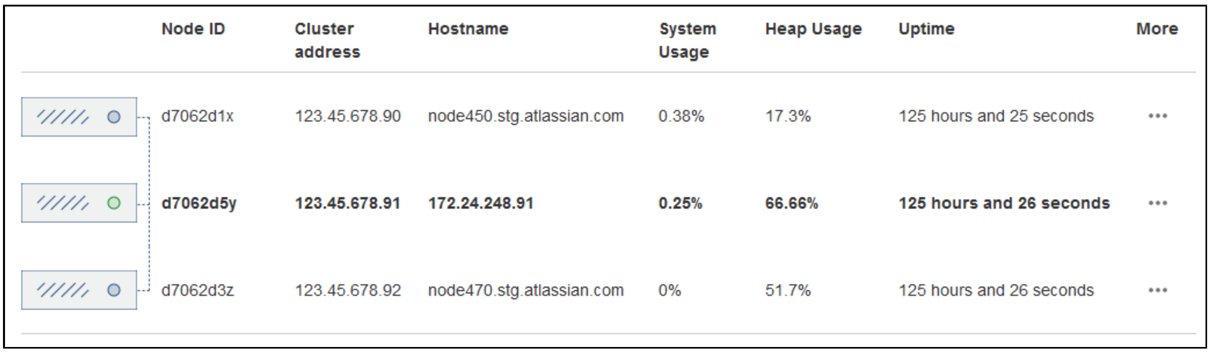
4. Start Confluence one node at a time

You must only start Confluence **one node at a time**. The first node must be up and available before starting the next one.

1. Start Confluence on node 1
2. Wait for Confluence to become available on node 1
3. Start Confluence on node 2
4. Wait for Confluence to become available on node 2.

TheCluster monitoring console (⚙> **General Configuration** > **Clustering**) shows information about the active cluster.

When the cluster is running properly, this page displays the details of each node, including system usage and uptime. Use the ••• menu to see more information about each node in the cluster.



	Node ID	Cluster address	Hostname	System Usage	Heap Usage	Uptime	More
	d7062d1x	123.45.678.90	node450.stg.atlassian.com	0.38%	17.3%	125 hours and 25 seconds	•••
	d7062d5y	**123.45.678.91**	**172.24.248.91**	**0.25%**	**66.66%**	**125 hours and 26 seconds**	•••
	d7062d3z	123.45.678.92	node470.stg.atlassian.com	0%	51.7%	125 hours and 26 seconds	•••

5. Test your Confluence cluster

To test creating content you'll need to access Confluence via your load balancer URL. You can't create or edit pages when accessing a node directly.

A simple process to ensure your cluster is working correctly is:

1. Access a node via your load balancer URL, and create a new document on this node.
2. Ensure the new document is visible by accessing it directly on a different node.
3. Search for the new document on the original node, and ensure it appears.
4. Search for the new document on another node, and ensure it appears.

> ⓘ If Confluence detects more than one instance accessing the database, but not in a working cluster, it will shut itself down in a *cluster panic*. This can be fixed by troubleshooting the network connectivity of the cluster.

6. Set up your Synchrony cluster (optional)

Synchrony is required for collaborative editing. You have two options for running Synchrony with a Data Center license:

- **managed by Confluence**(recommended)
  This is the default setup. Confluence will automatically launch a Synchrony process on the same node, and manage it for you. No manual steps are required.
- **Standalone Synchrony cluster** (managed by you)
  You deploy and manage Synchrony standalone in its own cluster with as many nodes as you need. Significant setup is required.See Set up a Synchrony cluster for Confluence Data Center for a step-by-step guide.

Head to Administering Collaborative Editing to find out more about collaborative editing.

Security

Ensure that only permittedcluster nodes are allowed to connect to the following portsthrough the use of a firewall and / or network segregation:

- 5801 -Hazelcastport for Confluence
- 5701 -Hazelcastport for Synchrony
- 25500 - Cluster base port for Synchrony

If you use multicast for cluster discovery:

- 54327- Multicast port for Synchrony (only required if running Synchrony standalone cluster)

Troubleshooting

If you have problems with the above procedure, please see ourCluster Troubleshooting guide.

If you're testing Confluence Data Center by running the cluster on a single machine, please refer to our developer instructions onStarting a Confluence cluster on a single machine.

Upgrading a cluster

It's important that upgrades follow the procedure for Upgrading Confluence Data Center.

Upgrading Confluence Data Center

This page contains instructions for **upgrading an existing Confluence cluster**.

If you are not running Confluence in a cluster, follow the instructions in Upgrading Confluence.

If you're running Confluence in a cluster in AWS, follow the instructions inRunning Confluence Data Center in AWS.

If you are upgrading to the next bug fix update (for example, 7.9.0 to 7.9.3), you can do so with no downtime. Follow the instructions inUpgrade Confluence without downtime.

In this guide we'll use the following terminology:

- Installation directory The directory where you installed Confluence.
- Local home directory The home or data directory stored locally on each cluster node (if Confluence is not running in a cluster, this is simply known as the home directory).
- Shared home directory The directory you created that is accessible to all nodes in the cluster via the same path.

Currently using Confluence Server? Learn more about thebenefits of Confluence Data Center.

On this page:

1. Back up

We strongly recommend that you backup your Confluence home and install directories and your database before proceeding.

More information on specific files and directories to backup can be found inUpgrading Confluence.

2. Download Confluence

Download the appropriate file for your operating system fromhttps://www.atlassian.com/software/confluence/download

3. Stop the cluster

You must stop all the nodes in the cluster before upgrading.

We recommend configuring your load balancer to redirect traffic away from Confluence until the upgrade is complete on all nodes.

4. Upgrade the first node

To upgrade the first node:

1. Extract (unzip) the files to adirectory (this will be your new installation directory, and must be different to your existing installation directory)
2. Update the following line in the`<Installation-Directory>\confluence\WEB-INF\classes\confluence-init.properties`file to point to the**existinglocal home**directory on that node.

3. If your deployment uses a MySQL database, copy the jdbc driver jar file from your existing Confluence installation directory to `confluence/WEB-INF/lib`in your new installation directory. The jdbc driver will be located in either the`<Install-Directory>/common/lib`or`<Installation-Directory>/confluence/WEB-INF/lib`directories. SeeDatabase Setup For MySQL for more details.
4. If you run Confluence as a service:
    - On Windows,delete the existing service then re-install the serviceby running`<install-directory>/bin/service.bat`.
    - On Linux, update the service to point to the new installation directory (or use symbolic links to do this).
5. Copy any other immediately required customizations from the old version to the new one(for example if you are not running Confluence on the default ports or if you manage users externally, you'll need to update / copy the relevant files - find out more inUpgrading Confluence Manually).

> ⓘ If you configured Confluence to run as a Windows or Linux service, don't forget to update its service configuration as well. For related information, see Start Confluence Automatically on Windows as a Service or Run Confluence as a systemd service on linux.

6. Start Confluence, and confirm that you can log in and view pages before continuing to the next step.

You should now stop Confluence, and reapply any additional customizations from the old version to the new version, before upgrading the remaining nodes.

5. Upgrade Synchrony (optional)

If you've chosen to let Confluence manage Synchrony for you (recommended), you don't need to do anything. Synchrony was automatically upgraded with Confluence.

If you're running your own Synchrony cluster, you should:

1. Grab the new`synchrony-standalone.jar`from the`<local-home>`directory on your upgraded Confluence node.
2. Copy the new`synchrony-standalone.jar`to each of your Synchrony nodes, and start Synchrony as normal.

6. Copy Confluence to remaining nodes

The next step is to replicate your upgraded Confluence directories to other nodes in the cluster.

1. Copy the installation directory and local home directory from the first node to the next node.
2. If the path to the local home directory is different on this node, edit the`confluence-init.properties`to point to the correct location.
3. Start Confluence, and and confirm that you can log in and view pages on this node.

Stop Confluence on this node, then repeat this process for each remaining node.

7. Start Confluence and check cluster connectivity

Once all nodes have been upgraded you can start Confluence Data Center on each node, **one at a time** (starting up multiple nodes simultaneously can lead to serious failures).

TheCluster monitoring console (⚙> **General Configuration** > **Clustering**) includes information about the active cluster nodes. When the cluster is running properly, you should be able to see the details of each node.

Adding and Removing Data Center Nodes

Your Data Center license is based on the number of users in your cluster, rather than the number of nodes. This meansyou can add and remove nodes from your Data Center cluster at any time.

If you deployed Confluence Data Center on AWS using theQuick Start, your Confluence and Synchrony nodes will be inauto-scaling groups. You will add and remove nodes in the AWS console either by changing the minimum and maximum size of each group or using a scaling plan.

On this page:

Adding a node

To add a node:

1. Copy the installation directory and local home directory from the stopped node to your new node.
2. Start Confluence on your new node.
   During the startup process Confluence will recover indexes from a running node to bring the new node up to date.
3. Go to⚙> **General Configuration**> **Clustering**and check that the new node is visible.

You should only start one node at a time. Starting up multiple nodes simultaneously can cause serious failures.

If the discovery mode is set to TCP/IP, you'll need to update the `confluence.cluster.peers` property in the `confluence.cfg.xml` file for each node so the file lists all nodes in your cluster:

```
<property name="confluence.cluster.peers">[node 1 IP],[node 2 IP],[node 3 IP]</property> <!-- A comma-
separated list of node IP addresses, without spaces -->
```

Removing a node

To remove a node, stop Confluence on that node. You can then remove the installation and local home directory as required.

To see the number of nodes remaining go to⚙> **General Configuration**>**Clustering**.

Changing the node identifier

Confluence generates an identifier for each node in your cluster. You can use the`confluence.cluster.node.name`system propertyto set the node identifier on each node so that it's easier for your users and administrators to read.

SeeConfiguring System Properties for more information on how to set the system property.

Moving to a non-clustered installation

If you no longer need clustering, and want to avoid the overhead that comes from running a cluster with just one node, you can go back to a non-clustered Data Center installation. You'll need to make some infrastructure changes as part of the switch.

SeeMove to a non-clustered installationto find out how to do this.

Change Node Discovery from Multicast to TCP/IP or AWS

On this page:

If you're setting up Confluence Data Center for the first time, it'll step you through the process of choosing your discovery mode and adding cluster nodes.If you decide to change the node discovery for the cluster, you'll need to edit the`confluence.cfg.xml`file in thelocalhome directory of each cluster node.

- Before you make any changes, shut down all nodes in your cluster
- Make sure the discovery configuration is exactly the same for each node (make the same changes to the`confluence.cfg.xml` filein each local home directory)
- Always perform a safety backup before making manual edits to these files

The changes you need to make may differ slightly, depending on whether you've upgraded from an older version of Confluence Data Center or if you've started with version 5.9. We've detailed both methods, below.

To change from multicast to TCP/IP

Look for the following two lines in the**`confluence.cfg.xml`**file:

```
<property name="confluence.cluster.address">[multicast IP]</property>
<property name="confluence.cluster.join.type">multicast</property>
```

If both lines exist in the file, change them to the lines below; where the`confluence.cluster.address`property exists, butthere's no reference to the`confluence.cluster.join.type`property, update the first line and add the second line as shown below.

```
<property name="confluence.cluster.peers">[node 1 IP],[node 2 IP],[node 3 IP]</property> <!-- A comma-
separated list of node IP addresses, without spaces -->
<property name="confluence.cluster.join.type">tcp_ip</property> <!-- accepted values are multicast or
tcp_ip -->
```

Enter the address of each node, and separate each address with a comma. Please, make sure to remove the brackets from around the IP addresses.

You can now restart your cluster nodes.

To change from multicast to AWS

Look for the following two lines in the**`confluence.cfg.xml`**file and remove them:

```
<property name="confluence.cluster.address">[multicast IP]</property>
<property name="confluence.cluster.join.type">multicast</property>
```

Depending on which type of credentials you are passing to Confluence, you will add*one*of the following two blocks with your AWS configuration.

Option 1: For Access Key/Secret Key based credentials:

```
<property name="confluence.cluster.join.type">aws</property>
<property name="confluence.cluster.aws.host.header">[---VALUE---]</property>
<property name="confluence.cluster.aws.region">[---VALUE---]</property>
<property name="confluence.cluster.aws.tag.key">[---VALUE---]</property>
<property name="confluence.cluster.aws.tag.value">[---VALUE---]</property>
<property name="confluence.cluster.aws.access.key">[---VALUE---]</property>
<property name="confluence.cluster.aws.secret.key">[---VALUE---]</property>
```

Option 2: For IAM role based credentials:

```
<property name="confluence.cluster.join.type">aws</property>
<property name="confluence.cluster.aws.host.header">[---VALUE---]</property>
<property name="confluence.cluster.aws.region">[---VALUE---]</property>
<property name="confluence.cluster.aws.tag.key">[---VALUE---]</property>
<property name="confluence.cluster.aws.tag.value">[---VALUE---]</property>
<property name="confluence.cluster.aws.iam.role">[---VALUE---]</property>
```

To change from TCP/IP to AWS

Look for the following two lines in the**`confluence.cfg.xml`**file and remove them:

```
<property name="confluence.cluster.join.type">tcp_ip</property>
<property name="confluence.cluster.peers">[node 1 IP],[node 2 IP],[node 3 IP]</property>
```

Depending on which type of credentials you are passing to Confluence, you will add*one*of the following two blocks with your AWS configuration.

Option 1: For Access Key/Secret Key based credentials:

```
<property name="confluence.cluster.join.type">aws</property>
<property name="confluence.cluster.aws.host.header">[---VALUE---]</property>
<property name="confluence.cluster.aws.region">[---VALUE---]</property>
<property name="confluence.cluster.aws.tag.key">[---VALUE---]</property>
<property name="confluence.cluster.aws.tag.value">[---VALUE---]</property>
<property name="confluence.cluster.aws.access.key">[---VALUE---]</property>
<property name="confluence.cluster.aws.secret.key">[---VALUE---]</property>
```

Option 2: For IAM role based credentials:

```
<property name="confluence.cluster.join.type">aws</property>
<property name="confluence.cluster.aws.host.header">[---VALUE---]</property>
<property name="confluence.cluster.aws.region">[---VALUE---]</property>
<property name="confluence.cluster.aws.tag.key">[---VALUE---]</property>
<property name="confluence.cluster.aws.tag.value">[---VALUE---]</property>
<property name="confluence.cluster.aws.iam.role">[---VALUE---]</property>
```

You can now restart your cluster nodes.

Note that if you're using a CloudFormation YAML template you need to make sure you have these appropriate values as a minimum and they should be reflected on the AWS side as well. If you switch to AWS mode cluster type, please also reviewRunning Confluence Data Center in AWSand make sure you have the following set up in your YAML:

```
Key: Cluster
Value: !Ref AWS::StackName
PropagateAtLaunch: true
```

To change from TCP/IP to multicast

To switch from TCP/IP to multicast, just perform the reverse of the changes outlined above.

Reference of properties in the confluence.cfg.xml file

key	valid values	notes
`confluence.cluster.join.type`	`'multicast'` or `'tcp_ip'`or `'aws'`	Pre-5.9 Data Center installations won't have this key. By default, if the key is missing, Confluence will choose `multicast`
`confluence.cluster.address`	a single multicast IP address	This key is only used by confluence if `confluence.cluster.join.type` is set to `multicast`
`confluence.cluster.peers`	a comma-separated string of IP addresses (no spaces)	There must be at least one address here. The addresses are the IP address of each node in the cluster, for example `<property name="confluence.cluster.peers">[node 1 IP],[node 2 IP],[node 3 IP]</property>` This key is only used by confluence if `confluence.cluster.join.type` is set to `tcp_ip`

Running Confluence Data Center in AWS

If you decide to deploy Confluence Data Center in a clustered environment, consider usingAmazon Web Services (AWS). AWS allows you to scale your deployment elastically by resizing and quickly launching additional nodes, and provides a number of managed services that work out of the box with Confluence Data Center. These services make it easier to configure, manage, and maintain your deployment's clustered infrastructure.

Interested in learning more about the benefits of Data Center? Check out our overview of Confluence Data Center.

On this page:

Non-clustered VS clustered environment

A single node is adequate for most Small or Medium size deployments, unless you need specific features that require clustering (for example, high availability).If you have an existing Server installation, you can still use its infrastructure when you upgrade to Data Center. Many features exclusive to Data Center (likeSAML single sign-on,self-protection via rate limiting,andCDN support) don't require clustered infrastructure.You can start using these Data Center features by simply upgrading your Server installations license.For more information on whether clustering is right for you, check outAtlassian Data Center architecture and infrastructure options.

Deploying Confluence Data Center in a cluster using the AWS Quick Start

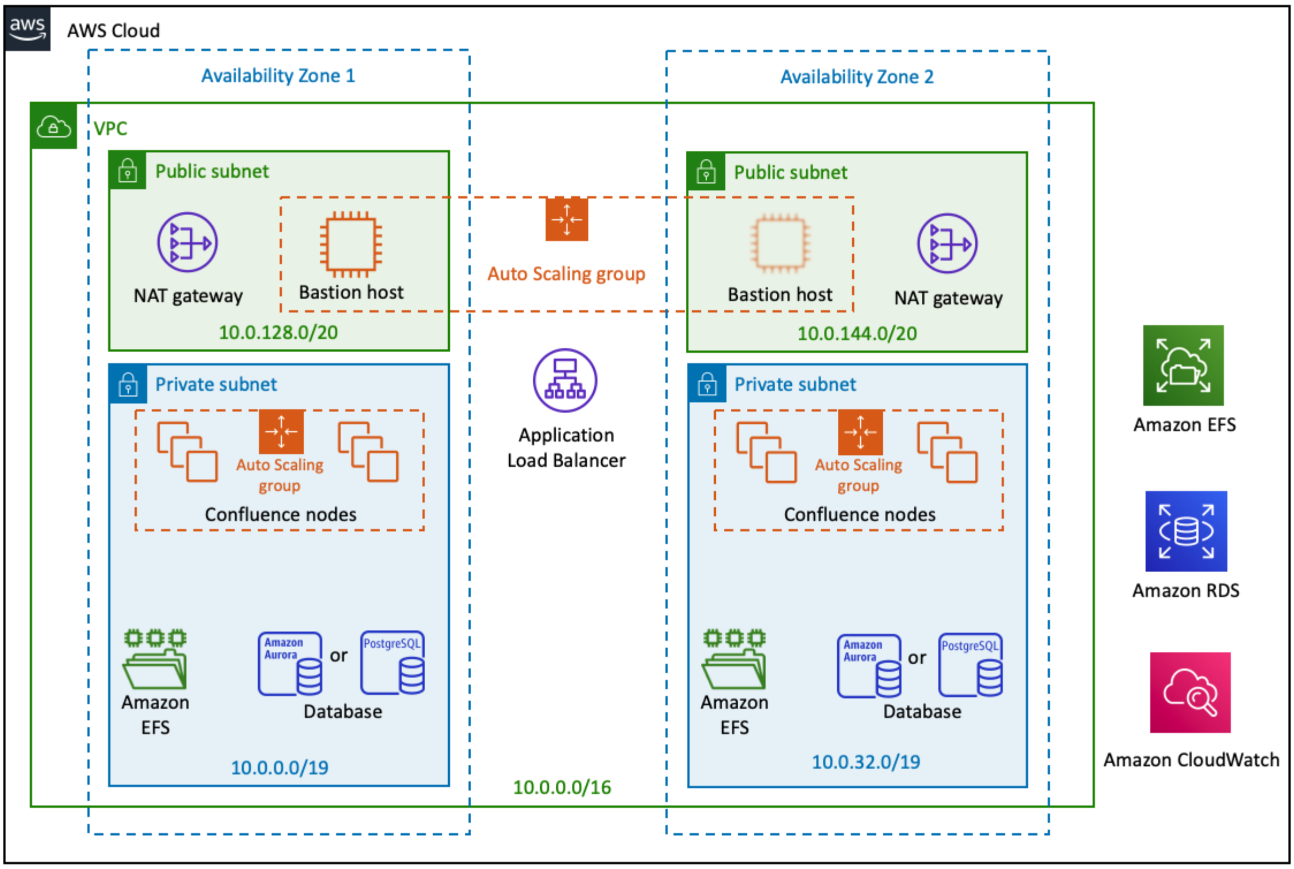
The simplest way to deploy your entire Data Center cluster in AWS is by using the Quick Start. The Quick Start launches, configures, and runs the AWS compute, network, storage, and other services required to deploy a specific workload on AWS, using AWS best practices for security and availability.

The Quick Start provides two deployment options, each with its own template. The first option deploys the Atlassian Standard Infrastructure (ASI) and then provisions Confluence Data Center into this ASI. The second option only provisions Confluence Data Center on an existing ASI.

Atlassian Standard Infrastructure (ASI)

The ASI is a virtual private cloud (VPC) that contains the components required by all Atlassian Data Center applications. For more information, see Atlassian Standard Infrastructure (ASI) on AWS.

Here's an overview of the Confluence Data Center Quick Start's architecture:



The deployment consists of the following components:

- **Instances/nodes**: One or more Amazon Elastic Cloud (EC2) instances as cluster nodes, running Confluence.
- **Load balancer**: An Application Load Balancer (ALB), which works both as load balancer and SSL-terminating reverse proxy.
- **Amazon EFS**: A shared file system for storing artifacts in a common location, accessible to multiple Confluence nodes. The Quick Start architecture implements the shared file system using the highly available Amazon Elastic File System (Amazon EFS) service.
- **Database**: Your choice of shared database instance Amazon RDS or Amazon Aurora.
- **Amazon CloudWatch**: Basic monitoring and centralized logging through Amazon's native CloudWatch service.

For more information on the architecture, components and deployment process, see our Quick Start Guide.

Confluence will use the Java Runtime Engine (JRE) that is bundled with Confluence (/opt/atlassian/confluence/jre/), and not the JRE that is installed on the EC2 instances (/usr/lib/jvm/jre/).

Advanced customizations

To get you up and running as quickly as possible, the Quick Start doesn't allow the same level of customization as a manual installation. You can, however, further customize your deployment through the variables in theAnsible playbooks we use.

All of our AWS Quick Starts use Ansible playbooks to configure specific components of your deployment. These playbooks are available publicly on this repository:

https://bitbucket.org/atlassian/dc-deployments-automation

You can override these configurations by using Ansible variables. Refer to the repositorys README file for more information.

Launching the Quick Start from your own S3 bucket (recommended)

The fastest way to launch the Quick Start is directly from its AWS S3 bucket. However, when you do, any updates we make to the Quick Start templates will propagate directly to your deployment. These updates sometimes involve adding or removing parameters from the templates. This could introduce unexpected (and possibly breaking) changes to your deployment.

For production environments, we recommend that you copy the Quick Start templates into your own S3 bucket. Then, launch them directly from there. Doing this gives you control over when to propagate Quick Start updates to your deployment.

1. Clone theQuick Start templates(including all of its submodules) to your local machine. From the command line, run:

```
git clone --recurse-submoduleshttps://github.com/aws-quickstart
/quickstart-atlassian-confluence.git
```

2. **(Optional)**TheQuick Start templatesrepository uses the directory structure required by the Quick Start interface. If needed (for example, to minimize storage costs), you can remove all other files except the following:

```
quickstart-atlassian-confluence
 submodules
  quickstart-atlassian-services
  templates
  quickstart-vpc-for-atlassian-services.yaml
 templates
 quickstart-confluence-master-with-vpc.template.yaml
 quickstart-confluence-master.template.yaml
```

3. Install and set up the AWS Command Line Interface. This tool will allow you to create an S3 bucket and upload content to it.
4. Create an S3 bucket in your region:

```
aws s3 mb s3://<bucket-name> --region <AWS_REGION>
```

At this point, you can now upload the Quick Start templates to your own S3 bucket. Before you do, you'll have to choose which Quick Start template youll be using:

- `quickstart-confluence-master-with-vpc.template.yaml`: use this for deploying into a new ASI (end-to-end deployment).
- `quickstart-confluence-master.template.yaml`: use this for deploying into an existing ASI.

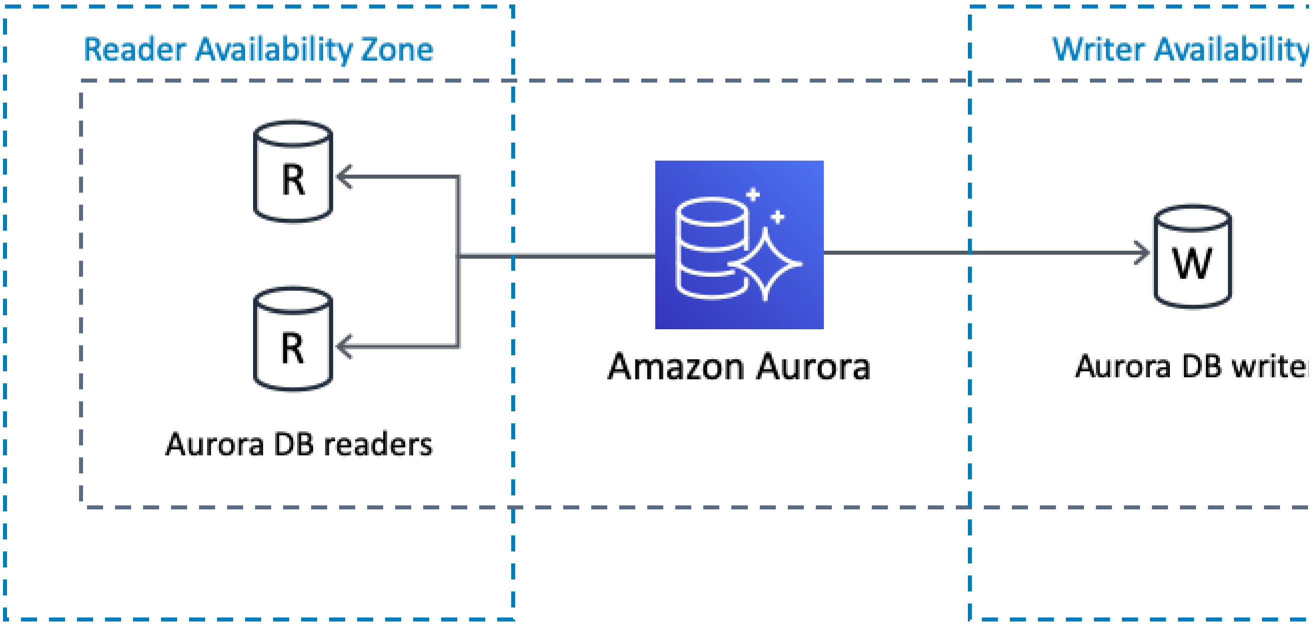
1. In the template youve chosen, the`QSS3BucketName`default value is set to`aws-quickstart`. Replace this default with the name of your S3 bucket.
2. Go into the parent directory of yourlocalclone of the Quick Start templates. From there, upload all the files in local clone to your S3 bucket:

```
aws s3 cp quickstart-atlassian-confluence s3://<bucket-name> --recursive
--acl public-read
```

3. Once youve uploaded everything, youre ready to deploy your production stack from your S3 bucket. Go to**Cloudformation** **Create Stack**. When specifying a template, paste in the Object URL of the Quick Start template youll be using.

Amazon Aurora database for high availability

The Quick Start also allows you to deploy Confluence Data Center with an Amazon Aurora clustered database (instead of RDS).This cluster will be PostgreSQL-compatible, featuring a primary database writer that replicates to two database readers.You can also set up the writers and readers in separate availability zones for better resiliency.



If the writer fails, Aurora automatically promotes one of the readers to take its place. For more information, seeAmazon Aurora Features: PostgreSQL-Compatible Edition.

⚠ If you want to set up an existing Confluence Data Center instance with Amazon Aurora, youll need to perform some extra steps. See Configuring Confluence Data Center to work with Amazon Aurora for detailed instructions.

Synchrony setup

If you have a Confluence Data Center license, two methods are available for running Synchrony:

- **managed by Confluence**(recommended)
  Confluence will automatically launch a Synchrony process on the same node, and manage it for you. No manual setup is required.
- **Standalone Synchrony cluster (managed by you)**
  You deploy and manage Synchrony standalone in its own cluster with as many nodes as you need. Significant setup is required.During a rolling upgrade, you'll need to upgrade the Synchrony separately from the Confluence cluster.

If you want simple setup and maintenance, we recommend allowing Confluence to manage Synchrony for you. If you want full control, or if making sure the editor is highly available is essential, then managing Synchrony in its own cluster may be the right solution for your organisation.

By default, the Quick Start will configure Synchrony to be managed by Confluence. However, you can use the Quick Start to configure standalone Synchrony. When you do, the Quick Start creates an Auto Scaling group containing one or more Amazon EC2 instances as cluster nodes, running Synchrony.

For more information about Synchrony configuration, seePossible Confluence and Synchrony Configurations.

Managed mode is only available in 6.12 and later

If you plan to deploy a Confluence Data Center version earlier than 6.12, you can only use Standalone mode. In the Quick Start, this means you should set your `Collaborative editing mode` to `synchrony-separate-nodes`.

Amazon CloudWatch for basic monitoring and centralized logging

The Quick Start can also provide you with node monitoring throughAmazon CloudWatch. This will allow you to track each node's CPU, disk, and network activity, all from a pre-configuredCloudWatch dashboard. The dashboard will be configured to display the latest log output, and you can customize the dashboard later on with additional monitoring and metrics.

By default, Amazon CloudWatch will also collect and store logs from each node into a single, central source. This centralized logging allows you to search and analyze your deployment's log data more easily and effectively. See Analyzing Log Data with CloudWatch Logs Insights and Search Log Data Using Filter Patterns for more information.

Amazon CloudWatch provides basic logging and monitoring, but also costs extra. To help reduce the cost of your deployment, you can disable logging or turn off Amazon CloudWatch integration during deployment.

To download your log data (for example, to archive it or analyze it outside of AWS), youll have to export it first to S3. From there, you can download it. See Exporting Log Data to Amazon S3 for details.

Auto Scaling groups

This Quick Start uses Auto Scaling groups, but only to statically control the number of its cluster nodes. We don't recommend that you use Auto Scaling to dynamically scale the size of your cluster. Adding an application node to the cluster usually takes more than 20 minutes, which isn't fast enough to address sudden load spikes.

If you can identify any periods of high and low load, you can schedule the application node cluster to scale accordingly. SeeScheduled Scaling for Amazon EC2 Auto Scalingfor more information.

To study trends in your organization's load,you'll need to monitor the performance of your deployment. Refer toConfluence Data Center sample deployment and monitoring strategyfor tips on how to do so.

EC2 sizing recommendations

For Large or XLarge deployments, check out ourAWS infrastructure recommendations for application, Synchrony, and database sizing advice. For smaller deployments, you can use instances that meet Confluence'ssystem requirements. Smaller instance types (micro, small, medium) are generally not adequate for running Confluence.

Customizing the AWS Quick Start's CloudFormation templates

To get you up and running as quickly as possible, the Quick Start doesn't allow the same level of customization as a manual installation. Alternatively, you can customize the CloudFormation templates used by the Quick Start to fit your needs. These templates are available from the following repository:

https://github.com/aws-quickstart/quickstart-atlassian-confluence

Supported AWS regions

Not all regions offer the services required to run Confluence. You'll need to choose a region that supports Amazon Elastic File System (EFS). You can currently deploy Confluence using the Quick Start in the following regions:

- Americas
  - Northern Virginia
  - Ohio
  - Oregon
  - Northern California
  - Montreal
- Europe/Middle East/Africa
  - Ireland
  - Frankfurt
  - London
  - Paris
- Asia Pacific
  - Singapore
  - Tokyo
  - Sydney
  - Seoul
  - Mumbai

This list was last updated on 20 Jun 2019.

The services offered in each region change from time to time. If your preferred region isn't on this list, check theRegional Product Servicestable in the AWS documentation to see if it already supports EFS.

AWS GovCloud is not for production

Our Quick Starts are also available onAWS GovCloudregions, but only for testing purposes. We do not support any deployments on GovCloud regions resulting from this Quick Start.

There is an additional dependency for Confluence versions earlier than 6.3.2. Synchrony (which is required for collaborative editing) uses a third party library to interact with the Amazon API, and the correct endpoints are not available in all regions. This means you can't run Synchrony in the following regions:

- US East (Ohio)
- EU (London)[1]
- Asia Pacific (Mumbai) [1]
- Asia Pacific (Seoul) [1]
- Canada (Central) [1]

[1] At the time of writing, these regions did not yet support EFS, so also can't be used to run Confluence.

Internal domain name routing with Route53 Private Hosted Zones

Even if your Confluence site is hosted on AWS, you can still link its DNS with an internal, on-premise DNS server (if you have one). You can do this through Amazon Route 53, creating a link between the public DNS and internal DNS. This will make it easier to access your infrastructure resources (database, shared home, and the like) through friendly domain names. You can make those domain names accessible externally or internally, depending on your DNS preferences.

Step 1: Create a new hosted zone

Create a **Private** hosted zone in **Services > Route 53**. The **Domain Name** is your preferred domain. For the VPC, use the existing Atlassian Standard Infrastructure.

Step 2: Configure your stack to use the hosted zone

Use your deployments Quick Start template to point your stack to the hosted zone from Step 1. If youre setting up Confluence for the first time, follow the Quick Start template as below:

1. Under **DNS (Optional)**, enter the name of your hosted zone in the **Route 53 Hosted Zone** field.
2. Enter your preferred domain **sub-domain** in the **Sub-domain for Hosted Zone** field. If you leave it blank, we'll use your stack name as the sub-domain.
3. Follow the prompts to deploy the stack.

If you already have an existing Confluence site, you can also configure your stack through the Quick Start template. To access this template:

1. Go to to **Services > CloudFormation** in the AWS console
2. Select the stack, and click **Update Stack**.
3. Under **DNS (Optional)**, enter the name of your hosted zone in the **Route 53 Hosted Zone** field.
4. Enter your preferred domain **sub-domain** in the **Sub-domain for Hosted Zone** field. If you leave it blank, we'll use your stack name as the sub-domain.
5. Follow the prompts to update the stack.

In either case, AWS will generate URLs and Route 53 records for the load balancer, EFS, and database. For example, if your hosted zone is `my.hostedzone.com` and your stack is named `mystack`, you can access the database through the URL `mystack.db.my.hostedzone.com`.

Step 3: Link your DNS server to the Confluence sites VPC

If you use a DNS server outside of AWS, then you need to link it to your deployments VPC (in this case, the Atlassian Standard Infrastructure). This means your DNS server should use Route 53 to resolve all queries to the hosted zones preferred domain (in Step 1).

For instructions on how to set this up, see Resolving DNS Queries Between VPCs and Your Network.

If you want to deploy an internal facing Confluence site, using your own DNS server, you can useAmazon Route 53to create a link between the public DNS and internal DNS.

1. In Route 53, create a **Private**hosted zone. For the VPC, you can use the existing Atlassian Services VPC. The domain name is your preferred domain.
2. If you've already set up Confluence, go to**Services > CloudFormation**in the AWS console, select the stack, and click**Update Stack**. (If you're setting up Confluence for the first time, follow the Quick Start template as below).
3. Under**Other Parameters**, enter the nameof your hosted zone in the**Route 53 Hosted Zone**field.
4. Enter your preferred **sub-domain** or leave the **Sub-domain for Hosted Zone** field blank and we'll use your stack name as the sub-domain.
5. Follow the prompts to update the stack. We'll then generate the load balancer and EFS url, and create a record in Route 53 for each.
6. In Confluence, go to ⚙> **General Configuration**and update the Confluence base URL to your Route 53 domain.
7. Set up DNS resolution between your on-premises network and the VPC with the private hosted zone. You can do this with:
   a. an Active Directory (eitherAmazon Directory Service or Microsoft Active Directory)
   b. a DNS forwarder on EC2 using bind9 or Unbound.
8. Finally, terminate and re-provision each Confluence and Synchrony node to pick up the changes.

> For related information on configuring Confluence's base URL, see Configuring the Server Base URL.

Scaling up and down

To increase or decrease the number of Confluence or Synchrony cluster nodes:

1. Sign in to the AWS Management Console, use the region selector in the navigation bar to choose the AWS Region for your deployment, and open the AWS CloudFormation console athttps://console.aws.amazon.com/cloudformation/.
2. Click the**Stack name**of your deployment. This will display your deployment's**Stack info**. From there, click**Update**.
3. On the**Select Template**page, leave**Use current template**selected, and then choose**Next**.
4. On the**Specify Details**page, go tothe**Cluster nodes**section of**Parameters**.From there, set your desired number of application nodesin the following parameters:
    1. **Minimum number of cluster nodes**
    2. **Maximum number of cluster nodes**
5. Click through to update the stack.

Disabled Auto Scaling

Since your cluster has the same minimum and maximum number of nodes,Auto Scalingis effectively disabled.

Setting different values for the minimum and maximum number of cluster nodes enables Auto Scaling. This dynamically scale the size of your cluster based on system load.

However, we recommend that you keep Auto Scaling disabled. At present, Auto Scaling can't effectively address sudden spikes in your deployment's system load. This means that you'll have to manually re-scale your cluster depending on the load.

Vertical VS Horizontal scaling

Adding new cluster nodes, especially automatically in response to load spikes, is a great way to increase capacity of a cluster temporarily. Beyond a certain point, adding very large numbers of cluster nodeswill bring diminishing returns. In general, increasing the size of each node (i.e., "vertical" scaling) will be able to handle a greater sustained capacity than increasing the number of nodes (i.e., "horizontal" scaling), especially if the nodes themselves are small.SeeInfrastructure recommendations for enterprise Confluence instances on AWS for more details.

See theAWS documentationfor more information on auto scaling groups.

Connecting to your nodes over SSH

You can perform node-level configuration or maintenance tasks on your deployment through theAWS Systems Manager Sessions Manager. This browser-based terminal lets you access your nodes without any SSH Keys or a Bastion host. For more information, seeGetting started with Session Manager.

Access via Bastion host

You can also access your nodes via a Bastion host (if you deployed one).To do this, you'll need your SSH private key file (the PEM file you specified for the**Key Name**parameter). Remember, this key can access all nodes in your deployment, so keep this key in a safe place.

The Bastion host acts as your "jump box" to any instance in your deployment's internal subnets. That is, access the Bastion host first, and from there access any instance in your deployment.

The Bastion host's public IP is the`BastionPubIp`output of your deployment's`ATL-BastionStack`stack. This stack is nested in your deployment'sAtlassian Standard Infrastructure (ASI). To access the Bastion host, use`ec2-user`as the user name, for example:

```
ssh -i keyfile.pem ec2-user@<BastionPubIp>
```

The`ec2-user`has`sudo`access. SSH access is by`root`is not allowed.

Upgrading

Consider upgrading to aLong Term Support release(if you're not on one already). Enterprise releases get fixes for critical bugs and security issues throughout its two-year support window. This gives you the option to keep a slower upgrade cadence without sacrificing security or stability. Long Term Support releases are suitable for companies who can't keep up with the frequency at which we ship feature releases.

Here's some useful advice for upgrading your deployment:

1. Before upgrading to a later version of Confluence Data Center,check if your apps are compatiblewith that version.Update your appsif needed. For more information about managing apps, seeUsing the Universal Plugin Manager.
2. If you need to keep Confluence Data Center running during your upgrade, we recommendusing read-only mode for site maintenance.Your users will be able to view pages, but not create or change them.
3. We strongly recommend that you perform the upgrade first in a*staging*environment before upgrading your production instance.Create a staging environment for upgrading Confluenceprovides helpful tips on doing so.

> ✓ **Rolling upgrades**
>
> As of Confluence Data Center 7.9, you can now upgrade to the next bug fix version (for example, 7.9.0 to 7.9.3) with no downtime. Follow the instructions inUpgrade Confluence without downtime.

When the time comes to upgrade your deployment, perform the following steps:

Step 1: Terminate all running Confluence Data Center application nodes

Set the number of application nodes used by the Confluence Data Center stack to 0. Then, update the stack.

> ! If your deployment uses standalone Synchrony, scale the number of Synchrony nodes to 0 at the same time.

1. In the AWS console, go to**Services > CloudFormation**. Select your deployments stack to view its Stack Details.
2. In the Stack Details screen, click**Update Stack**.
3. From the**Select Template**screen, select**Use current template**and click**Next**.
4. Youll need to terminate all running nodes. To do that, set the following parameters to 0:
   a. **Maximum number of cluster nodes**
   b. **Minimum number of cluster nodes**
5. Click**Next**. Click through the next pages, and then to apply the change using the**Update**button.
6. Once the update is complete, check that all application nodes have been terminated.

Step 2: Update the version used by your Confluence Data Center stack

Set the number of application nodes used by Confluence Data Center to 1. Configure it to use the version you want. Then, update the stack again.

> ! If your deployment uses standalone Synchrony, scale the number of Synchrony nodes to 1 at the same time.

1. From your deployments Stack Details screen, click**Update Stack**again.
2. From the**Select Template**screen, select**Use current template**and click**Next**.

3. Set the **Version** parameter to the version youre updating to.
4. Configure your stack to use one node. To do that, set the following parameters to 1:
    a. **Maximum number of cluster nodes**
    b. **Minimum number of cluster nodes**
5. Click **Next**. Click through the next pages, and then to apply the change using the **Update** button.

Step 3: Scale up the number of application nodes

You can now scale up your deployment to your original number of application nodes. You can do so for your Synchrony nodes as well, if you have standalone Synchrony. Refer back to Step 1 for instructions on how to re-configure the number of nodes used by your cluster.

Confluence Data Center in AWS currently doesn't allow upgrading an instance without some downtime in between the last cluster node of the old version shutting down and the first cluster node on the new version starting up. Make sure all existing nodes are terminated before launching new nodes on the new version.

Backing up

We recommend you use the AWS native backup facility, which utilizes snap-shots to back up your Confluence Data Center. For more information, see AWS Backup.

Migrating your existing Confluence site to AWS

After deploying Confluence on AWS, you might want to migrate your old deployment to it. To do so:

1. Upgrade your existing site to the version you have deployed to AWS (Confluence 6.1 or later).
2. (Optional) If your old database isn't PostgreSQL, you'll need to migrate it. See Migrating to Another Database for instructions.
3. Back up your PostgreSQL database and your existing `<shared-home>/attachments` directory.
4. Copy your backup files to `/media/atl/confluence/shared-home` in your EC2 instance.
5. Restore your PostgreSQL database dump to your RDS instance with `pg_restore`. See Importing Data into PostgreSQL on Amazon RDS in Amazon documentation for more information on how to do this.

Important notes

- When you create a cluster using the CloudFormation template, the database name is `confluence`. You **must maintain this database name** when you restore, or there will be problems when new nodes are provisioned. You will need to drop the new database and replace it with your backup.
- You don't need to copy indexes or anything from your existing local home or installation directories, just the attachments from your existing shared home directory.
- If you've modified the `<shared-home>/config/cache-settings-overrides.properties` file you may want to reapply your changes in your new environment.
- The `_copy` method described in this AWS page, Importing Data into PostgreSQL on Amazon RDS, is not suitable for migrating Confluence.

Getting started with Confluence Data Center on Azure

On this page:

If you decide to deploy Confluence Data Center in a clustered environment, consider usingMicrosoft Azure. This platform allows you to scale your deployment elastically by resizing and quickly launching additional nodes, and provides a number of managed services that work out of the box with Confluence Data Center. These services make it easier to configure, manaAutoscaling is not yet available, due to a problem with Hazelcast, which Confluence uses to discover nodes.ge, and maintain your deployment's clustered infrastructure.

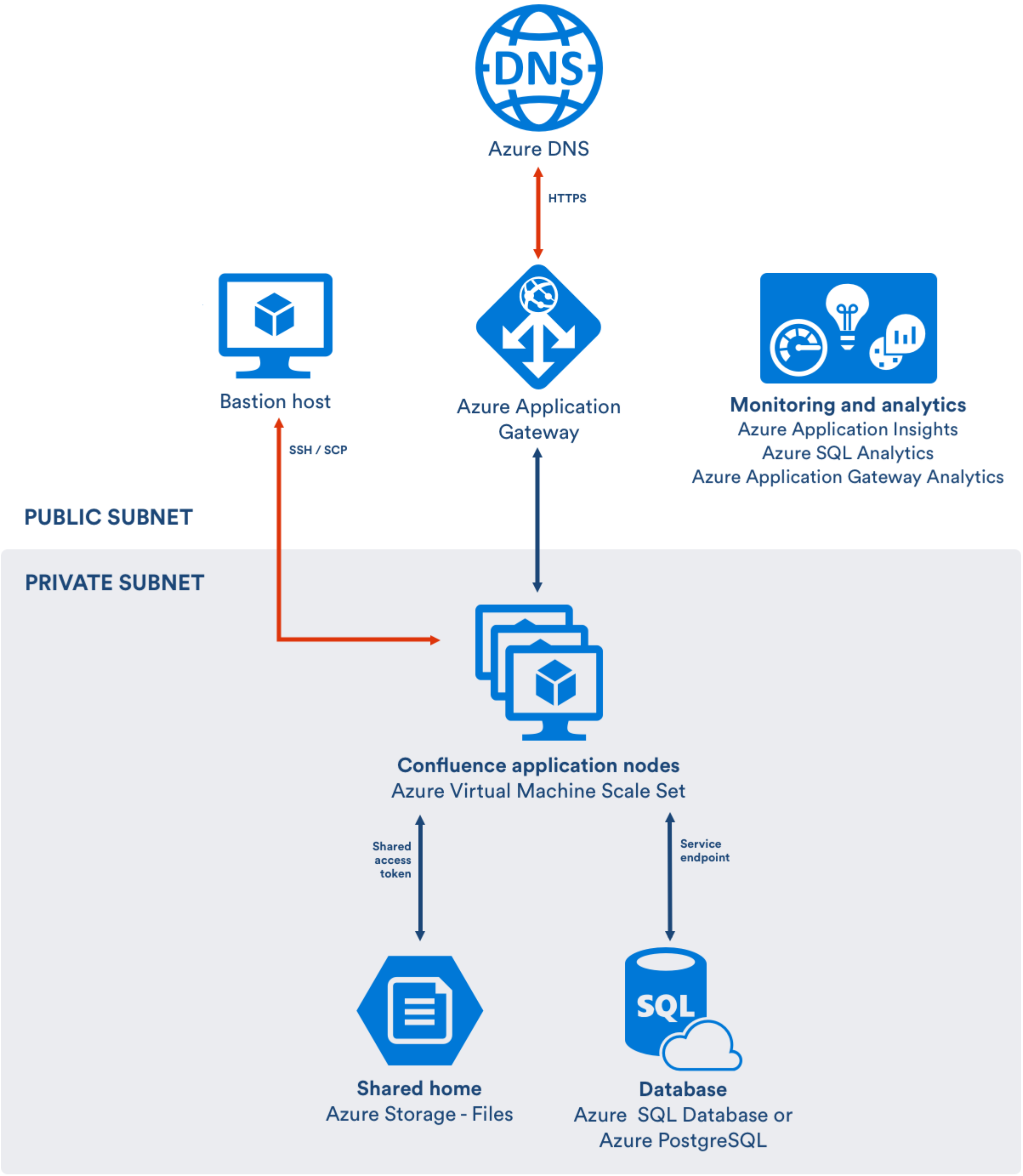
We strongly recommend you set up user management, central logging storage, a backup strategy, and monitoring, just as you would for aConfluenceData Center installation running on your own hardware.

Non-clustered VS clustered environment

A single node is adequate for most Small or Medium size deployments, unless you need specific features that require clustering (for example, high availability).If you have an existing Server installation, you can still use its infrastructure when you upgrade to Data Center. Many features exclusive to Data Center (likeSAML single sign-on,self-protection via rate limiting,andCDN support) don't require clustered infrastructure.You can start using these Data Center features by simply upgrading your Server installations license.For more information on whether clustering is right for you, check outAtlassian Data Center architecture and infrastructure options.

How it works

Here's an architectural overview of what you'll get when deployingConfluenceData Center using the template:



The deployment contains one or more Azure standard VM instances as cluster nodes in a scale set. Each cluster node runs Confluence Data Center and Synchrony. This way, you don't need to provision extra nodes to enable collaborative editing.

The template also provisions an Azure Files storage account for the shared home. This shared home stores attachments and other files accessible to the application cluster nodes. It's mounted as a SAN drive on each node, and treated normally like any other file.

Standardized infrastructure

TheJira Data Center,Confluence Data Center,Bitbucket Data Center, and Crowd Data Centertemplates deploy the following infrastructure components identically:

Component	Configuration

Bastion host	This is a lightweight but highly secure Azure Linux VM that controls SSH access to the application cluster nodes.
Application Gateway	By default, this gateway is composed of two instances for high availability. It acts as a HTTP /HTTPS load balancer for your scale set of application cluster nodes.
Monitoring	The ARM templates configure Azure Monitoring to perform basic health and availability monitoring to cluster nodes and database.
Database	You can choose between Azure SQL Database (MS SQL Server-compatible) or Azure PostgreSQL database. Either way, the database will be configured as service endpoints to only allow traffic from the private network that the cluster nodes are in. This restricted traffic setup helps enhance security.

Limitations

There are some limitations you should be aware of before deciding to deploy to Azure:

- Changing the size of the cluster after creation is not possible, due to a limitation in Hazelcast, which Confluence uses to discover nodes.
- You can't use the deployment template toupgrade an existing Confluence deployment, or to provision new nodes running a different version to the rest of your cluster.
- If a node is deleted manually, it can't be redeployed without first removing the cluster. The existing database, and the existing shared home directory won't be removed when redeploying.

Preparing for your deployment

Before you begin, you should use theConfluence Data Center load profiles to determine the size of your site. This information will help you choose the right infrastructure size during deployment.

You should also decide which Azure region is best for your site. Some services, such as such as Application Insights and Azure SQL Analytics, may not be available in all regions. You can check this athttps://azure.microsoft.com/en-gb/global-infrastructure/regions/.

During the deployment you'll need:

- Your database details, if you want to use an existing Azure database service. You'll need the database URL, port, username, and password.
- A Base64 encoded PFX certificate from a trusted Certificate Authority.
- Details of your existing CNAME, if you don't want Azure to generate a random domain for you.

Migrating an existing site to Azure

To migrate, you will need to set up a new Confluence Data Center site in Azure, and then import content from your old site. This approach ensures that your new site is created with optimum settings for Azure.

Here's a high level overview of the steps:

1. Back up your existing site, including your database and home directories.
2. Make a list of any Marketplace or other user-installed apps
3. Perform a full site export, excluding attachments if you have a large site. You can also turn on read-only mode, to prevent users from making changes in your old site.
4. Deploy Confluence Data Center in Azure via the Azure Portal, or CLI, and test that Confluence is working as expected.
5. Import your site export file. Make sure you know the administrator password for your existing site, as you'll be logged out during the import.
6. Copy the contents of your `/attachments`directory to the equivalent directory in your shared home.
7. Install any apps.
8. Test your site.

At this point you can make the site available to your users, and tear down your old site.

Tips for a successful migration:

- Do a trial run first -export your existing site, and import it into Azure to iron out any issues.
- Because you're setting up your new site in parallel, your current Confluence site can remain accessible throughout the process. If you're already running Confluence Data Center, use read-only mode to prevent people making changes after you've exported the site.
- Unless your existing site is small, exporting the site without attachments will keep the export file smaller.

DeployingConfluenceData Center to Azure via Azure marketplace

This method uses the Azure Marketplace to deploy Confluence Data Center using our deployment templates as a reference.

To deploy Confluence Data Center to Azure using our Marketplace app:

1. Log in toAzure Portal.
2. Choose**Create a resource**to start a new deployment
3. Search for **Atlassian** then select **Confluence Data Center** from the list of Marketplace apps
4. Choose **Create** to start configuring the deployment
5. Follow the prompts in the wizard to configure your deployment. Refer to the parameters table below for more information.
6. Confirm all the details are correct then click **Create** to purchase the subscription. Deployment will take about 30 minutes.
7. Once deployment is complete, go to the Confluence URL (`APPENDPOINT`) listed in the deployment outputs to complete onboarding and start using Confluence.

Confluence-specific parameters

Parameters	Description
Confluence Version	Specify the version of Confluence you'd like to install in full (for example, 6.14.0). Head to Confluence Release Notes for a list of all releases.
Confluence admin credentials	Provide a name and password for the initial Confluence administrator on your instance.
Confluence Cluster	Select the expected size of your site - trial, small, medium, large, extra large. This will determine the number of Confluence application nodes, and the size of VMs to be provisioned. Choose **Change Size** to override the defaults.

Standardized infrastructure parameters

TheJira Data Center,Confluence Data Center,Bitbucket Data Center, and Crowd Data Centertemplates all share the same parameters:

Parameter	Description
Subscription	Your Microsoft Azure subscription type.
Resource group	If you have an existing resource group, you can use it, or create a new one.
Location	This is the region where Azure will house your deployment.
SSH Access	Provide an SSH public key to be used to SSH into the instance that will act as bastion host, and a username and password for SSH access to the Bitbucket nodes. SeeCreate and use an SSH public-private key pair for Linux VMs in Azurein the Microsoft Azure documentation.

Database configuration	Choose between an Azure SQL Database, or Azure Database for PostgreSQL. Provide a username and password for the database admin user. ⚠ **Existing databases** If you want to integrate with an existing database, you'll have to deploy to Azure using the CLI.
CNAME	This is theCanonical Name record(CNAME) for your organization. If you don't provide one, Azure will generate a random sub domain for your instance.
HTTP/SSL	Provide the certificate and password to be used for SSL termination on the Azure Application Gateway.
Monitoring	Choose the monitoring and analytics services that you would like to enable. Subject to availability in your location. SeeMonitoringfor related information.

Deploying Confluence Data Center to Azure using the CLI

This method uses the Azure command line interface to deploy Confluence Data Center using our deployment templates as a reference. You'll need to install the Azure CLI to do this.

Using the deployment templates directly allows for greater configuration granularity. All hardware choices such as the number of cluster nodes, size, disk size, and OS type are configurable as parameters.

Head tohttps://bitbucket.org/atlassian/atlassian-azure-deploymentand check out the README to find out how to to deploy using the CLI.

Required parameters

The deployment template requires a number of values to be provided in order to deploy your Confluence Data Center instance.

Parameter	Description
confClusterSize	To use recommended hardware options for the Confluence installation choose a size. Allowed values: - trial - small - medium - large - enterprise If set, all further Gateway, VM, DB size parameters will be ignored.
clusterSshPassword	This is the SSH password you'll use to access your Confluence nodes.
dbPassword	This the password for your dedicated database user. The password must meet a strong password requirement (imposed by AzureSQL Server): it must be between 16 and 41 characters long, and must contain at least one uppercase letter, one lowercase letter, one number (0-9), and one non-alphanumeric character (., !, $, #, %, etc). See the Azure SQL password documentation for details.
confAdminUserPassword	This is the password for your Confluence administrator's account.

Optional parameters

The following parameters are optional. If you don't provide a value in the parameter file, we'll use the default values listed below.

Parameter	Default value	Description
confluenceVersion	*Latest*	This is the version of Confluence you want to install on your cluster nodes. Enter the Confluence version number in full, for example "6.14.0". We don't recommend using versions prior to 6.12, as they don't support managed Synchrony.
customDownloadUrl	*empty*	Use this URL to override standard Atlassian download url, for example to specify beta, release candidate or EAP versions. Used in conjunction with the confluenceVersion parameter.
dbCreateNew	true	Create a new database or attempt to use an existing specified database. Note that this has to be in same resource group and location as the target deployment.
dbType	Azure SQL DB	Choose between Azure SQL Server and Azure DB for PostgreSQL.
dbHost	*auto-generated*	The hostname of database server to be used if an external database is being used. This will be autogenerated if a new database is to be created.
dbPort	1433	The database port to use if an external database is being used. This will be autogenerated if a new database is to be created.
dbDatabase	confdatabase	The database name to use if an external database is being used. This will be autogenerated if a new database is to be created.
dbSchema	*auto-generated*	The database schema to use if an external database is being used. This will be autogenerated if a new database is to be created.
dbUsername	confluencedbuser	The username for the dedicated database user.
cname	*auto-generated*	This is the Canonical Name record (CNAME) for your organization. If you don't provide one, Azure will generate a random domain. If you do use a custom domain, you must also update your Domain Registrar's settings to add the Azure DNS Name Servers. Consult your domain registry's documentation on how to configure cname records.
sslBase64EncodedPfxCertificate		The certificate to be used for SSL termination on the Azure Application Gateway.
sslPfxCertificatePassword		The certificate password to be used for SSL termination on the Azure Application Gateway.
jumpboxSshKey		The SSH public key to use to access the bastion host (jumpbox)
confAdminUserName	admin	The username for the Confluence Administrator's account. Must be lowercase.
confAdminUserFullName	Admin Admin	The full name of the Confluence Administrator's account.

confAdminUserEmail	admin@example.com	The email address of the Confluence Administrator user.
confAppTitle	Atlassian Confluence	The name of your Confluence site.
jumpboxSshUser	confluenceadmin	This is the SSH user you'll use to access the bastion host (jumpbox).
clusterSshUser	confluenceadmin	The SSH username to use to access the Confluence nodes from the bastion host (jumpbox). This is the only way you can access Confluence nodes.
enableEmailAlerts	true	Enable email alerts.
enableApplicationInsights	true	Enable Azure Application Insights.
enableAnalytics	true	Enable Azure Operational Insights.

Overriding the recommended hardware options

The `confClusterSize`parameter allows you to select the size of your deployment, and then use our recommendations for all resources to be created.

If you choose not to set the`confClusterSize`parameter, you can choose to define your own values for things like `dbTier`, `dbTierSize`, `clusterVmSize`, `LinuxOsType`, and`appGtwyTier`.

These parameters are all listed in the`azuredeploy.json`template file, with a description and allowed values. You should alsocheck out theDeveloping guide in the template repository to learn more about developing your own template.

Securing your Azure deployment

We recommend deploying Confluence with SSL. Our template will prompt you for a certificate and password.

Good to know:

- HTTPS is terminated at the application gateway.
- Your certificate should be from a trusted Certificate Authority. You should avoid self-signed certificates.

Monitoring

As a number of the resources we provision are managed by Azure, a number of options are available for monitoring. For example:

- A number of default alerts are available, such as cluster nodes going offline, CPU, or Db DTU exceeding 80%. These alerts will be emailed to the Confluence Administrator email address specified in the deployment.
- Application Insights can be used to see the overall system health, and dig into particular areas of interest Application Insights in the Azure documentation.
- Azure SQL Analytics is available for more granular monitoring of your SQL Server database. Monitor Azure SQL Database using Azure SQL Analytics in the Microsoft Azure documentation.

Note that some of these resources are still in Preview, so may not be available in your location yet.

Administering Confluence Data Center on Azure

Once you've deployed Confluence Data Center to Azure using the deployment template, administering the application is similar to managing an application on your own hardware, with the exception that you'll need to go via the bastion host (jumpbox) to access your nodes.

To access your jumpbox and nodes you'll need:

- the SSH credentials you provided during setup,
- the Confluence node credentials you provided during setup
- the public DNS name or IP address of your jumpbox (you can obtain this through the Azure portal via**Menu**>**Resource groups**>**<your resource group>**>**confluencenat**), and
- the node IP addresses, listed against the`confluencecluster (instance n)`row in**Connected devices**.(You can obtain this through the Azure portal via**Menu**>**Resource groups**>**<your resource group>**>**confluencevnet**).

Connecting to your Azure jumpbox over SSH

You can SSH into yourConfluencecluster nodes, Synchrony nodes and shared home directory to perform configuration or maintenance tasks. Note that you must keep your SSH public key filein a safe place. This is the key to your jumpbox, and therefore all the nodes in your instance.

Access the jumpbox via a terminal or command line using:

```
$ ssh JUMPBOX_USERNAME@DNS_NAME_OR_IP_ADDRESS
```

You can find the SSH URL in the outputs section of your deployment.

Once you've accessed the jumpbox,we can jump to any of the nodes in the cluster, using:

```
$ ssh NODE_USERNAME@NODE_IP_ADDRESS
```

You'll then be asked for your node password - after providing this, you should be connected to the node.

Accessing your configuration files

For your Azure deployment, you may need to make changes to some configuration files, just as you would for a deployment on your own hardware:

- your`server.xml`lives in`/opt/atlassian/confluence/conf`
- your`setenv.sh`lives in`/opt/atlassian/confluence/bin`
- your local home`confluence.cfg.xml`lives in`/var/atlassian/application-data/confluence`
- your shared home`confluence.cfg.xml`lives in`/media/atl/confluence/shared`

These files are only accessible from the existing nodes. The*shared home*is mounted (think of it as a network hard disk) on each node under`/media/atl/confluence/shared`. So from an existing node (when you're logged in through SSH), you can go to`/media/atl/confluence/shared`.

If modifications to these files are made manually, new nodes will not pick up those modifications. You can either repeat the modifications on each node, or change the templates in the`/media/atl/confluence/shared`directory from which those files are derived. The mappings are:

- the`server.xml`file is derived from`/media/atl/confluence/shared/server.xml`
- the`setenv.sh`file is derived from`/media/atl/confluence/shared/setenv.sh`
- the local home`confluence.cfg.xml`is derived from`/media/atl/confluence/shared/home-confluence.cfg.xml`
- the shared home`confluence.cfg.xml`is derived from`/media/atl/confluence/shared/shared-confluence.cfg.xml`

These template files contain placeholders for values that are injected via the deployment script. Removing or changing them may cause breakages with the deployment. In most cases, these files should not be modified, as a lot of these settings are produced from the Azure Resource Manager templates automatically.

Upgrading

Consider upgrading to aLong Term Support release(if you're not on one already). Enterprise releases get fixes for critical bugs and security issues throughout its two-year support window. This gives you the option to keep a slower upgrade cadence without sacrificing security or stability. Long Term Support releases are suitable for companies who can't keep up with the frequency at which we ship feature releases.

Here's some useful advice for upgrading your deployment:

1. Before upgrading to a later version of Confluence Data Center,check if your apps are compatiblewith that version.Update your appsif needed. For more information about managing apps, seeUsing the Universal Plugin Manager.
2. If you need to keep Confluence Data Center running during your upgrade, we recommendusing read-only mode for site maintenance.Your users will be able to view pages, but not create or change them.
3. We strongly recommend that you perform the upgrade first in a*staging*environment before upgrading your production instance.Create a staging environment for upgrading Confluenceprovides helpful tips on doing so.

Rolling upgrades

As of Confluence Data Center 7.9, you can now upgrade to the next bug fix version (for example, 7.9.0 to 7.9.3) with no downtime. Follow the instructions inUpgrade Confluence without downtime.

Upgrading Confluence in Azure

The process of upgrading Confluence is the same as if you were running the cluster on your own hardware. You will stop Confluence on all nodes, upgrade one node, stop that node then copy the installation directory across to each remaining node in the cluster, before restarting each node, one at a time.

SeeUpgrading Confluence Data Centerfor more details.

You can't use the `confluenceVersion` parameter in the deployment template to upgrade an existing Confluence deployment, or to provision new nodes running a different version to the rest of your cluster.

You also can't do a rolling upgrade. You will need to bring all nodes down before upgrading.

Upgrading your operating system

If you need to upgrade the operating system running on your Confluence nodes, you will need to SSH into each node, perform a`sudo apt dist-upgrade`(Ubuntu) and reboot each node.

As Confluence is running as a service it will be automatically restarted on reboot.

You can't simply reimage an instance, as you might do in Jira, due to the way Hazelcast discovers cluster nodes.

Backing up and recovering from failures

We recommend you use the Azure native backup facilities where possible to make sure your data is backed up, and you can easily recover in the case of a failure.

Database backups

We use Azure-managed database instances with high availability. Azure provides several excellent options for backing up your database, so you should take some time to work out which will be the best, and most cost effective option for your needs. See the following Azure documentation for your chosen database:

- SQL Database: Automated backups
- SQL Database: Backup retention
- PostGreSQL: Backup concepts

Shared home backups

The shared home stores your your attachments, profile pictures, and export files. We create a general purpose Azure storage account, configured withlocal redundant storage(LRS), which means there are multiple copies of the data at any one time.

LRS provides a basic redundancy strategy for your shared home. As such, it shouldn't be necessary to take regular backups yourself. If you need to take point-in-time backups, usesnapshots.

Application nodes

The application nodes are VMs in an Azure Virtual Machine Scale Set. Each application node has a Confluence installation directory and a local home directory containing things like logs and search indexes.

Like the shared home, application nodes are configured withlocal redundant storage.This means there are multiple copies of the data at any one time.

If you've manually customised any configuration files in the installation directory (for example velocity templates), you may also want to manually back these up as a reference.

Bastion host

As this VM acts as a jumpbox, and doesn't store any data it doesn't need to be backed up. If the VM becomes unresponsive it can be restarted from the Azure Portal.

Application gateway

The application gateway is highly available. We deploy 2 instances by default. As with the bastion host, it doesn't need to be backed up.

Disaster recovery

SeeConfluence Data Center disaster recovery to learn about how you can develop a disaster recovery strategy. See also information in the Azure documentation about recovering from a region-wide failureAzure resiliency technical guidance: recovery from a region-wide service disruption.

Running Confluence Data Center on a Kubernetes cluster

If you're running self-managed environments and looking to adopt modern infrastructures, Atlassian Data Center products can now be deployed on Kubernetes clusters. By leveraging Kubernetes, you can drive greater agility amongst your teams while experiencing a simplified administrative experience at scale, without compromising your organizations regulatory requirements.

We offer Helm charts on GitHubfor installing and operating Atlassian products on a Kubernetes cluster of your choice. The Helm charts we offer are for:

- Jira
- Confluence
- Bitbucket

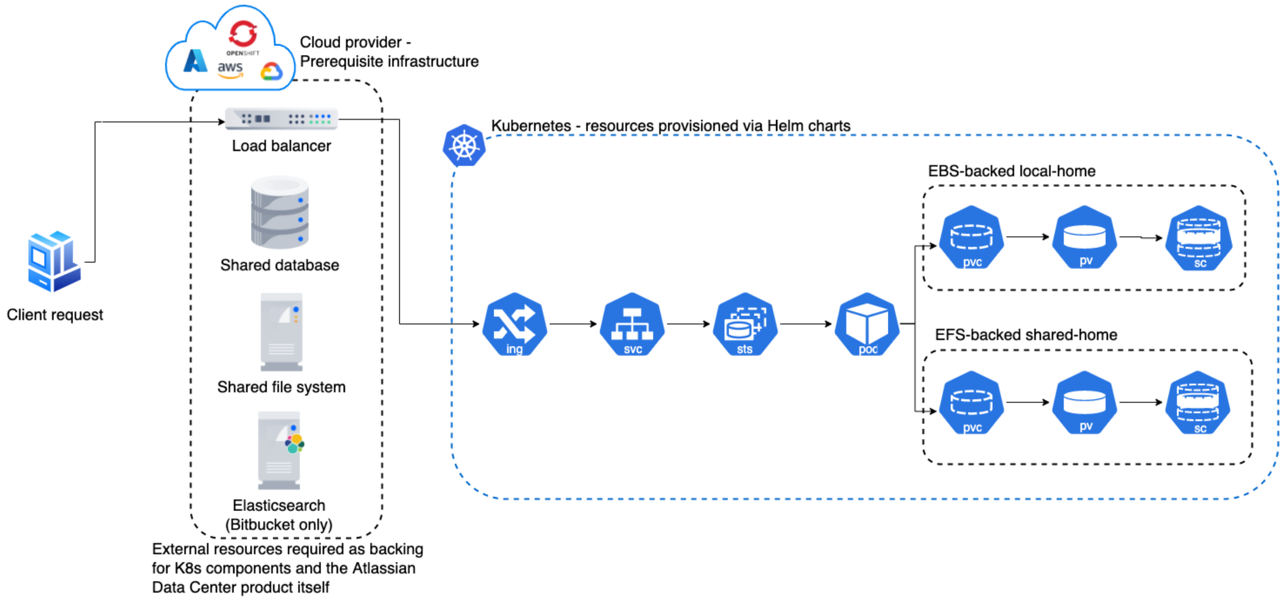
Helmis a package manager forKubernetesthat allows you to package, configure, and deployapplicationsand services ontoKubernetesclusters. Helm uses a packaging format called*charts*, which are collections of files that describe a related set of Kubernetes resources.

The Kubernetes cluster can be a managed environment, such asAmazon EKS,Azure Kubernetes Service,Google Kubernetes Engine, or a custom on-premise system.

We strongly recommend you set up user management, central logging storage, a backup strategy, and monitoring, just as you would for a Data Center installation running on your own hardware.

How it works

Here's an architectural overview of what you'll get when deployingyour Data Center application on a Kubernetes cluster using the Helm charts:


Cloud provider - Prerequisite infrastructure
Load balancer
Shared database
Shared file system
Elasticsearch (Bitbucket only)
External resources required as backing for K8s components and the Atlassian Data Center product itself
Client request
Kubernetes - resources provisioned via Helm charts
ing
svc
sts
poc
EBS-backed local-home
pvc
pv
sc
EFS-backed shared-home
pvc
pv
sc

Kubernetes entities required for product deployment:

- **Ingress and Ingress controller** (ing) - the Ingress defines the rules for traffic routing, which indicate where a request will go in the Kubernetes cluster. The Ingress controller is the component responsible for fulfilling those rules.
- **Service** (svc) - provides a single address for a set of pods to enable load-balancing between application nodes.
- **StatefulSets** (sts) - manages the deployment and scaling of a set ofpods.
- **Pod** - a group of one or morecontainers, with shared storage and network resources, and a specification for how to run the containers. Podsare the smallest deployable units of computing that you can create and manage in Kubernetes.

- **PersistentVolumeClaim** (pvc) - reserves the Persistent Volume (PV) to be used by a pod.
- **PersistentVolume** (pv) - is the "physical"volumeon the host machine that stores your persistent data.
- **StorageClass** (sc) - provides a way for administrators to describe the "classes" of storage they offer.

Installingyour Data Center application on a Kubernetes cluster

In addition to the Helm charts we provide for installing the Atlassian Data Center applications, we also providedocumentation and examples on a dedicated documentation site.

Before you begin, you need to have an understanding of Kubernetes and Helm concepts.

To install and operate your Data Center application on a Kubernetes cluster using our Helm charts:

1. Follow the requirements and set up your environment according to the Prerequisites guide.
2. Perform the installation steps described in the Installation guide.
3. Learn how to upgrade applications, scale your cluster, and update resources using the Operation guide.

Installing Java for Confluence

This page contains instructions for installing the Java Development Kit (JDK). This is a manual step that's only required if you're installing Confluence from a zip or archive file.

If you're using the Confluenceinstaller, you don't need to install Java manually, but you can choose to use a different Java vendor.

Check theSupported Platforms page to find out which Java versions and vendors can be used with Confluence.

Installing Java

The JDK (Java Development Kit) needs to be installed on the same server that will have Confluence installed. We support running Confluence with the JDK or JRE (Java Runtime Environment). These instructions will just cover installing the JDK.

Before you start, go to **Control Panel** > **Programs and Features** to check whether a JDK is already installed.

To install the JDK on Windows:

1. Download the appropriate Adoptium OpenJDK or Oracle JDK version.
   Check theSupported Platforms page to find out which JDK / JRE versions and vendors are supported for your version of Confluence. Be sure to download the right one for your operating system.
2. Run the Java installer. Make a note of the installation directory, as you'll need this later.
3. Once the Java installation is complete, check that the `JAVA_HOME` environment variable has been set correctly.
   Open a command prompt and type `echo %JAVA_HOME%` and hit Enter.
    - If you see a path to your Java installation directory, the `JAVA_Home` environment variable has been set correctly.
    - If nothing is displayed, or only `%JAVA_HOME%` is returned, you'll need to set the `JAVA_HOME` environment variable manually. See Setting the JAVA_HOME Variable in Windows for a step by step guide.

Before you start, check whether a JDK is already installed. Open a shell console and type `echo $JAVA_HOME` and hit Enter.

- If it returns something like`/opt/JDK8` or `/usr/lib/jvm/java8`, then your JDK is installed and properly configured.
- If nothing is displayed, you'll need to install the JDK or set the `$JAVA_HOME` environment variable. You can set this environment variable in your user account's 'profile' file. Alternatively, you can set this after installing Confluence, by defining this path in your Confluence installation's `setenv.sh` file, usually located in the Confluence `bin` directory.

To install the JDK on Linux:

1. Download the appropriate Adoptium OpenJDK or Oracle JDK version.
   Check theSupported Platforms page to find out which JDK / JRE versions are supported for your version of Confluence. Be sure to download the right one for your operating system.
2. Run the Java installer.
3. Open a shell console and type`echo $JAVA_HOME` and hit Enter to check that it has installed correctly (see notes above).

Note: Any Java or JDK version numbers on this page are **examples only**. Please refer to the **Supported Platforms** page for supported versions of Java.

Setting the JAVA_HOME Variable in Windows

To install Confluence manually on Windows, you will need to set an environment variable to point Confluence to the your Java installation directory.

This information is only relevant if you're installing Confluence manually on a Windows server. If you're using the installer, you don't need to do this.

Related pages

- Starting Tomcat as a Windows Service
- Installing Confluence in Linux

In most cases you should set the JRE_HOME environment variable, but if it is not set, Confluence will use JAVA_HOME.

Set the JAVA_HOME Variable

To set the JRE_HOME or JAVA_HOME variable:

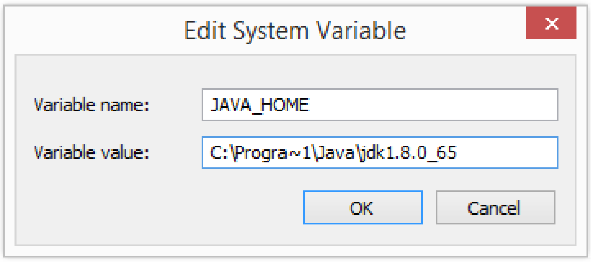
1. Locate your Java installation directory

   If you didn't change the path during installation, it'll be something like `C:\Program Files\Java\jdk1.8.0_65`

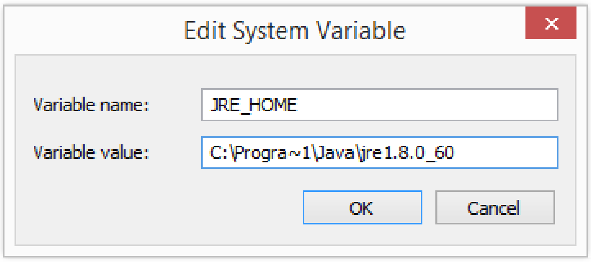
   You can also type `where java` at the command prompt.

2. Do one of the following:
   Windows 7 Right click **My Computer** and select **Properties** > **Advanced**
   Windows 8 Go to **Control Panel** > **System** > **Advanced System Settings**
   Windows 10 Search for **Environment Variables** then select **Edit the system environment variables**
3. Click the **Environment Variables** button.
4. Under **System Variables**, click **New**.
5. In the **Variable Name** field, enter either:
   - `JAVA_HOME` if you installed the JDK (Java Development Kit)
     or
   - `JRE_HOME` if you installed the JRE (Java Runtime Environment)
6. In the **Variable Value** field, enter your JDK or JRE installation path .

   If the path contains spaces, use the shortened path name. For example, `C:\Progra~1\Java\jdk1.8.0_65`



Variable name: JAVA_HOME
Variable value: C:\Progra~1\Java\jdk1.8.0_65



Variable name: JRE_HOME
Variable value: C:\Progra~1\Java\jre1.8.0_60

Note for Windows users on 64-bit systems

Progra~1 = 'Program Files'
Progra~2 = 'Program Files(x86)'

7. Click **OK** and **Apply Changes** as prompted

You'll need to close and re-open any command windows that were open before you made these changes, as there's no way to reload environment variables from an active command prompt. If the changes don't take effect after reopening the command window, restart Windows.

Set the JAVA_HOME variable via the command line

If you would prefer to set the JAVA_HOME (or JRE_HOME) variable via the command line:

1. Open Command Prompt (make sure you Run as administrator so you're able to add a system environment variable).
2. Set the value of the environment variable to your JDK (or JRE) installation path as follows:

   ```
   setx -m JAVA_HOME "C:\Progra~1\Java\jdk1.8.0_XX"
   ```

   If the path contains spaces, use the shortened path name.
3. Restart Command Prompt to reload the environment variables then use the following command to check the it's been added correctly.

   ```
   echo %JAVA_HOME%
   ```

   You should see the path to your JDK (or JRE) installation.

Change the Java vendor or version Confluence uses

When you install Confluence Server using the installer, it will run Confluence with the Java Runtime Engine (JRE) that was bundled with that Confluence release.

If you want to use a different Java vendor, version, or you want to install the full JDK, you can tell Confluence to use the version of Java installed on your server.

Not all vendors and versions are supported, and some versions have known issues, so always check the Supported Platforms page, as using an unsupported version can cause problems in Confluence.

On this page:

Check your current setup

How you change Confluence's Java path depends on whether you originally installed Confluence using the installer, or manually from a .zip or .tar.gz file.

The easiest way to check how Confluence is currently finding your Java is to:

1. Go to`<install-directory>/bin/setjre.sh`file (Linux) or `setjre.bat`(Windows) file.
2. Scroll to the bottom of the file and look for a line similar to the following. The file path may be different in your file.
   In Linux:

   ```
   JRE_HOME="/opt/atlassian/confluence/jre/"; export JRE_HOME
   ```

   In Windows:

   ```
   SET "JRE_HOME=C:\Program Files\Atlassian\Confluence\jre"
   ```

If a line similar to the one above is present, then JRE_HOME **is set** in this file by the installer, and you should use the **installer method**for Windows or Linux below.

If this line isn't present, JRE_HOME **is not set** in this file (because Confluence was installed manually), and you should use the **environment variable** method below.

Installer method - Windows

The way you do this depends on whether you run Confluence manually using the`start-confluence.bat`file, or as a Windows service.

In these examples we're going to point Confluence to the AdoptOpenJDK JRE, which is installed on our Windows server atC:\Program Files\AdoptOpenJDK\jdk8u192-b12\jre. The location of your JRE will be different, but the steps are the same for any supported Java vendor and version.

If you start Confluence manually

To change the Java that Confluence uses if you start Confluence manually in Windows:

1. In Command Prompt, use the following command tocheck that Java is installed and has been added to your path correctly.

    ```
    > java -version
    ```

    This will return your Java version. If nothing is returned, or it returns the wrong version, check the installation instructions for your Java vendor.
2. Stop Confluence.
3. In the Confluence installation directory edit the`<install-directory>/bin/setjre.bat`file andchange the last lineto point to your local Java installation, as in the example below.

    ```
    SET "JRE_HOME=C:\Progra~1\AdoptOpenJDK\jdk8u192-b12\jre"
    ```

    If this line isn't present, exit this file and use the environment variable method below.
4. Start Confluence.
5. Go to⚙> **General Configuration**>**System Information**and check that Confluence is using the expected Java version.

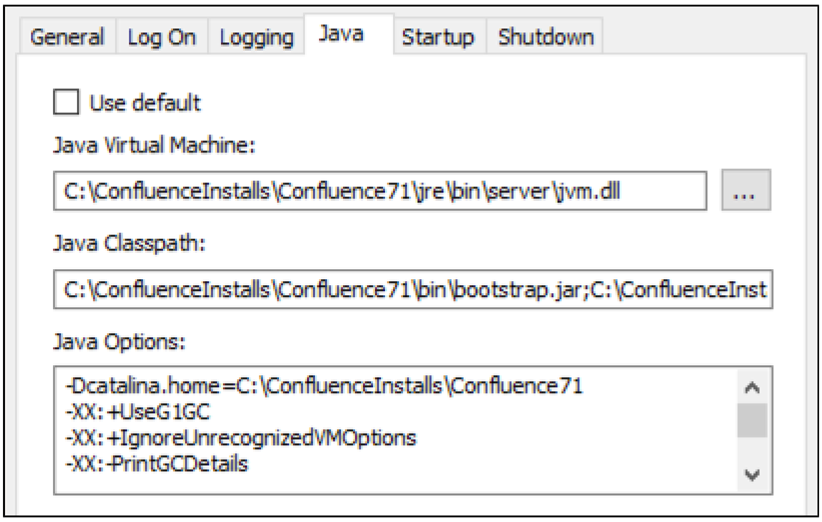
Remember, when you next upgrade Confluence this file will be overwritten, so you will need to re-apply this change to the new`setjre.bat`file.

If you run Confluence as a Windows service

To change the Java that Confluence uses if you run Confluence as a Windows service:

1. Open the Tomcat properties dialog. SeeHow to set system properties for Confluence running as a service on Windowsfor a step-by-step guide to locating your service and launching the Tomcat dialog.
2. Choose the**Java**tab.
3. Update the**Java Virtual Machine**line to point to the**AdoptOpenJDK jvm.dll**, as in the example below. The path to your Java installation will be different to our example.

    ```
    C:\Program Files\AdoptOpenJDK\jdk-11.0.4.11-hotspot\jre\bin\server\jvm.dll
    ```

    ☐ Use default

    Java Virtual Machine: C:\ConfluenceInstalls\Confluence71\jre\bin\server\jvm.dll

    Java Classpath: C:\ConfluenceInstalls\Confluence71\bin\bootstrap.jar;C:\ConfluenceInst

    Java Options:

    ```
    -Dcatalina.home=C:\ConfluenceInstalls\Confluence71
    -XX:+UseG1GC
    -XX:+IgnoreUnrecognizedVMOptions
    -XX:-PrintGCDetails
    ```
4. Restart the Confluence Windows Service.
5. Go to⚙> **General Configuration**>**System Information**and check that Confluence is using the expected Java version.

Remember, when you next upgrade Confluence this file will be overwritten, so you will need to re-apply this change to the service.

Installer method - Linux

In this example we're going to point Confluence to the AdoptOpenJDK JRE, which is installed on our Linus server at /opt/java/adoptopenjdk/jdk-11.0.4.11-hotspot/. The location of your JRE will be different, but the steps are the same for any supported Java vendor and version.

To change the Java that Confluence uses in Linux:

1. In Terminal, use the following command to check that Java is installed and added to your path correctly.

   ```
   $ java -version
   ```

   This will return your Java version. If nothing is returned, or it returns the wrong version, seeInstalling Java for Confluenceor check the installation instructions for your Java vendor.
2. Stop Confluence.
3. In the Confluence installation directory edit the`<install-directory>/bin/setjre.sh`file andchange the last lineto point to your local Java installation, as in the example below.

   The path to your Java installation will be different to our example.

   ```
   JRE_HOME="/opt/java/adoptopenjdk/jdk-11.0.4.11-hotspot/"; export JRE_HOME
   ```

   If this line isn't present, exit this file and use the environment variable methodbelow.
4. Start Confluence.
5. Go to⚙> **General Configuration**>**System Information**and check that Confluence is using the expected Java version.

Remember, when you next upgrade Confluence this file will be overwritten, so you will need to re-apply this change to the new `setjre.sh`file.

Environment variable method - Windows and Linux

If you installed Confluence manually (the path to the bundled JRE was not automatically set in the `setjre`file), Confluence will use the path set in the JRE_HOME environment variable. If JRE_HOME is not set, it will use the path set in JAVA_HOME.

See Setting JAVA_HOME variable for Confluence to find out how to set this environment variable in Windows.

Refer to the documentation for your Linux distribution to find out how to set an environment variable in Linux.

You won't need to update the JRE_HOME environment variable when you upgrade Confluence, but you will need to update the path if you upgrade Java.

How Confluence determines which Java to use

The JRE_HOME set in the`setjre`file takes precedence. If you installed Confluence using the installer, this will be automatically set to the Java version bundled with Confluence.

If JRE_HOME is not set in the`setjre.bat`or`setjre.sh`file, Confluence will use the JRE_HOME defined in your environment or service. If it can't find JRE_HOME, it will use the JAVA_HOME environment variable.

Which Java vendor can I use with my Confluence version?

The following table lists the supported Java vendors, and whether Oracle or AdoptOpenJDK is bundled with Confluence.

Confluence version	Supported Java vendors	Bundled Java vendor
6.6.12 and earlier	Oracle JRE	Oracle JRE
6.7.0 to 6.13.1, and 6.14.0	Oracle JRE	Oracle JRE
6.13.2 to 6.13.x, and 6.14.1 and later	Oracle JDK/JRE Adoptium OpenJDK (formerly known as AdoptOpenJDK)	AdoptOpenJDK

Known issues

- You may find that Oracle is still listed as the vendor in System Information. This is a known issue in Confluence which we hope to have resolved soon. The Java version will be reported correctly, so you can use that to make sure Confluence is pointing to the right version.
- AdoptOpenJDK does not include a required font configuration package, which may cause issues when installing in Linux. SeeConfluence Server 6.13 or later fails with FontConfiguration error when installing on Linux operating systemsfor information on how to install the required package manually.
- AdoptOpenJDK is now known as Adoptium OpenJDK.

Upgrading Java

If you choose not to use the bundled Java version, you will need to manually update Java from time to time, to get access to new security fixes and other improvements.

Always check the Supported Platforms page before upgrading, for any known issues affecting particular Java versions.

If upgrading to a major version, for example from Java 8 to Java 11, be aware that some Java arguments will not be recognised in later versions. When you upgrade, make sure you apply your customisations manually, don't simply copy over your old `setenv.sh`/ `setenv.bat`file, or existing Java options if you run Confluence as a service.

Creating a Dedicated User Account on the Operating System to Run Confluence

A dedicated user should be created to run Confluence, because Confluence runs as the user it is invoked under and therefore can potentially be abused.

This is optional if you're evaluating Confluence, but is required for production installations.If you used the Confluence installer on Linux, the installer created this user automatically.

Create a dedicated user account

Linux

If your operating system is *nix-based (for example, Linux or Solaris), type the following in a console:

```
$ sudo /usr/sbin/useradd --create-home --comment "Account for running Confluence" --shell /bin/bash
confluence
```

Windows

If your operating system is Windows create the dedicated user account bytyping the following at the Windows command line:

```
> net user confluence mypassword /add /comment:"Account for running Confluence"
```

(This creates a user account with user name 'confluence' and password 'mypassword'. You should choose your own password.)

Alternatively, openthe Windows 'Computer Management' console to add your 'confluence' user with its own password.

Next,Use the Windows 'Computer Management' console to remove the 'confluence' user's membership of all unnecessary Windows groups, such as the default 'Users' group.

If Windows is operating under Microsoft Active Directory, ask your Active Directory administrator to create your 'confluence' account (with no prior privileges).

Allow the account to write to specific Confluence directories

Ensure that the following directories can be read and written to by this dedicated user account (e.g. 'confluence'):

- The sub-directories of theConfluence Installation Directory:
    - `logs`
    - `temp`
    - `work`
- The entireConfluence Home directory.

Set who can access Confluence directories in Linux

To achieve this in Linux run the following commands:

```
sudo chown -R confluence <confluence-home-folder>/
sudo chown -R confluence <confluence-install-folder>/logs
sudo chown -R confluence <confluence-install-folder>/work
sudo chown -R confluence <confluence-install-folder>/temp
```

The other install directories should be left as root as those are controlled by the installer and allow for future upgrades:

```
sudo chmod -R u=rwx,g=rx,o=rx <confluence-install-folder>
sudo chmod -R u=rwx,g=rx,o=rx <confluence-home-folder>
```

See alsoBest Practices for Configuring Confluence Security.

Confirm who can access Confluence directories in Windows

After installing Confluence youshould check the permissions assigned to the installation directory, and make sure there are no unnecessary permissions being inherited. You can also repeat this process for the home directory.

To check the permissions for the install directory:

1. Right click your installation directory and select **Properties**.
2. In the **Security** tab, select **Advanced**.
3. Select **Disable inheritance**, and when prompted choose **Convert inherited permissions into explicit permissions on this object**.
4. Select **OK**.
5. Select any group or user account that should not have access and choose **Remove**.
   We recommend limiting access to only the dedicated 'confluence' user and system administrator groups.
6. Select **OK** to apply changes to your install directory (and all sub-directories).

To confirm your changes, log in to Windows with a normal user account, and check that you can't access the contents of the install directory.

Confluence Setup Guide

On this page:

Before running the Confluence Setup Wizard, as described below, you should have already completed installing Confluence.

When you access Confluence in your web browser for the first time, you will see the **Confluence Setup Wizard**. This is a series of screens which will prompt you to supply some default values for your Confluence site. It will also offer some more advanced options for setting up data connections and restoring data from a previous installation.

1. Start the setup wizard

1. Start Confluence (if it is not already running)
   For Windows, go to**Start** > **Programs** > **Confluence** > **Start Confluence Server**.
   Or, run the start-up script found in the `bin` folder of your installation directory:
   - `start-confluence.bat` for Windows.
   - `start-confluence.sh` for Linux-based systems.
2. Go http://localhost:8090/in your browser
   If you chose a different port during installation, change '8090' to the port you specified
   If you see an error, check you are using the port you specified during installation.

2. Choose your installation type

In this step, you'll choose whether you want a trial or a production installation.

- **Trial installation**
  Choose this option if you don't have a license, and want to try Confluence for the first time. You'll need an external database.

- **Production installation**
  Set up Confluence with your own external database. This option is recommended for setting up Confluence in a production environment.

3.Enter your license key

Follow the prompts to generate an evaluation license, or enter an existing license key.To retrieve an existing license key head tomy.atlassian.com, or to purchase a new commercial license go towww.atlassian.com/buy.

If you selected a **Trial installation** in the previous step,Confluence will generate your license. This will take a few minutes. Once complete,go tostep 8 below.

If you selected a **Production installation**, go to the next step to set up your external database.

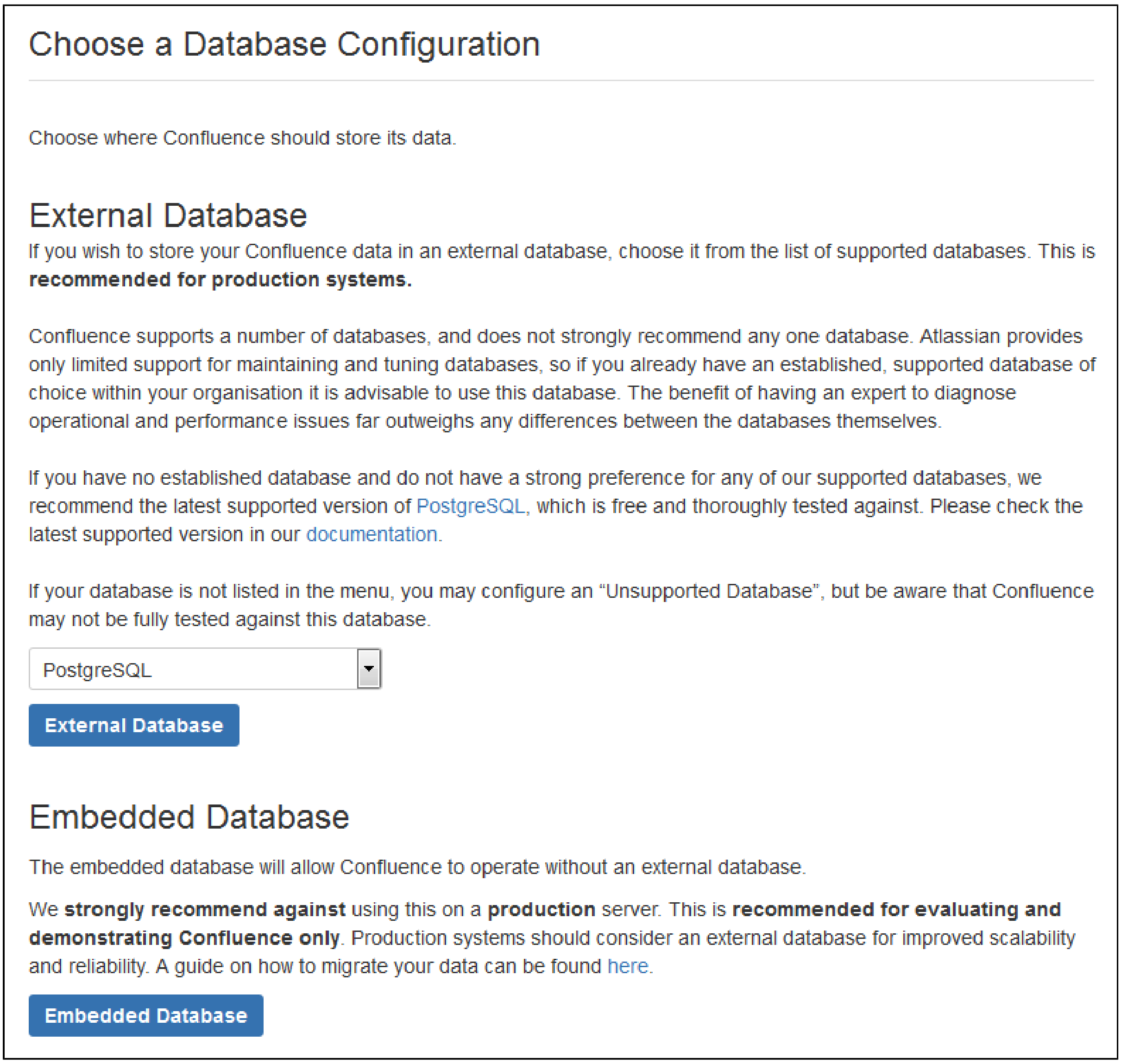
4. Production installation: database configuration

Next it's time to set up your database.Some things to consider:

- Check thesupported platformslist to confirm that your chosen database and version is supported.
- Seedatabase configurationfor information on setting up your database, including UTF-8 character encoding requirements.

- If you are using Confluence as a production system you**must**use an external database.
- The embedded H2 database is**only**supported for testing and app development purposes onnon-clustered (single node)Confluence Data Center installations.

Screenshot: Database configuration



Choose a Database Configuration

Choose where Confluence should store its data.

External Database

If you wish to store your Confluence data in an external database, choose it from the list of supported databases. This is **recommended for production systems.**

Confluence supports a number of databases, and does not strongly recommend any one database. Atlassian provides only limited support for maintaining and tuning databases, so if you already have an established, supported database of choice within your organisation it is advisable to use this database. The benefit of having an expert to diagnose operational and performance issues far outweighs any differences between the databases themselves.

If you have no established database and do not have a strong preference for any of our supported databases, we recommend the latest supported version of PostgreSQL, which is free and thoroughly tested against. Please check the latest supported version in our documentation.

If your database is not listed in the menu, you may configure an "Unsupported Database", but be aware that Confluence may not be fully tested against this database.

PostgreSQL

Embedded Database

The embedded database will allow Confluence to operate without an external database.

We **strongly recommend against** using this on a **production** server. This is **recommended for evaluating and demonstrating Confluence only**. Production systems should consider an external database for improved scalability and reliability. A guide on how to migrate your data can be found here.

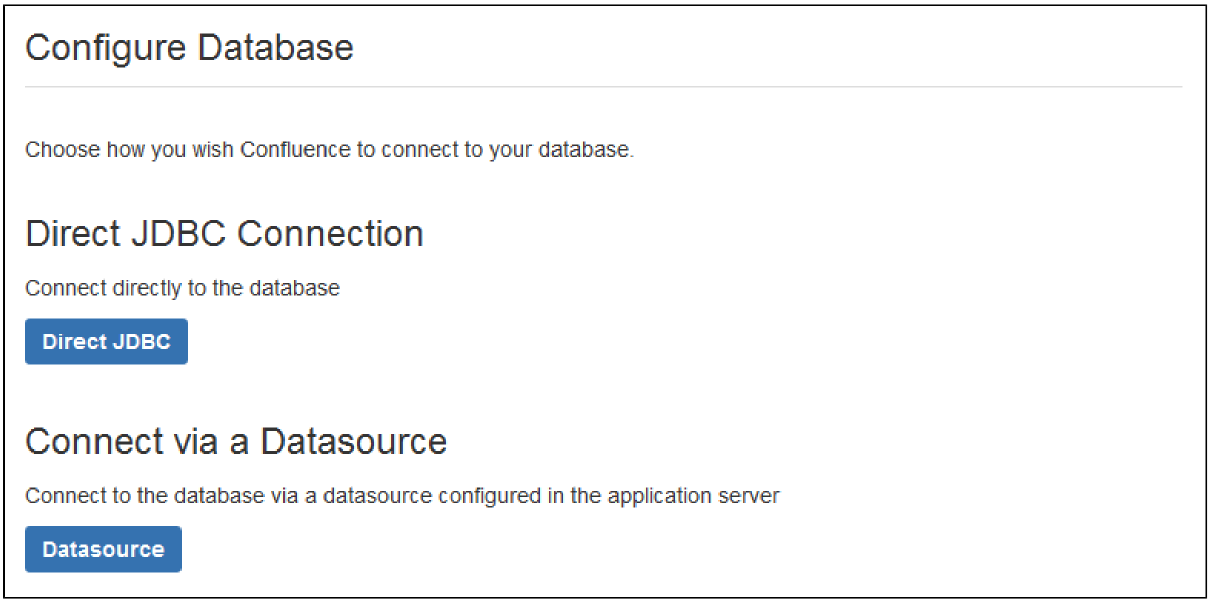
5. Production installation: external database

Before you Start

- **Character encoding:**
  - We strongly recommend that character encoding is consistent across your database, application server and web application, and that you use **UTF-8** encoding.
  - Before setting up your database, please read about configuring character encoding.
- **Database name:** When creating a new external database, give it the name '**confluence**'.

Choose how you want Confluence to connect to your database eithervia a direct JDBC connection or via a server-managed datasource connection.

Screenshot: Connection options



Configure Database

Choose how you wish Confluence to connect to your database.

Direct JDBC Connection

Connect directly to the database

Connect via a Datasource

Connect to the database via a datasource configured in the application server

Direct JDBC

This uses a standard JDBC database connection. Connection pooling is handled within Confluence.

- **Driver Class Name** The Java class name for the appropriate database driver. This will depend on the JDBC driver, and will be found in the documentation for your database. Note that Confluence bundles some database drivers, but you'll need to install the driver yourself if it is not bundled. SeeDatabase JDBC Driversfor details.
- **Database URL** The JDBC URL for the database you will be connecting to. This will depend on the JDBC driver, and will be found in the documentation for your database.
- **User Name** and **Password** A valid username and password that Confluence can use to access your database.

You will also need to know:

- The size of the connection pool Confluence should maintain. If in doubt, just go with the default provided.
- What kind of database you're connecting to, so you can tell Confluence which dialect it needs to use.

Datasource

This asks your application server (Tomcat) for a database connection. You will need to have configured a datasource in your application server. For information about configuring an external database, seeDatabase Configuration.

- **Datasource Name -** The JNDI name of the datasource, as configured in the application server. Note: Some servers will have JNDI names like `jdbc/datasourcename`; others will be like `java:comp/env/jdbc/datasourcename`. Check your application server documentation.

You will also need to know:

- What kind of database you're connecting to, so you can tell Confluence which dialect it needs to use.

6. Production installation: load content

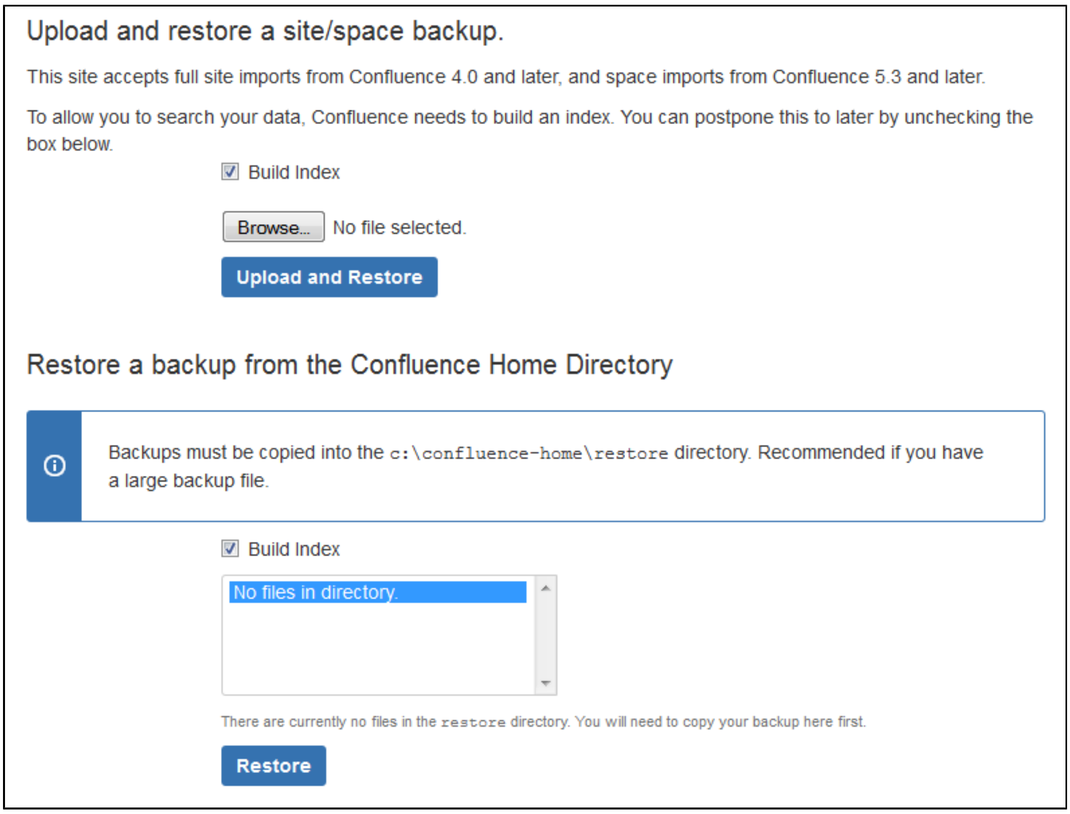
We can help you get your new Confluence site started with some demonstration content (which you can remove once you're up and running), or you can choose to proceed with an empty site. You'll need to create a space in your new site before you can start adding content.

If you're migrating from another Confluence installation choose**Restore from backup**to import your existing Confluence data.

7. Production Installation: restore data from backup

This option allows you to import data from an existing Confluence installation as part of the setup process. You'll need amanual backupfile from your existing Confluence installation to do this (go to **Backup and Restore** in the administration console of your existing Confluence site).

Screenshot: restore data options



Upload and restore a site/space backup.

This site accepts full site imports from Confluence 4.0 and later, and space imports from Confluence 5.3 and later.

To allow you to search your data, Confluence needs to build an index. You can postpone this to later by unchecking the box below.

☑ Build Index

No file selected.

Restore a backup from the Confluence Home Directory

Backups must be copied into the `c:\confluence-home\restore` directory. Recommended if you have a large backup file.

☑ Build Index

No files in directory.

There are currently no files in the `restore` directory. You will need to copy your backup here first.

There are two ways to restore your data - upload the file, or restore from a location on your file system.

- **Upload a backup file**

  This option will load the data from a zipped backup file. If your backup file is very large, restoring from the file system is a better option.Follow the prompts to browse for your backup file. Ensure select**Build Index** is selected so the search index is generated.
- **Restore a backup file from the file system**
  This option is recommended if your backup file is very large (100mb or more), or your backup file is already on the same server.

  Copy your XML backup file into the`<confluence-home>/restore`directory. Yourbackup file will appear in the list. Follow the prompts to restore the backup. Ensure select**Build Index**is selected so the search index is generated.

When the restore process has you'll be ready to log in to Confluence. The system administrator account and all other user data and content has been imported from your previous installation.

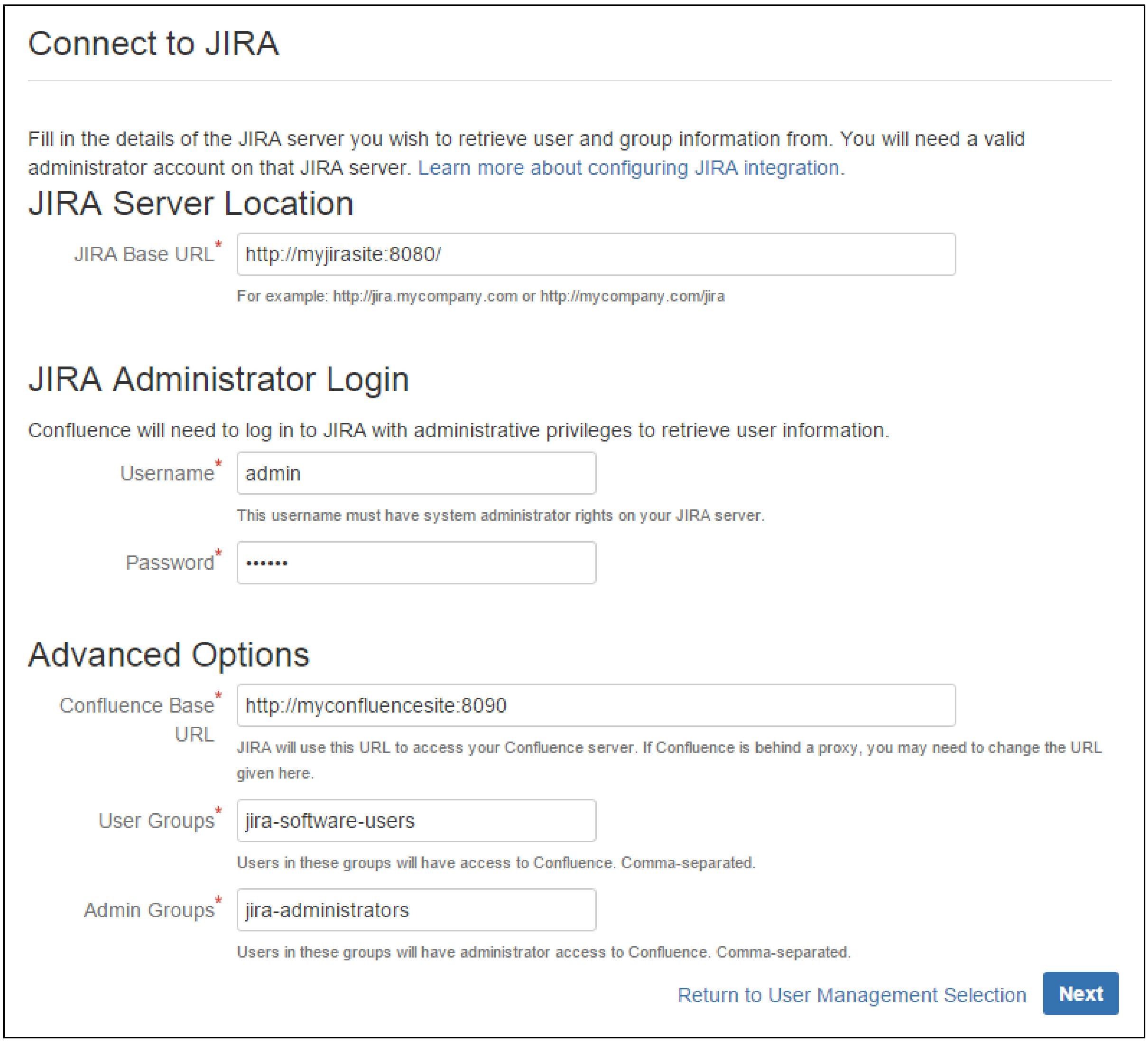
8. Set up user management

You can choose to manage Confluence's users and groups inside Confluence or in a Jira application, such as Jira Software or Jira Service Management.

- If you do not have a Jira application installed, or if you would prefer to set up external user management later, choose**Manage users and groups within Confluence**.
- If you have a Jira application installed, the setup wizard gives you the opportunity to configure the Jira connection automatically. This is a quick way of setting up your Jira integration with the most common

options. It will configure a Jira user directory for Confluence, and set up application links between Jira and Confluence for easy sharing of data. Choose**Connect to Jira**.

9. Connect to your Jira application



Connect to JIRA

Fill in the details of the JIRA server you wish to retrieve user and group information from. You will need a valid administrator account on that JIRA server. Learn more about configuring JIRA integration.

JIRA Server Location

JIRA Base URL*: http://myjirasite:8080/

For example: http://jira.mycompany.com or http://mycompany.com/jira

JIRA Administrator Login

Confluence will need to log in to JIRA with administrative privileges to retrieve user information.

Username*: admin

This username must have system administrator rights on your JIRA server.

Password*: ••••••

Advanced Options

Confluence Base URL*: http://myconfluencesite:8090

JIRA will use this URL to access your Confluence server. If Confluence is behind a proxy, you may need to change the URL given here.

User Groups*: jira-software-users

Users in these groups will have access to Confluence. Comma-separated.

Admin Groups*: jira-administrators

Users in these groups will have administrator access to Confluence. Comma-separated.

Enter the following information:

- **Jira Base URL** - the address of your Jira server, such as `http://www.example.com:8080/jira/` or `http://jira.example.com`
- **Jira Administrator Login**- this is the username and password of a user account that has the Jira System Administrator global permission in your Jira application.

  Confluence will also use this username and password to create a local administrator account which will let you access Confluence if Jira is unavailable. Note that this single account is stored in Confluence's internal user directory, so if you change the password in Jira, it will not automatically update in Confluence.

- **Confluence Base URL** - this is the URL Jira will use to access your Confluence server. The URL you give here overrides the base URL specified in Confluence, for the purposes of connecting to the Jira application.
- **User Groups** - these are the Jira groups whose members should be allowed to use Confluence. Members of these groups will get the 'Can use' permission for Confluence, and will be counted in your Confluence license. The default user group name differs depending on your Jira version:
  - Jira 6.4 and earlier: `jira-users`.
  - Jira Software 7.x and later: `jira-software-users`
  - Jira Core 7.x and later: `jira-core-users`

    - Jira Service Management (formerly Jira Service Desk) 3.x and later: `jira-servicedesk-users`
- **Admin Groups** Specify one or more Jira groups whose members should have administrative access to Confluence. The default group is `jira-administrators`. These groups will get the system administrator and Confluence administrator global permissions in Confluence.

For full details and a troubleshooting guide, see Configuring Jira Integration in the Setup Wizard.

10. Set up system administrator account

The system administrator has full administrative power over your Confluence instance. This person will be able to add more users, create spaces, and set further Confluence options. Please refer to the overview of global permissions for more information.

✓ Hint: If you are evaluating Confluence, set yourself as the administrator.

If you've delegated user management to a Jira application, we'll use the Jira system administrator account you specified as Confluence's system administrator account.

11. Setup is Complete

That's it, Confluence is ready to go. Click **Start**to jump straight in to Confluence.

Choose**Further Configuration** if you want to go directly to the Administration Console and complete administrator's tasks including configuring a mail server, adding users, changing the base URL and more.

Configuring Jira Integration in the Setup Wizard

This page describes the **Connect to Jira** step in the Confluence setup wizard.

If you are already using a Jira application, you can choose to delegate user management to Jira, instead of separately maintaining your users in Confluence.

You'll be able to specify exactly which groups in your Jira app should also be allowed to log in to Confluence. Your license tiers do not need to be the same for each application.

It's possible to connect Confluence to Jira after completing the setup process, but it's much quicker and easier to set it up at this stage.

You can delegate Confluence's user management to:

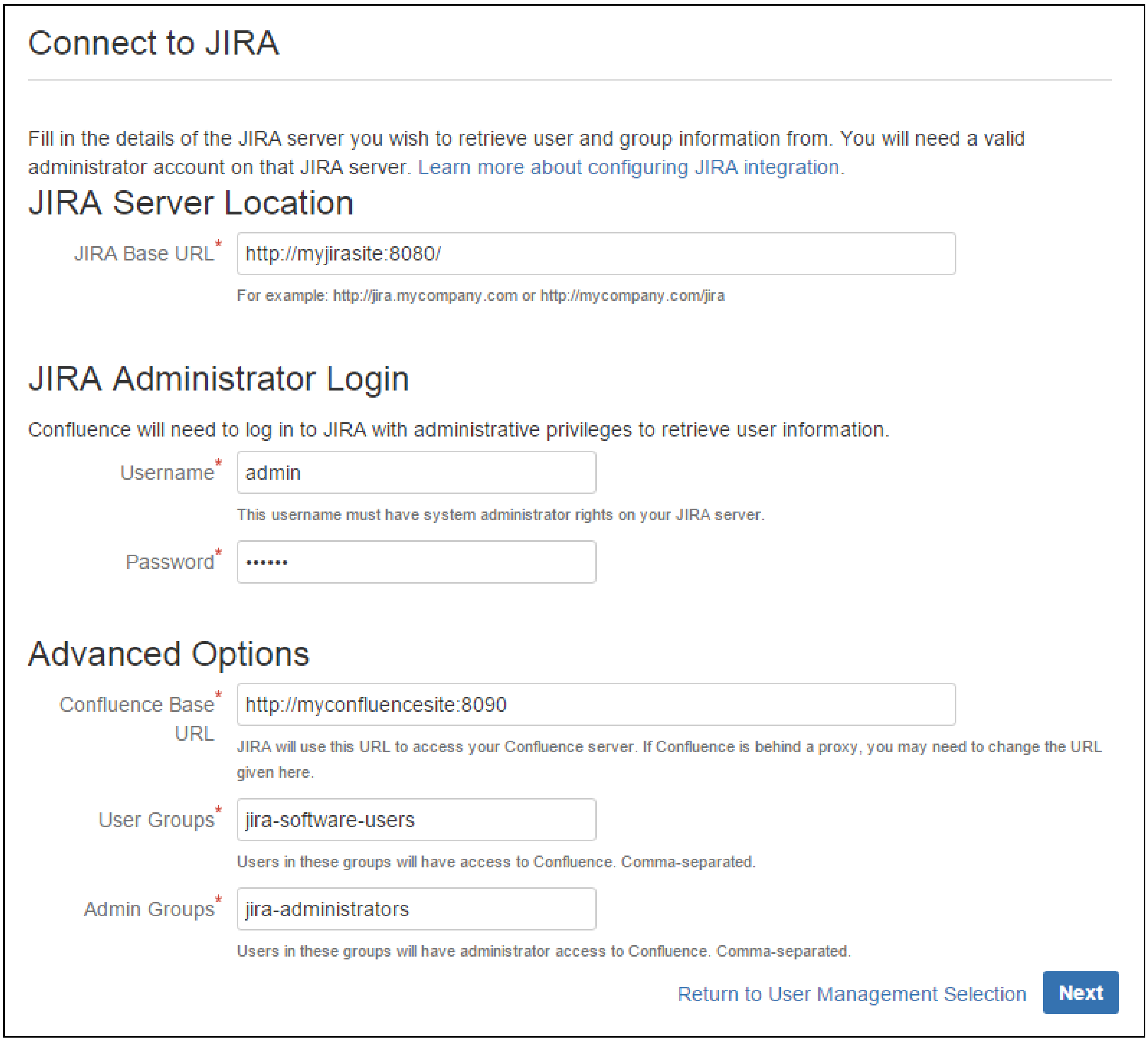
- Jira 4.3 or later
- Jira Core 7.0 or later
- Jira Software 7.0 or later
- Jira Service Management (formerly Jira Service Desk) 3.0 or later.

On this page:

Related pages:

- User Management Limitations and Recommendations
- Connecting to Crowd or Jira for User Management
- Confluence Setup Guide

Connecting to a Jira application in the Setup Wizard



Connect to JIRA

Fill in the details of the JIRA server you wish to retrieve user and group information from. You will need a valid administrator account on that JIRA server. Learn more about configuring JIRA integration.

JIRA Server Location

JIRA Base URL*: http://myjirasite:8080/

For example: http://jira.mycompany.com or http://mycompany.com/jira

JIRA Administrator Login

Confluence will need to log in to JIRA with administrative privileges to retrieve user information.

Username*: admin

This username must have system administrator rights on your JIRA server.

Password*: ••••••

Advanced Options

Confluence Base URL*: http://myconfluencesite:8090

JIRA will use this URL to access your Confluence server. If Confluence is behind a proxy, you may need to change the URL given here.

User Groups*: jira-software-users

Users in these groups will have access to Confluence. Comma-separated.

Admin Groups*: jira-administrators

Users in these groups will have administrator access to Confluence. Comma-separated.

Enter the following information:

- **Jira Base URL** - the address of your Jira server, such as `http://www.example.com:8080/jira/` or `http://jira.example.com`
- **Jira Administrator Login**- this is the username and password of a user account that has the Jira System Administrator global permission in your Jira application.

  Confluence will also use this username and password to create a local administrator account which will let you access Confluence if Jira is unavailable. Note that this single account is stored in Confluence's internal user directory, so if you change the password in Jira, it will not automatically update in Confluence.

- **Confluence Base URL** - this is the URL Jira will use to access your Confluence server. The URL you give here overrides the base URL specified in Confluence, for the purposes of connecting to the Jira application.
- **User Groups** - these are the Jira groups whose members should be allowed to use Confluence. Members of these groups will get the 'Can use' permission for Confluence, and will be counted in your Confluence license. The default user group name differs depending on your Jira version:
  - Jira 6.4 and earlier: `jira-users`.
  - Jira Software 7.x and later: `jira-software-users`
  - Jira Core 7.x and later: `jira-core-users`
  - Jira Service Management (formerly Jira Service Desk) 3.x and later: `jira-servicedesk-users`
- **Admin Groups** Specify one or more Jira groups whose members should have administrative access to Confluence. The default group is `jira-administrators`. These groups will get the system administrator and Confluence administrator global permissions in Confluence.

Troubleshooting

If you have trouble connecting Confluence to Jira, the following troubleshooting information should help you get up and running.

If no users can log in to Confluence after you've completed the setup process, check that the people are members of the Jira groups you specified. Only members of these groups will get the 'Can Use' Confluence permission.

Error in the setup wizard	Cause	Solution
Failed to create application link, or Failed to authenticate application link	The setup wizard failed to complete registration of the peer-to-peer application link with Jira. Jira integration is only partially configured.	Follow the steps below to remove the partial configuration then try the Connect to Jira step again.
Failed to register Confluence configuration in Jira for shared user management	The setup wizard failed to complete registration of the client-server link with Jira for user management. The peer-to-peer link was successfully created, but integration is only partially configured.	Follow the steps below to remove the partial configuration then try the Connect to Jira step again.
Error setting Crowd authentication	The setup wizard successfully established the peer-to-peer link with Jira, but could not persist the client-server link for user management in your`config.xml`file. This may be caused by a problem in your environment, such as a full disk.	Fix the problem that prevented the application from saving the configuration file to disk then follow the steps below to remove the partial configuration before trying the Connect to Jira step again.
Error reloading Crowd authentication	The setup wizard has completed the integration of your application with Jira, but is unable to start synchronizing the Jira users with your application.	Restart Confluence. You should be able to continue with the setup wizard. If this does not work, contact Atlassian Support for help.
java.lang.IllegalStateException: Could not create the application in Jira/Crowd (code: 500)	The setup wizard has not completed the integration of your application with Jira. The links are only partially configured. The problem occurred because there is already a user management configuration in Jira for this <application> URL.	Follow the steps below to remove the partial configurationand resolve any conflict with existing links then try the Connect to Jira step again.

Removing a partial configuration

If you hit a roadblock, you'll need to log in to Jira and remove the partial integration before you can try again. The specific steps will differ depending on your Jira application and version, but the essentials are the same for all versions:

- Log in to Jira as a user with system administrator permissions.
- In the Administrator screens, go to **Application Links**.
- Remove the application link that matches the base URL of your Confluence server.
- In the User Management screens, go to **Jira User Server**.
- Remove the link that matches the name and base URL of your Confluence server from the list of applications that can use Jira for user management.

If you're unable to tell which link matches your Confluence server because you have multiple servers of the same type running on the same host you can check the application ID, which is listed beside each server.

To find out the application ID of your new Confluence site, go to `<baseUrl>/rest/applinks/1.0/manifest` (where `<baseurl>`is the base URL of your Confluence site). The application ID will be listed in the `<ID>` element.

- Return to the Confluence setup wizard and try the **Connect to Jira** step again.

If you're still unable to connect Jira and Confluence using the setup wizard, you may need to skip this step and set up the links between Jira and Confluence manually once you've completed the Confluence setup process. SeeConnecting to Crowd or Jira for User Management.

Upgrading Confluence

In this guide we'll run you through using the installer to upgrade your Confluence site to the latest Confluence version on Windows or Linux.

Upgrading to any later version is free if you have current software maintenance. See ourLicensing FAQto find out more.

Other ways to upgrade Confluence:

- Manuallyupgrade Server or single-node Data Center without using the installer.
- Cluster with downtime upgrade your Data Center cluster.
- Cluster without downtime - rolling upgrade to a compatible bug fix version, with no downtime.

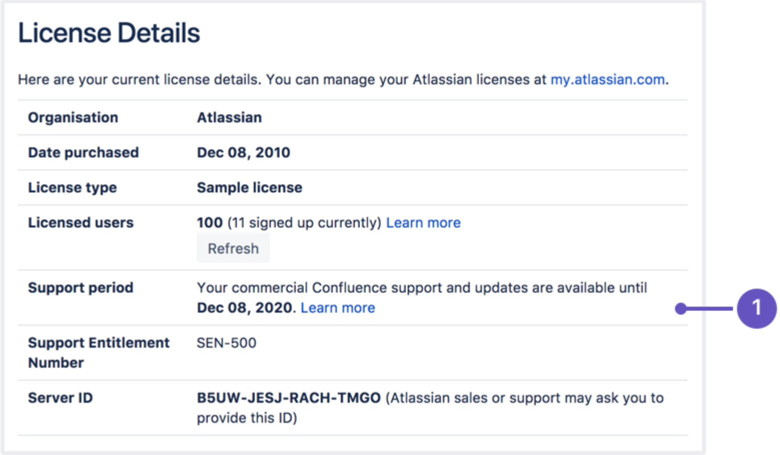
XML backups should**not**be used to upgrade Confluence.

On this page:

Before you begin

Before you upgrade Confluence, there's a few questions you need to answer.

Which upgrade method is the best option?	You can choose to upgrade using the installer, or manually using a zip or tar.gz file. In most cases the installer is the easiest way to upgrade your Confluence instance. You will need to upgrade manually if you are: • moving to another operating system or file location as part of this upgrade. • upgrading from **Confluence 3.5 or earlier** • upgrading from **Confluence 5.6** or earlier and previously used the **EAR/WAR distribution**to deploy Confluence into an existing application server. • performing a rolling upgrade, and you need to upgrade each node individually.

Are you eligible to upgrade?	To check if software maintenance is current for your license, go to⚙> **General Configuration** > **Troubleshooting and support tools**and make sure the license support period has not expired.  License Details Here are your current license details. You can manage your Atlassian licenses at my.atlassian.com. **Organisation**: **Atlassian** **Date purchased**: **Dec 08, 2010** **License type**: **Sample license** **Licensed users**: **100** (11 signed up currently) Learn more **Support period**: Your commercial Confluence support and updates are available until **Dec 08, 2020**. Learn more **Support Entitlement Number**: SEN-500 **Server ID**: **B5UW-JESJ-RACH-TMGO** (Atlassian sales or support may ask you to provide this ID) 1. **Software maintenance**: upgrade at any time during this period. If your support period has expired, follow the prompts to renew your license and reapply it before upgrading.
Have our supported platforms changed?	Check the Supported Platforms page for the version of Confluence you are upgrading to. This will give you info on supported operating systems, databases and browsers. **Good to know:** - The Confluence installer includes Java (JRE) and Tomcat, so you won't need to upgrade these separately. - If you need to upgrade your database, be sure to read the upgrade notes for the Confluence version you plan to upgrade to (and any in-between) to check for any database configuration changes that you may need to make.
Do you need to make changes to your environment?	Newer Confluence versions sometimes require changes to your environment, such as providing more memory or adjusting your reverse proxy settings. **Good to know:** We useUpgrade Notesto communicate changes that will impact you, such as: - Changes to supported databases, memory requirements or other changes that will impact your environment. - Features that have significantly changed or been removed in this release. - Actions you may need to take in your instance or environment immediately after the upgrade. It's important to read the notes for the version you're upgrading to and those in-between. For example, if you are upgrading from 5.8 to 5.10 you should read the upgrade notes for 5.9 and 5.10.

Plan your upgrade

Create a custom upgrade plan

Planning an upgrade? You can instantly generate a tailored upgrade plan from within Confluence. Head to ⚙> **General Configuration** > **Plan your upgrade**

You'll need to have a compatible version of the Troubleshooting and Support tools app installed. Learn more

1. Determine your upgrade path

Use the table below to determine the most efficient upgrade path from your current version to the latest versions of Confluence.

Your Version	Recommended upgrade path to Confluence 7
2.7 or earlier	Upgrade to **2.7.4** then upgrade to **3.5.17**, and follow paths below.
2.8 to 3.4	Upgrade to **3.5.17**, and follow paths below.
3.5	Upgrade to **5.0.3**, and follow paths below.
4.0 to 4.3	Upgrade to **5.10.x**, and follow paths below.
5.0 to 7.x	Upgrade directly to the latest version of Confluence 7.

If you are upgrading to the next bug fix update (for example, from 7.9.0 to 7.9.4), you can upgrade with no downtime.

Confluence 7 is a major upgrade

Be sure to check the Confluence Upgrade Matrix, take a full backup, and test your upgrade in a non-production environment before upgrading your production site.

Enterprise releases

A Long Term Support release is a feature release that gets backported critical security updates and critical bug fixes during its entire two-year support window. If you can only upgrade once a year, consider upgrading to a Long Term Support release.Learn more

Long Term Support releases were originally referred to as Enterprise Releases.

2. Complete the pre-upgrade checks

1. Check theUpgrade Notesfor the version you plan to upgrade to (and any in between).
2. Go to⚙> **General Configuration**> **Plan your upgrade**then select the version you want to upgrade to. This will run somepre-upgrade checks.
3. Go to ⚙> **General Configuration** > **Troubleshooting and support tools**to run the health check.

    If the software maintenance period included in your license has expired you can keep using Confluence, but you'll need to renew before you can upgrade.

    Go to ⚙> **General Configuration** > **License Details** and follow the prompts to renew your license.

If you are using the**embedded (trial) database**you shouldmigrate to a different database**before**upgrading. SeeEmbedded H2 Databasefor more information.

Database character encoding must be set to UTF+8 (or AL32UTF8 for Oracle databases). You will not be able to upgrade to current Confluence versions unless you have the correct character encoding.

4. Go to ⚙ > **Manage apps**and scroll down to the**Confluence Update Check**to check the compatibility of your Marketplace apps.

5. Choose the version you plan to upgrade to then hit**Check**.

If your users rely on particular Marketplace apps, you may want to wait until they are compatible before upgrading Confluence. Vendors generally update their apps very soon after a major release.

Good to know:

- You can disable an app temporarily while you upgrade if it is not yet compatible.
- Compatibility information for Atlassian Labs and other free apps is often not available immediatley after a new release. In many cases the app will still work, so give it a try in a test site before upgrading your production site.

3. Upgrade Confluence in a test environment

1. Create a staging copy of your current production environment.
   See Create a staging environment for upgrading Confluence for help creating an environment to test your upgrade in.

2. Follow the steps below to upgrade your test environment.

3. Test any unsupported user-installed apps, customizations (such as custom theme or layouts) and proxy configuration (if possible) before upgrading your production environment.

Upgrade Confluence

4. Back up

1. Back up your **database** and confirm the backup was created properly.
   If your database does not support online backups you'll need to stop Confluence first.

   Once you've confirmed your database backup was successful, you can choose to disable the automatic generation of an upgrade recovery file, as this process can take a long time for sites that are medium sized or larger.

2. Back up your **installation directory**
   The installer will completley replace this directory, so any files you've added (such as a keystore or SSL certificate) won't be retained. The installation wizard will back up this directory before starting the upgrade, but you should also back it up manually first.

3. Back up your**home directory**.
   The installation wizard gives you the option to also back up your home directory as part of the installation process, but you should also back up this directory manually before starting the upgrade.

You can find the location of your home directory in the `<installation-directory>/confluence/WEB-INF/classes/confluence-init.properties` file.

This is where your search indexes and attachments are stored. If you store attachments outside the Confluence Home directory, you should also backup your attachments directory.

5.Download Confluence

Download the installer for your operating system.

- Latest versionhttps://www.atlassian.com/software/confluence/download
- Older versionshttps://www.atlassian.com/software/confluence/download-archives

6. Run the installer

1. Run the installer.

    Run the .exe file. We recommend using a Windows administrator account.

    If prompted to allow the upgrade wizard to make changes to your computer, choose '**Yes**'. If you do not, the installation wizard will have restricted access to your operating system and any subsequent installation options will be limited.

    Change to the directory where you downloaded Confluence then execute this command to make the installer executable:

    ```
    $ chmod a+x atlassian-confluence-X.X.X-x64.bin
    ```

    Where `X.X.X` is is the Confluence version you downloaded.

    Next, run the installer we recommend using`sudo`to run the installer:

    ```
    $ sudo ./atlassian-confluence-X.X.X-x64.bin
    ```

    You can also choose to run the installer with root user privileges.

2. Follow the prompts to upgrade Confluence:
    a. When prompted choose**Upgrade an existingConfluence installation**(for Linux users this is option 3).
    b. Make sure the**Existing Confluence installation directory**suggested by the wizard is correct (especially important if you have multiple Confluence installations on the same machine).
    c. **Back up Confluence home**is strongly recommended. This will create a .zip backup of the Confluence home and installation directories.
    d. The installation wizard notifies you of customizations in the Confluence Installation directory. Make a note of these as you'll need to reapply them later.

        The installation wizard's ability to notify you about customizations will depend on how your existing Confluence instance was installed:

        - If your current Confluence instance was installed using the installer, the wizard will check the entire Confluence Installation directory.
        - If your current Confluence instance was installed manually it will only check the`confluence`subdirectory of the Confluence Installation directory. The installation wizard will**not**notify you of modifications in any other directory, for example modifications to start-up scripts under the`bin`directory or modifications to the`server.xml`file (such as anSSL configuration).

        You won't be notified about files you've added to the installation directory, so be sure to back them up first.

3. The wizard will shut down your Confluence instance and proceed with the upgrade. Once complete, it will restart Confluence and you can then launch Confluence in your browser to confirm the upgrade was successful.

Depending on the size of your instance and the number of upgrade tasks to be run, this step may take a few minutes or several hours.

After the upgrade

7. Copy your database driver

If you're using an Oracle or MySQL database, you'll need to copy the jdbc driver jar file from your existing Confluence installation directory to`confluence/WEB-INF/lib`in your new installation directory.

Microsoft SQL and Postgres users can skip this step.

8. Reinstall the service if required (Windows only)

If you run Confluence as a service on Windows you should delete the existing service then re-install the service by running`<install-directory>/bin/service.bat`.

This makes sure the service gets the most recent JVM options.

9. Re-apply any modifications

During the upgrade the wizard migrated the following from your existingConfluence installation:

- TCP port values in your `<install-directory>/conf/server.xml`file.
- Location of your Confluence home directory in`<install-directory>/confluence/WEB-INF/classes/confluence-init.properties`.

All other customizations, including `CATALINA_OPTS` parametersin your `<install-directory>/bin/setenv.sh`/`setenv.bat` files, need to be reapplied manually.

Any other configurations, customizations (including any other modifications in the `<install-directory>/conf/server.xml`file), the path to your own Java installation in `<install-directory>/bin/setjre.sh`, or `setjre.bat`, or additional files added to the installation directory are **not migrated** during the upgrade and need to be reapplied manually.

1. Stop your upgraded Confluence instance.
2. Edit each file, and reapply the customizations in your upgraded Confluence Installation directory.
3. Copy over any additional files (such as keystore or SSL certificate)
4. Restart the upgraded Confluence instance.

We**strongly recommend**you test your customizations in a test instance prior to upgrading your production instance as changes may have been made to Confluence that make your customizations unusable.

Edit the new file manually, rather than copying over the old file, as the default configuration in these files may have changed between Confluence versions.

10. Update your apps (add-ons)

You can update any apps that are compatible with the new version of Confluence.

1. Go to ⚙ > **Manage apps**
2. Update your apps to the supported versions.

At this stage, it can be useful to clear your plugin cache. Learn how to do this

This is optional, but can be useful to avoid any issues with third-party apps and plugins.

11. Update your reverse proxy and check you can access Confluence

If you are upgrading from **Confluence 5.x to Confluence 6.x** you will need to modify your reverse proxy (if used) to add Synchrony, which is required for collaborative editing. See Proxy and SSL considerations for more information on the changes you'll need to make to your proxy config.

Once your upgrade is complete, you should access Confluence (via your reverse proxy, not directly) and:

- Head to > **General Configuration** > **Collaborative editing** and check the Synchrony status is **running**.
- Edit any page to check that your browser can connect to Synchrony.

See Troubleshooting Collaborative Editing for suggested next steps if Synchrony is not running or you see an error in the editor, as you may have a misconfigured reverse proxy.

Troubleshooting

Did something go wrong?

If you need to retry the upgrade, **you must restore your pre-upgrade backups first.** Do not attempt to run an upgrade again, or start the older version of Confluence again after an upgrade has failed.

- **Can't proceed with upgrade because license has expired**
  If your license has expired and was not renewed and reapplied before upgrading you will receive errors during the upgrade process. See upgrading beyond current license period for information on how to resolve this problem.
- **Can't proceed with upgrade because of a conflict with anti virus**
  Some anti-virus or other Internet security tools may interfere with the Confluence upgrade process and prevent the process from completing successfully, particularly if you run Confluence as a Windows service. If you experience or anticipate experiencing such an issue with your anti-virus / Internet security tool, disable this tool first before proceeding with the Confluence upgrade.
- **Database does not support online backups**
  The upgrade wizard will prompt you to backup your database using your database's backup utilities. If your database does not support online backups, stop the upgrade process, shut down Confluence, perform your database backup and then run the installer again to continue with the upgrade.
- **Upgrade is taking a very long time**
  If you have a very large database (i.e. database backups take a very long time to complete), setting the `confluence.upgrade.recovery.file.enabled` system property to false will speed up the upgrade process. It should be used only when there is a process to back up database and verify the backup before performing an upgrade.
- **Confluence doesn't start**
  Incompatible Marketplace apps can occasionally prevent Confluence from starting successfully. You can troubleshoot the problem by starting Confluence with all user installed apps temporarily disabled. See Start and Stop Confluence for more info.
- **Collaborative editing errors**
  If Synchrony is not running or you see an error, head to Troubleshooting Collaborative Editing for info on how to get collaborative editing up and running in your environment. The most common problems are a misconfigured reverse proxy or port 8091 not being available for Synchrony.
- **Space directory is empty after the upgrade**
  If you are upgrading from Confluence 6.3 or earlier, there's a known issue where spaces do not appear in the space directory. You'll need to reindex your site after upgrading to fix this.

You can also refer to theUpgrade Troubleshootingguide in the Confluence Knowledge Base, or check for answers from the community atAtlassian Answers.

Upgrading Beyond Current Licensed Period

This page covers what to do ifyou have upgraded Confluence to a version beyond your current license entitlement.

Related pages:

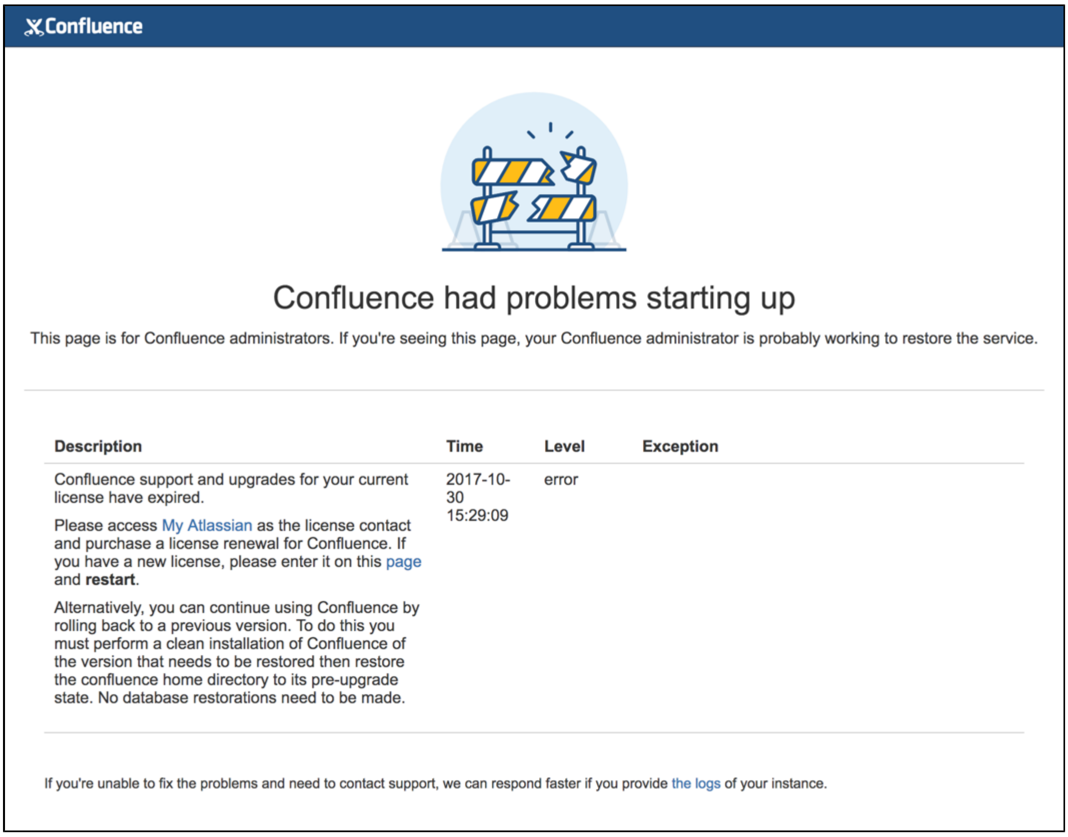
- Upgrading Confluence
- Working with Confluence Logs

License warnings

During the upgrade you will see an error similar to the following in yourapplication logs.

```
ERROR [confluence.upgrade.impl.DefaultUpgradeManager] runUpgradePrerequisites
Current license is not valid: SUPPORT_EXPIRED
```

When you try to access Confluence in your browser, you'll see this warning:



Confluence had problems starting up

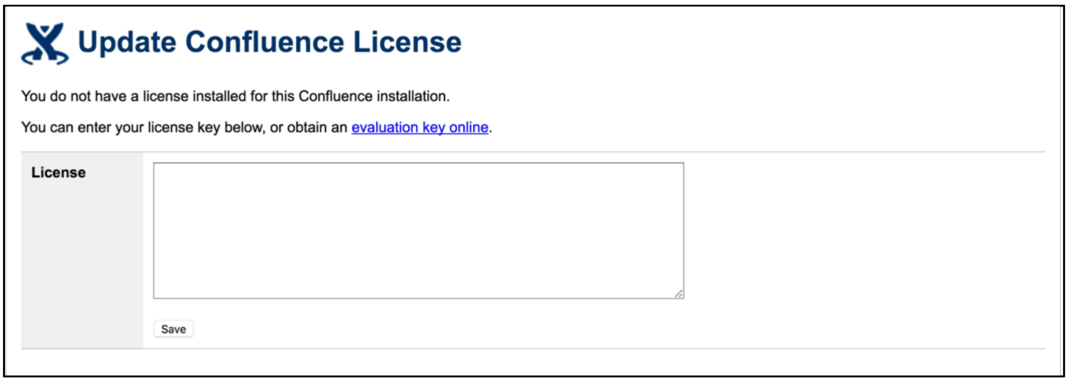
This page is for Confluence administrators. If you're seeing this page, your Confluence administrator is probably working to restore the service.

Description	Time	Level	Exception
Confluence support and upgrades for your current license have expired. Please access My Atlassian as the license contact and purchase a license renewal for Confluence. If you have a new license, please enter it on this page and **restart**. Alternatively, you can continue using Confluence by rolling back to a previous version. To do this you must perform a clean installation of Confluence of the version that needs to be restored then restore the confluence home directory to its pre-upgrade state. No database restorations need to be made.	2017-10-30 15:29:09	error	

If you're unable to fix the problems and need to contact support, we can respond faster if you provide the logs of your instance.

Updating the Confluence license

1. Head to my.atlassian.com to renew your license or purchase a new license.
2. Follow the prompts on the warning screen to enter your new license key.



Update Confluence License

You do not have a license installed for this Confluence installation.

You can enter your license key below, or obtain an evaluation key online.

3. Restart Confluence to pick up the license change. You should now be able to log in to Confluence as normal.

Confluence Post-Upgrade Checks

This article provides a list of items for Confluence Administrators to check after a Confluence upgrade to ensure that it has completed successfully. This list is not exhaustive, but it does cover common upgrade mistakes.

Before You Begin

After you have completed an upgrade, you should see the following message in the `atlassian-confluence.log` file:

```
2010-03-08 08:03:58,899 INFO [main] [atlassian.confluence.upgrade.
AbstractUpgradeManager] entireupgradeFinished Upgrade completed successfully
```

If you do not see the line in your log similar to the one above, this means that your upgrade may not have completed successfully. Please check our Upgrade Troubleshooting documentation to check for a suitable recommendation or fix.

Upgrade Checklist

Here's a recommended list of things to check after completing an upgrade

1.The editor

Edit a page to check your browser can connect to Synchrony, which is required for collaborative editing. SeeTroubleshooting Collaborative Editing if you are not able to edit a page.

2. Layout and Menu

Visit the Confluence dashboard and check that it is accessible and displays as expected. Test the different Internet browsers that you have in use in your environment. In addition, confirm that the layout appears as expected and that the menus are clickable and functioning.

3. Search

Try searching for content, for example pages, attachments or user names. Check that the expected results are returned.If you notice any problems, you may want to take advantage of the maintenance window to rebuild the indexes from scratch. SeeContent Index Administration.

4. Permissions

Confirm that you can visit a page that has view restrictions, but you have permission to view. Confirm that you can edit a page that has edit restrictions but you have permission to edit. Make sure that the permissions of child pages are functioning as well. Involve as many space administrators as possible to confirm they are working. Confirm that anonymous or forbidden users cannot access or modify restricted pages.

5. Attachments

Confirm that attachments are accessible and searchable.

6. Marketplace apps

Outdated third-party apps can cause upgrade failure. Quite often, they will just be incompatible and simply do not work anymore. If you discover that your app is no longer working, please check for the latest version for your app in the The Atlassian Marketplaceor check for compatibility in theUniversal Plugin Manager.

Migration from Wiki Markup to XHTML-Based Storage Format

If you are upgrading **to Confluence 4.0 or later** from an older version (From Confluence 3.5.x or earler) then as part of the upgrade an automatic migration of your content will take place. This is a non-destructive process. Your existing content is not overwritten. Instead, the migration process will create a new version of each wiki markup page. The new version will use the new XHTML-based storage format, so that you can edit the page in the Confluence rich text editor.

In addition, if you are **upgrading to Confluence 4.3 or later** from an older version then as part of the upgrade an automatic migration of your page templates will take place. See Migration of Templates from Wiki Markup to XHTML-Based Storage Format.

Note: Even though the process is non-destructive, you must be sure to perform a backup of your database and home directory prior to starting the new version of Confluence, as we recommend for any Confluence upgrade.

Migration process

Depending on the size of your Confluence installation, the migration from wiki markup to the new XHTML-based storage format could prove time consuming. The duration of the migration is difficult to estimate; this is due to a number of site specific factors. As a rough guide, a test dataset we migrated was 130,000 pages, totalling approximately 700Mb, which took six minutes.

On this page:

Related pages:

- Migration of Templates from Wiki Markup to XHTML-Based Storage Format
- Upgrading Confluence

The following properties that can be modified to allow finer control over the migration process:

Property	Purpose	Default
confluence.wiki.migration.threads	The number of concurrent worker threads migrating content	4
confluence.wiki.migration.batch.size	The number of items migrated in each batch of work	500
confluence.wiki.migration.versioncomment	The comment associated with the newly migrated version of each piece of content	"Migrated to Confluence 4.0"

(For instructions on setting Confluence system properties see this document.)

Again, due to the large variability in Confluence installations it is hard to give specific recommendations for the above settings. One point to note though that both increasing batch size and the number of threads (or both) will increase the peak memory required for migration. If memory is an issue then as you increase one of these settings consider decreasing the other.

Another factor to be aware of if modifying these defaults is that of the cache settings employed in your site. The migration will quickly populate certain Confluence caches so be sure that if you have customized caches as described here that there is enough memory on the server for these caches should they reach maximum capacity.

Watching the migration logs during the upgrade

To monitor the progress of a site migration you should watch the output in the application log.

Typical logging progress will be shown by multiple log entries at the INFO level of the following format:

```
WikiToXhtmlMigrationThread-n - Migrated 2500 of 158432 pages, this batch migrated 500/500 without error
```

There may be a wide array of messages logged from each individual page but any errors are also collected for display in a single migration report once all content has been processed. Here is a typical example of such a report:

```
Wiki to XHTML Exception Report:
Summary:
        0 settings values failed.
        0 PageTemplates failed.
        2 ContentEntityObjects failed.
Content Exceptions:
        1) Type: page, Id: 332, Title: Release Notes 1.0b3, Space: DOC - Confluence 4.0 Beta. Cause: com.
atlassian.confluence.content.render.xhtml.migration.exceptions.UnknownMacroMigrationException: The macro
link is unknown.. Message: The macro link is unknown.
        2) Type: comment, Id: 6919, Title: null, Global Scope. Cause: com.atlassian.confluence.content.
render.xhtml.migration.exceptions.UnknownMacroMigrationException: The macro mymacro is unknown.. Message:
The macro mymacro is unknown.
```

Each entry in the report will identify the content that caused migration exceptions as well as displaying the exceptions themselves.

In almost all cases any content reported as errored will have been migrated to the new XHTML-based storage format, but will actually consist of wiki markup content wrapped within an XML 'unmigrated-wiki-markup' macro. This content will still be viewable in Confluence and editable within the new Confluence Editor.

However, in some cases a batch of content may actually have completely failed to migrated. This is most typically due to an unhandled exception causing a database transaction rollback. This would be reported in the log with a message like this:

```
Unable to start up Confluence. Fatal error during startup sequence: confluence.lifecycle.core:
pluginframeworkdependentupgrades (Run all the upgrades that require the plugin framework to be available) -
com.atlassian.confluence.content.render.xhtml.migration.exceptions.MigrationException: java.util.concurrent.
ExecutionException: org.springframework.transaction.UnexpectedRollbackException: Transaction rolled back
because it has been marked as rollback-only
```

Confluence provides no further report about this scenario and will also allow Confluence to restart as normal without retrying a migration. If a user tries to view any such unmigrated content they will see an exception similar to this:

```
java.lang.UnsupportedOperationException: The body of this ContentEntityObject ('Page Title') was 'WIKI' but
was expected to be 'XHTML'
```

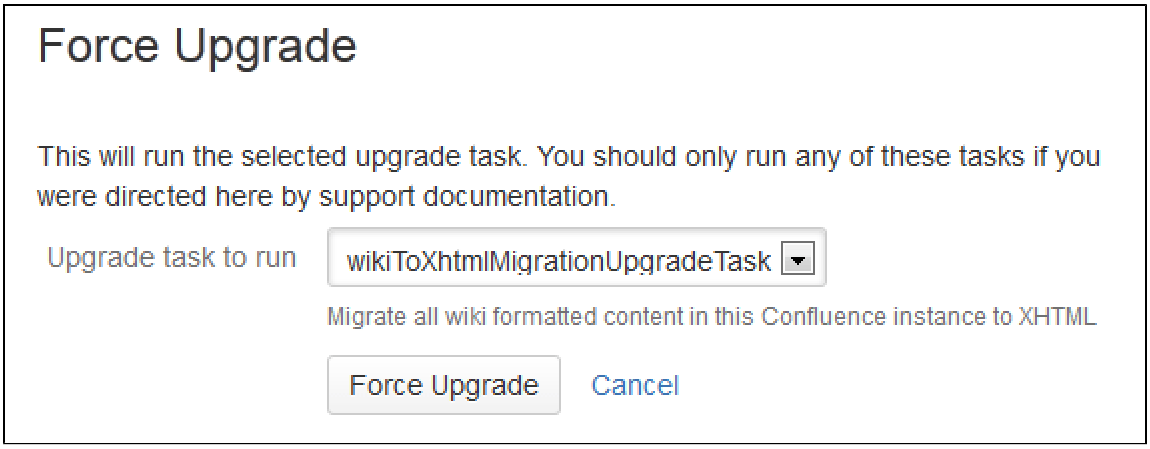
The solution is to ensure you manually re-run the site migration after the restart.

Re-running the migration for content that completely failed the migration

A Confluence Administrator can restart the site migration if there was any content that failed migration (see previous section). Only the content that is still formatted in wiki markup will be migrated, so typically a re-migration will take less time than the original migration.

To manually re-run migration:

1. Open this URL in your browser:`<Confluence Address>/admin/force-upgrade.action`
2. Select **wikiToXhtmlMigrationUpgradeTask** in the **Upgrade task to run** dropdown list.
3. Choose**Force Upgrade**.



Force Upgrade

This will run the selected upgrade task. You should only run any of these tasks if you were directed here by support documentation.

Upgrade task to run: wikiToXhtmlMigrationUpgradeTask

Migrate all wiki formatted content in this Confluence instance to XHTML

Re-attempting the migration for content in 'unmigrated-wiki-markup' macro

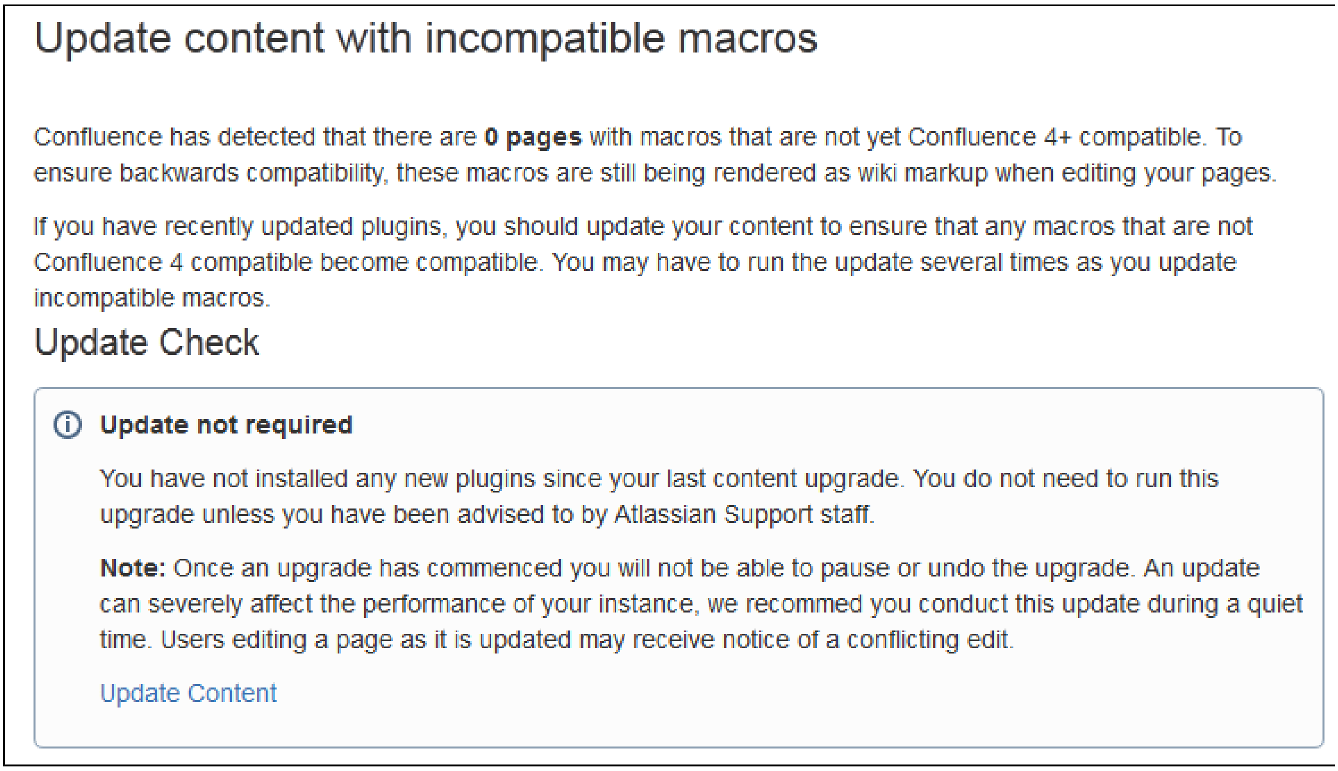
The previous section was about dealing with the exceptional circumstance where certain content was left completely unmigrated. The most common migration problem is that the content was migrated but remains formatted as wiki markup on the page, within the body of an 'unmigrated-wiki-markup' macro. Any content which is referenced in the migration report will be found in this state. This content is still viewable and editable but since it is wiki markup it cannot be edited using the full feature set of the rich text editor.

The most common reason for content to be in this state is that the page contains an unknown macro, or a macro that is not compatible with Confluence 4.x.

There are two possible fixes for this situation:

1. Install a version of the macro that is compatible with Confluence 4.x. See Plugin Development Upgrade FAQ for 4.0 .
2. Edit the page and remove the problematic macro.

Regardless of the solution you choose, you can then force a re-migration of all the content (including content in templates) that was left wrapped in an 'unmigrated-wiki-markup' macro. This feature is found at `<Confluence Address>/admin/unmigratedcontent.action`



Update content with incompatible macros

Confluence has detected that there are **0 pages** with macros that are not yet Confluence 4+ compatible. To ensure backwards compatibility, these macros are still being rendered as wiki markup when editing your pages.

If you have recently updated plugins, you should update your content to ensure that any macros that are not Confluence 4 compatible become compatible. You may have to run the update several times as you update incompatible macros.

Update Check

Update not required

You have not installed any new plugins since your last content upgrade. You do not need to run this upgrade unless you have been advised to by Atlassian Support staff.

Note: Once an upgrade has commenced you will not be able to pause or undo the upgrade. An update can severely affect the performance of your instance, we recommed you conduct this update during a quiet time. Users editing a page as it is updated may receive notice of a conflicting edit.

Notes

We refer to the Confluence storage format as 'XHTML-based'. To be correct, we should call it XML, because the Confluence storage format does not comply with the XHTML definition. In particular, Confluence includes custom elements for macros and more. We're using the term 'XHTML-based' to indicate that there is a large proportion of HTML in the storage format.

Migration of Templates from Wiki Markup to XHTML-Based Storage Format

If you are **upgrading to Confluence 4.3 or later from an older version** (from Confluence 4.2.x or earlier) then as part of the upgrade an automatic migration of your page templates will take place. This is a non-destructive process. Your existing content is not overwritten. Instead, the migration process will create a new version of each space template and each global template on your Confluence site. The new version will use the new XHTML-based storage format, so that you can edit the template in the Confluence rich text editor.

Note: Nevertheless, you must be sure to perform a backup of your database and home directory prior to starting the new version of Confluence, as we recommend for any Confluence upgrade.

Watching the migration logs during the upgrade

To monitor the progress of a site migration you should watch the output in the application log.

A typical logging progress will be shown by multiple log entries at the INFO level of the following format:

```
WikiToXhtmlMigrationThread-n - Migrated 22 of 29 PageTemplates.
```

On this page:

Related pages:

- Migration from Wiki Markup to XHTML-Based Storage Format
- Page Templates
- Upgrading Confluence

There may be a wide array of messages logged from each individual template, but any errors are also collected for display in a single migration report once all content has been processed. Here is a typical example of such a report:

```
Wiki to XHTML Exception Report:
Summary:
        0 settings values failed.
        2 PageTemplates failed.
        0 ContentEntityObjects failed.
Content Exceptions:
        1) Type: page, Id: 332, Title: Release Notes 1.0b3, Space: DOC - Confluence 4.0 Beta. Cause: com.
atlassian.confluence.content.render.xhtml.migration.exceptions.UnknownMacroMigrationException: The macro
link is unknown.. Message: The macro link is unknown.
        2) Type: comment, Id: 6919, Title: null, Global Scope. Cause: com.atlassian.confluence.content.
render.xhtml.migration.exceptions.UnknownMacroMigrationException: The macro mymacro is unknown.. Message:
The macro mymacro is unknown.
```

Each entry in the report will identify the content that caused migration exceptions as well as displaying the exceptions themselves.

In almost all cases any content reported as errored will have been migrated to the new XHTML-based storage format, but will actually consist of wiki markup content wrapped within an XML 'unmigrated-wiki-markup' macro. This content will still be viewable in Confluence and editable within the Confluence rich text editor.

However, in some cases a batch of content may actually have completely failed to migrate. This is most typically due to an unhandled exception causing a database transaction rollback. This would be reported in the log with a message like this:

```
Unable to start up Confluence. Fatal error during startup sequence: confluence.lifecycle.core:
pluginframeworkdependentupgrades (Run all the upgrades that require the plugin framework to be available) -
com.atlassian.confluence.content.render.xhtml.migration.exceptions.MigrationException: java.util.concurrent.
ExecutionException: org.springframework.transaction.UnexpectedRollbackException: Transaction rolled back
because it has been marked as rollback-only
```

Confluence provides no further report about this scenario and will also allow Confluence to restart as normal without retrying a migration. If a user tries to view or edit an unmigrated template, the wiki template editor will be used.

The solution is to manually re-run the site migration after the restart, as described below.

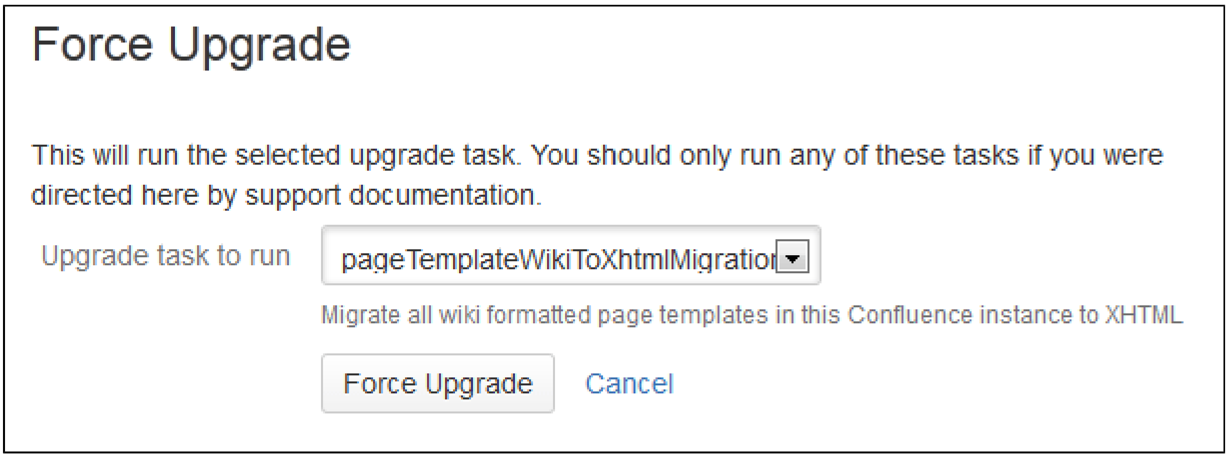
Re-running the migration

A Confluence administrator can restart the template migration if any templates have failed the migration (see previous section). Only the templates that are still formatted in wiki markup will be migrated again. Typically, a re-migration will take less time than the original migration.

To manually re-run the migration:

1. Open this URL in your browser:`<Confluence Address>/admin/force-upgrade.action`
2. Select **pageTemplateWikiToXhtmlMigrationUpgradeTask** in the **Upgrade task to run** dropdown list.
3. Choose**Force Upgrade**.

Screenshot: The 'Force Upgrade' screen in the Confluence administration console



Force Upgrade

This will run the selected upgrade task. You should only run any of these tasks if you were directed here by support documentation.

Upgrade task to run: pageTemplateWikiToXhtmlMigratio

Migrate all wiki formatted page templates in this Confluence instance to XHTML

Notes

We refer to the Confluence storage format as 'XHTML-based'. To be correct, we should call it XML, because the Confluence storage format does not comply with the XHTML definition. In particular, Confluence includes custom elements for macros and more. We're using the term 'XHTML-based' to indicate that there is a large proportion of HTML in the storage format.

Upgrading Confluence Manually

On this page:

In this guide we'll run you through upgrading your Confluence site to the latest Confluence version on Windows or Linux using the zip / tar.gz file.

Upgrading to any later version is free if you have current software maintenance. See ourLicensing FAQto find out more.

Other ways to upgrade Confluence:

- Installer the simplest way to upgrade Confluence.
- Data Center upgrade your Data Center cluster.
- Rolling upgrade- upgrade your Data Center cluster to the latest available bug fix version, with no downtime.

XML backups should**not**be used to upgrade Confluence.

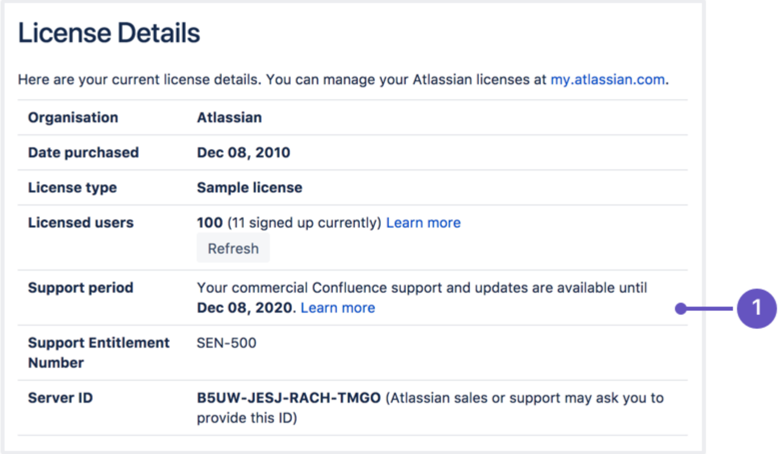
Before you begin

Before you upgrade Confluence, there's a few questions you need to answer.

Is manual the right upgrade method for you?	You can choose to upgrade using the installer, or manually using a zip or tar.gz file. In most cases the installer is the easiest way to upgrade your Confluence instance. You will need to upgrade manually if you are: • moving to another operating system or file location as part of this upgrade. • upgrading from **Confluence 3.5 or earlier** • upgrading from **Confluence 5.6** or earlier and previously used the **EAR/WAR distribution**to deploy Confluence into an existing application server. • performing a rolling upgrade, and you need to upgrade each node individually.

<table>
<tr>
<td>Are you eligible to upgrade?</td>
<td>

To check if software maintenance is current for your license, go to ⚙ > **General Configuration** > **Troubleshooting and support tools** and make sure the license support period has not expired.



License Details

Here are your current license details. You can manage your Atlassian licenses at my.atlassian.com.

Organisation	**Atlassian**
Date purchased	**Dec 08, 2010**
License type	**Sample license**
Licensed users	**100** (11 signed up currently) Learn more Refresh
Support period	Your commercial Confluence support and updates are available until **Dec 08, 2020.** Learn more
Support Entitlement Number	SEN-500
Server ID	**B5UW-JESJ-RACH-TMGO** (Atlassian sales or support may ask you to provide this ID)

1. **Software maintenance**: upgrade at any time during this period.

If your support period has expired, follow the prompts to renew your license and reapply it before upgrading.

</td>
</tr>
<tr>
<td>Have our supported platforms changed?</td>
<td>

Check the Supported Platforms page for the version of Confluence you are upgrading to. This will give you info on supported operating systems, databases and browsers.

Good to know:

- If you need to upgrade Java, remember to update your JAVA_HOME variable to the new version.
- The Confluence installer includes Tomcat, so you won't need to upgrade it separately.
- If you need to upgrade your database, be sure to read the upgrade notes for the Confluence version you plan to upgrade to (and any in-between) to check for any database configuration changes that you may need to make.

</td>
</tr>
<tr>
<td>Do you need to make changes to your environment?</td>
<td>

Newer Confluence versions sometimes require changes to your environment, such as providing more memory or adjusting your reverse proxy settings.

Good to know:

We use Upgrade Notes to communicate changes that will impact you, such as:

- Changes to supported databases, memory requirements or other changes that will impact your environment.
- Features that have significantly changed or been removed in this release.
- Actions you may need to take in your instance or environment immediately after the upgrade.

It's important to read the notes for the version you're upgrading to and those in-between. For example, if you are upgrading from 5.8 to 5.10 you should read the upgrade notes for 5.9 and 5.10.

</td>
</tr>
</table>

Plan your upgrade

1. Determine your upgrade path

Use the table below to determine the most efficient upgrade path from your current version to the latest versions of Confluence.

Your Version	Recommended upgrade path to Confluence 7
2.7 or earlier	Upgrade to **2.7.4** then upgrade to **3.5.17**, and follow paths below.
2.8 to 3.4	Upgrade to **3.5.17**, and follow paths below.
3.5	Upgrade to **5.0.3**, and follow paths below.
4.0 to 4.3	Upgrade to **5.10.x**, and follow paths below.
5.0 to 7.x	Upgrade directly to the latest version of Confluence 7.

If you are upgrading to the next bug fix update (for example, from 7.9.0 to 7.9.4), you can upgrade with no downtime.

⚠ **Confluence 7 is a major upgrade**

Be sure to check the Confluence Upgrade Matrix, take a full backup, and test your upgrade in a non-production environment before upgrading your production site.

2. Complete the pre-upgrade checks

1. Check theUpgrade Notesfor the version you plan to upgrade to (and any in between).
2. Go to⚙> **General Configuration**> **Plan your upgrade**then select the version you want to upgrade to. This will run somepre-upgrade checks.
3. Go to ⚙> **General Configuration** > **Troubleshooting and support tools**to run the health check.

   If the software maintenance period included in your license has expired you can keep using Confluence, but you'll need to renew before you can upgrade.

   Go to ⚙> **General Configuration** > **License Details** and follow the prompts to renew your license.

   If you are using the**embedded (trial) database**you shouldmigrate to a different database**before**upgrading. SeeEmbedded H2 Databasefor more information.

   Database character encoding must be set to UTF+8 (or AL32UTF8 for Oracle databases). You will not be able to upgrade to current Confluence versions unless you have the correct character encoding.

4. Go to ⚙ > **Manage apps**and scroll down to the**Confluence Update Check**to check the compatibility of your Marketplace apps.
5. Choose the version you plan to upgrade to then hit**Check**.

   If your users rely on particular Marketplace apps, you may want to wait until they are compatible before upgrading Confluence. Vendors generally update their apps very soon after a major release.

   Good to know:

- You can disable an app temporarily while you upgrade if it is not yet compatible.
- Compatibility information for Atlassian Labs and other free apps is often not available immediatley after a new release. In many cases the app will still work, so give it a try in a test site before upgrading your production site.

3. Upgrade Confluence in a test environment

1. Create a staging copy of your current production environment.
   See Create a staging environment for upgrading Confluence for help creating an environment to test your upgrade in.

2. Follow the steps below to upgrade your test environment.

3. Test any unsupported user-installed apps, customizations (such as custom theme or layouts) and proxy configuration (if possible) before upgrading your production environment.

Upgrade Confluence

4. Back up

1. Back up your database and confirm the backup was created properly.
   If your database does not support online backups you'll need to stop Confluence first.

   Once you've confirmed your database backup was successful, you can choose todisable the automatic generation of an upgrade recovery file, as this process can take a long time for sites that are medium sized or larger.

2. Back up your**installation directory**and**home directory**.

   You can find the location of your home directory in the `<installation-directory>/confluence/WEB-INF/classes/confluence-init.properties` file.

   This is where your search indexes and attachments are stored. If you store attachments outside the Confluence Home directory, you should also backup your attachments directory.

5.Download Confluence

Download the appropriate file for your operating system -https://www.atlassian.com/software/confluence/download

6. Extract the file and upgrade Confluence

1. Stop Confluence.
   SeeUsing read-only mode for site maintenance if you need to provide uninterrupted access.

2. Extract (unzip) the files to adirectory (this is your new installation directory, and must be different to your existing installation directory)
   Note: There are some known issues with unzipping the archive on Windows. We recommend using 7Zip or Winzip.

3. Edit `<Installation-Directory>\confluence\WEB-INF\classes\confluence-init.properties`file to point to your**existing**Confluence home directory.

4. If you're using an Oracle or MySQL database, you'll need to copyyour jdbc driver jar file from your existing Confluence installation directory to`confluence/WEB-INF/lib`in your **new installation directory**.

5. There are some additional steps you make need to take if:
   - you are running Confluence as a**Windows Service**

     If you are running Confluence as a Windows service, go to the command prompt and type:

```
<Installation-Directory>\bin\service.bat remove Confluence
```

It is vital that you stop and remove the existing service *prior to uninstalling* the old instance of Confluence. For more information on running Confluence as Windows service, please refer to Start Confluence Automatically on Windows as a Service.

⚠To remove the service installed by theConfluence installer, you'll need to run`<confluence auto installer installation folder>\UninstallService.bat`.

- You are running Confluence on a different port (not the default 8090)

  If you are not running Confluence on port 8090 update `<Installation-Directory>\conf\server.xml`file to include your ports.

6. Start your new Confluence. You should not see the setup wizard.

After the upgrade

7. Reinstall the service (Windows only)

If you run Confluence as a service on Windows you should delete the existing service then re-install the service by running`<install-directory>/bin/service.bat`.

This makes sure the service gets the most recent JVM options.

8. Re-apply any modifications

If you have customized Confluence (such as an SSL configuration in the`server.xml`file, or `CATALINA_OPTS`or`JAVA_OPTS`parameters in your`confluence-init.properties`file), you'll need to perform the following steps after the upgrade is complete:

1. Stop your upgraded Confluence instance.
2. Reapply the customizations to the relevant files in the newly upgraded Confluence Installation directory.
3. Restart the upgraded Confluence instance.

We**strongly recommend**you test your customizations in a test instance prior to upgrading your production instance as changes may have been made to Confluence that make your customizations unsuable.

9. Update your reverse proxy and check you can access Confluence

If you are upgrading from**Confluence 5.x to Confluence 6.x**you will need to modify your reverse proxy (if used) to add Synchrony, which is required for collaborative editing. SeeProxy and SSL considerationsfor more information on the changes you'll need to make to your proxy config.

Once your upgrade is complete, you should access Confluence (via your reverse proxy, not directly) and:

- Head to ⚙> **General Configuration**>**Collaborative editing**and check the Synchrony status is**running**.
- Edit any page to check that your browser can connect to Synchrony.

SeeTroubleshooting Collaborative Editingfor suggested next steps if Synchrony is not running or you see an error in the editor, as you may have a misconfigured reverse proxy.

Troubleshooting

Did something go wrong?

If you need to retry the upgrade,**you must restore your pre-upgrade backups first.** Do not attempt to run an upgrade again, or start the older version of Confluence again after an upgrade has failed.

- **Can't proceed with upgrade because license has expired**
  If your license has expired and was not renewed and reapplied before upgrading you will receive errors during the upgrade process. Seeupgrading beyond current license periodfor information on how to resolve this problem.

- **Collaborative editing errors**
  If Synchrony is not running or you see an error, head toTroubleshooting Collaborative Editingfor info on how to get collaborative editing up and running in your environment. The most common problems are a misconfigured reverse proxy or port 8091 not being available for Synchrony.
- **Upgrade is taking a very long time**
  If you have a very large database (i.e. database backups take a very long time to complete), setting the`confluence.upgrade.recovery.file.enabled`system propertyto falsewill speed up the upgrade process. It should be used only when there is a process to back up database and verify the backup before performing an upgrade.

You can also refer to theUpgrade Troubleshootingguide in the Confluence Knowledge Base, or check for answers from the community atAtlassian Answers.

Create a staging environment for upgrading Confluence

On this page:

When you upgrade Confluence we strongly recommend performing the upgrade in a test environment before upgrading your production site. In this guide we'll refer to this test environment as *staging*.

Most Confluence licenses include a free developer license for use in a staging environment. SeeHow to get a Confluence Developer licenseto find out how to access your license.

Create a staging environment

1. Replicate your environment

Your staging environment should closely replicate your real-live environment (production), including any reverse proxies, SSL configuration, or load balancer (for Data Center).You may decide to use a different physical server or a virtualized solution. The main thing is to make sure it is an appropriate replica of your production environment.

For the purposes of these instructions, we assume your staging environment is physically separate fromyour production environment, and has the same operating system (and Java version if you've installed Confluence manually).

2. Replicate your database

To replicate your database:

1. Back up your production database. Refer to the documentation for your database for more info on the best way to do this.
2. Install your database on the staging server and restore the backup.

The steps for restoring your database backup will differ depending on your chosen database and backup tool. Make sure:

- Your new staging database has a**different**name from your production database.
- Your staging database user account has the**same**username and password as your production database user account.
- Character encoding and other configurations are the same as your production database (for example character encoding should be Unicode UTF-8 (or AL32UTF8 for Oracle databases).

3. Replicate Confluence

To replicate Confluence, make a copy of your Confluence installation and point it to your staging database. These instructions are for Confluence Server (for Data Center there are some additional steps before you start Confluence).

1. Copy your entire **production installation directory** to your staging server.
2. Copy your entire **production home directory** to your staging server.
3. Edit `<installation-directory>/confluence/WEB-INF/classes/confluence-init.properties`to point to your staging home directory.
4. Edit`<home-directory>/confluence.cfg.xml`or `<installation-directory>/server.xml`to point to your staging database.

```
<property name="hibernate.connection.url">jdbc:postgresql://localhost:5432/confluencestaging<
/property>
```

```
<Resource name="jdbc/confluence" auth="Container" type="javax.sql.DataSource"
     username="postgres"
     password="postgres"
     driverClassName="org.postgresql.Driver"
     url="jdbc:postgresql://localhost:5432/confluencestaging"
     maxTotal="60"
     maxIdle="20"
     validationQuery="select 1" />
```

5. Start Confluence with the followingSystem Properties to make sure your staging site does not send notifications to real users.

   ```
   -Datlassian.notifications.disabled=true
   -Datlassian.mail.senddisabled=true
   ```

6. Head to`http://localhost:<port>`and log in to Confluence on your staging server.
7. Go to ⚙> **General Configuration**and change the**base URL**of your staging site (for example `mysite.staging.com`)
8. Go to⚙> **General Configuration**> **License Details** and apply your development license.
9. Go to⚙> **General Configuration**> **System Information** and check that Confluence is correctly pointing to your staging database, and staging home directory.

> ⚠ It's essential to check that you are not still connected to your production database.

Additional steps for Data Center

If you have Confluence Data Center, the process is much the same as for Confluence Server described above. You will copy each local home and installation directory to each staging node, and then:

1. Copy the**production shared home directory** to the staging server.
2. Edit`<local-home-directory>/confluence.cfg.xml`to point to your staging shared home directory. This change **must** be made on every staging node.

Changes to the `<installation-directory>/confluence/WEB-INF/classes/confluence-init.properties`and `<home-directory>/confluence.cfg.xml` must be made on **every** staging node.

When it comes time to start Confluence, start one node at a time, as usual.

4. Replicate external user management (optional)

If you're managing users in Jira, Crowd, or in an external LDAP directory you can:

- replicate Jira, Crowd, or your external directory in your staging environment and point your Confluence staging site to your staging external directory (recommended).
- provide your staging server with network or local access to the same hosts as your production server.

Additional configuration options

There are a number of additional things you may want to change in your staging environment, to make sure it does not interact with your production environment, or to clearly differentiate it for users.

Modify application links (recommended)

If you have application links between Confluence and other Atlassian applications you should change the server ID on each staging application. SeeHow to change the server ID of Confluence andChange the server ID for an instance of Jira server for Jira.

If you don't change the server ID and update your application links there is a chance that when you create a new application link in production it will point to your staging server instead.

To review the Application Links manually in the database,use the following following SQL query:

```
select * from bandana where bandanakey like 'applinks%';
```

Modify external gadgets

If you have external gadgets configured, you can update these from the database, using the following SQL query:

```
select * from bandana where bandanakey = 'confluence.ExternalGadgetSpecStore.specs'
```

Change the global color scheme

If can be helpful to use a different color scheme on your staging site, to differentiate it from your production site. See Customizing Color Schemesfor how to do this.

You can also find this data in the database using the following SQL query:

```
select * from bandana where bandanakey = 'atlassian.confluence.colour.scheme';
```

Change the instance name (recommended)

It is a good idea to change the name of your staging site, to differentiate it from your production site. Head to ⚙> **General Configuration**and update the **Site Title** if Confluence is running.

If Confluence is not running, you can do this from the database.You can find the site title using the following SQL query:

```
select * from bandana where bandanakey = 'atlassian.confluence.settings';
```

The attribute you are looking for is`setTitle.`

Add a banner

It can be useful to add a banner to your staging site, to provide useful information like the date of the last refresh, or who to contact if you want to make changes.

If you have a Confluence Data Center license, you can do this by enabling the banner that is used by read-only mode (you don't need to enable read-only mode to use the banner).

If you have a Confluence Server license, you can manually add a banner using HTML. Head to⚙> **General Configuration**> **Custom HTML**.Remember to close your tags properly, or Confluence may not display correctly.

If you want to add a banner before starting Confluence, you can do it in the database.You can find the custom HTML using the following SQL query:

```
select * from bandana where bandanakey = 'atlassian.confluence.settings';
```

The attribute you are looking for is`customHtmlSettingsafterBodyStart`

Disable specific plugins

You might want to disable specific plugins or check whether these plugins are already disabled or not. See theHow to reset all Confluence plugins back to their default state through the databaseknowledge base article to find how to do this.

You can alsodisable plugins in Confluence in 6.1+ using Java system properties.

Upgrade your staging environment

Once you have created your staging environment, you can upgrade it in the same way you would your production environment.

Make a note of how long the upgrade takes, as this information will help you plan your production system outage and communicate with your users.

You can also use your staging environment to test any customizations or essential Marketplace apps in your site.

Upgrade Confluence without downtime

If you run Confluence Data Center in a cluster, you may be able to upgrade Confluence without any downtime for your users. This method is known as a rolling upgrade.

In a rolling upgrade, your site is put into upgrade mode, which temporarily allows nodes running different Confluence versions to join the cluster. As you take each node offline to upgrade it, the other active nodes keep your Confluence site available to users. Once all nodes have been upgraded in turn, you finalize the upgrade and turn off upgrade mode.

On this page:

Can I upgrade without downtime?

Whether you can upgrade your Confluence Data Center cluster without downtime depends on the version you are upgrading from, and the version you are upgrading to.Learn more about thedifferent types of releases.

Upgrading from	Upgrading to		
	Bugfix	**Feature**	**Platform**
Confluence 7.8 and earlier	✗ Requires downtime	✗ Requires downtime	✗ Requires downtime
Confluence 7.8 to 7.13	✓ No downtime (for example, from 7.12.0 to 7.12.2)	✗ Requires downtime	✗ Requires downtime
Confluence 7.14 and later	✓ No downtime (for example, from 7.14.0 to 7.14.2)	✓ No downtime when upgrading to the *next*feature version (for example, from 7.14.x to 7.15.x) ✗ Requires downtime if the upgrade spans *more than one* feature version (for example, from 7.14.x to 7.17.x)	✗ Requires downtime

Before you begin

Before you start planning a rolling upgrade, theres a few questions you need to answer.

Does my Confluence deployment support rolling upgrades?	You can only perform a rolling upgrade with no downtime on a multi-node Confluence cluster. Clustering is only supported on a Confluence Data Center license. In addition, a rolling upgrade involves enabling upgrade mode, which is only available in Confluence Data Center. Learn more about multi-node clustering in Confluence
Do I have enough nodes to support user requests during the rolling upgrade?	You need to take a node offline to upgrade it. During this time, other active nodes will take over the offline nodes workload. Make sure you have enough active nodes to handle user traffic at any given time. If possible, add a node temporarily to your cluster to compensate for offline nodes.
Is the version compatible with rolling upgrades?	Whether you can upgrade without downtime depends on the version you are upgrading from, and the version you are upgrading to. The pre-upgrade check will confirm whether you can upgrade without downtime.

Prepare for the rolling upgrade

1.Complete pre-upgrade checks

1. Check theUpgrade Notesfor the version you plan to upgrade to (and any in between).
2. Go to⚙> **General Configuration**> **Plan your upgrade**then select the version you want to upgrade to. This will run somepre-upgrade checks.
3. Go to ⚙> **General Configuration** > **Troubleshooting and support tools**to run the health check.

   If the software maintenance period included in your license has expired you can keep using Confluence, but you'll need to renew before you can upgrade.

   Go to ⚙> **General Configuration** > **License Details** and follow the prompts to renew your license.

   If you are using the**embedded (trial) database**you shouldmigrate to a different database**before**upgrading. SeeEmbedded H2 Databasefor more information.

   Database character encoding must be set to UTF+8 (or AL32UTF8 for Oracle databases). You will not be able to upgrade to current Confluence versions unless you have the correct character encoding.

4. Go to ⚙ > **Manage apps**and scroll down to the**Confluence Update Check**to check the compatibility of your Marketplace apps.
5. Choose the version you plan to upgrade to then hit**Check**.

   If your users rely on particular Marketplace apps, you may want to wait until they are compatible before upgrading Confluence. Vendors generally update their apps very soon after a major release.

   Good to know:

   - You can disable an app temporarily while you upgrade if it is not yet compatible.
   - Compatibility information for Atlassian Labs and other free apps is often not available immediatley after a new release. In many cases the app will still work, so give it a try in a test site before upgrading your production site.

2. Prevent the installation or upgrade of apps during the upgrade period

If you manage Confluence with a team of admins, schedule the rolling upgrade with them. Notify them to postpone any app installs or upgrades until after the rolling upgrade. Installing or upgrading apps during a rolling upgrade could result in unexpected errors.

3. Back up Confluence Data Center

Site Backup and Restorelists useful resources, along with recommendations for manual and automated backups. In particular,Production Backup Strategyrecommends specific methods for backing up larger Confluence sites.

If your deployment is hosted on AWS, we recommend that you use the AWS native backup facility, which utilizes snapshots to back up your site.For more information, seeAWS Backup.

4. Set up a staging environment to test the rolling upgrade

We strongly recommend that you perform the rolling upgrade on a staging or test environment first.

1. Create a staging copy of your current production environment.
   See Create a staging environment for upgrading Confluence for help creating an environment to test your upgrade in.
2. Follow the steps below to upgrade your test environment.
3. Test any unsupported user-installed apps, customizations (such as custom theme or layouts) and proxy configuration (if possible) before upgrading your production environment.

Perform the rolling upgrade

There are three methods for performing a rolling upgrade, depending on what orchestration tools your deployment uses.

Method	Description	Instructions
Manual upgrade	A manual upgrade is suitable for deployments that feature minimal orchestration, particularly in node upgrades. If your deployment is based on ourAzure templates, you'll also need to perform a manual upgrade.	Upgrade a Confluence cluster manually without downtime
AWS CloudFormation	If your deployment is defined by an AWS CloudFormation template (like ourAWS Quick Start), then you can use the same template to orchestrate your upgrade.	Upgrade a Confluence cluster on AWS without downtime
API-driven	You can orchestrate the entire rolling upgrade process through API calls.	Upgrade a Confluence cluster through the API without downtime

Upgrade a Confluence cluster manually without downtime

This document provides step-by-step instructions on how to perform a rolling upgrade on deployments with little or no automation. These instructions are also suitable for deployments based on ourAzure templates.

For an overview of rolling upgrades (including planning and preparation information), seeUpgrade Confluence without downtime.

Step 1: Download upgrade files

Before you start the upgrade, you'll need to download the right Confluence version. You'll be installing this on each node. Remember, you can only upgrade to a higher bug fix version (for example, from Confluence 7.9.0 to 7.9.4) or to the next feature version (for example, from Confluence 7.14.2 to 7.15.0).

Download Confluence

Alternatively, go to⚙> **General Configuration**> **Plan your upgrade** to run the pre-upgrade checks and download a compatible bug fix version.

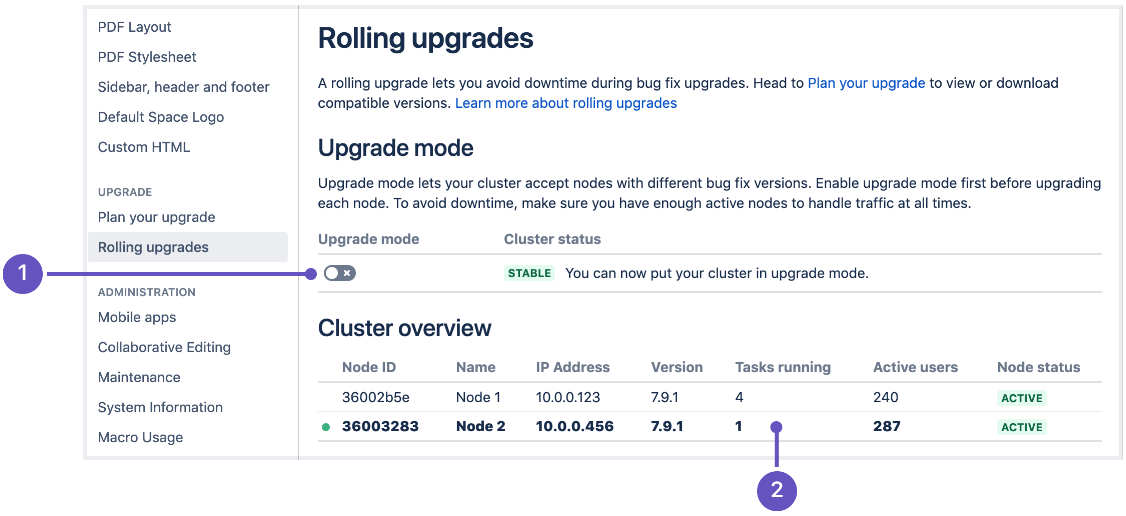
Step 2: Enable upgrade mode

You need System Administrator global permissions to do this.

To enable upgrade mode:

1. Go to⚙> **General Configuration**> **Rolling upgrades**.
2. Select the **Upgrade mode** toggle (1).

Screenshot: The Rolling upgrades screen.



Rolling upgrades

A rolling upgrade lets you avoid downtime during bug fix upgrades. Head to Plan your upgrade to view or download compatible versions. Learn more about rolling upgrades

Upgrade mode

Upgrade mode lets your cluster accept nodes with different bug fix versions. Enable upgrade mode first before upgrading each node. To avoid downtime, make sure you have enough active nodes to handle traffic at all times.

Upgrade mode	Cluster status
○	STABLE You can now put your cluster in upgrade mode.

Cluster overview

Node ID	Name	IP Address	Version	Tasks running	Active users	Node status
36002b5e	Node 1	10.0.0.123	7.9.1	4	240	ACTIVE
● **36003283**	**Node 2**	**10.0.0.456**	**7.9.1**	**1**	**287**	ACTIVE

The cluster overview can help you choose which node to upgrade first. The **Tasks running** (2) column shows how many long-running tasks are running on that node, and the **Active users** shows how many users are logged in. When choosing which node to upgrade first, start with the ones with the least number of tasks running and active users.

Upgrade mode allows your cluster to temporarily accept nodes running different Confluence versions. This lets you upgrade a node and let it rejoin the cluster (along with the other non-upgraded nodes). Both upgraded and non-upgraded active nodes work together to keep Confluence available to all users.You can disable upgrade mode as long as you havent upgraded any nodes yet.

Step 3: Upgrade the first node

With upgrade mode enabled, you can now upgrade your first node.

Start with the least busy node

We recommend that you start upgrading the node with the least number of running tasks and active users. You can check this on the Rolling upgrades page.

Start by shutting down Confluence gracefully on the node:

1. Access the node through a command line or SSH.
2. Shut down Confluence gracefully on the node. To do this, run the stop script corresponding to your operating system and configuration. For example, if you installed Confluence as a service on Linux, run the following command:
   ```
   $ sudo /etc/init.d/confluence stop
   ```
   Learn more about graceful Confluence shutdowns
   A graceful shutdown allows the Confluence node to finish all of its tasks first before going offline.During shutdown, the node's status will be**Terminating**, and user requests sent to the node will be redirected by the load balancer to other Active nodes.

   > For nodes running on Linux or Docker, you can also trigger a graceful shutdown through the `kill` command (this will send a `SIGTERM` signal directly to the Confluence process).

3. Wait for the node to go offline. You can monitor its status on the Node status column of the Rolling upgrade pages Cluster overview section.

Once the status of the node is offline, you can start upgrading the node. Copy the Confluence installation file you downloaded to the local file system for that node.

To upgrade the first node:

1. Extract (unzip) the files to adirectory (this will be your new installation directory, and must be different to your existing installation directory)
2. Update the following line in the`<Installation-Directory>\confluence\WEB-INF\classes\confluence-init.properties`file to point to the**existinglocal home**directory on that node.
3. If your deployment uses a MySQL database, copy the jdbc driver jar file from your existing Confluence installation directory to `confluence/WEB-INF/lib`in your new installation directory.
   The jdbc driver will be located in either the`<Install-Directory>/common/lib`or`<Installation-Directory>/confluence/WEB-INF/lib`directories. SeeDatabase Setup For MySQL for more details.
4. If you run Confluence as a service:
   - On Windows,delete the existing service then re-install the serviceby running`<install-directory>/bin/service.bat`.
   - On Linux, update the service to point to the new installation directory (or use symbolic links to do this).
5. Copy any other immediately required customizations from the old version to the new one(for example if you are not running Confluence on the default ports or if you manage users externally, you'll need to update / copy the relevant files - find out more inUpgrading Confluence Manually).

   > If you configured Confluence to run as a Windows or Linux service, don't forget to update its service configuration as well. For related information, see Start Confluence Automatically on Windows as a Service or Run Confluence as a systemd service on linux.

6. Start Confluence, and confirm that you can log in and view pages before continuing to the next step.

As soon as the first upgraded node joins the cluster, your cluster status will transition to Mixed. This means that you wont be able to disable Upgrade mode until all nodes are running the same version.

Upgrade Synchrony (optional)

If you've chosen to let Confluence manage Synchrony for you (recommended), you don't need to do anything. Synchrony was automatically upgraded with Confluence.

If you're running your own Synchrony cluster, grab the new`synchrony-standalone.jar`from the`<local-home>`directory on your upgraded Confluence node. Then, perform the following steps on each Synchrony node:

1. Stop Synchrony on the node using either the`start-synchrony.sh`(for Linux) or`start-synchrony.bat`(for Windows) file from the Synchrony home directory.
2. Copy the new`synchrony-standalone.jar`to your Synchrony home directory.
3. Start Synchrony as normal.

See Set up a Synchrony cluster for Confluence Data Centerfor related information.

Step 4: Upgrade all other nodes individually

After starting the upgraded node, wait for its status to change to Active in the Cluster overview. At this point you should check the application logs for that node, and log in to Confluence on that node to make sure everything is working. It's still possible to roll back the upgrade at this point, so taking some time to test is recommended.

Once you've tested the first node, you can start upgrading another node, following the same steps. Do this for each remaining node as always, we recommend that you upgrade the node with the least number of running tasks each time.

Step 5: Finalize the upgrade

The steps to finalize your upgrade will differ slightly depending on whether you are upgrading to a bugfix version, or to the next feature version which may require upgrade tasks to be run. You should do this soon as possible, as some tasks are put on hold while your cluster is in upgrade mode.

Finalize upgrade to a bugfix version

To finalize the upgrade:

1. Wait for the cluster status to change to **Ready to finalize**. This won't happen until all nodes are active, and running the same upgraded version.
2. Select the **Finalize upgrade** button.
3. Wait for confirmation that the upgrade is complete. The cluster status will change to **Stable**.

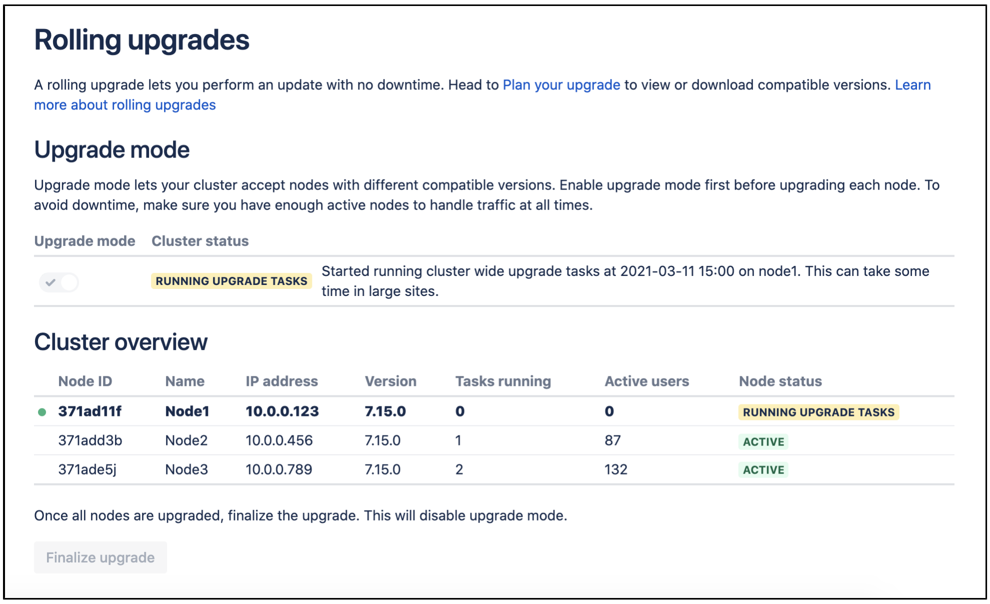
Your upgrade is now complete.

Finalize upgrade to a feature version

To finalize the upgrade:

1. Wait for the cluster status to change to **Ready to run upgrade tasks**. This won't happen until all nodes are active, and running the same upgraded version.
2. Select the **Run upgrade tasks and finalize upgrade** button.
3. One node will start running upgrade tasks. Tail the logs on this node if you want to monitor the process.
4. Wait for confirmation that the upgrade is complete. The cluster status will change to **Stable**.

Your upgrade is now complete.



Rolling upgrades

A rolling upgrade lets you perform an update with no downtime. Head to Plan your upgrade to view or download compatible versions. Learn more about rolling upgrades

Upgrade mode

Upgrade mode lets your cluster accept nodes with different compatible versions. Enable upgrade mode first before upgrading each node. To avoid downtime, make sure you have enough active nodes to handle traffic at all times.

Upgrade mode	Cluster status	
✓	RUNNING UPGRADE TASKS	Started running cluster wide upgrade tasks at 2021-03-11 15:00 on node1. This can take some time in large sites.

Cluster overview

	Node ID	Name	IP address	Version	Tasks running	Active users	Node status
●	**371ad11f**	**Node1**	**10.0.0.123**	**7.15.0**	**0**	**0**	RUNNING UPGRADE TASKS
	371add3b	Node2	10.0.0.456	7.15.0	1	87	ACTIVE
	371ade5j	Node3	10.0.0.789	7.15.0	2	132	ACTIVE

Once all nodes are upgraded, finalize the upgrade. This will disable upgrade mode.

Screenshot: One cluster node running upgrade tasks for the whole cluster.

Upgrade tasks make any required changes to your database and file system, for example changing the database schema or the way index files are stored in the local home directories.

There are a few things you should know about upgrade tasks:

- One cluster node will run the upgrade tasks on the database and other nodes. If there's a problem, logs will be written to the application log on this node.
- The status of other nodes in the cluster may change to **Running upgrade tasks** momentarily to indicate that an upgrade task is making a change to the file system on that node. The node actually running the upgrade tasks does not change.
- Depending on the the size or complexity of your data, some upgrade tasks can take several hours to complete. We generally include a warning in the upgrade notes for the particular version if an upgrade task is likely to take a significant amount of time.
- It's not necessary to direct traffic away from the node running upgrade tasks, but if you know the upgrade tasks are likely to be significant, you may want to do this to avoid any performance impact.

Troubleshooting

Node errors during rolling upgrade

If a nodes status transitions to **Error**, it means something went wrong during the upgrade. You cant finish the rolling upgrade if any node has an **Error** status. However, you can still disable Upgrade mode as long as the cluster status is still **Ready to upgrade**.

There are several ways to address this:

- Shut down Confluence gracefully on the node. This should disconnect the node from the cluster, allowing the node to transition to an **Offline** status.
- If you cant shut down Confluence gracefully, shut down the node altogether.

Once all active nodes are upgraded with no nodes in Error, you can finalize the rolling upgrade. You can investigate any problems with the problematic node afterwards and re-connect it to the cluster once you address the error.

Upgrade tasks failed error

If the cluster status changes to **Upgrade tasks failed**, this means that one or more upgrade tasks did not complete successfully and the upgrade has not been finalized. You should:

1. Check the application log on the node running the upgrade task for errors. The node identifier is included in the cluster status message.
2. Resolve any obvious issues (such as file system permissions, or network connectivity problems)
3. Select **Re-run upgrade tasks and finalize upgrade** to try again.

If upgrade tasks are still failing, and you can't identify a cause, you should contact our Support team for assistance. You may also want to roll back the upgrade at this point. We don't recommend leaving Confluence in upgrade mode for a prolonged period of time.

Roll back a node to its original version

How you roll back depends on the upgrade stage you have reached. See Roll back a rolling upgrade for more information.

Mixed status with Upgrade mode disabled

If a node is in an Error state with Upgrade mode disabled, you can't enable Upgrade mode. Fix the problem or remove the node from the cluster to enable Upgrade mode.

Disconnect a node from the cluster through the load balancer

If a node error prevents you from gracefully shutting down Confluence, try disconnecting it from the cluster through the load balancer. The following table provides guidance how to do so for popular load balancers.

NGINX	NGINX defines groups of cluster nodes through the upstream directive . To prevent the load balancer from connecting to a node, delete the node's entry from its corresponding upstream group. Learn more about the upstream directive in the ngx_http_upstream_module module.
HAProxy	With HAProxy, you candisable all traffic to the node by putting it in a `maint` state: `set server <node IP or hostname> state maint` Learn more about forcing a server's administrative state.
Apache	You can disable a node (or "worker") by setting its activation member attribute to disabled. Learn more about advanced load balancer worker properties in Apache.
Azure Application Gateway	We provide adeployment template for Confluence Data Center on Azure; this template uses the Azure Application Gateway as its load balancer. The Azure Application Gateway defines each node as a target within a backend pool. Use the **Edit backend pool** interface to remove your node's corresponding entry. Learn more about adding (and removing) targets from a backend pool.

Traffic is disproportionately distributed during or after upgrade

Some load balancers might use strategies that send a disproportionate amount of active users to a newly-upgraded node. When this happens, the node might become overloaded, slowing down Confluence for all users logged in to the node.

To address this, you can also temporarily disconnect the node from the cluster. This will force the load balancer to re-distribute active users between all other available nodes. Afterwards, you can add the node again to the cluster.

Node won't start up

If a node is Offline or Starting for too long, you may have to troubleshoot Confluence on the node directly. See Confluence Startup Problems Troubleshooting for related information.

Upgrade a Confluence cluster on AWS without downtime

This document provides step-by-step instructions on performing a rolling upgrade on an AWS deployment orchestrated through CloudFormation. In particular, these instructions are suitable for Confluence Data Center deployments based on our AWS Quick Starts.

For an overview of rolling upgrades (including planning and preparation information), seeUpgrade Confluence without downtime.

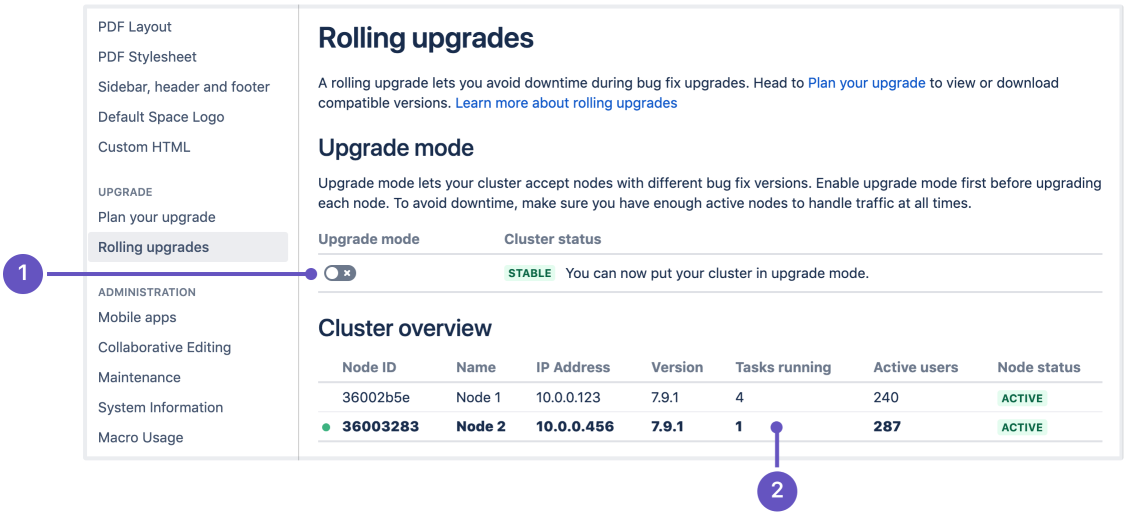
Step 1: Enable upgrade mode

You need System Administrator global permissions to do this.

To enable upgrade mode:

1. Go to⚙> **General Configuration**> **Rolling upgrades**.
2. Select the **Upgrade mode** toggle (1).

Screenshot: The Rolling upgrades screen.



PDF Layout
PDF Stylesheet
Sidebar, header and footer
Default Space Logo
Custom HTML

UPGRADE
Plan your upgrade
Rolling upgrades

ADMINISTRATION
Mobile apps
Collaborative Editing
Maintenance
System Information
Macro Usage

Rolling upgrades

A rolling upgrade lets you avoid downtime during bug fix upgrades. Head to Plan your upgrade to view or download compatible versions. Learn more about rolling upgrades

Upgrade mode

Upgrade mode lets your cluster accept nodes with different bug fix versions. Enable upgrade mode first before upgrading each node. To avoid downtime, make sure you have enough active nodes to handle traffic at all times.

Upgrade mode	Cluster status
	STABLE You can now put your cluster in upgrade mode.

Cluster overview

Node ID	Name	IP Address	Version	Tasks running	Active users	Node status
36002b5e	Node 1	10.0.0.123	7.9.1	4	240	ACTIVE
● **36003283**	**Node 2**	**10.0.0.456**	**7.9.1**	**1**	**287**	ACTIVE

The cluster overview can help you choose which node to upgrade first. The **Tasks running** (2) column shows how many long-running tasks are running on that node, and the **Active users** shows how many users are logged in. When choosing which node to upgrade first, start with the ones with the least number of tasks running and active users.

Upgrade mode allows your cluster to temporarily accept nodes running different Confluence versions. This lets you upgrade a node and let it rejoin the cluster (along with the other non-upgraded nodes). Both upgraded and non-upgraded active nodes work together to keep Confluence available to all users.You can disable upgrade mode as long as you havent upgraded any nodes yet.

Step 2: Find all the current application nodes in your stack

In AWS, note the Instance IDs of all running application nodes in your stack. These are all the application nodes running your current version. You'll need these IDs for a later step.

1. In the AWS console, go to**Services > CloudFormation**. Select your deployments stack to view its Stack Details.
2. Expand the **Resources** drop-down. Look for the **ClusterNodeGroup** and click its Physical ID. This will take you to a page showing the Auto Scaling Group details of your application nodes.
3. In the Auto Scaling Group details, click on the **Instances** tab. Note all of the Instance IDs listed there; you'll be terminating them at a later step.

Step 3: Update your CloudFormation template

Your deployment uses a CloudFormation template that defines each component of your environment. In this case, upgrading Confluence means updating the version of Confluence used in the template. During the upgrade, we highly recommend that you add a node temporarily to your cluster as well.

1. In the AWS console, go to**Services** > **CloudFormation**. Select your deployments stack to view its Stack Details.
2. In the Stack Details screen, click**Update Stack**.
3. From theSelect Templatescreen, select**Use current template**and click**Next**.
4. Set the**Version**parameter to the version youre updating to. Since this is a rolling upgrade, you can only set this to a later bug fix version.
5. Add an extra node to your cluster. This will help ensure that your cluster won't have a shortage of nodes for user traffic. To do this, increase thevalue of the following parameters by 1:
    - **Maximum number of cluster nodes**
    - **Minimum number of cluster nodes**
6. Select **Next**. Click through the next pages, and then to apply the change using the**Update**button.

After updating the stack, you will have one extra node already running the new Confluence version. With Upgrade mode enabled, that node will be allowed to join the cluster and start work. Your other nodes won't be upgraded yet.

As soon as the first upgraded node joins the cluster, your cluster status will transition to Mixed. This means that you wont be able to disable Upgrade mode until all nodes are running the same version.

Once the new upgraded node is running an in an Active state, you shouldcheck the application logs for that node, and log in to Confluence on that node to make sure everything is working. It's still possible to roll back the upgrade at this point, so taking some time to test is recommended.

Once you've tested the first node, you can start upgrading another node. To do that, shut down and terminate the node AWS will then replace the node with a new one running the updated Confluence version.

Step 4: Upgrade another node

> ⚠ **Start with the least busy node**
>
> We recommend that you start upgrading the node with the least number of running tasks and active users. On the Rolling upgrades page, youll find both in the Cluster overview section.

In Step 2, you noted the instance ID of each node in your cluster. Terminate the node where you gracefully shut down Confluence. To do this:

1. In the AWS console, go to**Services** > **EC2**. From there, click **Running Instances**.
2. Check the instance of matching the node where you gracefully shut down Confluence.
3. From the**Actions**drop-down, selectInstance **State** > **Terminate**.
4. Click through to terminate the instance.

Each time you terminate a node, AWS will automatically replace it. The replacement will be running the new version of Confluence. Once the new node's status is Active, you can move on to upgrading another node.

Step 5: Upgrade all other nodes individually

At this point, your cluster should have two nodes running the new version of Confluence. You can now upgrade other nodes. To do so, simply repeat the previous step on another node.As always, we recommend that you upgrade the node with the least number of running tasks each time.

> ⚠ If your deployment usesstandalone Synchrony, you may need to update the version used by each Synchrony node as well. To do this, terminate each Synchrony node one after the other after you upgrade all nodes to the new version.

Step 6: Finalize the upgrade

The steps to finalize your upgrade will differ slightly depending on whether you are upgrading to a bugfix version, or to the next feature version which may require upgrade tasks to be run. You should do this soon as possible, as some tasks are put on hold while your cluster is in upgrade mode.

Finalize upgrade to a bugfix version

To finalize the upgrade:

1. Wait for the cluster status to change to **Ready to finalize**. This won't happen until all nodes are active, and running the same upgraded version.
2. Select the **Finalize upgrade** button.
3. Wait for confirmation that the upgrade is complete. The cluster status will change to **Stable**.

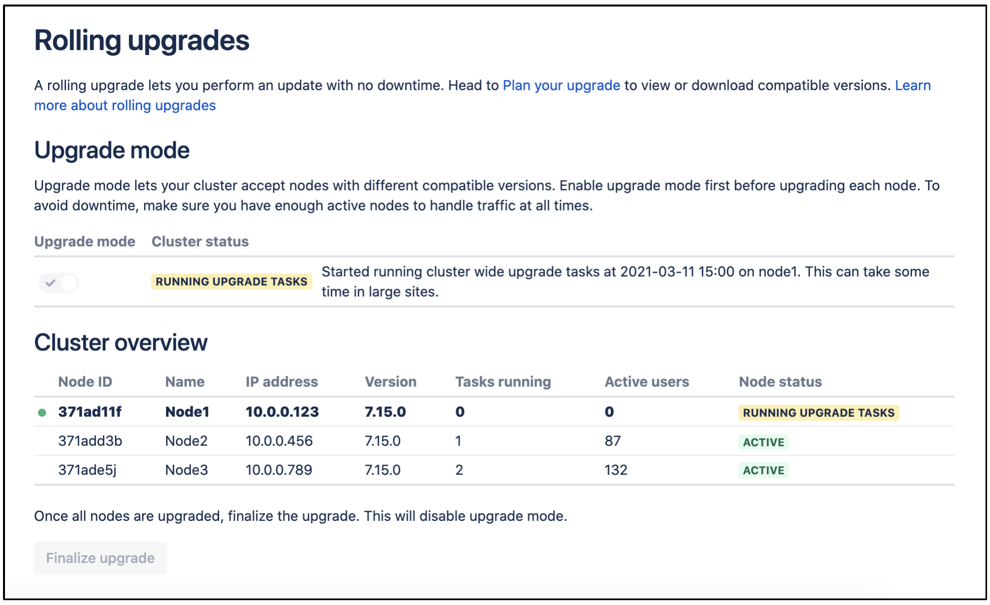
Your upgrade is now complete.

Finalize upgrade to a feature version

To finalize the upgrade:

1. Wait for the cluster status to change to **Ready to run upgrade tasks**. This won't happen until all nodes are active, and running the same upgraded version.
2. Select the **Run upgrade tasks and finalize upgrade** button.
3. One node will start running upgrade tasks. Tail the logs on this node if you want to monitor the process.
4. Wait for confirmation that the upgrade is complete. The cluster status will change to **Stable**.

Your upgrade is now complete.



Rolling upgrades

A rolling upgrade lets you perform an update with no downtime. Head to Plan your upgrade to view or download compatible versions. Learn more about rolling upgrades

Upgrade mode

Upgrade mode lets your cluster accept nodes with different compatible versions. Enable upgrade mode first before upgrading each node. To avoid downtime, make sure you have enough active nodes to handle traffic at all times.

Upgrade mode	Cluster status	
✓	RUNNING UPGRADE TASKS	Started running cluster wide upgrade tasks at 2021-03-11 15:00 on node1. This can take some time in large sites.

Cluster overview

	Node ID	Name	IP address	Version	Tasks running	Active users	Node status
●	**371ad11f**	**Node1**	**10.0.0.123**	**7.15.0**	**0**	**0**	RUNNING UPGRADE TASKS
	371add3b	Node2	10.0.0.456	7.15.0	1	87	ACTIVE
	371ade5j	Node3	10.0.0.789	7.15.0	2	132	ACTIVE

Once all nodes are upgraded, finalize the upgrade. This will disable upgrade mode.

Screenshot: One cluster node running upgrade tasks for the whole cluster.

> Upgrade tasks make any required changes to your database and file system, for example changing the database schema or the way index files are stored in the local home directories.
>
> There are a few things you should know about upgrade tasks:
>
> - One cluster node will run the upgrade tasks on the database and other nodes. If there's a problem, logs will be written to the application log on this node.
> - The status of other nodes in the cluster may change to **Running upgrade tasks** momentarily to indicate that an upgrade task is making a change to the file system on that node. The node actually running the upgrade tasks does not change.
> - Depending on the the size or complexity of your data, some upgrade tasks can take several hours to complete. We generally include a warning in the upgrade notes for the particular version if an upgrade task is likely to take a significant amount of time.

- It's not necessary to direct traffic away from the node running upgrade tasks, but if you know the upgrade tasks are likely to be significant, you may want to do this to avoid any performance impact.

Step 7: Scale down your cluster

In Step 3, we added a node temporarily to the cluster as a replacement for each one we terminated. This was to help ensure we'd have enough nodes to handle normal user traffic. After finalizing the upgrade, you can remove that node:

1. In the AWS console, go to**Services** > **CloudFormation**. Select your deployments stack to view its **Stack Details**.
2. In the Stack Details screen, click**Update Stack**.
3. From theSelect Templatescreen, select**Use current template**and select**Next**.
4. Decrease the value of the following parameters by 1:
   - **Maximum number of cluster nodes**
   - **Minimum number of cluster nodes**
5. Select **Next**. Click through the next pages, and then to apply the change using the**Update**button.

You can now remove one node from your cluster without AWS replacing it. To do this:

- Choose the node with the least number of running tasks.
- Shut down Confluence gracefully on the node.
- Terminate the node.

Refer to Step 4 for detailed instructions.

Troubleshooting

Disconnect a node from the cluster through the load balancer

If an error prevents you from terminating a node, try disconnecting the node from the cluster through the load balancer. In the AWS Application Load Balancer, each node is registered as a target so to disconnect a node, you'll have to de-register it. For more information on how to do this, seeTarget groups for your Application Load Balancers andRegistered targets.

Traffic is disproportionately distributed during or after upgrade

Some load balancers might use strategies that send a disproportionate amount of active users to a newly-upgraded node. When this happens, the node might become overloaded, slowing down Confluence for all users logged in to the node.

To address this, you can also temporarily disconnect the node from the cluster. This will force the load balancer to re-distribute active users between all other available nodes. Afterwards, you can add the node again to the cluster.

Node errors during rolling upgrade

If a nodes status transitions to **Error**, it means something went wrong during the upgrade. You cant finish the rolling upgrade if any node has an **Error** status. However, you can still disable Upgrade mode as long as the cluster status is still **Ready to upgrade**.

There are several ways to address this:

- Shut down Confluence gracefully on the node. This should disconnect the node from the cluster, allowing the node to transition to an **Offline** status.
- If you cant shut down Confluence gracefully, shut down the node altogether.

Once all active nodes are upgraded with no nodes in Error, you can finalize the rolling upgrade. You can investigate any problems with the problematic node afterwards and re-connect it to the cluster once you address the error.

Roll back to the original version

How you roll back depends on the upgrade stage you have reached. See Roll back a rolling upgrade for more information.

Mixed status with Upgrade mode disabled

If a node is in an Error state with Upgrade mode disabled, you can't enable Upgrade mode. Fix the problem or remove the node from the cluster to enable Upgrade mode.

Node won't start up

If a node is Offline or Starting for too long, you may have to troubleshoot Confluence on the node directly. See Confluence Startup Problems Troubleshooting for related information.

Upgrade a Confluence cluster through the API without downtime

This document provides guidance on how to initiate and finalize a rolling upgrade through API calls. This upgrade method is suitable for admins with the skills and automation tools to orchestrate maintenance tasks (like upgrades).

For an overview of rolling upgrades (including planning and preparation information), seeUpgrade Confluence without downtime.

API reference

The entire rolling upgrade process is governed by the following API:

```
http://<host>:<port>/rest/zdu/cluster/zdu/
```

ThisAPI has the following calls:

/zdu	Get an overview of the cluster's status.
/zdu/start	Enable upgrade mode.
/zdu/state	Get the status of the cluster.
/zdu/nodes/{nodeId}	Get an overview of a node's status, including the number of running tasks.
/zdu/cancel	Disable upgrade mode. You can only use this call if the upgrade progress is not MIXED.
/zdu/approve	Once all nodes are upgraded, finalize the rolling upgrade. This will automatically disable upgrade mode.

For detailed information about each API call, seeConfluence REST API Documentation.

Initiating a rolling upgrade

To initiate a rolling upgrade, enable rolling upgrade first. To do this, use:

```
http://<host>:<port>/rest/zdu/cluster/zdu/start
```

Upgrade mode allows your cluster to temporarily accept nodes running different Confluence versions. This lets you upgrade a node and let it rejoin the cluster (along with the other non-upgraded nodes). Both upgraded and non-upgraded active nodes work together to keep Confluence available to all users.You can disable upgrade mode as long as you havent upgraded any nodes yet.

Upgrading each node individually

Before you upgrade a node, you'll need to gracefully shut down Confluence on it.To do this, run the stop script corresponding to your operating system and configuration.Learn more about graceful Confluence shutdowns.

For example, if you installed Confluence as a service on Linux, run the following command:

```
$ sudo /etc/init.d/confluence stop
```

After upgrading Confluence on the node, wait for it to transition to an Active status first before upgrading another node.

Node statuses

To get the status of a node, use:

```
http://<host>:<port>/rest/zdu/cluster/zdu/nodes/<nodeID>
```

ACTIVE	Confluence is connected to the cluster and running with no errors.
STARTING	Confluence is still loading, and should transition to Active once finished.
TERMINATING	Confluence was gracefully shut down, and should transition to Offline once finished.
OFFLINE	Confluence is not responding on the node. This node will be removed from the cluster completely if it is still offline after Upgrade mode is disabled.
ERROR	Something went wrong with Confluence on the node.

Cluster statuses

To get the status of the cluster, use:

```
http://<host>:<port>/rest/zdu/cluster/zdu/state
```

STABLE	You can turn on Upgrade mode now.
READY_TO_UPGRADE	Upgrade mode is enabled, but no nodes have been upgraded yet. You can start upgrading your first node now.
MIXED	At least one node is upgraded, but you haven't finished upgrading all nodes yet. Your cluster has nodes running different Confluence versions. You need to upgrade all nodes to the same bug fix version to transition to the next status (**READY_TO_RUN_UPGRADE_TASKS**).
READY_TO_RUN_UPGRADE_TASKS	All nodes have node been upgraded. You can now finalize the rolling upgrade: `http://<host>:<port>/rest/zdu/cluster/zdu/approve`

Enable and disable Upgrade mode

How you roll back depends on the upgrade stage you have reached. See Roll back a rolling upgrade for more information.

> **Mixed status with Upgrade mode disabled**
>
> If a node is in an Error state with Upgrade mode disabled, you can't enable Upgrade mode. Fix the problem or remove the node from the cluster to enable Upgrade mode.

Troubleshooting

Node errors during rolling upgrade

If a nodes status transitions to **Error**, it means something went wrong during the upgrade. You cant finish the rolling upgrade if any node has an **Error** status. However, you can still disable Upgrade mode as long as the cluster status is still **Ready to upgrade**.

There are several ways to address this:

- Shut down Confluence gracefully on the node. This should disconnect the node from the cluster, allowing the node to transition to an **Offline** status.
- If you cant shut down Confluence gracefully, shut down the node altogether.

Once all active nodes are upgraded with no nodes in Error, you can finalize the rolling upgrade. You can investigate any problems with the problematic node afterwards and re-connect it to the cluster once you address the error.

Disconnecting a node from the cluster through the load balancer

If a node error prevents you from gracefully shutting down Confluence, try disconnecting it from the cluster through the load balancer. The following table provides guidance how to do so for popular load balancers.

NGINX	NGINX defines groups of cluster nodes through the upstream directive . To prevent the load balancer from connecting to a node, delete the node's entry from its corresponding upstream group. Learn more about the upstream directive in the ngx_http_upstream_module module.
HAProxy	With HAProxy, you candisable all traffic to the node by putting it in a `maint` state: `set server <node IP or hostname> state maint` Learn more about forcing a server's administrative state.
Apache	You can disable a node (or "worker") by setting its activation member attribute to disabled. Learn more about advanced load balancer worker properties in Apache.
Azure Application Gateway	We provide adeployment template for Confluence Data Center on Azure; this template uses the Azure Application Gateway as its load balancer. The Azure Application Gateway defines each node as a target within a backend pool. Use the **Edit backend pool** interface to remove your node's corresponding entry. Learn more about adding (and removing) targets from a backend pool.

Traffic is disproportionately distributed during or after upgrade

Some load balancers might use strategies that send a disproportionate amount of active users to a newly-upgraded node. When this happens, the node might become overloaded, slowing down Confluence for all users logged in to the node.

To address this, you can also temporarily disconnect the node from the cluster. This will force the load balancer to re-distribute active users between all other available nodes. Afterwards, you can add the node again to the cluster.

Node won't start up

If a node is Offline or Starting for too long, you may have to troubleshoot Confluence on the node directly. See Confluence Startup Problems Troubleshooting for related information.

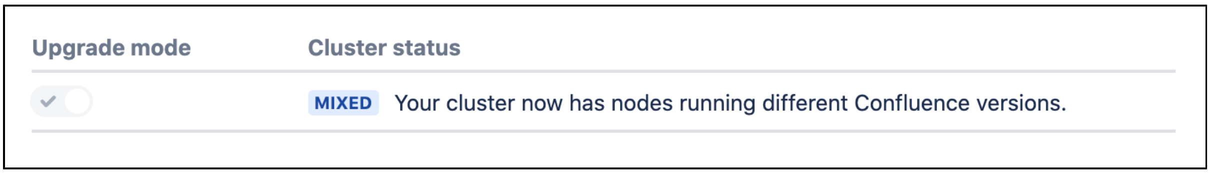
Roll back a rolling upgrade

On this page:

> ⓘ The steps on this page only apply if you have used the rolling upgrade method to upgrade Confluence.

If something goes wrong during a rolling upgrade, you may be able to roll back to the original version.

How you roll back depends on the upgrade stage you have reached, and also how you deploy Confluence. To check the current cluster status go to ⚙> **General Configuration**> **Rolling upgrades**.



Upgrade mode	Cluster status
✓	MIXED Your cluster now has nodes running different Confluence versions.

Screenshot: Cluster status in the Rolling upgrades screen

Cluster upgrade status	Action to take
READY TO UPGRADE	In the rolling upgrades screen, disable **Upgrade mode**.
MIXED READY TO RUN UPGRADE TASKS	Follow the steps below to roll back the application version on each upgraded node: - Rollback steps - manual and Azure deployments - Rollback steps - AWS deployments - Rollback steps - Kubernetes deployments Once all nodes are running the original version, the cluster status will change to Ready to upgrade.
RUNNING UPGRADE TASKS UPGRADE TASKS FAILED	You can't roll back once final cluster-wide upgrade tasks have started running. If you stop Confluence on the node running the upgrade task, another node will pick up where the stopped node left off. If upgrade tasks fail, you will need to investigate the problem, then re-run upgrade tasks from the rolling upgrades screen.
COMPLETE	You can't roll back to an earlier version, because the upgrade was finalized successfully.

Roll back a rolling upgrade - manual and Azure deployments

These instructions assume your original install directory is still available. If it's not, you may need to restore it from your backup. You don't need to restore the local home directory.

To roll back an upgraded node to its original version:

1. Access the node through a command line or SSH.
2. Shut down Confluence gracefully on the node.
3. Wait for the node to go offline. You can monitor its status on the **Node status** column of the Rolling upgrade pages Cluster overview section.
4. If you run Confluence as a service:

  - On Windows,delete the new service then re-install the old serviceby running<old-install-directory>/bin/service.bat.
  - On Linux, update the service to point to the old installation directory (or use symbolic links to do this).
5. Start Confluence (from the original install directory) on the node. You should not see the setup wizard.

Once all nodes are running the same version, the clusters status will revert back to Ready to upgrade. You can then turn off Upgrade mode.

Roll back a rolling upgrade - AWS deployments

To roll back the upgraded nodes to the original version:

In the AWS console, go toServices > CloudFormation. Select your deployments stack to view its Stack Details.

1. In the **Stack Details** screen, select**Update Stack**.
2. From the**Select Template**screen, select**Use current template**and select**Next**.
3. Set the**Version**parameter to your original version.
4. Select**Next**. Click through the next pages, and then to apply the change using the**Update**button.

Afterwards, terminate all nodes running the new version of Confluence. AWS will replace each with a node running the original version.Once all nodes are running the same version, the clusters status will revert back to Ready to upgrade. This will also allow you to disable Upgrade mode.

Upgrade task troubleshooting

On this page:

When introducing a new feature, or making a significant change to your application, we sometimes need to transform existing data in your database or index, or change the way some data is stored.

Here's a simple example. If we stored "Sydney Australia" in a `location` column in the database, but later decide to store city and country information separately, we might use an upgrade task to take the existing data in the `location` column, and split it into a `city` and `country` column, containing "Sydney" and "Australia" respectively. Actual upgrade tasks are rarely this simplistic, but you get the idea.

We don't include changes that require upgrade tasks in bug fix releases, but they can be quite common in feature and platform releases. You can tell if a version has an upgrade task if the build number is different to your current version.

When are upgrade tasks run?

This depends on the type of upgrade task, and whether you are upgrading with or without downtime.

Rolling upgrade without downtime

If you're performing a rolling upgrade:

- node-specific upgrade tasks happen just prior to the application starting up on that node.
- cluster-wide upgrade tasks happen when all nodes are running the new version, and you select Run upgrade tasks and finalize upgrade in the rolling upgrades screen.

During a rolling upgrade, there's a short time where data might exist in both old and new formats.Cluster-wide upgrade tasks include tasks that transform data in the database, and may also include changes to the shared home and local home directories on each node. These tasks require all nodes to have been upgraded before they can be run.

Using the example above, a node that has not yet been upgraded would continue to write to the `location` column, while an upgraded node would write to the new `city` and `country` columns, as well as the old `location` column (to prevent data loss if you need to roll back). Once all nodes are upgraded, it's safe for us to split the existing data in the `location` field into the new `city` and `country` fields. This is often the part of the upgrade task that can take some time, depending on how much data you have.

Upgrade with downtime

When upgrading a non-clustered deployment, upgrade tasks are usually run just prior to the application starting up after the upgrade.

When upgrading a cluster with downtime (not a rolling upgrade), cluster-wide upgrade tasks are run when the first node starts up.

Troubleshooting failed upgrade tasks

If an upgrade task fails, there are a number of things you'll need to do to resolve the issue.

Check the application logs

The first step is to check the application logs. If you're running Confluence in a cluster, you may need to check the logs on more than one node.

Sometimes the cause will be obvious, such as a network timeout, not enough disk space in the local or shared home directory, or the database user / confluence user has inadequate permissions to complete the action.

Check your database configuration

The most common reason upgrade tasks fail include:

- database user does not have adequate permissions to perform the required action
- database configuration is incorrect (for example the character set or encoding)
- database version or edition not supported.

This usually results in a database error being written to the application logs.Check for KB articles about the specific problem, and confirm your setup matches the database setup specified in our documentation.

Re-run upgrade tasks

Once you've resolved any issues, you'll need to re-run the upgrade tasks. How you do this depends on whether you are upgrading with or without downtime.

- If you're performing a rolling upgrade, re-start the application on any failed nodes, then select Re-run upgrade tasks and finalize upgrade.
- If you're upgrading with downtime, re-start the application. Upgrade tasks will run prior to the application starting up.

Don't leave your application in upgrade mode

If you're performing a rolling upgrade, it's important you don't leave your cluster in an upgrade mode longer than is necessary. This is because there may be data that needs to be handled in multiple ways until the final upgrade tasks can be run.

Known issues

- Some non-enterprise editions of Microsoft SQL Server don't support online index creation. If an upgrade task needs to acquire an exclusive table lock, you may experience some performance degradation or downtime. We'll warn you if we detect that you database edition may be affected.

Supported Platforms

This page describes the additional software and infrastructure you'll need to run Confluence. Please review this info before installing Confluence. The information on this page applies to**Confluence Server and Data Center 7.15**.

- You should only use Confluence with a supported platform. Any platforms and versions not listed on this page are unsupported, which means we don't test, fix bugs or provide assistance.
- SeeEnd of Support Announcements for Confluencefor upcoming changes to supported platforms.
- Go to⚙> **General Configuration** > **Troubleshooting and support tools** to check your instance health. It looks at things like your license validity, Tomcat version, basic database setup and more.

On this page:

- Browsers
- Operating systems
- Databases
- Java
- Infrastructure

Related pages:

- Confluence Installation Guide
- Confluence Setup Guide
- Server Hardware Requirements Guide
- Supported Platforms FAQ

Definitions:

✓Supported - you can use**Confluence Server and Data Center 7.15**with this platform.

ℹLimited - you can evaluate Confluence on this platform, but you can't use it to run a production Confluence site.

⚠Deprecated - support for this platform will end in an upcoming release. SeeEnd of Support Announcements for Confluence.

Browsers

Desktop browsers

✓Microsoft Edge (Chromium)

✓ Chrome

✓ Firefox

✓ Safari (Mac only)

Mobile browsers

✓ Chrome

✓ Firefox

✓ Safari (iOS only)

✓ Android WebView

Mobile operating system (required for mobile app)

✓iOS 11 or later

✓Android 4.4 (KitKat) or later

Good to know:

- The Confluence setup wizard requires Javascript to be enabled while installing Confluence.Learn more
- Parts of Confluence won't display correctly if your browser window size is less than1024x768.
- Although some supported browsers may allow you to enable Adobe Flash in their advanced settings, we recommend leaving Flash disabled, as enabling it may expose you to security vulnerabilities.

Operating systems

Operating systems

✓Microsoft Windows

✓Linux (most distributions)

Known issues:

- The following operating system variants can't be used with Confluence:
    - Windows Nano

ⓘMacOS / OSX (evaluation only)

    - Alpine Linux (3.5 and earlier)

Good to know:

- You can run Confluence on 32bit or 64bit operating systems, but we only provide installers for 64bit operating systems.
- You can evaluate Confluence on MacOS / OSX, but you can't install and run your production Confluence site on a Mac.

Databases

PostgreSQL

✓PostgreSQL 10

✓PostgreSQL 11

Amazon Aurora (Data Center only)

✓PostgreSQL 10

✓PostgreSQL 11

Azure PostgreSQL (Data Center only)

✓PostgreSQL 10

✓PostgreSQL 11

MySQL

✓MySQL 5.7

✓MySQL 8

Oracle

✓Oracle 12c Release 2

✓Oracle 19c

Microsoft SQL Server

⚠SQL Server 2016

✓SQL Server 2017

✓Azure SQL

Embedded database

ⓘH2 (Data Center testing installations only)

Known issues:

- Confluence will not work on MySQL variants such as:
    - MariaDB - see CONFSERVER-29060
    - Percona Server - see CONFSERVER-36471
- Confluence can become unresponsive with Oracle's Native Network Encryption - seeCONFSERVER-60152for mitigation options.
- Confluence requires Service Pack 1 or later for Microsoft SQL Server 2016 - seeCONFSERVER-61145.

Good to know:

- The embedded H2 database isonlysupported fortesting and app development purposesonnon-clustered (single node)Confluence Data Center installations.
- You can use Amazon's Relational Database Service (RDS) for the supported databases listed on this page.
- The only supported Amazon Aurora config is a PostgreSQL-compatible clustered database with one writer replicating to zero or more readers.Learn more

Java

Oracle JRE / JDK

✓Java 1.8

✓Java 11

AdoptOpenJDK

Known issues:

- There's a known issue with some Java 11 versions and TLS 1.3. We recommend Java 11.0.8 or later.
- Some Oracle Java versions have bugs that impact Confluence. You can't run Confluence on Java 1.8.0_25 and 1.8.0_31 (seeJDK-8059299)or Java 1.8.0_45 (seeJDK-8068400).

✓Java 8 (HotSpot) ✓Java 11 (HotSpot)	• Some AdoptOpenJDK versions have bugs that impact Confluence. We recommend version**jdk8u202** (seeCONFSERVER-58784). • You can't run Confluence on the OPENJ9 JVM from AdoptOpenJDK. Use the HotSpot JVM. • We use**AdoptOpenJDK**to replicate issues raised with OpenJDK. If youre using a different distribution of OpenJDK well still provide support for our products. However, if the bug is caused by a problem in Java distribution, you'll need to contact the Java distributor for help. **Good to know:** • You don't need to install Java if you plan to use the installer to install Confluence, as a Java 11 JRE is bundled with Confluence (provided by AdoptOpenJDK). • SeeBundled Tomcat and Java versions to see which Java version was bundled with your Confluence version.

Infrastructure

Hardware:

- You can't run Confluence on SPARC based hardware. You'll need to use x86 hardware or 64bit derivatives of x86 hardware.
- You can't use an NFS mount for your installation or home directory due to Lucene requirements. If you're installing Confluence Data Center, an NFS mount is fine for the shared home directory, but not for the local home directories.

Virtualization:

- You can run Confluence and Confluence Data Center in a virtualized environment (including Docker), but our support team can't assist you with problems related to the environment itself. SeeRunning Confluence in a Virtualized Environment
- Our support team can assist you with deploying Confluence Data Center in AWS using the Cloud Formation Template or Quick Start. We won't be able to assist you if you have significantly customised the Cloud Formation Template.

Application server:

- We only support the Tomcat version that is bundled with your Confluence version. You can't run Confluence in your own application server. SeeBundled Tomcat and Java versions to see which version of Tomcat was bundled with your Confluence version.

Internet protocols:

- You can run Confluence in both IPv4 and IPv6 environments.
- Raw IPv6 addresses are not always recognized. See the Confluence 6.9 Upgrade Notesfor limitations and known issues.

Operating system support:

- You should only install and use Confluence on operating system versions that have active vendor support. For example, you can use Confluence on any Microsoft supported version of Windows, unless specified otherwise above.

For more information see our Server Hardware Requirements Guide and System Requirements.

End of Support Announcements for Confluence

This page is where we announce end of support for various platforms, browsers, and information on features that will be discontinued in Confluence Server.

The table below summarizes the end of support announcements for **upcoming**Confluence releases. If a platform (or version) has already reached its end of support date, it is **not** listed in the table.

Platform	Confluence end of support
Microsoft SQL Server 2016	No support in Confluence 7.17(announcement)
PostgreSQL 9.6	No support in Confluence 7.14 (announcement)
Microsoft Edge 18	No support in Confluence 7.13 (announcement)
SQL Server 2014 PostgreSQL 9.5	No support in Confluence 7.5 (announcement)
Internet Explorer 11	No support in Confluence 7.5 (announcement)
View File macros	These macros are now fully supported (updated announcement)

Most recent announcements first:

- Deprecated database for Confluence (16 November 2021)
- Deprecated database for Confluence (13 April 2021)
- Deprecated browsers for Confluence (2 February 2021)
- Deprecated databases for Confluence (11 December 2019)
- Deprecated database for Confluence (11 December 2019)
- Deprecated databases for Confluence (14 October 2019)
- Deprecated browsers for Confluence (24 September 2019)
- Deprecated macros for Confluence (12 March 2019)
- Deprecated Gadgets in Confluence (12 March 2019)
- Changes to features in Confluence (12 March 2019)
- Deprecated databases for Confluence (2 October 2018)
- Deprecated databases for Confluence (30 January 2017)
- Deprecated macro for Confluence (31 October 2017)
- Deprecated driver for Microsoft SQL Server
- Deprecated operating system for Confluence (15 May 2017)
- Deprecated mobile browser for Confluence (3 November 2016)
- Changes to Confluence distributions (8 June 2016)
- Deprecated browsers for Confluence (8 June 2016)
- Deprecated databases for Confluence (8 June 2016)
- Deprecated macros for Confluence (13 November 2015)
- Discontinued features for Confluence (10 July 2015)
- Deprecated databases for Confluence (19 May 2015)
- DeprecatedTomcatplatform for Confluence (1 May 2015)
- Deprecated Web Browsers for Confluence (20 April 2015)
- Deprecated Java platform for Confluence (27 January 2015)
- Deprecated distribution for Confluence (2 September 2014)
- Deprecated databases for Confluence (12 June 2014)
- DeprecatedTomcatplatform for Confluence (22 April 2014)
- Deprecated Databases for Confluence (2 December 2013)
- Deprecated Web Browsers for Confluence (24 September 2013)
- Deprecated Databases for Confluence (13 August 2013)
- Deprecated Tomcat platform for Confluence (29 August 2012)
- Deprecated Java platform for Confluence (6 August 2012)
- Deprecated Databases for Confluence (1 May 2012)
- Deprecated Databases for Confluence (13 March 2012)
- Deprecated Operating Systems for Confluence (21 July 2011)
- Deprecated Databases for Confluence (7 January 2011)
- Deprecated Web Browsers for Confluence (7 January 2011)

- Deprecated Databases for Confluence (12 October 2010)
- Deprecated Web Browsers for Confluence (12 October 2010)
- Deprecated Databases for Confluence (6 July 2010)
- Deprecated Web Browsers for Confluence (6 July 2010)
- Deprecated Databases for Confluence (24 March 2010)
- Deprecated Application Servers for Confluence (27 January 2010)
- Deprecated Java Platforms for Confluence (27 January 2010)
- Deprecated Web Browsers for Confluence (14 December 2009)

Deprecated database for Confluence (16 November 2021)

Atlassian will not support the following database in Confluence 7.17:

- Microsoft SQL Server 2016

End of support means that Atlassian will not offer support for, or fix bugs related to, running Confluence 7.17 or later with this database.

- Confluence 7.16 is the last version that will support Microsoft SQL Server 2016.
- Confluence 7.16 and earlier versions will continue to work with Microsoft SQL Server 2016, however we will not fix bugs affecting this database after theend-of-life datefor your version of Confluence.
- Confluence 7.17 and later will not be tested with Microsoft SQL Server 2016.

Check out theSupported Platformspage for the full list of supported databases.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated database for Confluence (13 April 2021)

Atlassian will not support the following database in Confluence 7.14:

- PostgreSQL 9.6

End of support means that Atlassian will not offer support for, or fix bugs related to, running Confluence 7.14 or later with this database.

- Confluence 7.13 is the last version that will supportPostgreSQL 9.6.
- Confluence 7.13 and earlier versions will continue to work with PostgreSQL 9.6, however we will not fix bugs affecting this database after theend-of-life datefor your version of Confluence.
- Confluence 7.14 and later will not be tested with PostgreSQL 9.6.

Check out theSupported Platformspage for the full list of supported databases.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated browsers for Confluence (2 February 2021)

In January 2020 Microsoft released a new Microsoft Edge browser based on Chromium. This new version is compatible with all supported Windows versions, and replaces the previous version, now known as Microsoft Edge Legacy. Read more about the difference between the new Microsoft Edge and Microsoft Edge Legacy on the Microsoft support site.

As Microsoft have announced plans to end support for Microsoft Edge Legacy, we have also decided to end support for Microsoft Edge Legacy.

End of support means we will not fix bugs specific to Microsoft Edge Legacy, and will begin to introduce features that aren't compatible with this browser.

When is this happening?

- Confluence 7.12 is the last version to support Microsoft Edge Legacy.
- Confluence 7.13 and subsequent versions will not support Microsoft Edge Legacy.

What this means for you

We recommend switching to one of oursupported browsers, such as the new Microsoft Edge (Chromium), Google Chrome, or Mozilla Firefox.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated databases for Confluence (11 December 2019)

Atlassian will not support the following databases in Confluence 7.5:

- Microsoft SQL Server 2014
- PostgreSQL 9.5

End of support means thatAtlassian will not offer support for, or fix bugs related to, running Confluence 7.5 or later with this database.

- Confluence 7.4 is the last version that will support these databases.
- Confluence 7.4 and earlier versions will continue to work withthese databases, however we will not fix bugs affecting these databases after theend-of-life datefor your version of Confluence.
- Confluence 7.5 and later will not be tested withthese databases.

Check out theSupported Platformspage for the full list of supported databases.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated database for Confluence (11 December 2019)

Atlassian will not support the following database in Confluence 7.4:

- Microsoft SQL Server 2012

End of support means thatAtlassian will not offer support for, or fix bugs related to, running Confluence 7.4 or later with this database.

- Confluence 7.3 is the last version that will support Microsoft SQL Server 2012.
- Confluence 7.3 and earlier versions will continue to work with Microsoft SQL Server 2012, however we will not fix bugs affecting this database after theend-of-life datefor your version of Confluence.
- Confluence 7.4 and later will not be tested with Microsoft SQL Server 2012.

Check out theSupported Platformspage for the full list of supported databases.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated databases for Confluence (14 October 2019)

Atlassian will not support the following databases in Confluence 7.4:

- PostgreSQL 9.4
- MySQL 5.6
- Oracle 12c R1

End of support means thatAtlassian will not offer support for, or fix bugs related to, running Confluence 7.4 or later with these databases.

- Confluence 7.3 is the last version that will support these databases.
- Confluence 7.3 and earlier versions will continue to work with these databases, however we will not fix bugs affecting these databases after theend-of-life datefor your version of Confluence.
- Confluence 7.4 and later will not be tested with these databases.

Check out theSupported Platformspage for the full list of supported databases.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated browsers for Confluence (24 September 2019)

In 2015 Microsoft released Edge as the browser to supersede Internet Explorer, and in recent times Microsoft has discouraged the use of Internet Explorer as a default browser. To allow us to continue to take advantage of modern web standards to deliver improved functionality and the best possible user experience across all of our products, we have decided to end support for Internet Explorer 11.

End of support means we will not fix bugs specific to Internet Explorer 11, and will begin to introduce features that aren't compatible with this browser.

When is this happening?

- Confluence 7.4 is the last version to support Internet Explorer. Confluence 7.4 will be anEnterprise release.
- Confluence 7.5 and subsequent versions will not support Internet Explorer 11.

What this means for you

We recommend switching to one of our supported browsers, such as Microsoft Edge, Google Chrome, or Mozilla Firefox.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated macros for Confluence (12 March 2019)

We will end support for the following macros in Confluence 7.0, and hide them from the macro browser.Any existing instances of these macros will still work, but you won't be able to insert these macros into the editor using the macro browser:

- IM Presence macro
- Netwok macro
- Search results macro
- Space details macro

End of support means Atlassian will not fix bugs related to these macros in Confluence 7.0 or later versions. We will remove these macro entirely in a future Confluence release, and will provide more information at that time.

To check whether a macro is used in your site, go to ⚙ >**General Configuration** >**Macro Usage**. Some macros will be listed under the system app that provides them.

IM Presence macro

TheIM Presence Macroshows when a given user is online in a selected chat service. The macro only supports a small number of chat services, and we feel that most modern chat tools provide better ways to see this information.

If you have questions or concerns, please comment on this issue ~~CONFSERVER-57596~~ CLOSED .

Network macro

TheNetwork Macroallows you display the people a particular user is following, or people who are following that user. Following someone is a useful way to get notifications about their activity, and this network information is also available on each user's profile page.

If you have questions or concerns, please comment on this issue ~~CONFSERVER-57597~~ CLOSED .

Search results macro

TheSearch Results Macroallows you to display the results of a keyword search on a page. We are making some great changes to Search over the next few releases, and have observed that this macro is rarely used.

If you have questions or concerns, please comment on this issue ~~CONFSERVER-57598~~ CLOSED .

Space details macro

TheSpace Details Macroallows you to display basic information about the current space on a page. This information is available at all times from Space Tools > Overview.

If you have questions or concerns, please comment on this issue ~~CONFSERVER-57599~~ CLOSED .

Deprecated Gadgets in Confluence (12 March 2019)

We will end support for the following Gadgets in Confluence 7.0,and hide them from the macro browser.Any existing instances of these gadgets will still work, but you won't be able to insert these gadgets into the editor using the macro browser:

- Activity Stream
- Confluence Page Gadget
- Confluence Quick Nav Gadget
- News gadget

End of support means Atlassian will not fix bugs related to these gadgets in Confluence 7.0 or later versions. We will remove these gadgets entirely in a future Confluence release, and will provide more information at that time.

Gadgetswere designed to allow you to display information dynamically from sources like iGoogle or Jira, for example, in Confluence. The first gadgets were introduced in Confluence 3.1, and much of the technology they were based on is now superseded or obsolete. Since then we have also implemented a number of better ways to display dynamic information using macros and other integration points.

Activity Stream gadget

The Activity stream gadget shows a list of recently changed content in your site. We recommend using the Recently Updated macro as an alternative in Confluence.

Confluence Page Gadget

This gadget displays the contents of a Confluence page. We recommend using the Include Page macro as an alternative in Confluence.

Confluence Quick Nav Gadget

This gadget provides a search field that can be used to search for page titles in Confluence. We recommend using the Livesearch macro as an alternative in Confluence.

News gadget

This gadget previously displayed blogs and other news from Atlassian. It has not been displaying content for some time. We will remove this gadget completley in 7.0.

If you have questions or concerns, please comment on this issue ~~CONFSERVER-57614~~ CLOSED .

Changes to features in Confluence (12 March 2019)

Shortcut links

Shortcut Linkswere introduced in Confluence 2.3 and provided a quick way to add links to websites in wiki markup. Shortcut links can only be configured by an administrator, are not easily discoverable, and seldom used by end users.

✓ Thanks for your feedback on CONFSERVER-57610 NOT BEING CONSIDERED

We've heard you, and will not end support for Shortcut links in Confluence 7.0.

Trackback and external referrers

We will remove the trackback and referrers features completley in Confluence 7.0.

Trackbackenables Confluence to send and receive trackback pings when pages are linked to.External Referrers appear on the**Page Information**view of a page, and list clicks from external websites to the page. Trackback is no longer widely used in modern websites, and because it relies on accepting unauthenticated requests to a particular URL, is a spam vector.

If you have questions or concerns, please comment on this issue ~~CONFSERVER-57611~~ CLOSED .

Orphaned pages screen

We will remove the Orphaned pages screen in the default theme in Confluence 7.0.

The Orphaned pages screen provided a list of all pages that Confluence considersorphaned pages(not a child of a space homepage, and not linked to by any other page). Since the introduction of the Confluence 5 default theme, the orphaned pages screen has been less useful because it's always possible to see all pages in a space via**Space Tools**>**Reorder pages**.

If you have questions or concerns, please comment on this issue ~~CONFSERVER-57601~~ CLOSED .

Hipchat integration

We have discontinued development on all chat products. Hipchat Cloud services were shut down in February 2019, and Hipchat Data Center and Server will both reach end of life within the next year.

We will end support for all bundled Hipchat plugins in Confluence 7.0. These will be disabled by default for new installations. This will have no impact on existing installations, and can be easily enabled if required.

End of support means that Atlassian will not fix bugs related to Hipchat integration in Confluence 7.0 or later versions.

If you have questions or concerns, please comment on this issue ~~CONFSERVER-57602~~ CLOSED .

Deprecated databases for Confluence (2 October 2018)

Atlassian will end support for**PostgreSQL 9.3**in Confluence 6.13.End of support means thatAtlassian will not offer support for, or fix bugs related to, running Confluence 6.13 or later with this database.

- Confluence 6.12 is the last version that will support PostgreSQL 9.3.
- Confluence 6.12 and earlier versions will continue to work with PostgreSQL 9.3, however we will not fix bugs affecting these databases after the end-of-life datefor your version of Confluence.
- Confluence 6.13 and later will not be tested with PostgreSQL 9.3.

Check out theSupported Platformspage for the full list of supported databases.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated databases for Confluence (30 January 2017)

Atlassian will end support for **PostgreSQL 9.2** in Confluence 6.8.End of support means thatAtlassian will not offer support for, or fix bugs related to, running Confluence 6.8 or later with this database.

- Confluence 6.7 is the last version that will support PostgreSQL 9.2.
- Confluence 6.7 and earlier versions will continue to work with PostgreSQL 9.2, however we will not fix bugs affecting these databases after the end-of-life datefor your version of Confluence.
- Confluence 6.8 and later will not be tested with PostgreSQL 9.2.

Check out theSupported Platformspage for the full list of supported databases.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated macro for Confluence (31 October 2017)

We will end support for the **JUnit Report macro** with the release of Confluence 6.6. This macro is used to display the results of JUnit tests on a Confluence page and, based on our research, is rarely used.

End of support means that Atlassian will not fix bugs related to this macro past the support end date for your version of Confluence. We will remove this macro entirely in a future Confluence release, and will provide more information at that time.

To check whether this macro is used in your site, go to⚙> **General Configuration**> **Macro Usage**. The JUnit Report macro will be listed under **Advanced Macros** if it's used.

If you have questions or concerns, please comment on this issue ~~CONFSERVER-53942~~ - Plans to remove JUnit macro CLOSED .

Deprecated driver for Microsoft SQL Server

We are replacing the open source jTDS driver for SQL Server with the official Microsoft JDBC Driver for SQL Server. This new driver is bundled with Confluence 6.4 and later.

Atlassian will end support for the jTDS driver in Confluence 6.6. End of support means that Atlassian will not offer support for, or fix bugs related to, installing and running Confluence 6.6 or later with this driver.

- Confluence 6.5.x will be the last major release to bundle the jTDS driver.
- Confluence 6.5.x and earlier versions will continue to be supported with the jTDS driver, until their support end date.

- Confluence 6.6.x will not bundle or support the jTDS driver. We'll provide plenty of information on how to migrate to the new driver at that time.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated operating system for Confluence (15 May 2017)

Atlassian will end support for the Oracle Solaris operating systemin Confluence 6.3.End of support means thatAtlassian will not offer support for, or fix bugs related to, installing and running Confluence 6.3 or later on this operating system.

- Confluence 6.2.x will be the last major release that can be installed on Solaris.
- Confluence 6.2.x and earlier versions will continue to be supported on Solaris, until their support end date.

Check out theSupported Platformspage for the full list of supported operating systems.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated mobile browser for Confluence (3 November 2016)

Atlassian will end support for the default browser provided with Android4.0.3 (Ice Cream Sandwich)in Confluence 6.0.End of support means thatAtlassian will not fix bugs related to this browser past the support end date,except for security related issues. This means:

- Confluence 5.10 will be the last major release that supportsthe default browser provided with Android4.0.3 (Ice Cream Sandwich).
- Confluence 5.10.x and earlier versions will continue to work onthe default browser provided with Android4.0.3 (Ice Cream Sandwich).

With the release of Confluence 6.0 we have added support for the default browser provided with current Android versions from 4.4 (KitKat) and later. Check out theSupported Platformspage for the full list of supported browsers.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Changes to Confluence distributions (8 June 2016)

To help us bring you new Confluence Server releases faster, we are considering only providing 64-bit installers. Confluence 5.10 would be the last Confluence release to provide a 32-bit installer.

Q: Can I upgrade using the 64-bit installer?

Yes. If you installed Confluence using the 32-bit installer on a 64-bit operating system, you will be able to upgrade using the 64-bit installer.

Q: What if I am not able to use the 64-bit installer?

We'd love to hear from you to better understand how this change would impact you. Comment on this issue ~~CONFSERVER-42817~~ - Planned deprecation of 32-bit installers CLOSED or contact us directly at`eol-announcement at atlassian dot com`.

Deprecated browsers for Confluence (8 June 2016)

Atlassian will end support for Internet Explorer 10 in Confluence 6.0.End of support means thatAtlassian will not fix bugs related to Internet Explorer 10 past the support end date,except for security related issues.

This changeallows us to use more modern browser technologies to give you the best user experience in Confluence.Check out theSupported Platformspage for the full list of supported browsers.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Internet Explorer 10 (IE10) end of support notes

- Confluence 5.10 will be the last major release that supportsInternet Explorer 10.
- Confluence 5.10.x and earlier versions will continue to work onInternet Explorer 10.
- No Confluence releases after 5.10.x will be tested with Internet Explorer 10.

Deprecated databases for Confluence (8 June 2016)

This section announces the end of Atlassian support for certain databases for Confluence. End of support means that Atlassian will not fix bugs related to the specified database past the support end date for your version of Confluence.

The details are below. Please refer to the list ofsupported platformsfor details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email`eol-announcement at atlassian dot com`.

End of life announcement for database support

Database	Support End Date
MySQL 5.5	After Confluence 5.10.x

Notes:

- Confluence 5.10 is the last version that will support MySQL 5.5.
- Confluence 5.10 and previously-released versions will continue to work with the database version listed above, however we will not fix bugs affecting these databases after the end-of-life datefor your version of Confluence.
- No Confluence releases after 5.10.x will be tested with the database listed above.

Deprecated macros for Confluence (13 November 2015)

✓ **Update 22 January 2019**
We know from your feedback that the existing View File macros provide important functionality that the newer file upload and preview experience does not. For this reason, we've decided to **reverse the decision to stop supporting these macros**.

This means from Confluence 6.14, we will fix bugs relating to these macros, and will not remove the macros from Confluence.

With the release of Confluence **5.9** we will be ending support for the following macros, known collectively as the 'View File' macros:

- Office Excel
- Office Word
- Office PowerPoint
- PDF

End of support means that Atlassian will not fix bugs related to these macros past the support end date for your version of Confluence. We plan to remove these macros in a future Confluence release, and will provide plenty of information to help you make the transition when the time comes.

The View File macros will still be available in future Confluence releases (including Confluence 5.9, 5.10 and later), but we recommend inserting Office and PDF files as a thumbnail or link, and using the preview to view the file in full, as it provides a much better way to display Office and PDF files on your pages. See Display Files and Images for more info.

If you have any questions or concerns, please comment on this issue ~~CONFSERVER-39829~~ - Plans to remove the view file macros CLOSED

Discontinued features for Confluence (10 July 2015)

Status updates

As part of our work to make Confluence simpler and easier to use we've decided to remove the Status Updates feature in**Confluence 5.9**. This includes the ability to:

- update your status
- see other people's status via their profile or the User Status List macro.

Our research tells us that this feature isn't widely used, and we believe thatHipChatgives your team much better ways to share their status.

We'll provide more information at the time of the Confluence 5.9 release. If you have questions or concerns, please comment on this issue ~~CONFSERVER-38253~~ - Plans to remove status updates CLOSED .

Documentation theme

In order to better focus our development efforts on a single theme, we plan to remove the Documentation theme in**Confluence 6.0**.

We know that many customers use the Documentation theme because they like to have a page tree in their space sidebar. This has been available in the default theme for some time now, plus other great features like sidebar shortcuts, JIRA links, and sticky table headers.

To help you switch to the more modern default theme, we've added some of your favorite documentation theme features, including the ability to add:

- a header and footer
- custom content to the sidebar.

These new additions to the default theme are available in Confluence 5.9. As these fields will continue to use wiki markup, you will be able to drop your existing wiki markup straight from the Documentation theme into the default theme.

To help you switch themes we've put together a FAQ and step-by-step guidewhich covers everything from how to turn on the default theme, find out which spaces are using the theme, and what to do if the Documentation theme is the global theme for your whole site.

If you have any questions or concerns please comment on this issue ~~CONFSERVER-38256~~ - Plans to remove the documentation theme CLOSED .

Deprecated databases for Confluence (19 May 2015)

This section announces the end of Atlassian support for certain databases for Confluence. End of support means that Atlassian will not fix bugs related to the specified database past the support end date for your version of Confluence.

The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Database Support

Database	Support End Date
Microsoft SQL 2008	After Confluence 5.8.x
Oracle 11.1	
Oracle 11.2	

Notes:

- Confluence 5.8 is the last version that will support the database versions listed above.
- Confluence 5.8 and previously-released versions will continue to work with the database versions listed above, however we will not fix bugs affecting these databases after the end-of-life date for your version of Confluence.
- No Confluence releases after 5.8.x will be tested with the databases listed above.

DeprecatedTomcatplatform for Confluence (1 May 2015)

This section announces the end of Atlassian support for Tomcat 7.0.x for Confluence. Aspreviously announced, we now only support the version of Tomcat that is bundled with your version of Confluence.

End of support means that Atlassian will not fix bugs related to the specified version of Tomcat, past the support end date for your version of Confluence.If you have questions or concerns regarding this announcement, please email`eol-announcement at atlassian dot com`.

End of Life Announcement for Tomcat 7.0.x Support

Platform	Support End Date
Tomcat 7.0.x	When Confluence 5.8 is released

Tomcat 7.0.x notes:

- Confluence 5.7 is the last major version that will support Tomcat 7.0.x. The Confluence 5.7.x bug-fix releases will also continue to support Tomcat 7.0.x.
- Confluence 5.7.x and previously-released versions will continue to work with Tomcat 7.0.x. However, we will not fix bugs affectingTomcat 7.0.x after the end-of-life date for your version of Confluence.
- Confluence 5.8 will not be tested with Tomcat 7.0.x.

Deprecated Web Browsers for Confluence (20 April 2015)

Atlassian will end support for Internet Explorer 9 in the next major release after Confluence 5.8.x.End of support means thatAtlassian will not fix bugs related to Internet Explorer 9 past the support end date,except for security related issues.

This change allows us to use more modern browser technologies to give you the best user experience in Confluence. Check out theSupported Platformspage for the full list of supported browsers.

If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Internet Explorer 9 (IE9) End of Support Notes

- Confluence 5.8 will be the last major release that supportsInternet Explorer 9
- Confluence 5.8.x and earlier versions will continue to work onInternet Explorer 9
- No Confluence releases after 5.8.x will be tested with Internet Explorer 9

Deprecated Java platform for Confluence (27 January 2015)

This section announces the end of Atlassian support for Java 7 for Confluence. Please note that Oracle is planning to stop providing public updates for JRE 7 inApril 2015.

End of support means that Atlassian will not fix bugs related to the specified version of Java, past the support end date for your version of Confluence. The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Java 7 Support

Platform	Support End Date
Java 7 (JRE and JDK 1.7)	When Confluence 5.8 is released

Java 7 notes:

- Confluence 5.7 is the last major version that will support Java 7. The Confluence 5.7.x bug-fix releases will also continue to support Java 7.
- Java 7 (JRE and JDK 1.7) will still be supported in Confluence 5.7.
- Confluence 5.7.x and previously-released versions will continue to work with Java 7, but we will not fix bugs affecting Java 7 after the end-of-life date for your version of Confluence.
- Confluence 5.8 will not be tested with Java 7.

Deprecated distribution for Confluence (2 September 2014)

To help us to make Confluence a more robust and scalable application, we have decided to stop providing an EAR/WAR distribution. This means that the only supported application server will be will be the version of Tomcat that is bundled with each release.

Confluence 5.6 will be the last Confluence release to provide an EAR/WAR edition.

Q: Do I need to use the installer?
No,the removal of the EAR/WAR distribution does not force you to use the installer. You can still use the standalone distribution, which doesn't have an install script - it's just a copy of Tomcat with Confluence configured inside it. Essentially it's a directory that you unpack and then run yourself.

Q: What if a security problem is found in the bundled version of Tomcat?
Our security team monitors vulnerabilities in all our dependencies, including Tomcat, and fixes continue to follow ourSecurity Bugfix Policy. If at any time you become aware of a vulnerability we've missed, please report it as described inHow to report a security issue.

If you have more questions or concerns regarding this announcement, please contact us at`eol-announcement at atlassian dot com`.

Deprecated databases for Confluence (12 June 2014)

This section announces the end of Atlassian support for certain databases for Confluence. End of support means that Atlassian will not fix bugs related to the specified database past the support end date for your version of Confluence.

The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Database Support

Database	Support End Date
PostgreSQL 8.4	With the release of Confluence 5.7
PostgreSQL 9.0	
PostgreSQL 9.1	
MySQL 5.1	

Notes:

- Confluence 5.6 is the last version that will support the database versions listed above.
- Confluence 5.6 and previously-released versions will continue to work with the database versions listed above, however we will not fix bugs affecting these databases after the end-of-life date for your version of Confluence.
- Confluence 5.7 has not been tested with the databases listed above.

DeprecatedTomcatplatform for Confluence (22 April 2014)

This section announces the end of Atlassian support for Tomcat 6.0.x for Confluence.

End of support means that Atlassian will not fix bugs related to the specified version of Tomcat, past the support end date for your version of Confluence. The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Tomcat 6.0.x Support

Platform	Support End Date
Tomcat 6.0.x	When Confluence 5.6 is released, due in mid 2014

Tomcat 6.0.x notes:

- Confluence 5.5 is the last major version that will support Tomcat 6.0.x. The Confluence 5.5.x bug-fix releases will also continue to support Tomcat 6.0.x.
- Confluence 5.5.x and previously-released versions will continue to work with Tomcat 6.0.x. However, we will not fix bugs affectingTomcat 6.0.x after the end-of-life date for your version of Confluence.
- Confluence 5.6 will not be tested with Tomcat 6.0.x.

Deprecated Databases for Confluence (2 December 2013)

This section announces the end of Atlassian support for certain databases for Confluence. End of support means that Atlassian will not fix bugs related to the specified database past the support end date for your version of Confluence.

The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Database Support

Database	Support End Date
PostgreSQL 8.3	When Confluence 5.5 is released, due in early 2014

PostgreSQL 8.3 notes:

- Confluence 5.4 is the last version that will support PostgreSQL 8.3.
- Confluence 5.4 and previously-released versions will continue to work with PostgreSQL 8.3. However, we will not fix bugs affecting PostgreSQL 8.3 after the end-of-life date for your version of Confluence.
- Confluence 5.5 will not be tested with PostgreSQL 8.3.

Deprecated Web Browsers for Confluence (24 September 2013)

To allow us to dedicate resources to providing the best experience on modern browsers, Confluence 5.5 will be the**last release that supports Internet Explorer 8 (IE8)**. The reasons behind this decision are to enable us to provide the best user experience to our customers, accelerate our pace of innovation and give us the ability to utilize modern browser technologies.

End of support means that Atlassian will not perform any maintenance on Confluence related to IE8 after the final release of Confluence 5.5.x, except for security related issues. In order to minimize the impact on you and the way your company uses Confluence, we have provided this announcement as early as possible, and hope that the subsequent 6 month period will give you adequate time to prepare for this change without disruption.

Atlassian will continue to supportInternet Explorer 9 (IE9) and Internet Explorer 10 (IE10) as well asthe latest versions of Chrome, Firefox and Safari. For further information,please refer to theSupported Platformspage. If you have questions or concerns regarding this announcement, please email eol-announcement at atlassian dot com.

Deprecated Databases for Confluence (13 August 2013)

This section announces the end of Atlassian support for certain databases for Confluence. End of support means that Atlassian will not fix bugs related to the specified database past the support end date for your version of Confluence.

The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Database Support

Database	Support End Date
MS SQL 2005	When Confluence 5.3 is released, due in late 2013

MS SQL 2005 notes:

- Confluence 5.2 is the last version that will support MS SQL 2005.
- Confluence 5.2 and previously-released versions will continue to work with MS SQL 2005. However, we will not fix bugs affecting MS SQL 2005 after the end-of-life date for your version of Confluence.
- Confluence 5.3 will not be tested with MS SQL 2005.

Deprecated Tomcat platform for Confluence (29 August 2012)

This section announces the end of Atlassian support for Tomcat 5.5.x for Confluence. Please note: Apache have announced that support for Apache Tomcat 5.5.x will end on 30 September 2012:End of life for Apache Tomcat 5.5.x.

End of support means that Atlassian will not fix bugs related to the specified version of Tomcat, past the support end date for your version of Confluence. The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Tomcat 5.5.x Support

Platform	Support End Date
Tomcat 5.5.x	When Confluence 5.0 is released, due in early 2013

Tomcat 5.5.x notes:

- Confluence 4.3 is the last major version that will support Tomcat 5.5.x. The Confluence 4.3.x bug-fix releases will also continue to support Tomcat 5.5.x.
- Tomcat 6.0.x will still be supported in Confluence 5.0.
- Confluence 4.3.x and previously-released versions will continue to work with Tomcat 5.5.x. However, we will not fix bugs affectingTomcat 5.5.x after the end-of-life date for your version of Confluence.
- Confluence 5.0 will not be tested with Tomcat 5.5.x.

Deprecated Java platform for Confluence (6 August 2012)

This section announces the end of Atlassian support for Java 6 for Confluence. Please note that Oracle has announced the end of public updates for Java 6: Java SE 6 End of Public Updates Notice.

End of support means that Atlassian will not fix bugs related to the specified version of Java, past the support end date for your version of Confluence. The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Java 6 Support

Platform	Support End Date
Java 6 (JRE and JDK 1.6)	When Confluence 5.0 is released, due in early 2013

Java 6 notes:

- Confluence 4.3 is the last major version that will support Java 6. The Confluence 4.3.x bug-fix releases will also continue to support Java 6.
- Java 7 (JRE and JDK 1.7) will still be supported in Confluence 5.0.
- Confluence 4.3.x and previously-released versions will continue to work with Java 6. However, we will not fix bugs affecting Java 6 after the end-of-life date for your version of Confluence.
- Confluence 5.0 will not be tested with Java 6.

Deprecated Databases for Confluence (1 May 2012)

This section announces the end of Atlassian support for certain databases for Confluence. End of support means that Atlassian will not fix bugs related to the specified database past the support end date for your version of Confluence.

The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Database Support

Database	Support End Date
PostgreSQL 8.2	When Confluence 4.3 is released, due in mid 2012

PostgreSQL 8.2 notes:

- Confluence 4.2 is the last version that will support version 8.2 of PostgreSQL.
- Versions 8.3, 8.4 and 9.0 will still be supported in Confluence 4.3.
- Confluence 4.2 and previously-released versions will continue to work with PostgreSQL 8.2. However, we will not fix bugs affecting PostgreSQL 8.2 after the end-of-life date for your version of Confluence.
- Confluence 4.3 will not be tested with PostgreSQL 8.2.

Deprecated Databases for Confluence (13 March 2012)

This section announces the end of Atlassian support for certain databases for Confluence. End of support means that Atlassian will not fix bugs related to the specified database past the support end date for your version of Confluence.

The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Database Support

Database	Support End Date
DB2	When Confluence 4.3 is released, due in mid 2012

DB2 notes:

- Confluence 4.2 is the last version that will support DB2.
- From Confluence 4.3, no versions of DB2 will be supported.
- Confluence 4.2 and previously-released versions will continue to work with DB2. However, we will not fix bugs affecting DB2 after the end-of-life date for your version of Confluence.
- Confluence 4.3 will not be tested with DB2.
- For help with moving from DB2 to a supported database, please refer to the list of supported databases and the guide to migrating to another database.

Deprecated Operating Systems for Confluence (21 July 2011)

This section announces the end of Atlassian support for certain operating systems for Confluence. End of support means that Atlassian will not fix bugs related to running Confluence server on that operating system past the support end date.

We will stop supporting the following operating systems from Confluence 4.0, due in late 2011:

- Mac OS X (as a Confluence server platform).

The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Operating System Support

Operating System	Support End Date
Mac OS X (as a Confluence server platform)	When Confluence 4.0 releases, due in late 2011

- **Mac OS X Notes:**
    - Atlassian intends to end support for Mac OS X (as a server platform) in Confluence 4.0 (due for release in late 2011). Confluence 3.5 is the last version that will support Mac OS X.
    - The Sun/Oracle JDK/JRE 1.6 is the only JDK platform officially supported by Atlassian. This means that Apple Mac OS X is not a supported operating system for the Confluence server, as the Sun/Oracle JDK does not run on Mac OS X.
    - Accessing Confluence as a user from Mac OS X via a compatible web browser will still be supported for the forseeable future.

Deprecated Databases for Confluence (7 January 2011)

This section announces the end of Atlassian support for certain database versions for Confluence. End of support means that Atlassian will not fix bugs related to certain database versions past the support end date.

We will **stop supporting the following database versions** from Confluence 4.0, due in late 2011:

- MySQL 5.0.

The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Database Support

Database	Support End Date
MySQL (version 5.0 only)	When Confluence 4.0 releases, due in late 2011

- **MySQL Notes:**
    - Atlassian intends to end support for MySQL 5.0 in Confluence 4.0 (due for release in the middle of 2011). Confluence 3.5 is the last version that will support MySQL 5.0.
    - MySQL 5.1 will still be supported.
    - 'Support End Date' means that Confluence 3.5 and previously released versions will continue to work with MySQL 5.0. However, we will not fix bugs affecting MySQL 5.0 past the support end date.
    - Confluence 4.0 will not be tested with MySQL 5.0.

Deprecated Web Browsers for Confluence (7 January 2011)

This section announces the end of Atlassian support for certain web browser versions for Confluence. End of support means that Atlassian will not fix bugs related to certain web browser versions past the support end date.

We will **stop supporting the following web browser versions** from Confluence 4.0, late middle of 2011:

- Microsoft Internet Explorer 7 (IE7).
- Safari 4.
- Firefox 3.5.

The details are below. Please refer to the list of supported platforms for details of platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Web Browser Support

Web Browser	Support End Date
Microsoft Internet Explorer (version 7 only)	When Confluence 4.0 releases, late the middle of 2011
Safari (version 4 only)	When Confluence 4.0 releases, due in late of 2011
Firefox (version 3.5 only)	When Confluence 4.0 releases, due in late of 2011

- **Internet Explorer Notes:**
  - Atlassian intends to end support for IE7 in Confluence 4.0 (due for release in the middle of 2011). Confluence 3.5 is the last version that will support IE7.
  - IE8 will still be supported.
  - 'Support End Date' means that Confluence 3.5 and previously released versions will continue to work with IE7. However, we will not fix bugs affecting IE7 past the support end date.
  - Confluence 4.0 will not be tested with IE7.

- **Safari Notes:**
  - Atlassian will introduce support for Safari 5 in Confluence 3.5.
  - We intend to end support for Safari 4 in Confluence 4.0 (due for release in the middle of 2011). Confluence 3.5 is the last version that will support Safari 4.
  - 'Support End Date' means that Confluence 3.5 and previously released versions will continue to work with Safari 4. However, we will not fix bugs affecting Safari 4 past the support end date.
  - Confluence 4.0 will not be tested with Safari 4.

- **Firefox Notes:**
  - Atlassian will end support for Firefox 3.0 in Confluence 3.5, as previously announced.
  - We intend to end support for Firefox 3.5 in Confluence 4.0 (due for release in the middle of 2011). Confluence 3.5 is the last version that will support Firefox 3.5.
  - Firefox 3.6 will still be supported.
  - 'Support End Date' means that Confluence 3.5 and previously released versions will continue to work with Firefox 3.5. However, we will not fix bugs affecting Firefox 3.5 past the support end date.
  - Confluence 4.0 will not be tested with Firefox 3.5.

Deprecated Databases for Confluence (12 October 2010)

This section announces the end of Atlassian support for certain database versions for Confluence. End of support means that Atlassian will not fix bugs related to certain database versions past the support end date.

We will **stop supporting the following database versions**:

- From Confluence 3.5, due in the first half of 2011, Confluence will no longer support PostgreSQL 8.1. *Note, PostgreSQL 8.2 and PostgreSQL 8.4 will still be supported.*

The details are below. Please refer to the Supported Platforms for more details regarding platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Database Support

Database	Support End Date
PostgreSQL (version 8.1 only)	When Confluence 3.5 releases, due in the first half of 2011

- **PostgreSQL (version 8.1 only) End of Support Notes:**

  - Atlassian intends to end support for PostgreSQL 8.1 in Confluence 3.5 (due to release in the first half of 2011), with the final support for these platforms in Confluence 3.4. PostgreSQL 8.2 and PostgreSQL 8.4 will still be supported.
  - 'Support End Date' means that Confluence 3.4 and previous released versions will continue to work with the PostgreSQL 8.1 However, we will not fix bugs affecting PostgreSQL 8.1 past the support end date.
  - Confluence 3.5 (due to release in the first half of 2011) will not be tested with PostgreSQL 8.1.

Deprecated Web Browsers for Confluence (12 October 2010)

This section announces the end of Atlassian support for certain web browser versions for Confluence. End of support means that Atlassian will not fix bugs related to certain web browser versions past the support end date.

We will **stop supporting the following web browser versions**:

- From Confluence 3.5, due in the first half of 2011, Confluence will no longer support Firefox 3.0.
  Note, Firefox 3.5 and Firefox 3.6 will still be supported.

The details are below. Please refer to the Supported Platforms for more details regarding platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Web Browser Support

Web Browser	Support End Date
Firefox (version 3.0 only)	When Confluence 3.5 releases, due in the first half of 2011

- **Firefox (version 3.0 only) End of Support Notes:**
  - Atlassian intends to end support for Firefox 3.0 in Confluence 3.5 (due to release in the first half of 2011), with the final support for these platforms in Confluence 3.4. Firefox 3.5 and Firefox 3.6 will still be supported.
  - 'Support End Date' means that Confluence 3.4 and previous released versions will continue to work with Firefox 3.0. However, we will not fix bugs affecting Firefox 3.0 past the support end date.
  - Confluence 3.5 (due to release in the first half of 2011) will not be tested with Firefox 3.0.

Deprecated Databases for Confluence (6 July 2010)

This section announces the end of Atlassian support for certain database versions for Confluence. End of support means that Atlassian will not fix bugs related to certain database versions past the support end date.

We will **stop supporting the following database versions**:

- From Confluence 3.4, due in the second half of 2010, Confluence will no longer support Oracle 10g (i.e. Oracle 10.1 and Oracle 10.2).
  Note, Oracle 11g (i.e. Oracle 11.1 and Oracle 11.2) will still be supported.

We have made these decisions in line with Oracle's decision to stop support for Oracle 10g, as per the "Oracle Database (RDBMS) Releases Support Status Summary [ID 161818.1]" article on the Oracle Support site (note, you will need an Oracle Support account to find and view the article). This also will reduce the testing time required for each release and help us speed up our ability to deliver market-driven features. We are committed to helping our customers understand this decision and assist them in upgrading to Oracle 11g if needed.

The details are below. Please refer to the Supported Platforms for more details regarding platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Database Support

Database	Support End Date
Oracle (version 10.1 and 10.2 only)	When Confluence 3.4 releases, due in the second half of 2010

- **Oracle (version 10.1 and 10.2 only) End of Support Notes:**
    - Atlassian intends to end support for Oracle 10.1 and Oracle 10.2 in Confluence 3.4 (due to release in the second half of 2010), with the final support for these platforms in Confluence 3.3 ?. Oracle 11.1 and Oracle 11.2 will still be supported.
    - 'Support End Date' means that Confluence 3.3 and previous released versions will continue to work with the Oracle 10.1 and Oracle 10.2. However, we will not fix bugs affecting Oracle 10.1 or Oracle 10.2 past the support end date.
    - Confluence 3.4 (due to release in the second half of 2010) will not be tested with Oracle 10.1 and Oracle 10.2.

Deprecated Web Browsers for Confluence (6 July 2010)

This section announces the end of Atlassian support for certain web browser versions for Confluence. End of support means that Atlassian will not fix bugs related to certain web browser versions past the support end date.

We will **stop supporting the following web browser versions**:

- From Confluence 3.4, due in the second half of 2010, Confluence will no longer support Safari 3 or Safari 3.1.
  Note, Safari 4 will still be supported.

The details are below. Please refer to the Supported Platforms for more details regarding platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Web Browser Support

Web Browser	Support End Date
Safari (version 3 and 3.1 only)	When Confluence 3.4 releases, due in the second half of 2010

- **Safari (version 3 and 3.1 only) End of Support Notes:**
    - Atlassian intends to end support for Safari 3 and Safari 3.1 in Confluence 3.4 (due to release in the second half of 2010), with the final support for these platforms in Confluence 3.3. Safari 4 will still be supported.
    - 'Support End Date' means that Confluence 3.3 and previous released versions will continue to work with the Safari 3 and Safari 3.1. However, we will not fix bugs affecting Safari 3 and Safari 3.1 past the support end date.
    - Confluence 3.4 (due to release in the second half of 2010) will not be tested with Safari 3 and Safari 3.1.

Deprecated Databases for Confluence (24 March 2010)

This section announces the end of Atlassian support for certain database versions for Confluence. End of support means that Atlassian will not fix bugs related to certain database versions past the support end date.

We will **stop supporting the following database versions**:

- From Confluence 3.3, due in Q3 2010, Confluence will no longer support DB2 8.2.
  Note, DB2 9.7 will still be supported.

We are reducing our database support to reduce the amount of testing time and help us speed up our ability to deliver market-driven features. We are committed to helping our customers understand this decision and assist them in upgrading to DB2 9.7 if needed.

The details are below. Please refer to the Supported Platforms for more details regarding platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Database Support

Database	Support End Date
DB2 (version 8.2 only)	When Confluence 3.3 releases, due Q3 2010

- **DB2 (version 8.2 only) End of Support Notes:**
  - Atlassian intends to end support for DB2 8.2 in Q3 2010, with the final support for these platforms in Confluence 3.2. DB2 9.7 will still be supported.
  - 'Support End Date' means that Confluence 3.2 and previous released versions will continue to work with the DB2 8.2. However, we will not fix bugs affecting DB2 8.2 past the support end date.
  - Confluence 3.3 (due to release in Q3 2010) will not be tested with DB2 8.2.

Deprecated Application Servers for Confluence (27 January 2010)

This section announces the end of Atlassian support for certain application servers for Confluence. End of support means that Atlassian will not fix bugs related to certain application servers past the support end date.

We will **stop supporting the following application servers**:

- From Confluence 3.2, due late Q1 2010, Confluence will no longer support JBoss application servers.
- From Confluence 3.3, due in Q3 2010, Confluence will no longer support Oracle WebLogic, IBM WebSphere or Caucho Resin.

We are reducing our application server platform support to reduce the amount of testing time and help us speed up our ability to deliver market-driven features. We are committed to helping our customers understand this decision and assist them in migrating to Tomcat, our supported application server.

The details are below. Please refer to the Supported Platforms for more details regarding platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Application Server Support

Application Servers	Support End Date
JBoss 4.2.2	When Confluence 3.2 releases, due late Q1 2010
Oracle WebLogic 9.2	When Confluence 3.3 releases, due Q3 2010
IBM WebSphere 6.1	When Confluence 3.3 releases, due Q3 2010
Caucho Resin 3.0, 3.1.6, 3.1.7	When Confluence 3.3 releases, due Q3 2010

- **JBoss End of Support Notes:**
  - 'Support End Date' means that Confluence 3.1 and previous released versions will continue to work with stated application servers. However, we will not fix bugs affecting JBoss application servers.
  - Confluence 3.2 will not support JBoss application servers.

- **WebLogic, WebSphere and Resin End of Support Notes:**
  - Atlassian intends to end support for Oracle WebLogic, IBM WebSphere, and Caucho Resin in Q3 2010, with the final support for these platforms in Confluence 3.2.
  - 'Support End Date' means that Confluence 3.2 and previous released versions will continue to work with the stated application servers. However, we will not fix bugs affecting Oracle WebLogic, IBM WebSphere, and Caucho Resin application servers past the support end date.

    - Confluence 3.3 (due to release in Q3 2010) will only be tested with and support Tomcat 5.5.20+ and 6.0.
    - If you have concerns with this end of support announcement, please email `eol-announcement at atlassian dot com`.

Why is Atlassian doing this?

We have chosen to standardize on Tomcat, because it is the most widely used application server in our user population. It is fast, robust, secure, well-documented, easy to operate, open source, and has a huge community driving improvements. It is the de facto industry standard, with several companies available that specialize in providing enterprise grade support contracts for it, ranging from customizations to 24/7 support.

Deprecated Java Platforms for Confluence (27 January 2010)

This section announces the end of Atlassian support for certain Java Platforms for Confluence.

We will **stop supporting the following Java Platforms**:

- From Confluence 3.3, due Q3 2010, support for Java Platform 5 (JDK/JRE 1.5) will end.

We are ending support for Java Platform 5, in line with the Java SE Support Roadmap (i.e. "End of Service Life" for Java Platform 5 dated October 30, 2009). We are committed to helping our customers understand this decision and assist them in updating to Java Platform 6, our supported Java Platform.

The details are below. Please refer to the Supported Platforms for more details regarding platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Java Platform Support

Java Platform	Support End Date
Java Platform 5 (JDK/JRE 1.5)	When Confluence 3.3 releases, due Q3 2010

- **Java Platform 5 End of Support Notes:**
    - Atlassian intends to end support for Java Platform 5 in Q3 2010.
    - 'Support End Date' means that Confluence 3.2.x and previous released versions will continue to work with Java Platform 5 (JDK/JRE 1.5), however we will not fix bugs related to Java Platform 5 past the support end date.
    - Confluence 3.3 will only be tested with and support Java Platform 6 (JDK/JRE 1.6).
    - If you have concerns with this end of support announcement, please email `eol-announcement at atlassian dot com`.

Deprecated Web Browsers for Confluence (14 December 2009)

This section announces the end of Atlassian support for certain web browsers for Confluence.

We will **stop supporting older versions of web browsers** as follows:

- From Confluence 3.2, due late Q1 2010, support for Firefox 2 and Safari 2 will end.
- From 13 July 2010, in line with Microsoft's Support Lifecycle policy, support for IE6 will end.

The details are below. Please refer to the Supported Platforms for more details regarding platform support for Confluence. If you have questions or concerns regarding this announcement, please email `eol-announcement at atlassian dot com`.

End of Life Announcement for Web Browser Support

Web Browsers	Support End Date
Firefox 2	When Confluence 3.2 releases, late Q1 2010

Safari 2	When Confluence 3.2 releases, late Q1 2010
Internet Explorer 6	When Confluence 3.3 releases (target Q3 2010) or 13 July 2010, whichever is sooner

- **Firefox 2 and Safari 2 Notes:**
  - Confluence 3.1 is the last version to officially support Firefox 2 and Safari 2.
  - You may be able to use these older browser for the most common use cases like viewing and editing content, but official support for these browsers will end once you upgrade to Confluence 3.2.
  - Confluence 3.2 is currently targeted to release late Q1 2010 and will not be tested with Firefox 2 and Safari 2. After the Confluence 3.2 release, Atlassian will not provide fixes in older versions of Confluence for bugs affecting Firefox 2 and Safari 2.

- **Internet Explorer 6 Notes:**
  - Confluence 3.2 (due late Q1 2010) will be the last version to officially support Internet Explorer 6.
  - Confluence 3.3 is currently targeted to release Q3 2010 and will **not** support IE6.
  - Atlassian will support IE6 in Confluence until the 13th of July 2010, in line with Microsoft's Support Lifecycle policy. Beyond that date, released versions of Confluence will continue working with IE6 just as they did before, but we will not fix bugs affecting Internet Explorer 6.
  - You may be able to use Internet Explorer 6 for the most common use cases like viewing and editing content, but official support for this browser will end once you upgrade to Confluence 3.3.

Bundled Tomcat and Java versions

This page lists the specific versions of Apache Tomcat and Adopt OpenJDK that we bundle with Confluence. This information is useful if you want to check whether your Confluence version might be using a Tomcat or Java version that's affected by a specific issue, vulnerability, or bug.

We also list the specific Java versions we use when testing Confluence, which can be handy if you don't run Confluence with the bundled JRE.

Confluence 7.15

Confluence	Tomcat	Bundled JRE	Tested JREs
7.15.0	9.0.54	AdoptiumOpenJDK 11.0.12_7	Oracle JDK 8u301 Oracle JDK 11.0.12 Adoptium OpenJDK8u302b08

Confluence 7.14

Confluence	Tomcat	Bundled JRE	Tested JREs
7.14.0	9.0.45	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u301 Oracle JDK 11.0.12 Adoptium OpenJDK8u302b08
7.14.1	9.0.54	AdoptiumOpenJDK 11.0.12_7	Oracle JDK 8u301 Oracle JDK 11.0.12 Adoptium OpenJDK8u302b08
7.14.2	9.0.54	AdoptiumOpenJDK 11.0.12_7	Oracle JDK 8u301 Oracle JDK 11.0.12 Adoptium OpenJDK8u302b08

Confluence 7.13

Confluence	Tomcat	Bundled JRE	Tested JREs
7.13.0	9.0.45	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u291 Oracle JDK 11.0.11 Adoptium OpenJDK8u292b10
7.13.1	9.0.45	Adopt OpenJDK11.0.12_7	Oracle JDK 8u301 Oracle JDK 11.0.12 Adoptium OpenJDK8u302b08
7.13.2	9.0.45	AdoptiumOpenJDK 11.0.12_7	Oracle JDK 8u301 Oracle JDK 11.0.12 Adoptium OpenJDK8u302b08

Confluence 7.12

Confluence	Tomcat	Bundled JRE	Tested JREs
7.12.0	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.12.1	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01

7.12.2	9.0.45	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.12.3	9.0.45	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.12.4	9.0.45	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u291 Oracle JDK 11.0.11 Adopt OpenJDK8u292b10
7.12.5	9.0.45	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u291 Oracle JDK 11.0.11 Adoptium OpenJDK8u292b10

Confluence 7.11

Confluence	Tomcat	Bundled JRE	Tested JREs
7.11.0	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.11.1	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.11.2	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.11.3	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.11.6	9.0.45	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u291 Oracle JDK 11.0.11 Adoptium OpenJDK8u292b10

Confluence 7.10

Confluence	Tomcat	Bundled JRE	Tested JREs
7.10.0	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.10.1	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.10.2	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01

Confluence 7.9

Confluence	Tomcat	Bundled JRE	Tested JREs
7.9.0	9.0.37	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01

7.9.1	9.0.37	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.9.2	9.0.37	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01

Confluence 7.8

Confluence	Tomcat	Bundled JRE	Tested JREs
7.8.0	9.0.37	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.8 Adopt OpenJDK 8u252-b09
7.8.1	9.0.37	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.8 Adopt OpenJDK 8u252-b09
7.8.3	9.0.37	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01

Confluence 7.7

Confluence	Tomcat	Bundled JRE	Tested JREs
7.7.2	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.7 Adopt OpenJDK 8u232-b09
7.7.3	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.8 Adopt OpenJDK 8u252-b09
7.7.4	9.0.37	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.8 Adopt OpenJDK 8u252-b09

Note: 7.7.0 and 7.7.1 were internal releases.

Confluence 7.6

Confluence	Tomcat	Bundled JRE	Tested JREs
7.6.0	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.7 Adopt OpenJDK 8u232-b09
7.6.1	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.7 Adopt OpenJDK 8u232-b09
7.6.2	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.7 Adopt OpenJDK 8u232-b09

Confluence 7.5

Confluence	Tomcat	Bundled JRE	Tested JREs

7.5.0	9.0.33	Adopt OpenJDK 11.0.5_10	Oracle JDK 8u251 Oracle JDK 11.0.7 Adopt OpenJDK 8u232-b09
7.5.1	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.7 Adopt OpenJDK 8u232-b09
7.5.2	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.7 Adopt OpenJDK 8u232-b09

Confluence 7.4

Confluence	Tomcat	Bundled JRE	Tested JREs
7.4.0	9.0.33	Adopt OpenJDK 11.0.5_10	Oracle JDK 8u221 Oracle JDK 11.0.5 Adopt OpenJDK 8u232-b09
7.4.1	9.0.33	Adopt OpenJDK 11.0.5_10	Oracle JDK 8u251 Oracle JDK 11.0.7 Adopt OpenJDK 8u232-b09
7.4.2	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.7 Adopt OpenJDK 8u232-b09
7.4.3	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.7 Adopt OpenJDK 8u232-b09
7.4.4	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u251 Oracle JDK 11.0.8 Adopt OpenJDK 8u252-b09
7.4.5	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.4.6	9.0.33	Adopt OpenJDK 11.0.7_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.4.7	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.4.8	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.4.9	9.0.40	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u261 Oracle JDK 11.0.8 Adopt OpenJDK 8u265-b01
7.4.10	9.0.45	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u291 Oracle JDK 11.0.11 Adopt OpenJDK8u292b10
7.4.11	9.0.45	Adopt OpenJDK 11.0.8_10	Oracle JDK 8u291 Oracle JDK 11.0.11 Adoptium OpenJDK8u292b10

7.4.12	9.0.45	Adoptium OpenJDK 11.0.12_7	Oracle JDK 8u301 Oracle JDK 11.0.12 Adoptium OpenJDK8u302b08
7.4.13	9.0.45	Adoptium OpenJDK 11.0.12_7	Oracle JDK 8u301 Oracle JDK 11.0.12 Adoptium OpenJDK8u302b08

Note: Adopt OpenJDK 11.0.3 and 11.0.4 had known issues in Linux and Windows in 7.4.0.

Confluence 7.3

Confluence	Tomcat	Bundled JRE	Tested JREs
7.3.1	9.0.27	Adopt OpenJDK 11.0.5_10	Oracle JDK 8u221 Oracle JDK 11.0.5 Adopt OpenJDK 8u232-b09
7.3.2	9.0.27	Adopt OpenJDK 11.0.5_10	Oracle JDK 8u221 Oracle JDK 11.0.5 Adopt OpenJDK 8u232-b09
7.3.3	9.0.27	Adopt OpenJDK 11.0.5_10	Oracle JDK 8u221 Oracle JDK 11.0.5 Adopt OpenJDK 8u232-b09
7.3.4	9.0.33	Adopt OpenJDK 11.0.5_10	Oracle JDK 8u221 Oracle JDK 11.0.5 Adopt OpenJDK 8u232-b09
7.3.5	9.0.33	Adopt OpenJDK 11.0.5_10	Oracle JDK 8u221 Oracle JDK 11.0.5 Adopt OpenJDK 8u232-b09

Confluence 7.2

Confluence	Tomcat	Bundled JRE	Tested JREs
7.2.0	9.0.27	Adopt OpenJDK 8u202b08	Oracle JDK 8u202 Oracle JDK 11.0.1 Adopt OpenJDK11.0.1+13
7.2.1	9.0.27	Adopt OpenJDK 8u202b08	Oracle JDK 8u202 Oracle JDK 11.0.1 Adopt OpenJDK11.0.1+13
7.2.2	9.0.27	Adopt OpenJDK 8u202b08	Oracle JDK 8u202 Oracle JDK 11.0.1 Adopt OpenJDK11.0.1+13

Note: Java 11 is supported, but not bundled in Confluence 7.2.

Confluence 7.1

Confluence	Tomcat	Bundled JRE	Tested JREs
7.1.0	9.0.22	Adopt OpenJDK 8u202b08	Oracle JDK 8u202 Oracle JDK 11.0.1 Adopt OpenJDK11.0.1+13

7.1.1	9.0.27	Adopt OpenJDK 8u202b08	Oracle JDK 8u202 Oracle JDK 11.0.1 Adopt OpenJDK11.0.1+13
7.1.2	9.0.27	Adopt OpenJDK 8u202b08	Oracle JDK 8u202 Oracle JDK 11.0.1 Adopt OpenJDK11.0.1+13

Note: Java 11 is supported, but not bundled in Confluence 7.1.

Confluence 7.0

Confluence	Tomcat	Bundled JRE	Tested JREs
7.0.1	9.0.22	Adopt OpenJDK 8u202b08	Oracle JDK 8u202 Oracle JDK 11.0.1 Adopt OpenJDK11.0.1+13
7.0.2	9.0.22	Adopt OpenJDK 8u202b08	Oracle JDK 8u202 Oracle JDK 11.0.1 Adopt OpenJDK11.0.1+13
7.0.3	9.0.22	Adopt OpenJDK 8u202b08	Oracle JDK 8u202 Oracle JDK 11.0.1 Adopt OpenJDK11.0.1+13
7.0.4	9.0.22	Adopt OpenJDK 8u202b08	Oracle JDK 8u202 Oracle JDK 11.0.1 Adopt OpenJDK11.0.1+13
7.0.5	9.0.27	Adopt OpenJDK 8u202b08	Oracle JDK 8u202 Oracle JDK 11.0.1 Adopt OpenJDK11.0.1+13

Confluence 6.15

Confluence	Tomcat	Bundled JRE	Tested JREs
6.15.0	9.0.12	Adopt OpenJDK 8u192b12	Oracle JDK 8u202
6.15.1	9.0.12	Adopt OpenJDK 8u192b12	Oracle JDK 8u202
6.15.2	9.0.12	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.15.3	9.0.17	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.15.4	9.0.19	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.15.5	9.0.19	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.15.6	9.0.19	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.15.7	9.0.21	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.15.8	9.0.22	Adopt OpenJDK 8u222b10	Oracle JDK 8u202
6.15.9	9.0.22	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.15.10	9.0.22	Adopt OpenJDK 8u202b08	Oracle JDK 8u202

Note: There was a known issue with Adopt OpenJDK 8u222b10, which was bundled with Confluence 6.15.8 ~~CONFSERVER-58784~~ CLOSED .

Confluence 6.14

Confluence	Tomcat	Bundled JRE	Tested JREs
6.14.0	9.0.12	Adopt OpenJDK 8u192b12	Oracle JDK 8u202
6.14.1	9.0.12	Adopt OpenJDK 8u192b12	Oracle JDK 8u202
6.14.2	9.0.12	Adopt OpenJDK 8u192b12	Oracle JDK 8u202
6.14.3	9.0.12	Adopt OpenJDK 8u202b08	Oracle JDK 8u202

Confluence 6.13

Confluence	Tomcat	Bundled JRE	Tested JREs
6.13.0	9.0.12	Oracle JDK 1.8.0_192	-
6.13.1	9.0.12	Oracle JDK 1.8.0_192	-
6.13.2	9.0.12	Adopt OpenJDK 8u192b12	Oracle JDK 1.8.0_192
6.13.3	9.0.12	Adopt OpenJDK 8u192b12	Oracle JDK 1.8.0_192
6.13.4	9.0.12	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.13.5	9.0.19	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.13.6	9.0.19	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.13.7	9.0.22	Adopt OpenJDK 8u222b10	Oracle JDK 8u202
6.13.8	9.0.22	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.13.9	9.0.22	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.13.10	9.0.22	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.13.11	9.0.22	Adopt OpenJDK 8u202b08	Oracle JDK 8u202
6.13.12	9.0.33	Adopt OpenJDK 8u252b09	Oracle JDK 8u251
6.13.13	9.0.33	Adopt OpenJDK 8u252b09	Oracle JDK 8u251
6.13.15	9.0.33	Adopt OpenJDK 8u252b09	Oracle JDK 8u251
6.13.17	9.0.33	Adopt OpenJDK 8u252b09	Oracle JDK 8u261
6.13.18	9.0.33	Adopt OpenJDK 8u252b09	Oracle JDK 8u261
6.13.19	9.0.40	Adopt OpenJDK 8u265b01	Oracle JDK 8u261
6.13.20	9.0.40	Adopt OpenJDK 8u265b01	Oracle JDK 8u261
6.13.21	9.0.40	Adopt OpenJDK 8u265b01	Oracle JDK 8u261
6.13.23	9.0.40	Adopt OpenJDK 8u265b01	Oracle JDK 8u291

Note: There was a known issue with Adopt OpenJDK 8u222b10, which was bundled with Confluence 6.13.7 🟥 ~~CONFSERVER-58784~~ CLOSED .

Note: Confluence 6.13.14 and 6.13.16 were internal releases.

Confluence 6.12

Confluence	Tomcat	Bundled JRE
6.12.0	9.0.11	Oracle JDK 1.8.0_181
6.12.1	9.0.11	Oracle JDK 1.8.0_181
6.12.2	9.0.12	Oracle JDK 1.8.0_181
6.12.3	9.0.12	Oracle JDK 1.8.0_181
6.12.4	9.0.12	Oracle JDK 1.8.0_181

Confluence 6.11

Confluence	Tomcat	Bundled JRE
6.11.0	9.0.10	Oracle JDK 1.8.0_162
6.11.1	9.0.10	Oracle JDK 1.8.0_162
6.11.2	9.0.11	Oracle JDK 1.8.0_181

Confluence 6.10

Confluence	Tomcat	Bundled JRE
6.10.0	9.0.8	Oracle JDK 1.8.0_162
6.10.1	9.0.8	Oracle JDK 1.8.0_162
6.10.2	9.0.10	Oracle JDK 1.8.0_162
6.10.3	9.0.19	Oracle JDK 1.8.0_202

Confluence 6.9

Confluence	Tomcat	Bundled JRE
6.9.0	8.0.51	Oracle JDK 1.8.0_162
6.9.1	8.0.51	Oracle JDK 1.8.0_162
6.9.2	8.0.52	Oracle JDK 1.8.0_162
6.9.3	8.0.52	Oracle JDK 1.8.0_162

Confluence 6.8

Confluence	Tomcat	Bundled JRE
6.8.0	8.0.50	Oracle JDK 1.8.0_162
6.8.1	8.0.50	Oracle JDK 1.8.0_162
6.8.2	8.0.51	Oracle JDK 1.8.0_162
6.8.3	8.0.51	Oracle JDK 1.8.0_162
6.8.4	8.0.52	Oracle JDK 1.8.0_162
6.8.5	8.0.52	Oracle JDK 1.8.0_162

Confluence 6.7

Confluence	Tomcat	Bundled JRE
6.7.0	8.0.48	Oracle JDK 1.8.0_162
6.7.1	8.0.48	Oracle JDK 1.8.0_162
6.7.2	8.0.48	Oracle JDK 1.8.0_162
6.7.3	8.0.50	Oracle JDK 1.8.0_162

Confluence 6.6

Confluence	Tomcat	Bundled JRE
6.6.0	8.0.47	Oracle JDK 1.8.0_152
6.6.1	8.0.48	Oracle JDK 1.8.0_162
6.6.2	8.0.48	Oracle JDK 1.8.0_162
6.6.3	8.0.50	Oracle JDK 1.8.0_162
6.6.4	8.0.50	Oracle JDK 1.8.0_162
6.6.5	8.0.51	Oracle JDK 1.8.0_162
6.6.6	8.0.51	Oracle JDK 1.8.0_162
6.6.7	8.0.52	Oracle JDK 1.8.0_162
6.6.8	8.0.53	Oracle JDK 1.8.0_162
6.6.9	8.0.53	Oracle JDK 1.8.0_181
6.6.10	8.0.53	Oracle JDK 1.8.0_192
6.6.11	8.0.53	Oracle JDK 1.8.0_192
6.6.12	8.0.53	Oracle JDK 1.8.0_192
6.6.13	8.0.53	Oracle JDK 1.8.0_202
6.6.14	8.0.53	Oracle JDK 1.8.0_202
6.6.15	8.0.53	Oracle JDK 1.8.0_202
6.6.16	8.0.53	Oracle JDK 1.8.0_202
6.6.17	8.0.53	Oracle JDK 1.8.0_202

Confluence 6.5

Confluence	Tomcat	Bundled JRE
6.5.0	8.0.47	Oracle JDK 1.8.0_144
6.5.1	8.0.47	Oracle JDK 1.8.0_144
6.5.2	8.0.47	Oracle JDK 1.8.0_152
6.5.3	8.0.51	Oracle JDK 1.8.0_162

Confluence 6.4

Confluence	Tomcat	Bundled JRE
6.4.0	8.0.43	Oracle JDK 1.8.0_131
6.4.1	8.0.43	Oracle JDK 1.8.0_131
6.4.2	8.0.46	Oracle JDK 1.8.0_144
6.4.3	8.0.47	Oracle JDK 1.8.0_144

Confluence 6.3

Confluence	Tomcat	Bundled JRE
6.3.0	8.0.43	Oracle JDK 1.8.0_131
6.3.1	8.0.43	Oracle JDK 1.8.0_131
6.3.2	8.0.43	Oracle JDK 1.8.0_131
6.3.3	8.0.43	Oracle JDK 1.8.0_131
6.3.4	8.0.43	Oracle JDK 1.8.0_131

Confluence 6.2

Confluence	Tomcat	Bundled JRE
6.2.0	8.0.41	Oracle JDK 1.8.0_112
6.2.1	8.0.43	Oracle JDK 1.8.0_131
6.2.2	8.0.43	Oracle JDK 1.8.0_131
6.2.3	8.0.43	Oracle JDK 1.8.0_131
6.2.4	8.0.43	Oracle JDK 1.8.0_131

Confluence 6.1

Confluence	Tomcat	Bundled JRE
6.1.0	8.0.41	Oracle JDK 1.8.0_112
6.1.1	8.0.41	Oracle JDK 1.8.0_112
6.1.2	8.0.41	Oracle JDK 1.8.0_112
6.1.3	8.0.41	Oracle JDK 1.8.0_112
6.1.4	8.0.43	Oracle JDK 1.8.0_131

Confluence 6.0

Confluence	Tomcat	Bundled JRE
6.0.1	8.0.36	Oracle JDK 1.8.0_102
6.0.2	8.0.36	Oracle JDK 1.8.0_102

6.0.3	8.0.39	Oracle JDK 1.8.0_112
6.0.4	8.0.39	Oracle JDK 1.8.0_112
6.0.5	8.0.39	Oracle JDK 1.8.0_112
6.0.6	8.0.41	Oracle JDK 1.8.0_112
6.0.7	8.0.41	Oracle JDK 1.8.0_112

On this page:

Supported Platforms FAQ

Q: How does Atlassian choose which JRE versions, application servers and databases to support?

For application servers and databases, we try to pick a good cross-section of open source options and popular commercial platforms. We then choose which JRE versions to support based on the recommended environments for these servers.

Q: What is a supported platform?

A supported platform is one that:

- Confluence is regularly tested on during the development cycle
- One that is available within Atlassian for support technicians and developers to reproduce problems
- Bugs raised against it will be given a high priority

Supporting a platform means we know how to get Confluence running in that environment and can troubleshoot Confluence issues within it. It does not mean we have any particular expertise beyond that. As such, we may not be able to provide assistance with customizing or tuning that application server or database. (Atlassian support is not a substitute for a good database administrator.)

Q: Can I get assistance with running Confluence on a platform that is *not* supported?

If you are running Confluence on an unsupported platform, then we can not guarantee providing any support for it. Furthermore, we will recommend that you switch to a platform which is supported.

Q: If you write your application to standards like J2EE, JDBC and SQL, doesn't that mean it should run on any compliant server?

Confluence is a complicated application and we commonly encounter interesting edge-cases where different servers have interpreted the specifications differently. Then again, each server has its own different collection of bugs.

Q: How can I get Atlassian to support Confluence on a new platform?

Supporting a new platform involves a significant investment of time by Atlassian, both up-front costs to set up new testing environments and fix any issues we might encounter and the ongoing costs involved in maintaining the application against this new environment in the future. As such, supporting a new platform is not something we will do unless we know there is significant demand for it.

Please be aware that your interest alone will not be enough for us to add support for your application server or database. We would need to see a significant number of votes on the issue raised in our public Jira site or a significant level of interest in our forums, before considering supporting that platform.

Q: My organization has standardized on an operating environment that Confluence does not support. What can I do?

In this situation, you have the following two options:

1. Run Confluence in the unsupported environment, with the caveats mentioned above.
2. Make an exception to your standardized operating environment and set up Confluence based on its supported platforms.

Migrate your Confluence site

Whether you're ready to make the move to cloud, or need the deployment and administrative flexibility of Data Center, we have everything you need to migrate successfully.

- Migrate from Server to Data Center
- Migrate from Confluence Cloud to Server
- Migrating Confluence Between Servers
- Move to a non-clustered installation
- From Confluence Evaluation through to Production Installation
- Cloud Migration Assistant for Confluence

✓ Considering a move to cloud? Check our the Server to cloud migration guide.

Migrate from Server to Data Center

This page outlines the process for upgrading an existing Confluence Server site to Confluence Data Center.

If you're installing Confluence for the first time (you don't have any existing Confluence data to migrate), seeInstalling Confluence Data Center.

On this page:

Before you begin

Things you should know about when setting up your Data Center:

Your Confluence license determines the type of Confluence you have: Server or Data Center. Confluence will auto-detect the license type when you enter your license key, and automatically unlock any license-specific features.

See ourSupported Platformspage for information on the database, Java, and operating systems you'll be able to use. These requirements are the same for Server and Data Center deployments.

Apps extend what your team can do with Atlassian applications, so it's important to make sure that your team can still use their apps after migrating to Data Center.When you switch to Data Center, you'll be required to switch to the Data Center compatible version of your apps, if one is available.

SeeEvaluate apps for Data Center migrationfor more information.

To use Confluence Data Center you must:

- Have a Data Center license (you canpurchase a Data Center licenseor create an evaluation license atmy.atlassian.com)
- Use asupportedexternal database, operating system and Java version
- Use OAuth authentication if you haveapplication linksto other Atlassian products (such as Jira)

If you plan to run Confluence Data Center in a cluster there are some additional infrastructure requirements. SeeClustering with Confluence Data Centerfor more information.

⚠ Theres a known issue during setup where a load balancer (or proxy) pings the server and breaks Confluence installation or migration to Data Center. See

CONFSERVER-61189 - Opening the base URL multiple times during Data Center migration will break the migration process. GATHERING IMPACT

During installation, you need to disable load balancer health checks and make sure you dont open multiple tabs that point to the same Confluence URL.

Migrate to non-clustered Data Center

Review and upgrade your apps

If you have any apps installed on your site, youll need to upgrade to the Data Center app version, if one is available. To avoid any impact to your apps, we recommend you do this before you enter your Confluence Data Center license key. Learn more aboutUpgrading server apps when you migrate to Data Center.

Upgrade your Confluence license

To move from Confluence Server to Confluence Data Center:

1. Go to⚙> **General Configuration**
2. Choose**License Details**from the sidebar under theAdministrationheading

3. Enter your Confluence Data Center license key.

There's no need to restart Confluence. Data Center features such as read-only mode, SAML single sign-on, and CDN will now be available.

Set up your cluster

If your organisation requirescontinuous uptime, scalability, and performance under heavy load, you'll want to run Confluence Data Center in a cluster.

To find out more about clustering, including infrastructure requirements see Clustering with Confluence Data Center.

If you're ready to set up your cluster now, head toSet up a Confluence Data Center cluster.

ⓘ Looking to migrate all your Atlassian applications to Data Center? Weve got you covered:

- Migrate to Bitbucket Data Center
- Migrate to Crowd Data Center
- Migrate to Confluence Data Center
- Migrate to Jira Data Center

Considering moving to cloud? Plan your cloud migration.

Migrate from Confluence Cloud to Server

ⓘ **Important changes to our server and Data Center products**

Weve ended sales for new server licenses, and will end support for server on February 2, 2024. Were continuing our investment in Data Center with several key improvements. Learn what this means for you

On this page:

This page is for people who are currently using Confluence Cloud, and wish to move to Confluence Server (a self-managed Confluence site).

Not moving from Cloud to Server?

These resources will help you plan your migration from:

- Confluence Server to Cloud
- Confluence Server to Data Center
- Confluence Server to Server

Before you begin

There's a few things to understand before you begin this process. Ready to migrate? Skip to the migration steps

Minimum Confluence version

You can migrate from Confluence Cloud to **Confluence Server /Data Center 6.0 or later** only. You can't import Cloud data (either the whole site or individual spaces) into any earlier versions of Confluence.

We recommend installing either latest version of Confluence, or the latest Enterprise Release. TheConfluence Upgrade Matrix will help you choose the right version for your organisation.

Features and app availability

Some Cloud features won't be available in Confluence Server or Data Center. The navigation and user experience will also be different in some places. The core functionality of Confluence is the same however.

Marketplace apps are not automatically migrated. When you set up your Confluence Server or Data Center site, you'll need to reinstall each of your apps.

Not all apps are available for both Cloud and Server / Data Center. When planning your migration, we recommend you check that your essential apps are available for Server / Data Center in theAtlassian Marketplaceand make a list of the ones you'll need to reinstall.

Templates

All pages that were created from a template will be migrated.

However, any custom templates you may have created in your Confluence Cloud site will not be migrated. You'll need to re-create your templates once your migration is complete.

You should also be aware that the range of built-in templates (known as blueprints) is much smaller in Confluence Server and Data Center, so some of the default templates you have previously used may not be available.See the full list of blueprints

Team Calendars and Questions data

Confluence Questions and Team Calendars data can't be migrated, as there is currently no way to export this data from Confluence Cloud.

Migration approach

You can choose to migrate your entire site in one go, or to import your team's content, space by space.

A **full site migration** involves a full site export (backup), and importing this file into Confluence Server or Data Center. Users and groups are included in this export. All spaces will be migrated, including archived spaces and personal spaces.

SeeMigration steps below to find out how to do this.

A **space by space migration** involves exporting each space individually, and importing these files into Confluence Server or Data Center one at a time. This means you can choose which spaces you want to migrate, or migrate in stages over time. Users and groups are not automatically migrated. If you've connected Confluence Server or Data Center to an external user directory, or have already populated your new site with user accounts, we'll attempt to attribute content to the right people on import.

SeeImport a space from Confluence Cloud if you plan to migrate your spaces one by one.

Infrastructure and database choice

Where you choose to host Confluence Server or Data Center is up to you. SeeSupported Platforms to find out which operating systems and databases are supported.

You can use any database listed on theSupported Platformspage, but you don't already have a database server, we recommend PostgreSQL, which is what Confluence Cloud is run on.

Licenses

You will need a new license to migrate to Confluence Server or Data Center. Your existing Confluence Cloud license can't be used. You can get a new license athttps://my.atlassian.com. You'll also need new licenses for any paid Marketplace apps.

Account visibility

In Confluence Cloud, people can choose not to make their profile information visible. This means when a Cloud site is imported into Server, user account information such as their full name, may not be included.

As long as you are logged in as a Site Admin when you complete the site export, email addresses will always be included, and used as the username when the user accounts are created. Users can then log in, and update their profile to provide the missing information.

Migration steps

This page will guide you through a **full site migration**. SeeImport a space from Confluence Cloudif you plan to migrate your spaces one by one.

Step 1: Check your apps

To check your apps are compatible:

1. In Confluence Cloud, go to**Settings**>**Manage Apps**.
2. Make a note of all**User-installed** apps.

3. Go tohttps://marketplace.atlassian.comand look up each app to see if a Server or Data Center edition is available.

Step 2: Install Confluence Server or Data Center

The way you do this depends on whether you're migrating to Server or Data Center, and how you plan to host the application.

SeeConfluence Installation Guide for links to all the installation options.

Step 3: Export your Confluence Cloud Site

To export your Confluence Cloud site:

1. Log in to Confluence Cloud as a **Site Admin**
2. In Confluence Cloud, go to **Settings** > **Backup Manager**
3. Follow the prompts to back up the site, and download the XML file.

The file will include all spaces and pages (including attachments), and all your users and groups.

Step 4: Import your Confluence Cloud site export file

Unless your site export file is quite small (less than 25mb) we recommend importing via the home directory method.

> ⚠ The import will overwrite all spaces, pages, and user accounts in your site - including your administrator account. You'll recover that account in the next step.
>
> You should back up your database, home directory, and installation directory before you begin, in case you need to roll back.

To import a site from the home directory:

1. Copy your export file to`<confluence-home>/restore.`
   (If you're not sure where this directory is located, the path is listed in the**Backup and Restore**screen)
2. Go to⚙> **General Configuration**>**Backup and Restore**.
3. Select your site export file under**Import from home directory**
4. Make sure **Build Index**is checked so that your index is created automatically.
5. Choose**Import**.

SeeRestoring a Site for more information about the import process.

Step 5: Recover sys admin permissions

When you import a site export file, all user accounts are overwritten, including the system administrator account that was created when you installed Confluence. Your existing Cloud Site Admin account will not automatically have system administrator permissions for Confluence Server or Data Center.

To recover system administrator permissions:

1. Stop Confluence.
2. Edit`<installation-directory>/bin/setenv.sh`or`setenv.bat`and add the following system property, replacing`<your-password>`with a unique, temporary password.

   ```
   -Datlassian.recovery.password=<your-password>
   ```

   SeeConfiguring System Propertiesfor more information on using system properties.
3. Start Confluence**manually**(don't start Confluence as a service).
4. Log in to Confluence with the username**recovery_admin**and the temporary password you specified in the system property.

5. Go to⚙> **User Management** > **Add Users**.
6. Enter the details for your new system administrator account and hit **Save**. Make sure to use a strong password.
7. Choose **Edit Groups** and select the `confluence-administrators` group. This is a super-group that has system administrator permissions.
8. Log out, and confirm that you can successfully log in with your new account.
9. Stop Confluence.
10. Edit`<installation-directory>/bin/setenv.sh`or`setenv.bat`and remove the system property.
11. Restart Confluence using your usual method (manually or by starting the service).

SeeRestore Passwords To Recover Admin User Rights for more information on this process.

Step 6: Install any apps

To re-install your apps:

1. Log in to Confluence Server or Data Center as an administrator.
2. Go to⚙ > **Manage apps**.
3. Follow the prompts to search for or upload the apps you identified in step 1. You'll need to purchase new licenses for these apps.

Remember that Team Calendars and Questions data is not included in your export, and cannot be migrated from Cloud at this time.

Step 7: Check your application links

If you had multiple Cloud products, such JIRA Software,you may need to make some changes to the application links.

To remove or update application links:

1. Go to⚙> **General Configuration**> **Application Links**.
2. Follow the prompts to check and update any application links that are now pointing to the wrong place.

If you're unable to remove the Jira Cloud application link from your Confluence after the import, you'll need to remove those references directly from the Confluence database. SeeAlternative Methods of Deleting Application Links in Confluence.

Troubleshooting

There are a few known issues that you might encounter when importing your Cloud site.

Can't load pages in your new site

If you experience problems loading pages after the import, head to⚙> **General Configuration**to check your base URL as the port may have changed.

User management admin screens are missing

This is a fairly uncommon problem caused by a dark feature flag that is included in your Cloud site export file. See

CONFSERVER-35177 - User and Group Links Missing from Admin Console After Migrating From Cloud to Server GATHERING IMPACT

for a workaround.

Jira issues macros are broken

If your Confluence Cloud site has macros that depend on the Application Links back to a Jira Cloud instance, and you are migrating Jira as well, these references will need to be updated to work properly. See

APL-1144 - Allow relocation of application links even if the target application is still accessible. UNDER TRIAGE

for a workaround.

You can also edit the XML file prior to importing it into Confluence Server or Data Center, or by bulk editing those references in Confluence database. SeeHow to bulk update JIRA Issue Macro to point to a different JIRA instance.

Users' favourites (starred pages, or saved for later) are missing

If you find that some of your users' favorites (pages saved for later) are missing due to **CONFSERVER-36348** - Favourites missing after importing GATHERING IMPACT . See How to restore missing favorites after import from XML for more information.

Some user accounts are missing or created without user details

Users in Confluence Cloud have the ability to change their profile visibility settings. To ensure all user data is included in the export, ask a site admin to perform the export.

Migrating Confluence Between Servers

On this page:

This page describes how to move Confluence between physical servers using the same or a different operating system.

It doesn't coverdatabase migrationorupgradingyour Confluence version. We suggest you do each of these steps separately.

Transferring Confluence to another server

To transfer Confluence to another server you will copy the home and install folders straight into an identical external database and user management setup. If your new server is using a different operating system there may be some additional changes at step 4.

1. Run the Confluence installer on your new server
2. Shut down Confluence on both your old and new servers
3. If you're using Oracle or MySQL, copythe driversfrom your old server to the new one
4. Delete the contents of the home directory on your new Confluence server, then copy in the contents of the home directory from your old Confluence server.
5. Make any additional changes required for your environment.

   If the path to your home directory is different on the new server open the `Confluence_install_directory/confluence/WEB-INF/classes` directory and edit `confluence-init.properties` by changing the line starting with '`confluence.home=`'.

   If you have also moved your database from one server to another you can change the JDBC URL in`<confluence.home>/confluence.cfg.xml`if you are using a direct JDBC connection or in the definition of your datasource (if you are connecting via a datasource).

   If you're migrating from **Windows to Linux**, you'll need to replace the backslashes with forward slashes in the following lines in`confluence.cfg.xml`:

   ```
   <property name="attachments.dir">${confluenceHome}/attachments</property>
   <property name="lucene.index.dir">${localHome}/index</property>
   <property name="webwork.multipart.saveDir">${localHome}/temp</property>
   ```

   If you're migrating from **Linux to Windows**, you'll need to replace the forward slashes with backslashes in the following lines in`confluence.cfg.xml`:

   ```
   <property name="attachments.dir">${confluenceHome}\attachments</property>
   <property name="lucene.index.dir">${localHome}\index</property>
   <property name="webwork.multipart.saveDir">${localHome}\temp</property>
   ```

6. Copy the `<confluence-install>/conf/server.xml`file from your old server to the same location on your new server
7. If you use a data source, ensure the data source points to the new database. See Configuring a datasource connection.
8. Start Confluence, then head to**General configuration**>**License Details**to add your license key

Westrongly recommend you perform arebuild of your content indicesafter performing a migration, to ensureConfluence search works as expected.

Move to a non-clustered installation

This page outlines how to switch from a clustered Confluence deployment to a non-clustered deployment. In these instructions we'll assume that you'll use one of your existing cluster nodes as your new, non-clustered installation.

If you have a valid Server license and want to move from Data Center to Server, see Moving from Data Center to Server.

Run Confluence in a cluster with one node

If you no longer need clustering for high availability or managing load, you can simply reduce the number of application nodes in your cluster to one.There are some advantages to this setup, as it is very easy to add more nodes if you require them in future, but there is a small performance overhead as Confluence will still operate as a cluster.

Move to a non-clustered installation

If you no longer need clustering, and want to avoid the overhead that comes from running a cluster with just one node, you can go back to a non-clustered (sometimes known as standalone) Data Center installation.

In these instructions we'll assume that you'll use one of your existing cluster nodes as your new, non-clustered installation. You'll also need to make some infrastructure changes as part of the switch. We recommend completing this process in a staging environment, and running a set of functional tests, integration tests, and performance tests, before making these changes in production.

Terminology

In this guide we'll use the following terminology:

- Installation directory The directory where you installed Confluence.
- Local home directory The home or data directory stored locally on each cluster node (if Confluence is not running in a cluster, this is simply known as the home directory).
- Shared home directory The directory you created that is accessible to all nodes in the cluster via the same path.

1. Shut down Confluence

Make sure read only mode is turned off, then stop Confluence on all cluster nodes before you proceed.

2. Configure your load balancer

Configure your load balancer to redirect traffic away from all Confluence nodes, except the node you plan to keep.

If you no longer need your load balancer, you can remove it at this step.

3. Move items in the cluster shared home back to local home

To move everything back to your local home:

1. Create a directory called`/shared-home`in the`<local home>` directory on the node you plan to keep (if you removed this directory when you set up clustering).
2. Move the following directories and files from your`<shared home>`directory to the`<local home>/shared-home`directory
   - config
   - confluence.cfg.xml
   - dcl-document
   - dcl-document_hd
   - dcl-thumbnail
3. Move the remaining contents of your <shared home> directory to the root of your <local home> directory. Make sure your attachments directory is moved as part of this step.

Your cluster's shared home directory should now be empty.

⚠Make sure you don't accidentally overwrite the `confluence.cfg.xml` in your local home directory. The `confluence.cfg.xml` file from your shared home directory doesn't contain the same parameters as the one in your local home directory.

From Confluence 7.12, you can choose to skip this step and keep your existing shared home directory. For example, this may be beneficial if you're using elastic storage for the `<shared home>/attachments` directory and want to keep that setup.

4. Modify cluster properties

1. Take a backup of the existing `<local home>/confluence.cfg.xml`
2. Edit `<local home>/confluence.cfg.xml`
3. Change the `setupType` parameter from `cluster` to `custom`:

```
<setupType>custom</setupType>
```

4. Remove all cluster properties that begin with `confluence.cluster`.

   Here are some example cluster properties that should be removed. These will vary depending on how you configured your cluster.

```
confluence.cluster
confluence.cluster.address
confluence.cluster.home
confluence.cluster.interface
confluence.cluster.join.type
confluence.cluster.name
```

   ⚠ If you chose to keep your shared home directory at the previous step, do not remove the `confluence.cluster.home` property, or Confluence will not know where to find your shared home, or attachments directory.

5. Save the file.

5. Start Confluence

Restart Confluence.

To confirm you're now running a standalone installation, go to ⚙ > **General Configuration** > **Clustering**.

The active cluster should no longer appear. Instead, you'll see information about getting started with clustering, and the option to enable cluster mode.

Additional steps if you have a Synchrony cluster

If you also have a Synchrony cluster, but would prefer to let Confluence manage Synchrony for you, you'll need to make some additional changes.

See Migrate from a standalone Synchrony cluster to managed Synchrony. This guide assumes you're running Confluence in a cluster, but the steps are similar for a non-clustered installation.

From Confluence Evaluation through to Production Installation

Important changes to our server and Data Center products

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On this page:

Related pages:

- Supported Platforms
- Add and Invite Users
- Getting Started as Confluence Administrator
- Confluence installation and upgrade guide

So, you want to try Confluence on an evaluation installation, then move to a production installation when you are ready? This page gives an overview of the steps to follow.

Assumptions:

- This page starts with telling you how to install an evaluation Confluence site. If you have already finished evaluating Confluence, you can safely skip steps 1 to 3.
- Your production installation will be an installed version of Confluence, **not** a Confluence Cloud site.
- You will evaluate Confluence on an installed version too, not a Confluence Cloud site.

If you are using Confluence Cloud to evaluate Confluence, please refer to the following guide when you want to move to an installed version: Migrate from Confluence Cloud to Server.

Step 1. Set up your evaluation Confluence site

If you have already set up an evaluation Confluence site, you can skip this step.

Below is a summary of the installation and setup procedure, focusing on the choice of database.

To install Confluence:

1. Download the installer from the Confluence download site.
   Note: If you are using a Mac or another unsupported platform for your evaluation, you will need to install from a zip file. Details are in the full installation guide.
2. Run the installer and choose the express or custom installation. If you are not sure, choose **Express Install**.
   - The **express** option will install Confluence with default settings.
   - The **custom** option allows you to choose the Confluence installation directory, home (data) directory, ports and other options.
3. When prompted, choose the option to **open Confluence in your browser**, where you can complete the setup.

To set up Confluence, including the database:

1. Follow the prompts in the browser-based setup wizard, to get your Confluence license.
2. Choose the **Trial**or**Production** installation type. If you are not sure, choose**Trial Installation**.
   - The **Trial**option will install Confluence with default settings, including the embedded database which is automatically set up for you. You'll need to migrate to an external database before running Confluence in a production environment (more info below).

Step 2. Add users and content to your evaluation site

If you have finished evaluating Confluence, you can skip this step.

Depending on your choices during the Confluence setup, your evaluation site may include sample content. The example pages, blog posts and attachments are in the 'Demonstration space'. This space is present if:

- You chose the 'Trial Installation' during setup.
- Or you chose the 'Production Installation', then chose to include the 'Example Site'.

You can update the sample content, and create more of your own. You can also invite people to join you on the site.

When you move to a production site, you can choose to copy the content and users to the new site.

To create content in your evaluation site:

- Choose **Spaces** >**Create Space** to add a space, which is like a library of pages.
- Choose**Create** to add pages and blog posts.

To add users: Go to⚙>**User management**.

Step 3. Look for interesting Marketplace apps as part of your evaluation

If you have finished evaluating Confluence, you can skip this step.

Apps, also called plugins or add-ons, provide additional features that you can install into your Confluence site. Some of them are provided free of charge. Many of the commercial apps are available free for an evaluation period.

You can browse and download app on the Atlassian Marketplace. You can also find apps via the Confluence user interface, which interacts with the Atlassian Marketplace for you.

To find useful apps via the Confluence user interface:

1. Go to⚙ > **Manage apps**.
2. Choose **Find new add-ons**.

Step 4. Set up your production Confluence site

When you are ready to move from an evaluation site to a production site, you need to migrate to a production-ready database. This involves installing a new Confluence site with a new database, and instructing Confluence to copy the data from your evaluation site to the new site. You will also need to check some important configuration settings, and define your backup strategy. The instructions below lead you through all the steps required.

Migrating your data to a production database:

1. Choose a database carefully, with a focus on reliability and backups. See our list of supported databases. If you are unsure which one to choose, we recommend PostgreSQL.
2. Install a new database and a new Confluence site, by following our guide to migrating to another database. The guide will lead you through the following steps:
    - Setting up your database server.
    - Adding a Confluence database (schema) to your database server.
    - Installing a new, production-ready Confluence site.
    - Copying your Confluence data from your evaluation site to your new production site.

Setting important configuration options on your production site:

- Set the base URL. See Configuring the Server Base URL.
- Make sure you have configured an email server. See Configuring a Server for Outgoing Mail.

- Decide on proxy setup and other settings that determine where Confluence fits into your network. See Web Server Configuration.
- Consider setting up a secure connection via SSL. SeeRunning Confluence Over SSL or HTTPS.
- Read our guidelines on security. See Best Practices for Configuring Confluence Security.
- Decide whether you will manage your users in Confluence or connect to an external LDAP directory. See Configuring User Directories.
- Decide whether you want to allow public (anonymous) access to your site. SeeSetting Up Public Access.
- Set up your permission scheme. See Permissions and restrictions.
- Connect Confluence to Jira applications such as Jira Software or Jira Service Management or other applications. See Linking to Another Application.

Defining your backup strategy:

By default, Confluence will create daily XML backups of your content and user data. This is suitable when you are evaluating Confluence. When you move to a production site, you need more robust backup procedures and technologies. See Production Backup Strategy.

Cloud Migration Assistant for Confluence

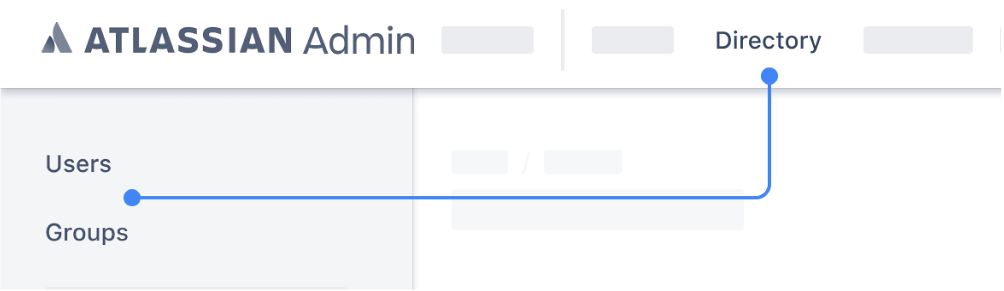
robots	noindex

descr iption	Step-by-step instructions on how to use the Confluence Cloud Migration Assistant to move your data from Confluence Server or Data Center to Confluence Cloud.

robots	noindex
robots	noindex

Before you migrate, check your cloud organization

Were currently rolling out changes that may affect your migration experience. From yourorganization at admin.atlassian.com, if the **Users** list and **Groups** list are under the **Directory** tab, you have the improved user management experience. This means that the users and groups across sites will be merged under the organization. Read more about how groups and permissions are migrated. If you have any concerns, contact support.



⚠ For a test migration or UAT, we recommend that your test cloud site is not part of the organization that also hosts your prod site. The prod site should be hosted in a different organization. This is to ensure smooth migration of the relevant users and groups.

The Confluence Cloud Migration Assistant is an app that helps you easily move content, users, and groups from Confluence Server or Data Center to Confluence Cloud. Built and maintained by Atlassian, the app is free to install and use.

With the app, you can choose what you want to move to the cloud, start migrating at your convenience, and monitor the progress of everything throughout the migration process.

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When to use the Confluence Cloud Migration Assistant

- When you want to move users or data from Confluence Server or Data Center to Confluence Cloud.
- When you want to assess your apps before moving from Confluence Server or Data Center to Confluence Cloud.
- When you want to run a test or trial migration from Confluence Server or Data Centerto Confluence Cloud.
- When the Atlassian Support team has recommended using the app.

The Confluence Cloud Migration Assistant will not work for Jira products. You can download the Jira Cloud Migration Assistant for Jira migrations to cloud.

Before you begin

Make sure you have reviewed the server to cloud migration guide. This guide will walk you through the migration process step-by-step and help you identify what to look out for.

Before attempting a test or production migration, ensure you've completed all of the steps for the Confluence Cloud Migration Assistant in thepre-migration checklist. The checklist will help you prepare yourself and your data for migration, and ensure you avoid common sources of migration failure.

Install the Confluence Cloud Migration Assistant app

If your Confluence Server site is version 6.13 or above you won't need to install anything because it comes pre-installed, although you may be asked to update the app.

To install the app on versions 5.10 to 6.12:

1. In Confluence Server go to⚙ > **Manage apps**.
2. Choose**Find new add-ons**.
3. Search for the**Confluence Cloud Migration Assistant**app.
4. Choose**Install**and you're all set.

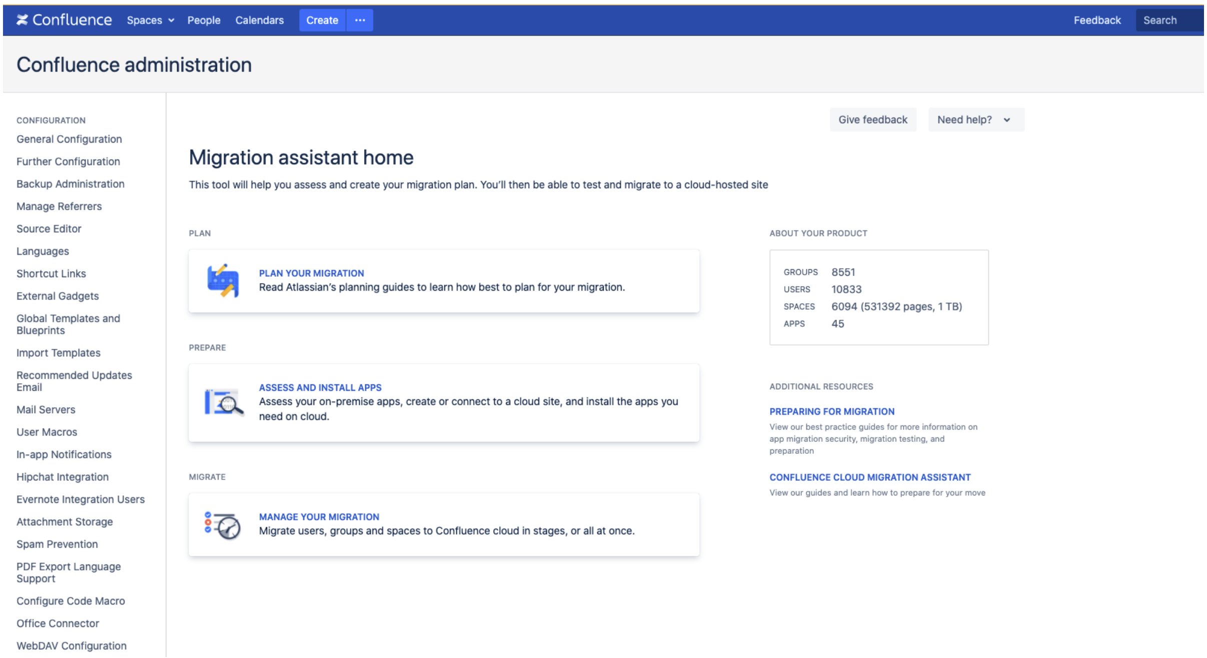
Alternatively, you can install it from theAtlassian Marketplace.

Once installed, you can access the migration assistant by going to**Confluence Administration**>look for the**Atlassian Cloud**category > select **Migration Assistant.**

If your Confluence Server site is behind a firewall, you'll need to allow access to the domain: **atlassian.com**

Use the migration assistant to assess your apps

Carrying out an assessment of your apps helps you to establish which apps are needed for a migration.



Migration assistant home

This tool will help you assess and create your migration plan. You'll then be able to test and migrate to a cloud-hosted site

PLAN

PLAN YOUR MIGRATION
Read Atlassian's planning guides to learn how best to plan for your migration.

PREPARE

ASSESS AND INSTALL APPS
Assess your on-premise apps, create or connect to a cloud site, and install the apps you need on cloud.

MIGRATE

MANAGE YOUR MIGRATION
Migrate users, groups and spaces to Confluence cloud in stages, or all at once.

ABOUT YOUR PRODUCT

GROUPS 8551
USERS 10833
SPACES 6094 (531392 pages, 1 TB)
APPS 45

ADDITIONAL RESOURCES

PREPARING FOR MIGRATION
View our best practice guides for more information on app migration security, migration testing, and preparation

CONFLUENCE CLOUD MIGRATION ASSISTANT
View our guides and learn how to prepare for your move

You can find step-by-step instructions for this process in Assessing and migrating apps with the Confluence Cloud Migration Assistant.

Check for possible data conflicts in your cloud site

You can reduce the risk of running into issues, or the migration failing, if you conduct somemanualchecks in your server and cloud sites.

1. Check for groupconflicts

Make sure that there are**no groups already in your cloud site with the same name as groups from your server site,**unless you are intentionally trying to merge them.

If we find a group in your server site that has the samename as a groupin your cloud site (either Jira or Confluence), we will merge the users from the server group into the cloud group.The server group users will inherit the permissions of the cloud group.This also applies to groups with Jira product access that have the same name as a Confluence group you are migrating. This is because all users and groups are managed in a central location in your cloud site.

If you dont want this to happen, youll need to make sure all groups across server and cloudhave unique namesbefore running your migration.

✓ The following groups manage admin access and are **blacklisted.** They will not be migrated at all: "site-admins", "system-administrators", "atlassian-addons", "atlassian-addons-admin". Users in these groups will still be migrated; if you want them to be in one of the blacklisted groups youll need to manually add them after migration.

2. Check for space keyconflicts

Before migrating,check that there are no spaces with the samespace keybetween your server and cloud sites.

If a space from your server site has the samespace keyas a space in your cloud site your migration will fail. This is because every space in Confluence Cloud must have a unique space key. If you find aconflict youcan:

- delete duplicate spaces from yourcloudorserversites
- reset your cloud site
- choose not to migrate these spaces

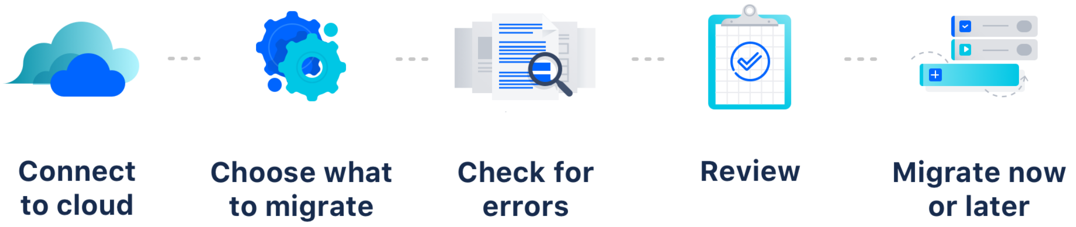
If the migration assistant finds a conflict, the space will not migrate.

If a space key conflict is caused by a previous test migration you canreset your cloud sitebefore migrating.

Use the app to set up and run your migration

Once you have the app installed, there are five key steps to set up and run your migration from server or Data Center to cloud:

1. Connect to cloud
2. Choose what to migrate
3. Check for errors
4. Review your migration
5. Migrate



The sections below describe each step in detail and explain some common errors that you may come across. If you have technical questions or issues while using the migration assistant, get in touch with our support team.

> **Running a test migration**
>
> We strongly recommend doing a trial run of your migration to a test or staging site before running your final migration. Check out our guidance on testing your migration.

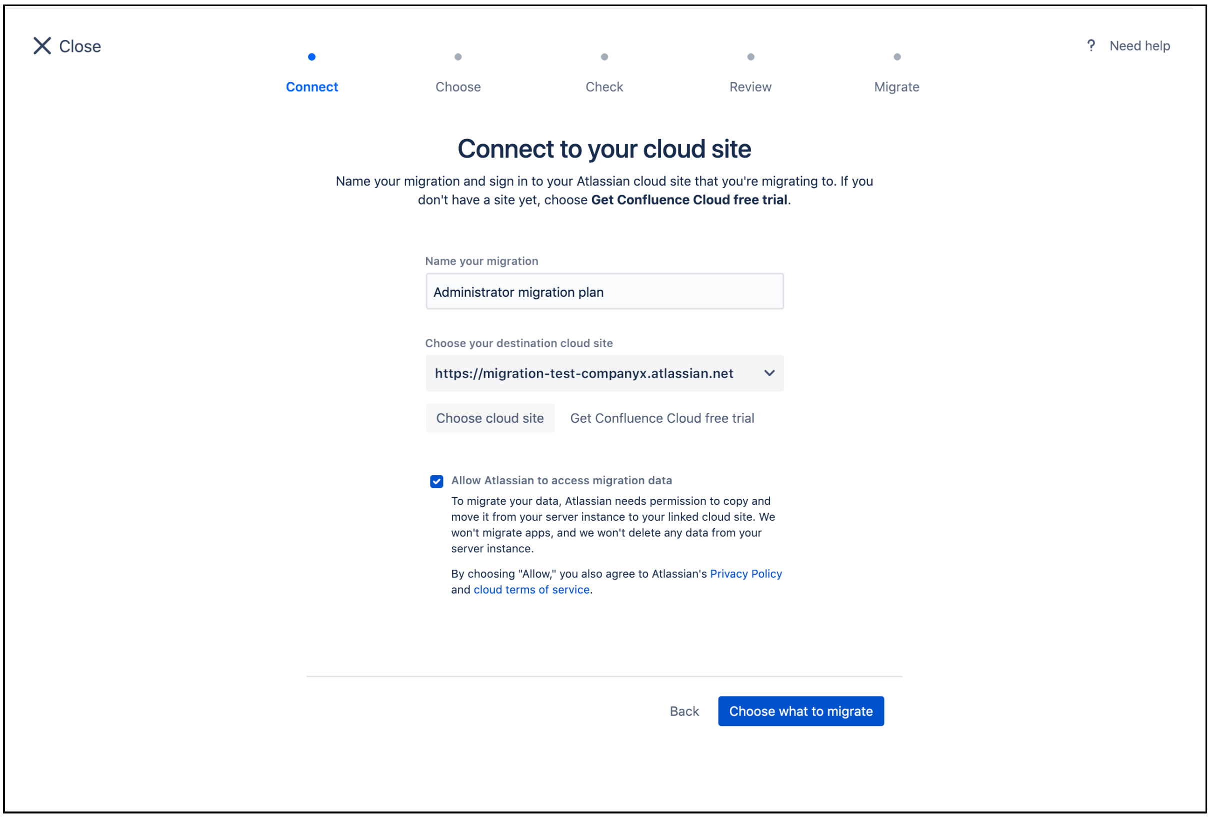
1. Connect to your destination Confluence Cloud site

Youll be asked to add a name for your migration and choose which cloud site you would like to migrate to. You need to be an admin in both your server and the destination cloud sites.

If you have already connected a cloud site, you should see it in the dropdown. If there is nothing there, you will need to either connect a new cloud site or sign up for a new cloud license.

When youre ready to go, check the box to allow Atlassian to move your data from your server site to your cloud site. If youre unable to grant Atlassian this access, you wont be able to migrate with the migration assistant and will need to do a space import instead.

If your Confluence Server site is behind a firewall, you'll need to allow access to the domain:**atlassian.com**. You also might need to allow access toother Atlassian domains.



Connect to your cloud site

Name your migration and sign in to your Atlassian cloud site that you're migrating to. If you don't have a site yet, choose **Get Confluence Cloud free trial**.

Name your migration: Administrator migration plan

Choose your destination cloud site: https://migration-test-companyx.atlassian.net

☑ Allow Atlassian to access migration data

To migrate your data, Atlassian needs permission to copy and move it from your server instance to your linked cloud site. We won't migrate apps, and we won't delete any data from your server instance.

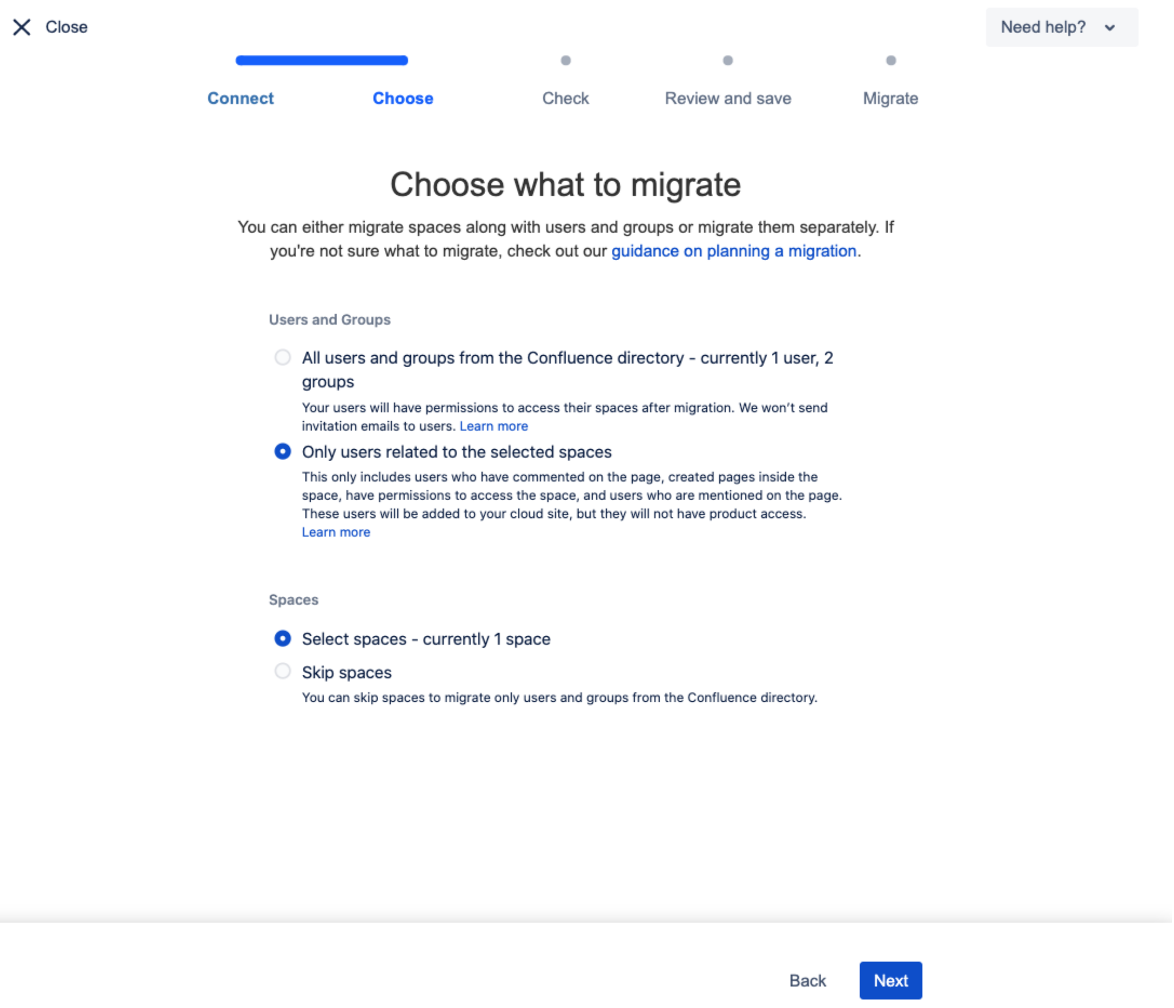
By choosing "Allow," you also agree to Atlassian's Privacy Policy and cloud terms of service.

2. Choose what to migrate

You can migrate everything together or break it up into different stages.

You can choose:

- all or some of your users and groups
- which individual spaces (and their attachments) you'd like to migrate



Choose what to migrate

You can either migrate spaces along with users and groups or migrate them separately. If you're not sure what to migrate, check out our guidance on planning a migration.

Users and Groups

○ All users and groups from the Confluence directory - currently 1 user, 2 groups
Your users will have permissions to access their spaces after migration. We won't send invitation emails to users. Learn more

● Only users related to the selected spaces
This only includes users who have commented on the page, created pages inside the space, have permissions to access the space, and users who are mentioned on the page. These users will be added to your cloud site, but they will not have product access. Learn more

Spaces

● Select spaces - currently 1 space

○ Skip spaces
You can skip spaces to migrate only users and groups from the Confluence directory.

Users and groups

You can choose to either migrate all or some of your users.

If you choose the migrate your users, the first time you do so all your users will be added to your cloud site. Every migration, after the first, we will just link your data to the users that already exist in cloud. If you have a large userbase we suggest following our recommendations.

When you migrate your users, they will be added to their groups when they get to cloud. You will need to review and approve group permissions after you migrate. When you approve group permissions, your users will be given Confluence access and will be added to your bill.

We wont send an invitation to your users. To invite your users you can choose to send an invitation from the **Administration** space after you have migrated, or send a link for them to log in themselves.

When you select **Only users related to the selected spaces**under users and groups, we will still migrate some user data connected to the spaces you are migrating. This is to make sure that mentions, comments, and page history stay active.

User data that will be migrated every time includes:

- full name
- username (discarded after migration)
- email address

We will only migrate this information for **users directly connected to the spaces** you are migrating. We will not give these users product access or add them to any groups. They will appear in your cloud site user list.

If you choose to migrate users later, their product and group access will be updated.

Also, if you choose not to migrate users and groups and you have a space permission granted by a group that don't exist in cloud, the Confluence Cloud Migration Assistant will not migrate the respective space permission. To avoid this scenario, we recommend you to create the specific group in the cloud site before migration.

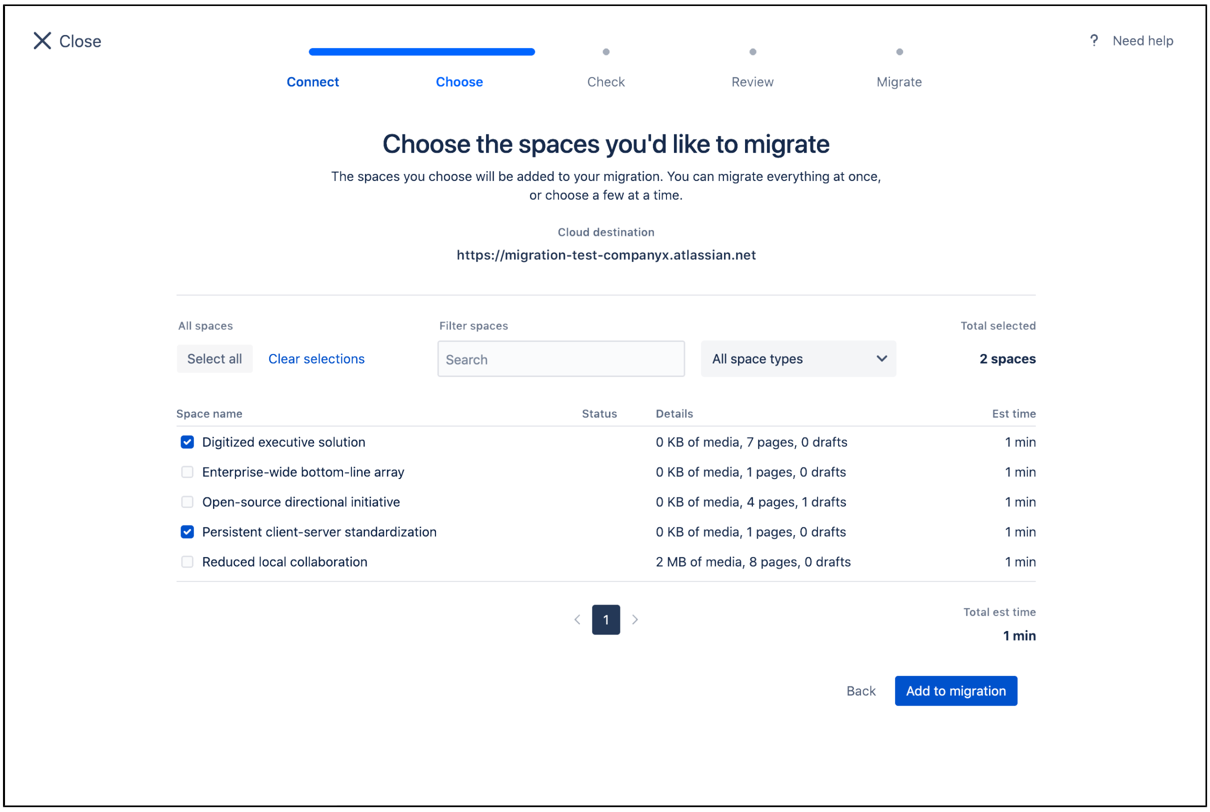
Other things to be aware of when migrating users and groups:

- Users are migrated using email address as the source of truth. On subsequent migrations, the migration assistant will link users by email address rather than re-migrating them. Check out ourtips for migrating a large number of users.
- You must validate all your user accounts (email addresses) before migrating to cloud. Migrating unknown user accounts can potentially allow unauthorized access to your cloud sites. For example, if you had users in your server instance with emails that you dont own, say email@example.com, you might be inviting someone who owns @example.com to your site in cloud.
- Confluence Cloud is subscription-based and billed on a per-user basis. If you plan to migrate your users, make sure you check the licensing options available.
- If you use an external user management system, we recommend synchronizing it with your local directory **before** migrating. This is to make sure that your users and groups are up to date before you transfer any data.
- Users with **disabled** status in your server site will be migrated as **active but without any product access**. This means they **will not be counted** as active Confluence users for billing purposes.
- If we find a group in your server site that has the same name as a group in your cloud site, we will merge the users from the server group into the cloud group.
- Global settings and global site permissions are not migrated with this tool. Youll need to set these manually after migration.
- If you have users that already exist in your destination cloud site and you choose to migrate users with this app, the following will occur:
  - If a user has **product accessin cloud**, but has **disabled status in your server site**, they will continue to have product access in cloud after migration.
  - If a user **does not have product access in cloud**, but is **enabled in your server site**, they will be granted product access through the migration process.

If you use Confluence as a knowledge base for Jira Service Management (formerly Jira Service Desk), your Jira Service Management users may also be migrated along with your Confluence users. This will happen if you can see your Jira Service Management users in the **cwd_user** table in Confluence.

Spaces

If you want to migrate all or some of your spaces choose **Select spaces** from the options. You will then be able to select what spaces you want to migrate. If you arent migrating any spaces you will be taken straight to check for errors.



Choose the spaces you'd like to migrate

The spaces you choose will be added to your migration. You can migrate everything at once, or choose a few at a time.

Cloud destination
https://migration-test-companyx.atlassian.net

Total selected
2 spaces

Space name	Status	Details	Est time
☑ Digitized executive solution		0 KB of media, 7 pages, 0 drafts	1 min
☐ Enterprise-wide bottom-line array		0 KB of media, 1 pages, 0 drafts	1 min
☐ Open-source directional initiative		0 KB of media, 4 pages, 1 drafts	1 min
☑ Persistent client-server standardization		0 KB of media, 1 pages, 0 drafts	1 min
☐ Reduced local collaboration		2 MB of media, 8 pages, 0 drafts	1 min

Total est time
1 min

Select the spaces you want to add to your migration. You can filter the list or search for particular spaces, or click **Select all** if you want to migrate everything at once. You wont be able to migrate spaces with space keys that already exist in your Confluence Cloud destination site.

If a space has a MIGRATED status, we have detected that you have already migrated this space to the same cloud site.

If a space has a QUEUED status, it has already been added to a migration that is waiting to be run.

If you have lots of spaces and attachments or you are on Data Center, you might want to break the migration up into a few smaller migrations. The migration assistant can be slow to load and process tasks when there is a lot to manage.

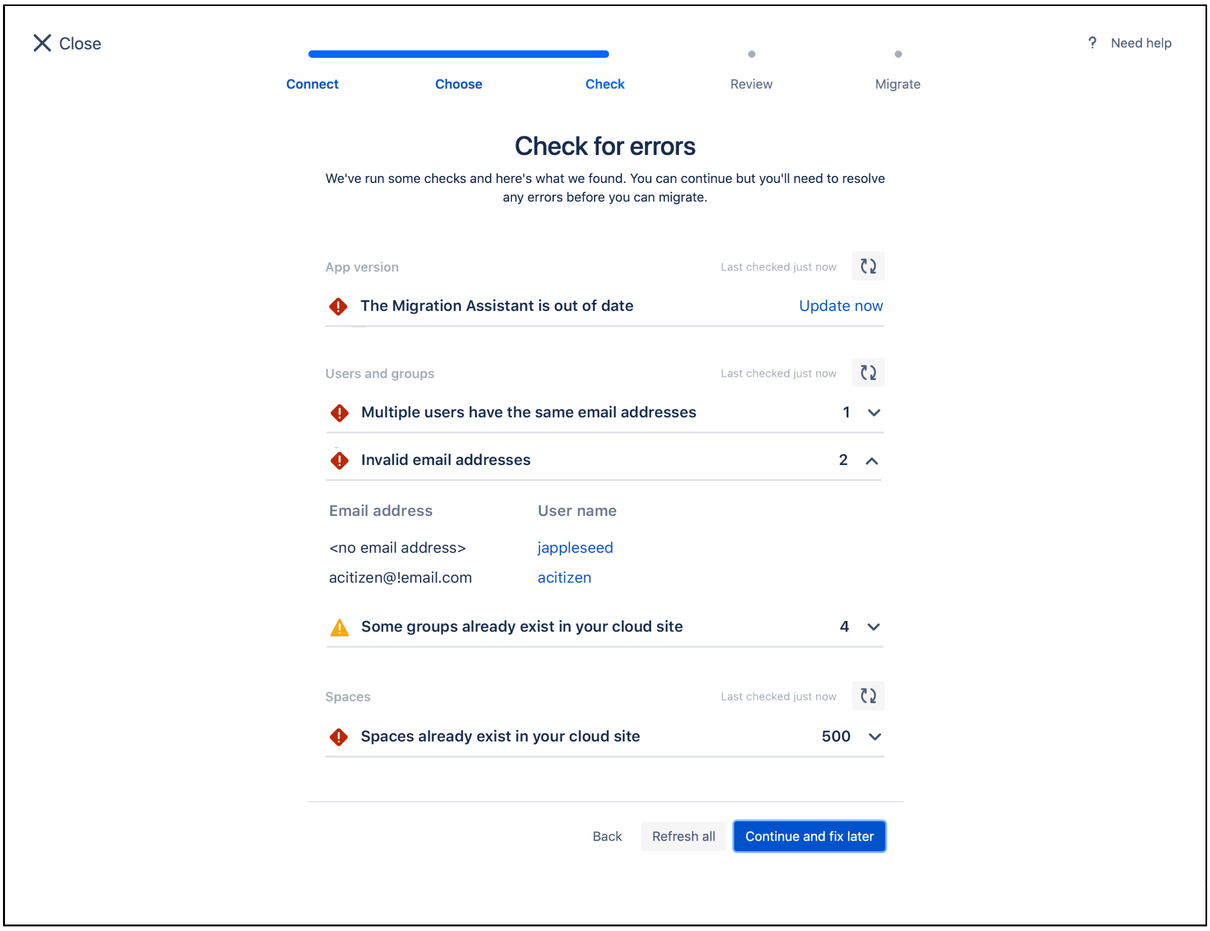
When you've chosen all your spaces, select**Add to migration**.

3. Check for errors

In this step, the Confluence Cloud Migration Assistant will review your migration and check for common errors. It will check if your:

- migration assistant app is up to date
- users have valid and unique email addresses
- groups will merge through the migration process
- spaces already exist in your cloud site
- spaces are publicly available and searchable online

You may also encounter other issues during the migration process; this step only checks for the issues mentioned here.



Check for errors

We've run some checks and here's what we found. You can continue but you'll need to resolve any errors before you can migrate.

App version — Last checked just now

The Migration Assistant is out of date — Update now

Users and groups — Last checked just now

Multiple users have the same email addresses	1
Invalid email addresses	2

Email address	User name
<no email address>	jappleseed
acitizen@!email.com	acitizen

Some groups already exist in your cloud site	4

Spaces — Last checked just now

Spaces already exist in your cloud site	500

If there is a green tick ✓then the check has passed. If you get a warning sign ⚠then you can continue, but you need to be aware of a potential issue.

If a check comes back with a red error ⊗then you will need to resolve the error before you can run your migration.

If you decide to **Continue and fix later**, you can come back to view the errors once you have saved your migration.

Updating the app

The migration assistant may be out of date. If you get this error, youll need to update it before running any migrations.

Users and groups errors

All users will need to have a valid and unique email address. If we detect invalid emails or multiple users with the same email, you will get an error. You will need to fix these email addresses before you can run your migration.

If you have chosen to migrate all users, we will check to see if you have any groups with the same name already in your cloud site. If we find groups with the same name, we will merge the users from the server group into the cloud group with the same name. You can continue with your migration without fixing this issue, but its important to check that this wont cause permission escalation.

✓ The following groups manage admin access and are **blacklisted.** They will not be migrated at all: "site-admins", "system-administrators", "atlassian-addons", "atlassian-addons-admin". Users in these groups will still be migrated; if you want them to be in one of the blacklisted groups youll need to manually add them after migration.

Space errors

If youre migrating spaces we will check to see if there will be any space key conflicts. If you get an error you can:

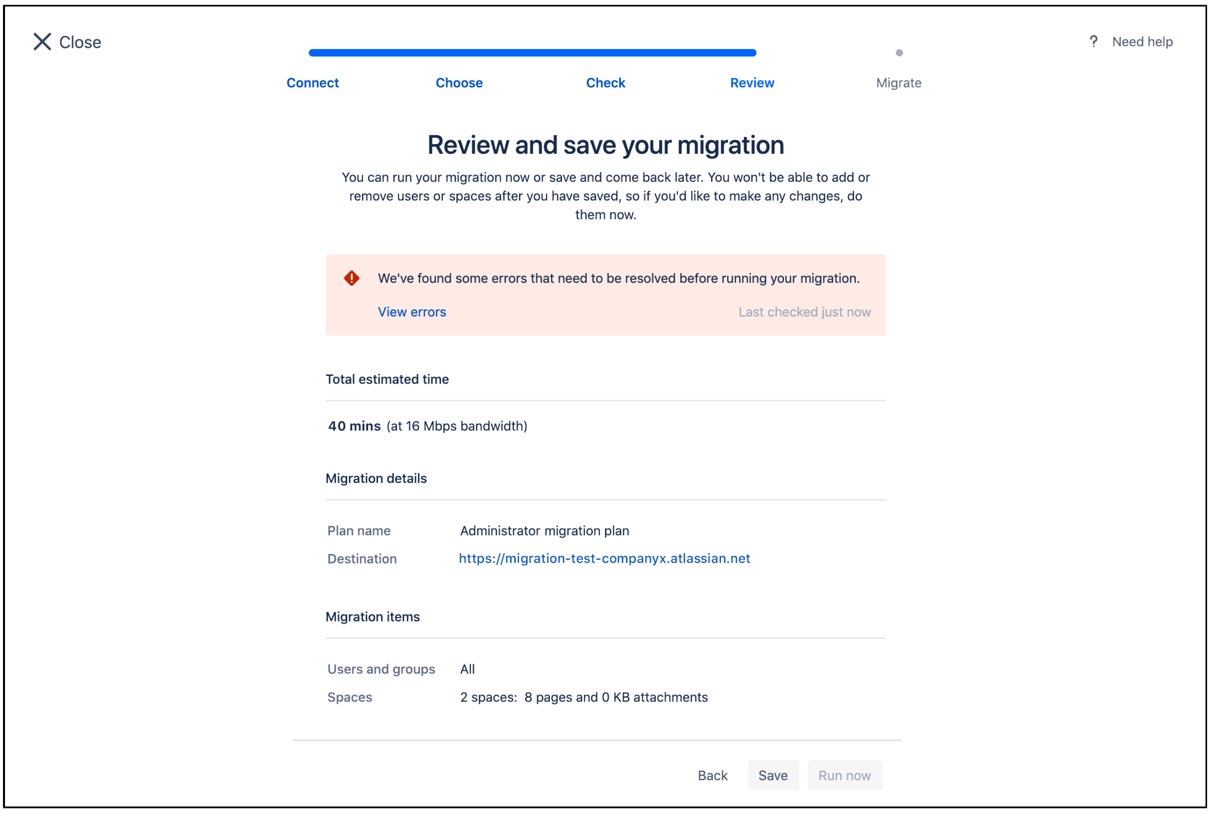
- delete duplicate spaces from your cloud or server sites
- reset your cloud site
- choose not to migrate these spaces by removing them from your migration

You will need to resolve any space key conflicts before you can run your migration.

4. Review your migration

This is the final step in setting up your migration.

If everything looks correct and you want to start your migration, click **Run**. If you would like to start your migration later or you still have errors to fix, click **Save**. If you choose to run your migration, it will still be saved to your dashboard. There, you can view the progress and details of all your migrations.



Review and save your migration

You can run your migration now or save and come back later. You won't be able to add or remove users or spaces after you have saved, so if you'd like to make any changes, do them now.

We've found some errors that need to be resolved before running your migration.

Last checked just now

Total estimated time

40 mins (at 16 Mbps bandwidth)

Migration details

Plan name	Administrator migration plan
Destination	https://migration-test-companyx.atlassian.net

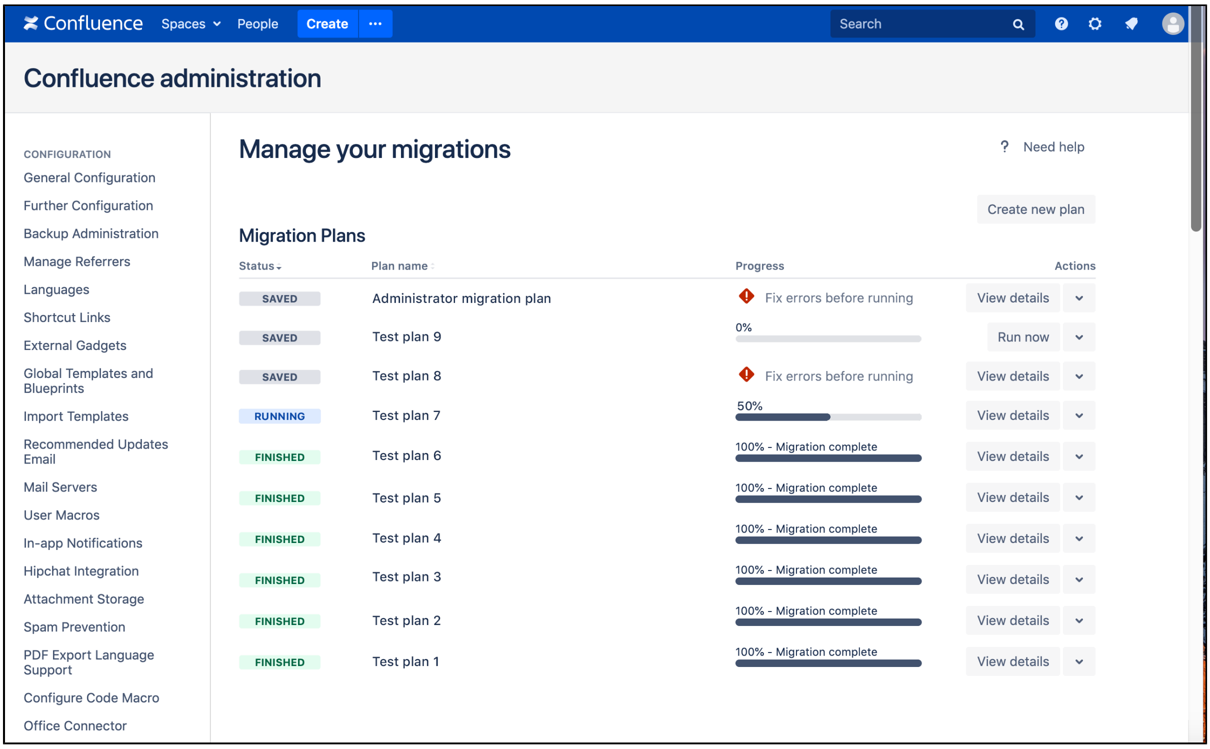
Migration items

Users and groups	All
Spaces	2 spaces: 8 pages and 0 KB attachments

5. Manage your migrations

Your saved migration will be listed on the migration dashboard, where you can **view details** or **run** it. You can also check the status of a migration, monitor the progress, stop a migration that's currently running, or create a new one.

You can create as many migrations as you need. At this time, migrations can't be edited or deleted, so if you create a migration that can't be used, just create a new one.



Confluence administration

Manage your migrations

Migration Plans

Status	Plan name	Progress	Actions
SAVED	Administrator migration plan	Fix errors before running	View details
SAVED	Test plan 9	0%	Run now
SAVED	Test plan 8	Fix errors before running	View details
RUNNING	Test plan 7	50%	View details
FINISHED	Test plan 6	100% - Migration complete	View details
FINISHED	Test plan 5	100% - Migration complete	View details
FINISHED	Test plan 4	100% - Migration complete	View details
FINISHED	Test plan 3	100% - Migration complete	View details
FINISHED	Test plan 2	100% - Migration complete	View details
FINISHED	Test plan 1	100% - Migration complete	View details

Status definitions

SAVED Your migration is saved and ready to run.

RUNNING Your migration is currently in progress.

FINISHED All tasks in your migration have been completed.

STOPPED Your migration has been manually stopped. Once stopped, it can't be resumed. Any step already in progress will first need to finish before the migration is shown as fully stopped. Some users, groups, and spaces may already have been migrated to your Confluence Cloud site.

FAILED We were unable to complete the migration. This might be because a space key already exists in the destination site, or the migration hit an unexpected error. Some users, groups, and spaces may already have been migrated to your Confluence Cloud site.

After migrating

After migrating spaces, it may take a while for them to appear in the space directory. However, you can still access them via a direct link.

Depending on the type of migration, there may be some things you need to do once your migration is finished.

Users and groups

To make sure your users and groups are set up correctly:

- Review members of groups and approve their permissions by going to **Review imported groups**. (If you have the Free plan, permissions cant be modified; users and groups retain the same permissions that they had on your original site.)
- Add users to the generic groups if necessary. The generic groups are: "site-admins", "system-administrators", "atlassian-addons", "atlassian-addons-admin".
- If you use an external user management system, check that your users have synced correctly.
- When you are ready, invite your users. Go to **Administration > Users > Show details** and then **Resend invite**. When they first log in they may be prompted to set a new password and add personal details.

> If you have the improved user management experience, go to**Administration > Directory > Users > Show details**and then**Resend invite**.

- We recommend providing some training or sending an onboarding email to your users tohelp them get familiar with their new cloud workspace.

Spaces

To check that your spaces have migrated successfully:

- Review content and spaces, or ask your users to review their own content.
- Check for any instances of *Former User.* This means that we were unable to match content to a user.
- Link your other Atlassian products by going to **Settings > Application links.**
- Use the Jira macro repair to update any links to Jira. On your cloud site go to **Settings > Jira macro repair** and follow the steps.

> ⚠ Confluence short links like *https://confluence.example.com/x/PywS* may not work after migrating. Replacing them with internal links (or full URLs if theyre not in your Confluence site)\before migrating should solve this issue.

You can then install any apps you wish to use and onboard your users.

For the full overview of post-migration actions check out the server to cloud migration guide.

More information and support

We have a number of channels available to help you with your migration.

- For more migration planning information and FAQs, visit theAtlassian Cloud Migration Center.
- Have a technical issue or need more support with strategy and best practices?Get in touch.
- Looking for peer advice? Ask theAtlassian Community.

- Want expert guidance? Work with anAtlassian Partner.

Confluence Data Center documentation

Data Center is our self-managed edition of Confluence built for enterprises. It provides the deployment flexibility and administrative control you need to manage mission-critical Confluence sites.Learn more aboutConfluence Data Centeron our website.

Data Center architecture

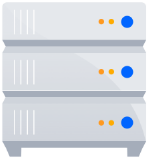
You can deploy Confluence Data Center in two ways.

Non-clustered (single node)

Run the Confluence Data Center application on a single server. (Available for Confluence 7.2 and later).

This allows you to take advantage of Data Center-only features without adding to your infrastructure.

Learn more about Data Center features.



Clustered

Run Confluence Data Center in a cluster with multiple application nodes, and a load balancer to direct traffic.

Clustering is designed for large, or mission-critical, Confluence sites, allowing you to provide high availability, and maintain performance as you scale.

Learn more about clustering with Data Center.

Get started

Install or upgrade Confluence Data Center

- Install Confluence Data Center from scratch
- Migrate from Server to Data Center

Clustering with Confluence Data Center

- Learn about clustering architecture and requirements
- Set up a Data Center cluster
- Add or remove application nodes
- Turn off clustering (revert to a non-clustered Data Center installation)
- Troubleshoot a clustering issue

Want to see what's included with Data Center? Head to theConfluence Server and Data Center feature comparison.

You can purchase a Data Center license or create an evaluation license at my.atlassian.com

Getting Started with Confluence Data Center

Data Center is our self-managed edition of Confluence built for enterprises. It provides the deployment flexibility and administrative control you need to manage mission-critical Confluence sites.

You can run Confluence Data Center documentation in a cluster, or as standalone (non-clustered) installation.

This guide covers**clustered** Data Center deployments.

On this page:

1. Define your requirements

Before you get started, its a good idea to define your organizations goals and requirements. If you need high availability, scalability, and performance under heavy load, you'll want to run Confluence Data Center in a cluster.

To prepare, we recommend assessing:

- the number of users you have
- the amount of data you have
- your expected usage patterns
- the resources your organization has allocated to maintain your Confluence site.

For more information about disaster recovery for Confluence, head toConfluence Data Center disaster recovery.

Our sizing and performance benchmarks can help you assess your expected load, andpredict performance:

- Confluence Data Center load profiles
- Confluence Data Center performance
- Infrastructure recommendations for enterprise Confluence instances on AWS

2. Provision your infrastructure

Once you've identified your organization's needs, you can prepare your clustered environment.Read ourClustering with Confluence Data Centerfor importanthardware and infrastructure considerations.

To help you get started with clustering, we've provided a Confluence Data Center sample deployment and monitoring strategy.

We've also provided some general advice about node sizing and load balancers, to help you find your feet if this is your first clustered environment:

- Node sizing overview for Atlassian Data Center
- Load balancer configuration options
- Traffic distribution with Atlassian Data Center

3. Plan your deployment

If you're new to Confluence, you can try out Confluence Data Center bydownloading a free trial. This can help you identify dependencies and plan your path to production.

Migrating from Confluence Server to Confluence Data Center?Read throughthese guides to help minimize disruption during the switch:

- Moving to Confluence Data Center
- Atlassian Data Center migration plan
- Atlassian Data Center migration checklist

It's also important to take aninventory of your third-party apps (also known as add-ons) to make sure they're compatible with Data Center. Using a large number of add-ons can degrade performance, soit's a good idea to remove any add-ons that aren't crucial to functionality.

Find out how to evaluate add-ons for Data Center migration.

4. Install and configure Confluence Data Center

Once your environment is ready, it's time to install and configure Confluence Data Center in a cluster.

How you install depends on your environment:

- **Your own hardware** seeInstalling Confluence Data Center
- **Kubernetes -** seeRunning Data Center products on a Kubernetes cluster
- **Azure** seeGetting started with Confluence Data Center on Azure
- **AWS (Amazon Web Services)** seeRunning Confluence Data Center in AWS

If you're migrating from Confluence Server to Confluence Data Center,follow the instructions outlined inMigrate from Server to Data Center.

Before deploying Confluence Data Center to production, we recommend thoroughly testing the installation. Head to ourData Center migration plan for detailed advice about testing and launching to production.

5. Maintain and scale your Confluence cluster

Once you've deployed your Confluence Data Center cluster in production, here are some resources for monitoring the health of the cluster, and scaling it up to accomodate moreusers:

- Tools for monitoring your Data Center application

Ready to grow? Read up on scaling and adding nodes to your new Confluence Data Centercluster:

- Scaling with Atlassian Data Center
- Adding or removing Confluence Data Center nodes

Confluence Server and Data Center feature comparison

Important changes to our server and Data Center products

Weve ended sales for new server licenses, and will end support for server on February 2, 2024. Were continuing our investment in Data Center with several key improvements. Learn what this means for you

If you manage your own Confluence site (it's not hosted by Atlassian), you'll have either a**Confluence Server** or**Confluence Data Center**license. If we manage Confluence for you, you'll have a **Confluence Cloud** license.

Your Confluence license determines which features and infrastructure choices are available.

We want all teams to get the most out of Confluence, so the core features are available for everyone including creating pages, working together, and organizing your work.

Feature comparison

Heres a summary of available features for Confluence Server and Confluence Data Center. If youre interested in having Atlassian host and manage your products, see how a cloud plan compares on ourConfluence features page.

Core features	**Server license**	**Data Center license**
Create spaces Create spaces to store your team or project work.	✓	✓
Create pages Create pages and blog posts, and work on them with your team.	✓	✓
Collaborative editing Up to 12 people can work on the same page at the same time. Learn more	✓	✓
Browser and mobile Use your browser, or use the iOS or Android app. Learn more	✓	✓
Team calendars Create and view calendars from your organization. Learn more	✗	✓ 7.11+
Analytics Track engagement with all the content in your site. Learn more	✗	✓ 7.11+
User management		
External user directories Store users in Active Directory, Crowd, Jira or another LDAP directory. Learn more	✓	✓
Single sign-on Use a SAML or OpenID Connect identity provider for authentication and single-sign on. Learn more	✓ via Crowd	✓ 6.1 +
Advanced permissions management Inspect user and group permissions for auditing and troubleshooting purposes. Learn more	✗	✓ 7.3 +
High availability and performance at scale		

Clustering Run Confluence on multiple nodes high availability. Learn more	✗	✓ 5.6 +
Content Delivery Network (CDN) support Improve geo-performance for distributed teams. Learn more	✗	✓ 7.0 +
Infrastructure and Control		
Read-only mode Limit what users can do in your site while you perform maintenance. Learn more	✗	✓ 6.10 +
Sandboxed processes Run resource intensive tasks in external sandboxes for greater stability. Learn more	✗	✓ 6.12 +
Rate limiting Control how many external REST API requests users and automations can make. Learn more	✗	✓ 7.3 +
Advanced auditing Access a wider range of audit events, and integrate with third-party logging systems. Learn more	✗	✓ 7.5 +
Rolling upgrades Upgrade to the latest bug fix update of the same feature release with no downtime. Learn more	✗	✓ 7.9 +
Deployment options		
Your own hardware Run Confluence on your own physical servers, virtualized servers, or in the data center of your choice.	✓	✓
AWS Quick Start Use our Cloud Formation Templates to deploy Confluence on AWS. Learn more	✗	✓ 6.1 +
Azure template Use our template to deploy Confluence on Azure. Learn more	✗	✓ 6.6 +
Kubernetes Helm charts Use our Helm charts to deploy Confluence on Kubernetes.Learn more	✗	✓ 7.13 +

Clustering with Confluence Data Center

Confluence Data Center allows you to run a cluster of multiple Confluence nodes, providing high availability, scalable capacity, and performance at scale.

This guide describes the benefits of clustering, and provides you an overview of what youll need to run Confluence in a clustered environment, including infrastructure and hardware requirements.

Ready to get started? See Set up a Confluence Data Center cluster

On this page

Is clustering right for my organization?

Clustering is designed for enterprises with large or mission-critical Data Center deployments that require continuous uptime, instant scalability, and performance under high load.

There are a number of benefits to running Confluence in a cluster:

- **High availability and failover:** If one node in your cluster goes down, the others take on the load, ensuring your users have uninterrupted access to Confluence.
- **Performance at scale:** each node added to your cluster increases concurrent user capacity, and improves response time as user activity grows.
- **Instant scalability:** add new nodes to your cluster without downtime or additional licensing fees. Indexes and apps are automatically synced.
- **Disaster recovery:** deploy an offsite Disaster Recovery system for business continuity, even in the event of a complete system outage. Shared application indexes get you back up and running quickly.
- **Rolling upgrade**: upgrade to the latest bug fix update of your feature release without any downtime. Apply critical bug fixes and security updates to your site while providing users with uninterrupted access to Confluence.

Clustering is only available with a Data Center license. Learn more about upgrading to Data Center.

Clustering architecture

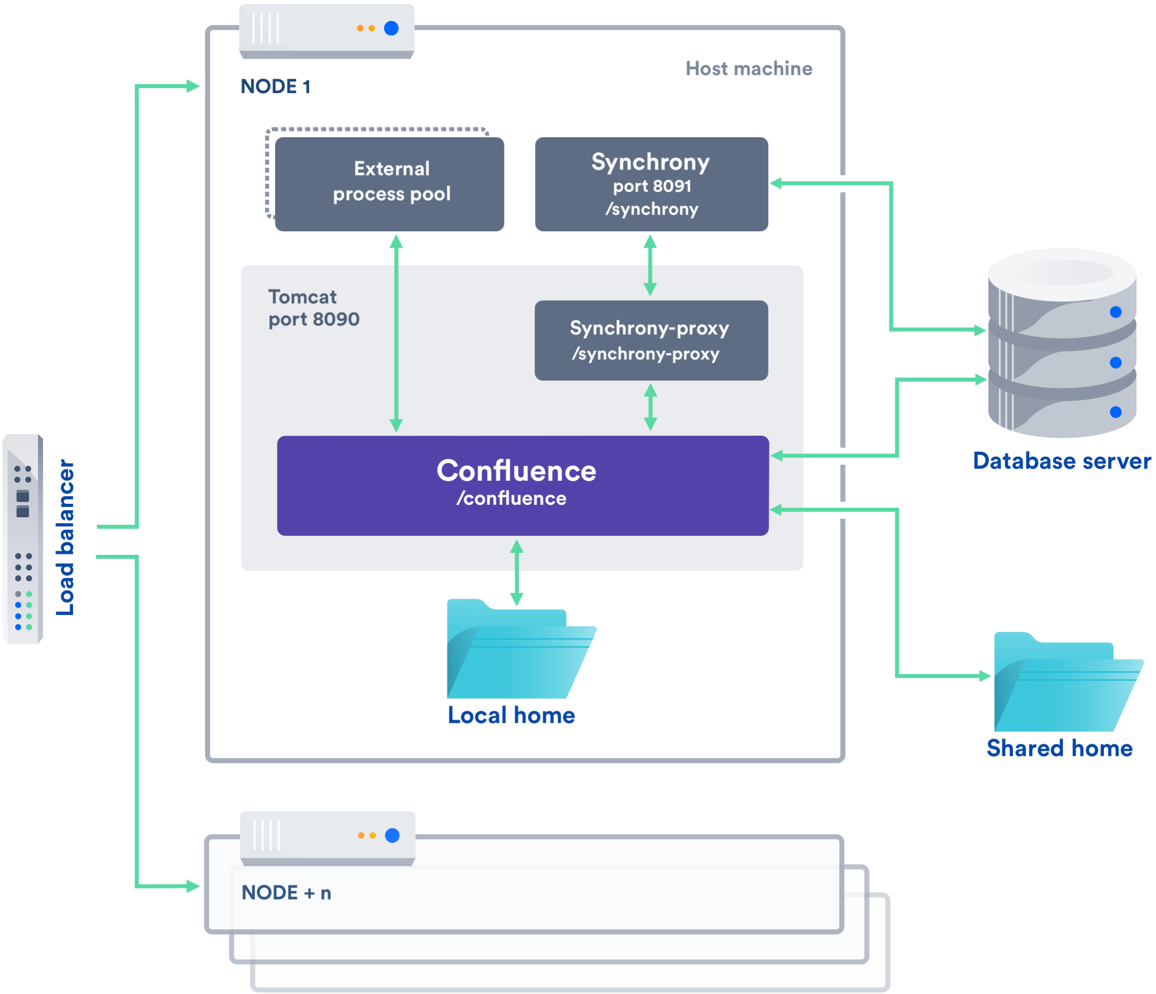
The basics

A Confluence Data Center cluster consists of:

- Multiple identical application nodes running Confluence Data Center.
- A load balancer to distribute traffic to all of your application nodes.
- A sharedfilesystem that stores attachments, and other shared files.
- A database that all nodes read and write to.

All application nodes are active and process requests. A user will access the same Confluence node for all requests until their session times out, they log out, or a node is removed from the cluster.

The image below shows a typical configuration:



Licensing

Your Data Center license is based on the number of users in your cluster, rather than the number of nodes. This means you can scale your environment without additional licensing fees for new servers or CPU.

You can monitor the available license seats in the License Details page in the admin console.

If you wanted to automate this process (for example to send alerts when you are nearing full allocation) you can use the REST API.

> The following GET requests require an authenticated user with system administrator permissions. The requests return JSON.

`<confluenceurl>/rest/license/1.0/license/userCount`	Number of active users
`<confluenceurl>/rest/license/1.0/license/remainingSeats`	Number of users you can add before reaching your license limit
`<confluenceurl>/rest/license/1.0/license/maxUsers`	Maximum number of users allowed by your license

Your Confluence license determines which features and infrastructure choices are available. Head toConfluence Server and Data Center feature comparison for a full run down of the differences between a Server license and a Data Center license.

Home directories

To run Confluence in a cluster, you'll need an additional home directory, known as the shared home.

Each Confluence node has a local home that contains logs, caches, Lucene indexes and configuration files. Everything else is stored in the shared home, which is accessible to each Confluence node in the cluster. Marketplace apps can choose whether to store data in the local or shared home, depending on the needs of the app.

Here's a summary of what is found in the local home and shared home:

Local home	Shared home
• logs • caches • Lucene indexes • configuration files • plugins	• attachments • avatars / profile pictures • icons • export files • import files • plugins

If you are currently storing attachments in your database you can continue to do so, but this is not available for new installations.

Caching

When clustered, Confluence uses a combination of local caches, distributed caches, and hybrid caches that are managed using Hazelcast. This allows for better horizontal scalability, and requires less storage and processing power than using only fully replicated caches. SeeCache Statistics for more information.

Because of this caching solution, to minimize latency, your nodes should be located in the same physical location, or region (for AWS and Azure).

Indexes

Each individual Confluence application node stores its own full copy of the index. A journal service keeps each index in sync.

When you first set up your cluster, you will copy the local home directory, including the indexes, from the first node to each new node.

When adding a new Confluence node to an existing cluster, you will copy the local home directory of an existing node to the new node. When you start the new node, Confluence will check if the index is current, and if not, request a recovery snapshot of the index from either the shared home directory, or a running node (with a matching build number) and extract it into the index directory before continuing the start up process. If the snapshot can't be generated or is not received by the new node in time, existing index files will be removed, and Confluence will perform a full re-index.

If a Confluence node is disconnected from the cluster for a short amount of time (hours), it will be able to use the journal service to bring its copy of the index up-to-date when it rejoins the cluster. If a node is down for a significant amount of time (days) its Lucene index will have become stale, and it will request a recovery snapshot from an existing node as part of the node startup process.

If you suspect there is a problem with the index, you can rebuild the index on one node, and Confluence will propagate the new index files to each node in the cluster.

SeeContent Index Administration for more information on reindexing and index recovery.

Cluster safety mechanism

The ClusterSafetyJob scheduled task runs every 30 seconds in Confluence. In a cluster, this job is run on one Confluence node only. The scheduled task operates on asafety number a randomly generated number that is stored both in the database and in the distributed cache used across the cluster.The ClusterSafetyJob compares the value in the database with the one in the cache, and if the value differs, Confluence will shut the node down - this is known as cluster split-brain.This safety mechanism is used to ensure your cluster nodes cannot get into an inconsistent state.

If cluster split-brain does occur, you need to ensure proper network connectivity between the clustered nodes. Most likely multicast traffic is being blocked or not routed correctly.

Balancing uptime and data integrity

By changing how often the cluster safety scheduled job runs and the duration of the Hazelcast heartbeat (which controls how long a node can be out of communication before it's removed from the cluster) you can fine tune the balance between uptime and data integrity in your cluster.In most cases the default values will be appropriate, but there are some circumstances where you may decide to trade off data integrity for increased uptime for example.

Uptime over data integrity

Cluster safety job	Hazelcast heartbeat	Effect
1 minute	1 minute	You could have network interruptions or garbage collection pauses of up to 1 minute without triggering a cluster panic. However, if two nodes are no longer communicating, conflicting data could be being written to the database for up to 1 minute, affecting your data integrity.
10 minutes	30 seconds	You could have network interruptions or garbage collection pauses of up to 30 seconds without nodes being evicted from the cluster. Evicted nodes then have up to 10 minutes to rejoin the cluster before the Cluster Safety Job kicks in and shuts down the problem node. Although this may result in higher uptime for your site, conflicting data could be being written to the database for up to 10 minutes, affecting your data integrity.

Data integrity over uptime

Cluster safety job	Hazelcast heartbeat	Effect
15 seconds	15 seconds	Network interruptions or garbage collection pauses longer than 15 seconds will trigger a cluster panic. Although this may result in higher downtime for your site, nodes can only write to the database while out of communication with each other for a maximum of 15 seconds, ensuring greater data integrity.
15 seconds	1 minute	You could have network interruption or garbage collection pauses up to 1 minute without nodes being evicted from the cluster. Once a node is evicted, it can only write to the database for a maximum of 15 seconds, minimizing the impact on your data integrity.

To find out how to change the cluster safety scheduled job, see Scheduled Jobs.

You can change theHazelcast heartbeat default via the `confluence.cluster.hazelcast.max.no.heartbeat.seconds` system property. See Configuring System Properties.

Cluster locks and event handling

Where an action must only run on one node, for example a scheduled job or sending daily email notifications, Confluence uses a cluster lock to ensure the action is only performed on one node.

Similarly, some actions need to be performed on one node, and then published to others. Event handling ensures that Confluence only publishes cluster events when the current transaction is committed and complete. This is to ensure that any data stored in the database will be available to other instances in the cluster when the event is received and processed.Event broadcasting is done only for certain events, like enabling or disabling an app.

Cluster node discovery

When configuring your cluster nodes you can either supply theIP address of each cluster node, or a multicast address.

If you're using multicast:

Confluence will broadcast a join request on the multicast network address. Confluence must be able to open a UDP port on this multicast address, or it won't be able to find the other cluster nodes.Once the nodes are discovered, each responds with a unicast (normal) IP address and port where it can be contacted for cache updates. Confluence must be able to open a UDP port for regular communication with the other nodes.

A multicast address can be auto-generated from the cluster name, or you can enter your own, during the set-up of the first node.

Infrastructure and hardware requirements

The choice of hardware and infrastructure is up to you. Below are some areas to think about when planning your hardware and infrastructure requirements.

AWS Quick Start deployment option

If you plan to run Confluence Data Center on AWS, a Quick Start is available to help you deploy Confluence Data Center in a new or existing Virtual Private Cloud (VPC). You'll get your Confluence and Synchrony nodes, Amazon RDS PostgreSQL database and application load balancer all configured and ready to use in minutes. If you're new to AWS, the step-by-step Quick Start Guide will assist you through the whole process.

Confluence can only be deployed in a region that supports Amazon Elastic File System (EFS). SeeRunning Confluence Data Center in AWS for more information.

It is worth noting that if you deploy Confluence using the Quick Start, it will use the Java Runtime Engine (JRE) that is bundled with Confluence (/opt/atlassian/confluence/jre/), and not the JRE that is installed on the EC2 instances (/usr/lib/jvm/jre/).

Server requirements

You should not run additional applications (other than core operating system services) on the same servers as Confluence. Running Confluence, Jira and Bamboo on a dedicated Atlassian software server works well for small installations but is discouraged when running at scale.

Confluence Data Center can be run successfully on virtual machines. If you plan to use multicast, you can't run Confluence Data Center in Amazon Web Services (AWS) environments as AWS doesn't support multicast traffic.

Cluster nodes

Each node does not need to be identical, but for consistent performance we recommend they are as close as possible. All cluster nodes must:

- be located in the same data center, or region (for AWS and Azure)
- run the same Confluence version on each Confluence node (exceptduring a rolling upgrade)
- run the same Synchrony version on each Synchrony node (if not using managed Synchrony)
- have the same OS, Java and application server version

- have the same memory configuration (both the JVM and the physical memory) (recommended)
- be configured with the same time zone (and keep the current time synchronized). Using ntpd or a similar service is a good way to ensure this.

⚠You must ensure the clocks on your nodes don't diverge, as it can result in a range ofproblems with yourcluster.

How many nodes?

Your Data Center license does not restrict the number of nodes in your cluster. The right number of nodes depends on the size and shape of your Confluence site, and the size of your nodes. See our Confluence Data Center load profiles guide for help sizing your instance. In general, we recommend starting small and growing as you need.

Memory requirements

Confluence nodes

We recommend that each Confluence node has a minimum of 10GB of RAM. A high number of concurrent users means that a lot of RAM will be consumed.

Here's some examples of how memory may be allocated on different sized machines:

RAM	Breakdown for each Confluence node
10GB	• 2GB for operating system and utilities • 4GB for Confluence JVM (-Xmx 3GB) • 2GB for external process pool (2 sandboxes with -Xmx 512MB each) • 2GB for Synchrony
16GB	• 2GB for operating system and utilities • 10GB for Confluence JVM (-Xmx 8GB) • 2GB for external process pool (2 sandboxes with -Xmx 512MB each) • 2GB for Synchrony

The maximum heap (-Xmx) for the Confluence application is set in the `setenv.sh`or `setenv.bat`file. The default should be increased for Data Center. We recommend keeping the minimum (Xms) and maximum (Xmx) heap the same value.

The external process pool is used to externalise memory intensive tasks,to minimise the impact on individual Confluence nodes. The processes are managed by Confluence. The maximum heap for each process (sandbox) (-Xmx), and number of processes in the pool, is set using system properties.In most cases the default settings will be adequate, and you don't need to do anything.

Standalone Synchrony cluster nodes

Synchrony is required for collaborative editing. By default, it is managed by Confluence, but you can choose to run Synchrony in its own cluster. SeePossible Confluence and Synchrony Configurations for more information on the choices available.

If you do choose to run your own Synchrony cluster, we recommend allowing 2GB memory for standalone Synchrony.Here's an example of how memory could be allocated on a dedicated Synchrony node.

Physical RAM	Breakdown for each Synchrony node
4GB	• 2GB for operating system and utilities • 2GB for Synchrony JVM (-Xmx 1GB)

Database

The most important requirement for the cluster database is that it have sufficient connections available to support the number of nodes.

For example, if:

- each Confluence node has a maximum pool size of 20 connections
- each Synchrony node has a maximum pool sizeof 15 connections (the default)
- you plan to run 3 Confluence nodes and 3 Synchrony nodes

your database server must allow at least 105 connections to the Confluence database. In practice, you may require more than the minimum for debugging or administrative purposes.

You should also ensure your intended database is listed in the currentSupported Platforms.The load on an average cluster solution is higher than on a standalone installation, so it is crucial to use the a supported database.

You must also use a supported database driver. Collaborative editing will fail with an error if you're using an unsupported or custom JDBC driver (or`driverClassName`in the case of a JNDI datasource connection). SeeDatabase JDBC Driversfor the list of drivers we support.

Additional requirements for database high availability

Running Confluence Data Center in a cluster removes the application server as a single point of failure. You can also do this for the database through the following supported configurations:

- Amazon RDS Multi-AZ: this database setup features a primary database that replicates to a standby in a different availability zone. If the primary goes down, the standby takes its place.
- Amazon PostgreSQL-Compatible Aurora: this is a cluster featuring a database node replicating to one or more readers (preferably in a different availability zone). If the writer goes down, Aurora will promote one of the writers to take its place.

The**AWS Quick Start deployment option**allows you to deploy Confluence Data Center with either one, from scratch. If you want to set up an Amazon Aurora cluster with an existing Confluence Data Center instance, refer toConfiguring Confluence Data Center to work with Amazon Aurora.

Shared home directory and storage requirements

All Confluence cluster nodes must have access to a shared directory in the same path.NFS and SMB/CIFS shares are supported as the locations of the shared directory. As this directory will contain large amount of data (including attachments and backups) it should be generously sized, and you should have a plan for how to increase the available disk space when required.

Remember me and session timeout

The 'remember me' option is enforced by default in a cluster. Users won't see the 'remember me' checkbox on the login page, and their session will be shared between nodes. See the following knowledge base articles if you need to change this, or change the session timeout.

- How to configure the 'Remember Me' feature in Confluence
- How to adjust the session timeout for Confluence

Load balancers

We suggest using the load balancer you are most familiar with. The loadbalancer needs to support session affinity and WebSockets. This is required for both Confluence and Synchrony. If you're deploying on AWS you'll need to use an Application Load Balancer (ALB).

Here are some recommendations when configuring your load balancer:

- Queue requests at the load balancer. By making sure the maximum number requests served to a node does not exceed the total number of http threads that Tomcat can accept, you can avoid overwhelming a node with more requests than it can handle. You can check the maxThreads in`<install-directory>/conf/server.xml`.
- Don't replay failed idempotent requests on other nodes, as this can propagate problems across all your nodes very quickly.
- Using*least connections*as the load balancing method, rather than*round robin*, can better balance the load when a node joins the cluster or rejoins after being removed.

Many load balancers require a URL to constantly check the health of their backends in order to automatically remove them from the pool. It's important to use a stable and fast URL for this, but lightweight enough to not consume unnecessary resources. The following URL returns Confluence's status and can be used for this purpose.

URL	Expected content	Expected HTTP Status
http://<confluenceurl>/status	`{"state":"RUNNING"}`	200 OK

HTTP Status Code	Response entity	Description
200	`{"state":"RUNNING"}`	Running normally
500	`{"state":"ERROR"}`	An error state
503	`{"state":"STARTING"}`	Application is starting
503	`{"state":"STOPPING"}`	Application is stopping
200	`{"state":"FIRST_RUN"}`	Application is running for the first time and has not yet been configured
404		Application failed to start up in an unexpected way (the web application failed to deploy)

Here are some recommendations, when setting up monitoring, that can help a node survive small problems, such as a long GC pause:

- Wait for two consecutive failures before removing a node.
- Allow existing connections to the node to finish, for say 30 seconds, before the node is removed from the pool.

Network adapters

Use separate network adapters for communication between servers.Cluster nodes should have a separate physical network (i.e. separate NICs) for inter-server communication.This is the best way to get the cluster to run fast and reliably. Performance problems are likely to occur if you connect cluster nodes via a network that has lots of other data streaming through it.

Additional requirements for collaborative editing

Collaborative editing in Confluence 6.0 and later is powered by Synchrony, which runs as a seperate process.

If you have a Confluence Data Center license, two methods are available for running Synchrony:

- **managed by Confluence**(recommended)
  Confluence will automatically launch a Synchrony process on the same node, and manage it for you. No manual setup is required.
- **Standalone Synchrony cluster (managed by you)**
  You deploy and manage Synchrony standalone in its own cluster with as many nodes as you need. Significant setup is required.During a rolling upgrade, you'll need to upgrade the Synchrony separately from the Confluence cluster.

If you want simple setup and maintenance, we recommend allowing Confluence to manage Synchrony for you. If you want full control, or if making sure the editor is highly available is essential, then managing Synchrony in its own cluster may be the right solution for your organisation.

App compatibility

The process for installing Marketplace apps (also known as add-ons or plugins) in a Confluence cluster is the same as for a standalone installation. You will not need to stop the cluster, or bring down any nodes to install or update an app.

The Atlassian Marketplace indicates apps that are compatible with Confluence Data Center.

If you have developed your own plugins (apps) for Confluence you should refer to our developer documentation onHow do I ensure my app works properly in a cluster?to find out how you can confirm your app is cluster compatible.

Ready to get started?

Head to Set up a Confluence Data Center cluster for a step-by-step guide to enabling and configuring your cluster.

External Process Pool for Confluence Data Center

On this page:

In Confluence Data Center we minimize the impact of particularly memory or CPU intensive actions byhandling them in an external process pool, which is a seperate pool of processes, managed by Confluence. These processes (also known as sandboxes) can crash or be terminated, and will be restarted automatically by Confluence, without affecting the Confluence application itself.

The external process pool currently handles the following actions:

- Document conversion(thumbnail generation for file previews)
- Exporting a space to PDF

The external process pool is **only available for Confluence Data Center**.

In Confluence Server, these actions are handled by Confluence, so the information on this page does not apply.

Memory requirements

You will need to make sure that Confluence has enough memory for the external process pool. In a clustered Data Center installation, you'll need to do this for each cluster node.The pool contains two processes (sandboxes) by default, sowe recommend allowing an additional 2 GB on top of what is already required for Confluence (1 GB per sandbox).

If you increase the size of the external process pool, make sure each node has enough free memory to cater for the extra processes.

Configure the external process pool

In most cases the default values will be adequate, however system administrators can configure the external process pool usingsystem properties. For example you may want to increase the size of the pool (the number of processes available), or increase the amount of memory a process can consume. Here are the main properties you may need to change:

- **conversion.sandbox.pool.size**
  Use this property to increase the number of processes (sandboxes) in the pool. You'll need to allow additional memory on each node for each additional process.
- **conversion.sandbox.memory.limit.megabytes**
  Use this property to limit the amount of memory each process (sandbox) in the pool can consume.

SeeRecognized System Propertiesfor a full description of these properties, including additional properties that can be used to fine-tune, or disable sandboxes for particular actions.

Monitor failed actions

When an external process (sandbox) is terminated, we'll write the following to the application log on that node:

```
2018-04-09 17:35:35 WARN [sandbox-terminator]
[impl.util.sandbox.DefaultSandbox] lambda$startTerminator$0 Request
has taken 33384ms exceeds limit 30000ms terminating sandbox
```

This will be followed by an`Attempting to restart the sandbox`message, the next time someone performs an action that uses the external process pool.

Note that the process is not immediatley restarted after termination, as we don't re-attempt failed actions. We wait for the next request to spin up a new sandbox process.

Document conversion for Confluence Data Center

When you insert a file into a page (for example a Word document, or Excel spreadsheet), Confluence will convert the contents to a format that can be viewed inline in the page, in the preview, or in some macros. This can be quite memory and CPU intensive, and has been known to cause out of memory errors when processing very complex files.

In Confluence Data Center we minimize the impact byhandling the conversion in an external process pool, which is a seperate pool of processes, managed by Confluence. These processes (also known as sandboxes) can crash or be terminated, and will be restarted automatically by Confluence, without affecting the Confluence application itself.

For example, If you insert a very complex file, and the process crashes or is terminated, thumbnail generation will fail. When this happens, a placeholder thumbnail will be used on the page, and a download option will be provided in the file preview. Confluence Data Center doesn't re-attempt to generate thumbnails for failed files. A good example of a complex file, is a PowerPoint presentation that contains 50 embedded Excel charts. Most files will be processed without any problems.

The external process pool is used for the following conversions:

- thumbnail generation for images and documents inserted into a page, or viewed in the preview.
- HTML conversion for Word and Office documents viewed using the Office Word and Office Excel macros.

ⓘ The external process pool is **only available for Confluence Data Center**.

In Confluence Server, thumbnail generation and HTML conversion is handled by Confluence, so the information on this page does not apply.

Configure the external process pool

In most cases the default values will be adequate, however system administrators can change the behaviour using system properties. For example you may want to increase the size of the pool (the number of processes available), or increase the time limit before a process is terminated. Here are the main properties you may need to change:

- **conversion.sandbox.pool.size**
  Use this property to increase the number of processes (sandboxes) in the pool. You'll need to allow additional memory on each node for each additional process.
- **conversion.sandbox.memory.limit.megabytes**
  Use this property to limit the amount of memory each thumbnail generation process in the pool can consume.
- **document.conversion.sandbox.memory.requirement.megabytes**
  Use this property to limit the amount of memory each HTML conversion process in the pool can consume.
- **document.conversion.sandbox.request.time.limit.secs**
  Use this property to change the amount of time (in seconds) that the sandbox will wait for the conversion process to complete, before terminating the process.

SeeRecognized System Propertiesfor a full description of these properties, plus a few additional properties that can be used to fine-tune, or disable the sandboxes completley.

Re-attempt thumbnail generation for failed files

Confluence does not re-attempt to generate thumbnails for a failed attachment, and re-inserting the attached file into the editor will not trigger the process.

If you do want to re-attempt thumbnail generation, for example after increasing the request time limit, you will need to re-upload the file, and then re-insert it into the page.

Other system properties that affect document conversion

The system properties listed on this page apply specifically to the external process pool. However there are some additional properties that apply in both Confluence Server and Confluence Data Center:

- **confluence.document.conversion.imaging.enabled.tif**
  Use this property to enable document conversion for TIFF files. This is disabled by default.
- **confluence.document.conversion.imaging.enabled.psd**
  Use this property to enable document conversion for Photoshop PSD files. This is disabled by default.
- **confluence.document.conversion.imaging.convert.timeout**
  Use this property to change the default 30 second time limit which applies when performing document conversion on complex image files (such as ICO, EMF, WMF).
- **confluence.document.conversion.slides.convert.timeout**
  Use this property to change the default 30 second time limit which applies when performing document conversion on presentation files (such as PPT, PPTX).

To override the default value of these properties, you'll need to use the `conversion.sandbox.java.options`system property to pass the property to the JVMs that make up the external process pool.

In this example we'll enable thumbnail generation for TIFF and PSD files.

1. Edit the `<install-directory>/bin/setenv.bat` file.
2. Add the following lines

```
set CATALINA_OPTS=-Dconversion.sandbox.java.options=-Dconfluence.document.conversion.imaging.
enabled.tif=true -Dconfluence.document.conversion.imaging.enabled.psd=true %CATALINA_OPTS%
```

You can pass multiple properties to the external process pool JVMs this way.

If you're running Confluence as a Windows Service or on AWS, see Configuring System Propertiesfor how to add this property.

In this example we'll enable thumbnail generation for TIFF and PSD files.

1. Edit the `<install-directory>/bin/setenv.sh` file.
2. Add the following lines. In this example we're enabling document conversion for TIFF and PSD files.

```
CATALINA_OPTS="-Dconversion.sandbox.java.options=-Dconfluence.document.conversion.imaging.enabled.
tif=true -Dconfluence.document.conversion.imaging.enabled.psd=true ${CATALINA_OPTS}"
```

You can pass multiple properties to the external process pool JVMs this way.

If you're running Confluence on AWS, see Configuring System Propertiesfor how to add this property.

If you decide to increase the timeout for generating thumbnails in the external process pool using the`document.conversion.sandbox.request.time.limit.secs`system property,you may also want to change the timeout for complex image files or presentations using the system properties above. Alternatively you could keep the default, and allow these types of files to fail sooner.

PDF export in Confluence Data Center

When you export a space to PDF, Confluence exports the content of each page to HTML, converts that HTML to PDF, and then finally merges all the pages together into a single PDF file. This can be quite memory and CPU intensive, andhas been known to cause out of memory errors when processing spaces with very long or complex pages.

In Confluence Data Center we minimize the impact byhandling the export in an external process pool, which is a seperate pool of processes, managed by Confluence. These processes (also known as sandboxes) can crash or be terminated, and will be restarted automatically by Confluence, without affecting the Confluence application itself.

ⓘ The external process pool is **only available for Confluence Data Center**.

In Confluence Server, PDF export is handled by Confluence, so the information on this page does not apply.

Troubleshooting failed exports

Exporting an entire space to PDF can sometimes fail, especially if the space is very large, or has very long or complex pages. If PDF export fails you'll see one of the following errors in your browser.

Page took too long to convert

This error occurs when the time it takes to convert the HTML of a page to PDF exceeds the set time limit. The page title will be included in the error message.

You should take a look at the page, and see if it can be simplified. It might have a lot of complex macros, or a lot of web images (images that are not attached to the page).If this error happens a lot, you can ask your admin toincrease the time limit.

Error converting page to HTML

This error occurs when Confluence runs out of memory, or hits another error while trying to convert the HTML of a page to PDF. The page title will be included in the error message.

As with the 'page took too long to convert' error above, you should take a look at the page, and see if it can be simplified.

Confluence admins can get more information about the cause of these errors from the Confluence application logs. If the failures are being caused by out of memory errors,your admin may be able to increase the amount of memory available to each sandbox in the external process pool. SeeExternal Process Pool for Confluence Data Center for more information.

Final PDF file wasn't merged in time

This error occurs at the last stage of the process, when the time it took to stitch together all the individual page PDFs into one PDF file, exceeds the set time limit.

If you hit this error you could try exporting the space again, or perhaps export the space in two sections (using the custom option on the PDF export screen). If this error happens a lot, you can ask your admin to increase the time limit.

Error merging the final PDF file

This error occurs when Confluence runs out of memory, or hits another error, when attempting to stitch together all the individual page PDFs into one file.

If you hit this error you could try exporting the space again, or perhaps export the space in two sections (using the custom option on the PDF export screen).

Confluence admins can get more information about the cause of these errors from the Confluenceapplication logs. If the failures are being caused by out of memory errors,they may be able to increase the amount of memory available to each sandbox in the external process pool. SeeExternal Process Pool for Confluence Data Centerfor more information.

Too many concurrent exports

This error occurs when multiple people are exporting to PDF at the same time. Confluence limits the number of PDF exports that can be processed concurrently.

If you hit this error, try exporting the space again later, after the other PDF exports have completed.

If this error happens a lot, your admin can increase the maximum number of concurrent PDF exports, or increase the time Confluence should wait when the maximum number of concurrent PDF exports has been reached using the following system properties:

confluence.pdfexport.permits.size
Use this property to set the maximum number of concurrent PDF exports that can be performed. This property applies per node, not per sandbox process.

confluence.pdfexport.timeout.seconds
Use this property to set the amount of time a new PDF export request should wait before failing, if the maximum number of concurrent PDF exportshas already been reached.

Change the time limit

Processes are automatically terminated once a time limit is exceeded. You can increase the time limit for PDF export using the following system property:

pdf.export.sandbox.request.time.limit.secs
Use this property to set the amount of time (in seconds) that a process should wait to complete, before being terminated. This time limit applies both to the time to convert the content from HTML to PDF, and the time to merge the final PDF file.

SeeRecognized System Propertiesfor a full list of properties, including a few additional properties that can be used to fine-tune, or disable the sandboxes for a particular action.

Don't use the external process pool for PDF export

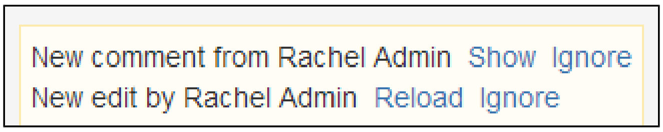
If you don't want to use the external process pool for PDF export, you can revert back to the Confluence Server method of generating PDF exports using the following system property:

pdf.export.sandbox.disable
Set this property to true if you don't want to handle PDF exports in the external process pool.

Restricted Functions in Confluence Data Center

There are some features that are disabled or limited in clustered Confluence Data Center installations. This is to ensure the integrity and performance of your cluster.

The current restricted functions are:

Restricted function	**Data Center Status**	**Explanation**
Workbox plugins	Available from 5.7	The workbox provides notifications collected from Confluence page watches, shares, and mentions. This is disabled in Confluence Data Center 5.6 to ensure notifications are correctly handled across the cluster. Disabled plugins included Workbox common plugin, Workbox Jira provider plugin, Workbox confluence provider plugin, Workbox host plugin. You will not be able to enable these plugins in the universal plugin manager.
Confluence Quick Reload Plugin	Available from 5.6.3	The quick reload function notifies users when a new comment has been added to a page they are currently viewing.  New comment from Rachel Admin Show Ignore New edit by Rachel Admin Reload Ignore This is disabled in Confluence Data Center 5.6 and 5.6.1 for performance reasons. You will not be able to enable the Confluence Quick Reload Plugin in the universal plugin manager. See ~~CONFSERVER-34680~~ - Make quick reload plugin available in Confluence Data Center CLOSED for more info.
Application links authentication: - Basic access (http) - Trusted Applications	RESTRICTED	When creating Application links to other applications (for example Jira) Basic HTTP and Trusted Applications authentication is not supported for Confluence Data Center. All application links must use OAuth authentication in a cluster.
Confluence Usage Stats plugin	DISABLED	The Confluence Usage Stats plugin provides space activity information for a space (statistics). This is disabled by default in Confluence Server and should not be enabled in Confluence Data Center.
Scheduled jobs history and status	LIMITED	On the Scheduled Jobs page in the Confluence Data Center administration console you will not be able to access the last execution time or history for each job. The page will also only show the configured status (scheduled or disabled) of each job, and will not indicate when a job is in progress.

Remember me on by default	LIMITED	Remember me on the log in page is enabled by default (and does not appear) to allow users to move seamlessly between nodes. You can use the `cluster.login.rememberme.enabled` system property to override the default and show the checkbox - users will be prompted to log in to another node if their current node is unavailable.

Set up a Confluence Data Center cluster

Confluence Data Center allows you to run a cluster of multiple Confluence nodes, providing high availability, scalable capacity, and performance at scale.

This guides walks you through the process of configuring a Data Center cluster on your own infrastructure.

Youll need to be logged in as a System Administrator to do this.

Not sure if clustering is right for you? Check out Clustering with Confluence Data Center for a detailed overview.

On this page

Clustering with AWS and Azure

You can also choose to deploy a Data Center cluster on public cloud providers, like AWS (Amazon Web Services) and Azure. We have specific guides and deployment templates to help you easily configure a cluster in AWS or Azure. Check them out to find out what's required.

Before you begin

Clustering requirements

To use Confluence Data Center you must:

- Have a Data Center license (you canpurchase a Data Center licenseor create an evaluation license atmy.atlassian.com)
- Use asupportedexternal database, operating system and Java version
- Use OAuth authentication if you haveapplication linksto other Atlassian products (such as Jira)

To run Confluence in a cluster you must also:

- Use a load balancer with session affinity in front of the Confluence cluster. WebSockets support is also recommended for collaborative editing.
- Have a shared directory accessible to all cluster nodes in the same path (this will be your shared home directory). This must be a separate directory, and not located within the local home or install directory.

See Clustering with Confluence Data Center for a complete overview of hardware and infrastructure considerations.

Security

Ensure that only permittedcluster nodes are allowed to connect to the following portsthrough the use of a firewall and / or network segregation:

- 5801 -Hazelcastport for Confluence
- 5701 -Hazelcastport for Synchrony
- 25500 - Cluster base port for Synchrony

If you use multicast for cluster discovery:

- 54327- Multicast port for Synchrony (only required if running Synchrony standalone cluster)

Terminology

In this guide we'll use the following terminology:

- Installation directory The directory where you installed Confluence.
- Local home directory The home or data directory stored locally on each cluster node (if Confluence is not running in a cluster, this is simply known as the home directory).
- Shared home directory The directory you created that is accessible to all nodes in the cluster via the same path.

Set up and configure your cluster

We recommend completing this process in a staging environment, and testing your clustered installation, before moving to production.

1. Back up

We strongly recommend that you backup your existing Confluence local home and install directories and your database before proceeding.

> You can find the location of your home directory in the `<installation-directory>/confluence/WEB-INF/classes/confluence-init.properties` file.
>
> This is where your search indexes and attachments are stored. If you store attachments outside the Confluence Home directory, you should also backup your attachments directory.

2. Create a shared home directory

1. Create a directory that's accessible to all cluster nodes via the same path. This will be your **shared home** directory.
2. In your existing Confluence home directory, move the contents of `<local home directory>/shared-home`to the new shared home directory you just created. To prevent confusion, we recommend deleting the empty `<local home directory>/shared-home`directory once you've moved its contents.
3. Move your `<local home>/attachments>`directory to the new `<shared home>/attachments`directory.

4. Enable cluster mode

Before you enable cluster mode, you should be ready to restart Confluence and configure your cluster. This will require some downtime.

1. Start Confluence.
2. Go to ⚙ > **General Configuration**.
3. Choose **Clustering** from the sidebar.
4. Select **Enable cluster mode**.
5. Select **Enable** to confirm youre ready to proceed.

5. Restart Confluence

Restart Confluence to configure your cluster. Once you restart, Confluence will be unavailable until youve completed the set up process.

6. Configure your cluster

The setup wizard will prompt you to configure the cluster, by entering:

- A name for your cluster
- The path to the shared home directory you created earlier
- The network interface Confluence will use to communicate between nodes
- How you want Confluence to discover cluster nodes:
    - Multicast - enter your own multicast address or automatically generate one.
    - TCP/IP - enter the IP address of each cluster node
    - AWS - enter your IAM Role or secret key, and region.

We recommend using our Quick Start or Cloud Formation Template to deploy Confluence Data Center in AWS, as it will automatically provision, configure and connect everything you need.

If you do decide to do your own custom deployment, you can provide the following information to allow Confluence to auto-discover cluster nodes:

Field	Description
IAM Role or **Secret Key**	This is your authentication method. You can choose to authenticate by IAM Role or Secret Key.
Region	This is the region your cluster nodes (EC2 instances) will be running in.
Host header	Optional. This is the AWS endpoint for Confluence to use (the address where the EC2 API can be found, for example 'ec2.amazonaws.com'). Leave blank to use the default endpoint.
Security group name	Optional. Use to narrow the members of your cluster to only resources in a particular security group (specified in the EC2 console).
Tag key and **Tag value**	Optional. Use to narrow the members of your cluster to only resources with particular tags (specified in the EC2 console).

If Synchrony is managed by Confluence, the same network settings will be applied to Synchrony.

Follow the prompts to create the cluster.

When you restart, Confluence will start setting up the cluster. This can take a few minutes. Some core components of Confluence will also change to become cluster compatible. For example, Confluence will switch to a distributed caching layer, managed by Hazelcast.

⚠Do not restart Confluence until your cluster is set up, and Confluence is back up and running.

Add more Confluence nodes

Your Data Center license doesnt restrict the number of nodes in your cluster. To achieve the benefits of clustering, such as high availability, youll need to add at least one additional cluster node.

Weve found that typically between 2 and 4 nodes is sufficient for most organizations. In general we recommend starting small and growing as needed.

7. Copy Confluence to the second node

To copy Confluence to the second node:

1. Shut down Confluence on node 1.
2. Copy the installation directory from node 1 to node 2.
3. Copy the local home directory from node 1 to node 2.

Copying the local home directory ensures the Confluence search index, the database and cluster configuration, and any other settings are copied to node 2.

Copying the local home directory ensures the Confluence search index, the database and cluster configuration, and any other settings are copied to node 2.

Make sure your database has sufficient connections available to support the number of nodes.

8. Configure your load balancer

Configure your load balancer for Confluence. You can use the load balancer of your choice, but it needs to support session affinity and WebSockets.

You can verify that your load balancer is sending requests correctly to your existing Confluence server by accessing Confluence through the load balancer and creating a page, then checking that this page can be viewed /edited by another machine through the load balancer.

See Clustering with Confluence Data Center for further load balancer guidance.

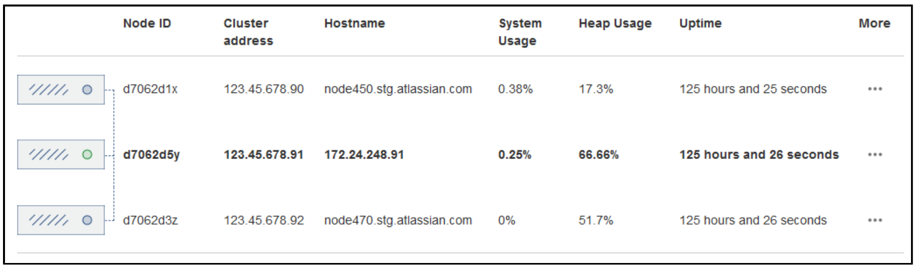
9. Start Confluence one node at a time

You must only start Confluence **one node at a time**. The first node must be up and available before starting the next one.

1. Start Confluence on node 1
2. Wait for Confluence to become available on node 1
3. Start Confluence on node 2
4. Wait for Confluence to become available on node 2.

TheCluster monitoring console (⚙> **General Configuration** > **Clustering**) shows information about the active cluster.

When the cluster is running properly, this page displays the details of each node, including system usage and uptime. Use the ••• menu to see more information about each node in the cluster.



	Node ID	Cluster address	Hostname	System Usage	Heap Usage	Uptime	More
○	d7062d1x	123.45.678.90	node450.stg.atlassian.com	0.38%	17.3%	125 hours and 25 seconds	•••
○	**d7062d5y**	**123.45.678.91**	**172.24.248.91**	**0.25%**	**66.66%**	**125 hours and 26 seconds**	•••
○	d7062d3z	123.45.678.92	node470.stg.atlassian.com	0%	51.7%	125 hours and 26 seconds	•••

10. Test your Confluence cluster

To test creating content you'll need to access Confluence via your load balancer URL. You can't create or edit pages when accessing a node directly.

A simple process to ensure your cluster is working correctly is:

1. Access a node via your load balancer URL, and create a new document on this node.
2. Ensure the new document is visible by accessing it directly on a different node.
3. Search for the new document on the original node, and ensure it appears.
4. Search for the new document on another node, and ensure it appears.

> ⓘ If Confluence detects more than one instance accessing the database, but not in a working cluster, it will shut itself down in a *cluster panic*. This can be fixed by troubleshooting the network connectivity of the cluster.

11. Set up a Synchrony cluster (optional)

Synchrony is required for collaborative editing. You have two options for running Synchrony with a Data Center license:

- **managed by Confluence**(recommended)
  This is the default setup. Confluence will automatically launch a Synchrony process on the same node, and manage it for you. No manual steps are required.
- **Standalone Synchrony cluster** (managed by you)
  You deploy and manage Synchrony standalone in its own cluster with as many nodes as you need. Significant setup is required.See Set up a Synchrony cluster for Confluence Data Center for a step-by-step guide.

Head to Administering Collaborative Editing to find out more about collaborative editing.

Troubleshooting

If you have problems with the above process, check our cluster troubleshooting guide.

Were here to help

Need help setting up your cluster? There are a range of support services available to help you plan and implement a clustered Data Center installation.

- An Atlassian Technical Account Manager can provide strategic guidance. They work with you to develop best practices for configuring, deploying and managing Confluence in a cluster.
- The Atlassian Premier Support team can provide technical support. Premier Support also offers health check analyses to validate the readiness of your environment.
- Atlassian Enterprise Partners offers a wide array of services to help you get the most out of your Atlassian tools.
- You can also ask questions in the Atlassian Community.

Confluence Data Center Performance

This document describes the performance tests we conducted on clustered Confluence Data Center within Atlassian, and the results of those tests. You can compare these data points to your own implementation to predict the type of results you might expect from implementing Confluence Data Center in a cluster in your own organization.

We started our performance tests by taking a fixed load profile (read/write ratio), then tested different cluster set ups against multiples of that load profile.

On this page

Testing results summary

Performance gains - Under a high load, clustered Confluence has improved performance overall.

Request responses don't diminish under increased load -Adding more nodes increases throughput, handles higher load and decreases response times.

ER SECOND

You might observe a different trend/behavior based on your configuration and usage. For details, please see the What we testedsection below.

Testing methodology and specifications

The following sections detail the testing environment and methodology we used in our performance tests.

How we tested

Our performance tests were all run on the same controlled isolated lab at Atlassian. For each test, the entire environment was reset and rebuilt. The testing environment included the following components and configuration:

- Apache proxy_balancer
- Postgres database and the required data
- G1GC garbage collector
- 8GB Xmx settings per node
- 6 CPUs per node
- Confluence Server on one machine or Confluence Data Center on two, or four machines as required for the specific test.

To run the test, we used a number of machines in the lab to generate load using scripted browsers and measuring the time taken to perform an action. An action here, means a complete user operation like creating a page or adding comment. Each browser was scripted to perform an action from a predefined list of actions and immediately move on the to next action (i.e. zero think time). Please note that this resulted in each browser performing more tasks than would be possible by a real user and you should not interpret the number of browsersto be equal to the number of real world users. Each test was run for 20 minutes, after which statistics were collected.

What we tested

- All tests used the same Postgres database containing the same number of spaces and pages.

- The mix of actions we included in the tests represented a sample of the most common user actions* representing six typical types of users (personas). The table below showthe ratio of actionsperformed by each of these personas. These user-based actions were repeated until the test was completed.

Persona	Ratio of actions
PageReader	7
Searcher	1
Editor	1
Creator	1
Commenter	1
Liker	1

Tests were performed with differing load sizes, from 4 up to 96 browsers.For larger load sets, profiles were scaled up, that is, doubling each amount for the 24 browser load, tripled for the 36 browser load.

*The tests did not include admin actions as these are assumed to be relatively infrequent.

Hardware

All performance tests were all run on the same controlled, isolated lab at Atlassian using the hardware listed below.

Hardware	Description	How many?
Rackform iServ R304.v3	CPU: 2 x Intel Xeon E5-2430L, 2.0GHz (6-Core, HT, 15MB Cache, 60W) 32nm RAM: 48GB (6 x 8GB DDR3-1600 ECC Registered 2R DIMMs) Operating at 1600 MT/s Max NIC: Dual Intel 82574L Gigabit Ethernet Controllers - Integrated Controller: 8 Ports 3Gb/s SAS, 2 Ports 6Gb/s SATA, and 4 Ports 3Gb/s SATA via Intel C606 Chipset PCIe 3.0 x16: Intel X540-T2 10GbE Dual-Port Server Adapter (X540) 10GBASE-T Cat 6A - RJ45 Fixed Drive: 240GB Intel 520 Series MLC (6Gb/s) 2.5" SATA SSD Power Supply: 600W Power Supply with PFC - 80 PLUS Gold Certified	20
Arista DCS-7050T-36-R	4PORT SFP+ REAR-TO-FRONT AIR 2XAC	1
HP ProCurve Switch	1810-48G 48 Port 10/100/1000 ports Web Managed Switch	1

Hardware testing notes:

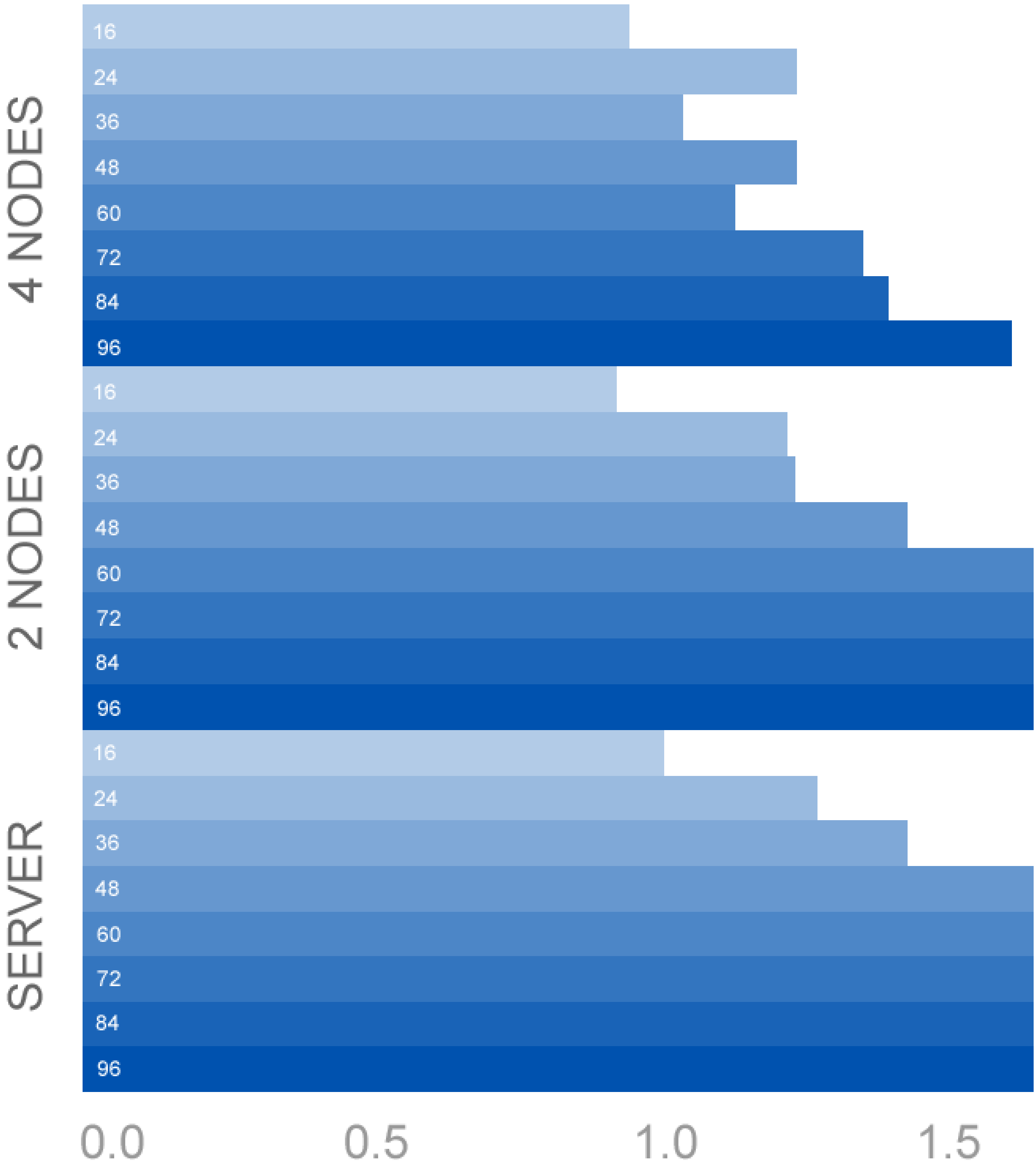
- In order to quickly put more stress on the Confluence nodes with less load, cluster nodes were set to use only 4 cores out of 6 from each CPU, thereby reducing its processing power.

- For instances being tested, 6 GB of memory was allocated to the JVM consistently across all tests. This may not be optimized for all cases but allowed for consistency and comparability between the tests.
- During the tests we did not observe high CPU or IO load on either the database or load balancer servers.
- During the tests we did not observe running out of HTTP connections in the load balancer or connections to database.
- The browser and servers are in the same location so there was very low latency between client and server.

Comparison to Confluence Server response times

The following table shows the relative performance as the load increases for each Confluence instance configuration: Confluence Server, two node Confluence Data Center, and four node Confluence Data Center. The table shows the response time relative to the baseline response time which we determined to be Confluence Server with sixteen browsers.

Browsers	**16**	**24**	**36**	**48**	**60**	**72**	**84**	**96**
Server	100.00%	125.28%	142.95%	222.76%	276.54%	334.79%	393.03%	451.28%
2 Node	93.79%	122.61%	123.50%	141.98%	168.47%	201.97%	235.47%	268.97%
4 Node	94.24%	122.22%	103.94%	123.47%	114.76%	134.61%	138.90%	160.95%



Ready to get started?

Contact usto speak with an Atlassian orget going with Data Centerstraight away.

For a detailed overview of Confluence's clustering solution see Clustering with Confluence Data Center. For help with installation, take a look atInstalling Confluence Data Center.

Confluence Data Center disaster recovery

A disaster recovery strategy is a key part of any business continuity plan. It outlines the processes to follow in the event of a disaster, to ensure that the business can recover and keep operating.ForConfluence, this means ensuringConfluence'savailability in the event that your primary site becomes unavailable.

Confluence Data Center documentationis the only Atlassian-supported high-availability solution for Confluence.

Not sure if you should upgrade from Confluence Server to Data Center? Learn more about thebenefits of Confluence Data Center.

This page demonstrates how you can useConfluence Data Center5.9 or laterin implementing and managing a disaster recovery strategy for Confluence. It doesn't, however, cover the broader business practices, like setting the key objectives (RTO, RPO & RCO[1]), and standard operating procedures.

What's the difference between high availability and disaster recovery?

The terms "high availability", "disaster recovery" and "failover" can often be confused. For the purposes of this page, we've defined them as follows:

- **High availability** A strategy to provide a specific level of availability. In Confluence's case, access to the application and an acceptable response time. Automated correction and failover (within the same location) are usually part of high-availability planning.
- **Disaster recovery** A strategy to resume operations in an alternate data center (usually in another geographic location), if the main data center becomes unavailable (i.e. a disaster). Failover (to another location) is a fundamental part of disaster recovery.
- **Failover** is when one machine takes over from another machine, when the aforementioned machines fails. This could be within the same data center or from one data center to another. Failover is usually part of both high availability and disaster recovery planning.

Overview

Before you start, you needConfluence Data Center 5.9 or laterto implement the strategy described in this guide. We'll also assume you've already set up and configured your cluster. See Set up a Confluence Data Center cluster.

This page describes what is generally referred to as a 'cold standby'strategy, which means thestandby Confluence instance isn't continuously running and that you need to take some administrative steps to start the standby instance and ensure it's in a suitable state to service the business needs of your organization.

Maintaining a runbook

The detailed steps will vary from organization to organization and, as such, we recommend you keep a full runbook of steps on file, away from the production system it references.Make your runbook detailed enough such that anyone in the relevant team should be able to complete the steps and recover your service, regardless of prior knowledge or experience. We expect any runbook to contain steps that cover the following parts of the disaster recovery process:

1. Detection of the problem
2. Isolation of the current production environment and bringing it down gracefully
3. Synchronization of data between failed production and intended recovery point
4. Warm up instructions for the recovery instance
5. Documentation, communication, and escalation guidelines

The major components you need to consider in your disaster recovery plan are:

Confluence installation	Your standby site should have exactly the same version of Confluence installed as your production site.

Database	This is the primary source of truth for Confluence and contains most of the Confluence data (except for attachments, avatars, etc). You need to replicate your database and continuously keep it up to date to satisfy your RPO1
Attachments	All attachments are stored in the Confluence Data Center shared home directory, and you need to ensure it's replicated to the standby instance.
Search Index	The search index isn't a primary source of truth, and can always be recreated from the database. For large installations, though, this can be quite time consuming and the functionality of Confluence will be greatly reduced until the index is fully recovered. Confluence Data Center stores search index backups in the shared home directory, which are covered by the shared home directory replication.
Plugins	User installed plugins are stored in the database and are covered by the database replication.
Other data	A few other non-critical items are stored in the Confluence Data Center shared home. Ensure they're also replicated to your standby instance.

Set up a standby system

Step 1. InstallConfluence Data Center5.9or higher

Install the same versionof Confluence on your standby system.Configure the system to attach to the standby database.

> ⚠ **DO NOT start the standby Confluence system**
>
> ***Starting Confluence would write data to the database and shared home, which you do not want to do.***
>
> You may want to test the installation, in which case you should temporarily connect it to a different database and different shared home directory and start Confluence to make sure it works as expected. Don't forget to update the database configuration to point to the standby database and the shared home directory configuration to point to the standby shared home directory after your testing.

Step 2. Implement a data replication strategy

Replicating data to your standby location is crucial to a cold standby failover strategy. You don't want to fail over to your standb y Confluence ins tance and find that it's out of date or that it takes many hours to re-index.

Database	All of the following Confluence supported database suppliers provide their own database replication solutions: - Oracle:http://www.oracle.com/technetwork/database/features/data-integration/index.html - PostgreSQL:https://wiki.postgresql.org/wiki/Binary_Replication_Tutorial - MySQL:http://dev.mysql.com/doc/refman/5.7/en/replication.html - Microsoft SQL Server:http://msdn.microsoft.com/en-us/library/ms151198.aspx You need to implement a database replication strategythat meets your RTO, RPO and RCO[1].
Files	You also need to implement a file server replication strategy for the Confluence shared home directory that meets your RTO, RPO and RCO[1].

Clustering considerations

For your clustered environment you need to be aware of the following, in addition to the information above:

Standby cluster	There's no need for the configuration of the standby cluster to reflect that of the live cluster. It may contain more or fewer nodes, depending on your requirements and budget. Fewer nodes may result in lower throughput, but that may be acceptable depending on your circumstances.
File locations	Where we mention `<confluencesharedhome>` as the location of files that need to be synchronized, we're referring to the shared home for the cluster. `<confluencelocalhome>` refers to the local home of the node in the cluster.
Starting the standby cluster	It's important to**initiallystart only one node**of the cluster, allow it to recover the search index, and check it's working correctly before starting additional nodes.

Disaster recovery testing

You should exercise extreme care when testing any disaster recovery plan. Simple mistakes may cause your live instance to be corrupted, for example, if testing updates are inserted into your production database. You may detrimentally impact your ability to recover from a real disaster, while testing your disaster recovery plan.

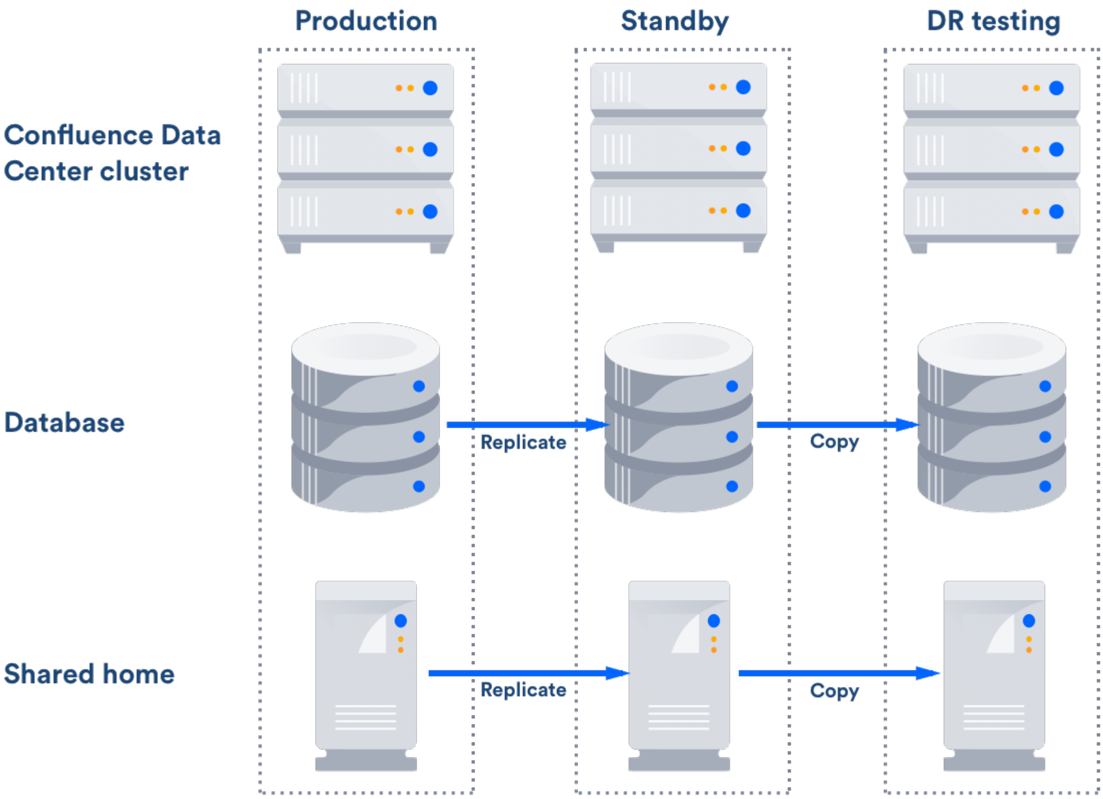
The key is to **keep the main data center as isolated as possible from the disaster recovery testing** .

This procedure will ensure that the standby environment will have all the right data, but as the testing environment is completely separate from the standby environment, possible configuration problems on the standby instance are not covered.

Prerequisites

Before you perform any testing, you need to isolate your production data.

Database	1. Temporarily pause all replication to the standby database 2. Replicate the data from the standby database to another database that's isolated and with no communication with the main database
Attachments, plugins and indexes	You need to ensure that no plugin updates or index backups occur during the test: 1. Disable index backups 2. Instruct sysadmins to not perform any updates in Confluence 3. Temporarily pause all replication to the standby shared home directory 4. Replicate the data from the standby shared home directory to another directory that's isolated and with no communication with the main shared home directory
Installation folders	1. Clone your standby installation separate from both the live and standby instances 2. Change the connection to the database in the `<confluencelocalhome>/confluence.cfg.xml` file to avoid any conflict 3. Change the location of the shared home directory in the `<confluencelocalhome>/confluence.cfg.xml` file to avoid any conflict 4. If using TCP/IP for cluster setup, change the IP addresses to that of your testing instances in `<confluencelocalhome>/confluence.cfg.xml`



After this you can resume all replication to the standby instance, including the database.

Perform disaster recovery testing

Once you have isolated your production data, follow the steps below to test your disaster recovery plan:

1. Ensure that the new database is ready, with the latestsnapshot andno replication
2. Ensure that the new shared home directory is ready, with the latestsnapshot andno replication
3. Ensureyou have a copy of Confluence on a clean server with the right database and shared home directory settings in`<confluencelocalhome>/confluence.cfg.xml`
4. Ensure you haveconfluence.homemapped, as it was in the standby instance, in the test server
5. Disable email (See`atlassian.mail.senddisabled`in[Configuring System Properties]())
6. StartConfluence

Handling a failover

In the event your primary site is unavailable, you'll need to fail over to your standby system. The steps are as follows:

1. Ensure your live system is shutdown and no longer updating the database
2. Ensure the contents of`<confluencesharedhome>` is synced to your standby instance
3. Perform whatever steps are required to activate your standby database
4. Start Confluenceon one node in the standby instance
5. Wait for Confluence to start andcheck it is operating as expected
6. Start up other Confluence nodes
7. Update your DNS, HTTP Proxy, or other front end devices to route traffic to your standby server

Returning to the primary instance

In most cases, you'll want to return to using your primary instance after you've resolved the problems that caused the disaster.This is easiest to achieve if you can schedule a reasonably-sized outage window.

You need to:

- Synchronize your primary database with the state of the secondary
- Synchronize the primary shared home directory with the state of the secondary

Perform the cut over

1. Shutdown Confluence on the standby instance
2. Ensure the database is synchronized correctly and configured to as required
3. Use rsync or a similar uililty to synchronize the shared home directory to the primary server
4. Start Confluence
5. Check that Confluence is operating as expected
6. Update your DNS, HTTP Proxy, or other front end devices to route traffic to your primary server

Other resources

Troubleshooting

If you encounter problems after failing over to your standby instance, check these FAQs for guidance:

> If your database doesn't have the data available that it should, then you'll need to restore the database from a backup.
>
> Once you've restored your database, the search index will no longer by in sync with the database. You can either do a full re-index, background or foreground, or recover from the latest index snapshot if you have one. This includes the journal id file for each index snapshot. The index snapshot can be older than your database backup; it'll synchronize itself as part of the recovery process.
>
> If the search index is corrupt, you can either do a full re-index, background or foreground, or recover from an earlier index snapshot from the shared home directory if you have one.
>
> You may be able to recover them from backups if you have them, or recover from the primary site if you have access to the hard drives.Tools such asrsync may be useful in these circumstances. Missing attachments won't stop Confluence performing normally; the missing attachments won't be available, but users may be able to upload them again.
>
> Application links are stored in the database. If the database replica is up to date, then the application links will be preserved.
>
> You do, however, also need to consider how each end of the link knows the address of the other:
>
> - If you use host names to address the partners in the link and the backup Confluence server has the same hostname, via updates to the DNS or similar, then the links should remain intact and working.
> - If the application links were built using IP addresses and these aren't the same, then the application links will need to be re-established.
> - If you use IP addresses that are valid on the internal company network but your backup system is remote and outside the original firewall, you'll need to re-establish your application links.

Definitions

RPO	Recovery Point Objective	How up-to-date you require your Confluence instance to be after a failure.
RTO	Recovery Time Objective	How quickly you require your standby system to be available after a failure.
RCO	Recovery Cost Objective	How much you are willing to spend on your disaster recovery solution.

Data Center Troubleshooting

This page covers troubleshooting for a Data Center installation of Confluence.

If you're experiencing Cluster Panic messages in non-clustered installation of Confluence, visit the Knowledge Base article 'Database is being updated by an instance which is not part of the current cluster' Error Message.

⚠You must ensure the clocks on your cluster nodes don't diverge, as it can result in a range ofproblems with yourcluster.

On this page:

- Symptoms
- Didn't find a solution?

Related pages:

- Troubleshooting a Data Center cluster outage

Symptoms

Below is a list of potential problems with Confluence Data Center, and their likely solutions.

Problem	Likely solutions
`Database is being updated by an instance which is not part of the current cluster` errors on a stand-alone	'Database is being updated by an instance which is not part of the current cluster' Error Message
`Database is being updated by an instance which is not part of the current cluster` errors on a cluster	Add multicast route, Check firewall, Cluster Panic due to Multiple Deployments
`Cannot assign requested address` on startup, featuring an IPv6 address	Prefer IPv4
Error in log: `The interface is not suitable for multicast communication`	Change multicast interface, Add multicast route
Multicast being sent, but not received	Check firewall, Check intermediate routers, Increase multicast TTL
App is unlicensed on some nodes after updating the license on one node.	Disable and re-enable the app in the Universal Plugin Manager.
After an app update, strings appear in the UI instead of buttons and icons on some nodes.	Restart the affected node.
`Hazelcast CANNOT start on this node. No matching network interface found.`	See Hazelcast CANNOT start on this node. No matching network interface found KB article
Any issue not covered here	Contact support

Multicast

- Which multicast address?

The multicast address and port used by Confluence can be found on the Cluster Configuration page, or in `confluence.cfg.xml` in the Confluence home directory.

- Multicast address generation.

Confluence uses a hashing algorithm to take the inputted name during setup and it is then turned into a multicast address stored in the config file. Thus, once the initial setup is completed, Confluence will use the address this is the reason why user can change the address if needed, without actually changing the name. Consequently the additional nodes using the same multicast address specified in the config file are able to join the cluster.

Each node has a multicast address configured in the `confluence.cfg.xml` file

```
name="confluence.cluster.address">xxx.xx.xxx.xxx</property>
```

A warning message is displayed when an user changes the address from the one that Confluence has generated by the hashing of the name. There is no way of eliminating the message any other way other than by returning the address to the one that matches the cluster name. Purpose of the warning message is to remind the user that the address has been changed - as it is not the hashed version any longer - consequently the node can not join the cluster just by using the name. It is also necessary to provide the correct address as well.

Mapping interface to IP address.

To ensure that the interface name is mapped correctly, the following tool can be used. It shows the mapping of the interface name to the IP address.

```
C:\>java -jar list-interfaces.jar
interfaces.size() = 4
networkInterface[0] = name:lo (MS TCP Loopback interface) index: 1 addresses:
/127.0.0.1;

networkInterface[1] = name:eth0 (VMware Virtual Ethernet Adapter for VMnet8) index: 2 addresses:
/192.168.133.1;

networkInterface[2] = name:eth1 (VMware Virtual Ethernet Adapter for VMnet1) index: 3 addresses:
/192.168.68.1;

networkInterface[3] = name:eth2 (Broadcom NetXtreme 57xx Gigabit Controller - Packet Scheduler Miniport)
index: 4 addresses:
/192.168.0.101;
```

Debugging tools

Listed below are some debugging tools that help determine what the status of the multicast traffic is:

Tool	Information provided
`netstat -gn`	Lists multicast groups. Does not work on Mac OS X.
`netstat -rn`	Lists system routing table.
`tcpdump -i` *`interface`*	Captures network traffic on the given interface. Most useful on an interface that only receives cluster traffic.

Add multicast route

Multicast networking requirements vary across operating systems. Some operating systems require little configuration, while some require the multicast address to be explicitly added to a network interface before Confluence can use it.If multicast traffic can't be sent or received correctly, adding a route for multicast traffic on the correct interface will often fix the problem. The example below is for a Ubuntu Linux system:

```
route add -net 224.0.0.0 netmask 240.0.0.0 dev eth0
```

To support multiple applications using multicast on different interfaces, you may need to specify a route specific to the Confluence multicast address.

Check firewall

Ensure your firewall allows UDP traffic on the multicast address and port used by Confluence.

Prefer IPv4

There are known issues relating to IPv6. You should configure your JVM to try binding to an IPv4 address first.

Change multicast interface

Confluence might have selected the incorrect interface for multicast traffic, which means it cannot connect to other nodes in the cluster. To override the interface used for multicast traffic after initial setup, edit the`confluence.cluster.interface` property in`<local-home>/confluence.cfg.xml`and specify the network interface. For example to tell Confluence to use `eth1`:

```
<property name="confluence.cluster.interface">eth1</property>
```

Overriding Hazelcast Configuration

If the solution to your problem involves changes to the Hazelcast configuration, these changes should**not**be made to the Confluence configuration files. Instead, to ensure your configuration survives upgrades, make your changes by creating a Hazelcast override file.

Increase multicast TTL

The multicast time-to-live (TTL) specifies how many *hops* a multicast packet should be allowed to travel before it is discarded by a router. It should be set to the number of routers in between your clustered nodes: 0 if both are on the same machine, 1 if on two different machines linked by a switch or cable, 2 if on two different machines with one intermediate router, and so on.

To increase the multicast TTL by edit the`confluence.cluster.ttl` property in the`<local home>/confluence.cfg.xml` file on each node. For example to set the TTL to 3:

```
<property name="confluence.cluster.ttl">3</property>
```

Check intermediate routers

Advanced switches and routers have the ability to understand multicast traffic, and route it appropriately. Unfortunately sometimes this functionality doesn't work correctly with the multicast management information (IGMP) published by the operating system running Confluence.

If multicast traffic is problematic, try disabling advanced multicast features on switches and routers in between the clustered nodes. These features can prevent multicast traffic being transmitted by certain operating systems.

Didn't find a solution?

Check Related Articles from the Confluence Knowledge Base

- List of REST APIs available to configure SSO on Confluence Data Center
- How to suppress cluster warning messages in the Confluence log files
- Starting Confluence node fails with 'Port [5801] is already in use and auto-increment is disabled. Hazelcast cannot start' error
- "Exception bootstrapping cluster:Shared home directory is not configured correctly" Error during Confluence Data Center startup
- Recovering from a Data Center cluster split-brain
- Cannot find "external_id" column when trying to upgrade to a Confluence CDC license after upgrading from a pre-5.5 Confluence Clustered installation
- Multicast communication works only one-way
- Cluster Panic due to Multicast Traffic Communication Problem

- Hazelcast CANNOT start on this node. No matching network interface found.
- Configuration of Confluence Cluster Fails with 'Cannot assign requested address'

Contact Atlassian support

We have dedicated staff on hand to support your installation of Confluence. Please follow the instructions for raising a support request and mention that you're having trouble setting up your Confluence cluster.

Troubleshooting a Data Center cluster outage

On this page:

Confluence Data Center cluster outages can be difficult to troubleshoot as the environments are complex and logging can be very verbose.

This page provides a starting point for investigating outages in your cluster.

Establish the originating node

The most common outage scenario is when something, such as database connectivity issue, network outage or a long garbage collection (GC) process, causes a node to fail to communicate with the cluster for 30 seconds or more and is removed by Hazelcast. The affected node then continues to write to the database, causing a cluster panic.

To establish the originating node:

1. Gather the application log filefrom each node as soon as possible after the outage. Time is critical as the logs will roll over and you may lose the relevant time period.
2. Record identifying information about each node to help you interpret the log messages (IP address, node ID and name of each node).
3. Make a chronological timeline of the events:
    a. Record the time that users or monitoring systems started reporting problems.
    b. View the logs for each node side by side (Hint: we find opening three tabs in node number order helps you always know which logs you are viewing).
    c. Search the logs for `'removing member'` and `'panic'`. This will give you a good idea of which nodes caused the issue and when.
    d. Make a chronological timeline of events from errors to node removal to panics. You can essentially disregard all logging that happens post-panic because once a node panics it needs to be restarted to function effectively. There will be a lot of noise in the logs, but it won't be very useful. The time period we're most interested in will be the minute or so leading up to the first removal or panic event in the logs.

       For example:

       ```
       2:50:15 (approx) Node 3 stopped heartbeating to the cluster for 30s
       (we can estimate this from the time of node removal)
       02:50:45 Node 3 was removed by Node 2
       02:53:15 Node 4 panics
       02:54:15 Node 1, Node 3 and Node 4 receive the panic event and stop processing
       Node 2 remains serving requests
       ```

    e. When you've established when the first affected node was removed, or when the first cluster panic occurred, look back in time in the logs on that node, to look for root causes.

Investigate common root causes

Once you know when the first affected node was removed you can start investigating root causes. From this point on, you're only looking at events on the affected node around the time of removal (in our example above, this is Node 3 at around 2:50). The subsequent removals and panics are usually flow-on effects of the original node removal event, and aren't likely to provide useful root cause information.

Garbage collection

Check the GC logs for the node that was removed (Node 3 in our example). Were there any GC pauses longer than the Hazelcast heartbeat interval (30 seconds by default)? Nodes can't heartbeat during Garbage Collection, so they will be removed from the cluster by one of the other nodes.

If there was a cluster panic, but the node was not removed from the cluster first, check the GC logs for pauses around the time of the panic - pauses that are relatively short (less than 30 seconds) can sometimes still cause panics (due to a race condition) in Confluence 5.10.1 and earlier.

Database connections

Check any database monitoring tools you may have. How many connections to the database were there at the time of the outage?Heartbeats can fail to send if a node can get a connection from its connection pool but not from the database itself, which can lead to nodes being removed from the cluster.

You won't be able to diagnose this from the Confluence logs and will need to look at any external monitoring tools you have for your database. If the outage happens again, check the current number of connections at the db level during the outage.

Network connectivity

Check your network monitoring tools. If a node drops off the network for a short time and cannot communicate with the cluster, it can be removed by the other nodes. Your load balancer logs may be useful here.

Still having trouble?

ContactSupportfor help troubleshooting these outages. Provide them with as much of the information above as possible, to help their investigation.

Use a CDN with Atlassian Data Center applications

On this page:

If your users are distributed across the world and experience poor performancewhen using Data Center products, you may be able to improve their experience by using a Content Delivery Network (CDN). Common CDNs include AWS CloudFront, Cloudflare, Akamai, and others.

CDN support is available in**Data Center**editions of:

- Jira Software 8.3
- Jira Service Management (formerly Jira Service Desk)4.3
- Confluence 7.0
- Bitbucket 6.8.

Get started with CDN

Here's a quick summary of what's involved to enable your CDN in Confluence Data Center:

1. Useour templateto spin up an AWS CloudFront distribution, or create an account with the CDN vendor of your choice.
2. Update yourload balancer and firewallto allow the CDN to reach your site.
3. In Confluence Data Center, provide the CDN URL, and enable CDN support.

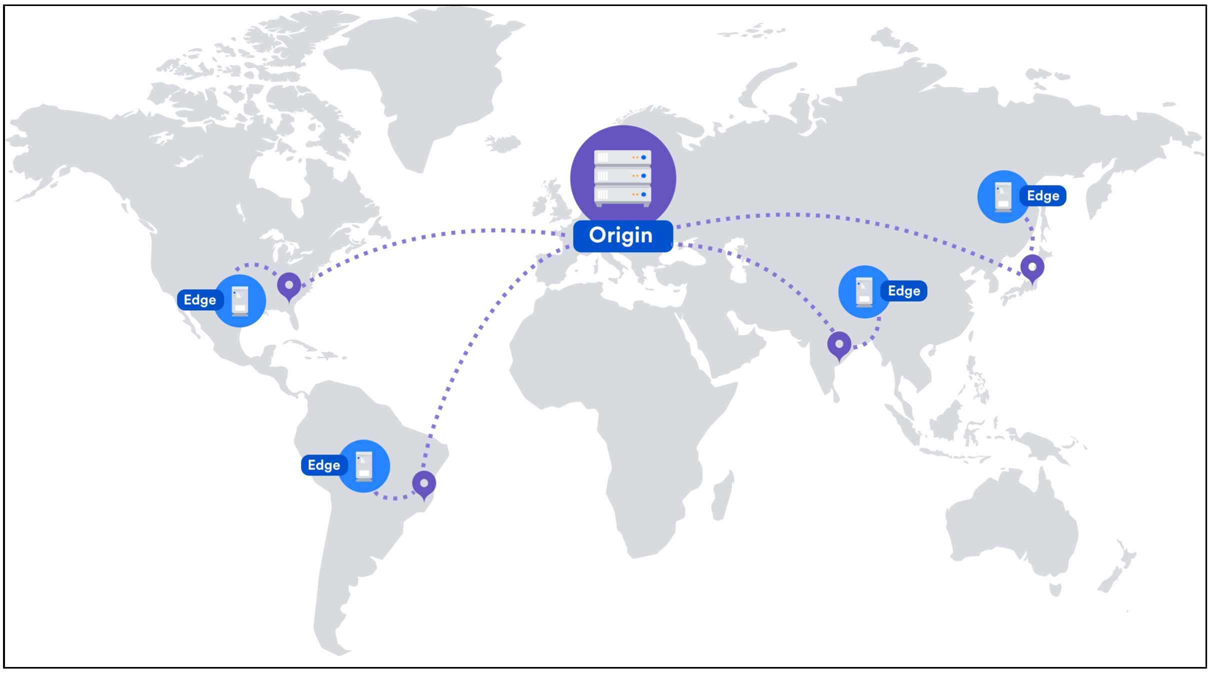
As end users access your site, static assets will be cached on the edge server closest to them, and served from there until they expire. This means it might take some time before you can start measuring the impact of the CDN, depending on when your users are online and accessing the site in each location. We don't provide the ability to preload the cache, so assets will be cached as they are served for the first time.

SeeConfigure your CDN for Confluence Data Centerfor the full step-by-step guide.

As always, we recommend testing this on your staging environment, before making any changes to your production site.

How it works

Static assets (such as JavaScript, CSS, and fonts) are cached on edge servers provided by a CDN vendor that are geographically closer to the user. This means when someone views a page, some of the assets needed to display the page are delivered by a server in their region, rather than from yourserver, known as the origin server.This can speed up page load times.



For example, if your server (known as the origin) is in Germany, a CDN can improve page load time by as much as 50% for users located in Rio de Janeiro, as static assets can be served from an edge server in Brazil.If you're new to CDNs and would like to learn more about how they work, CloudFlare provides a great introduction, seehttps://www.cloudflare.com/learning/cdn/performance/.

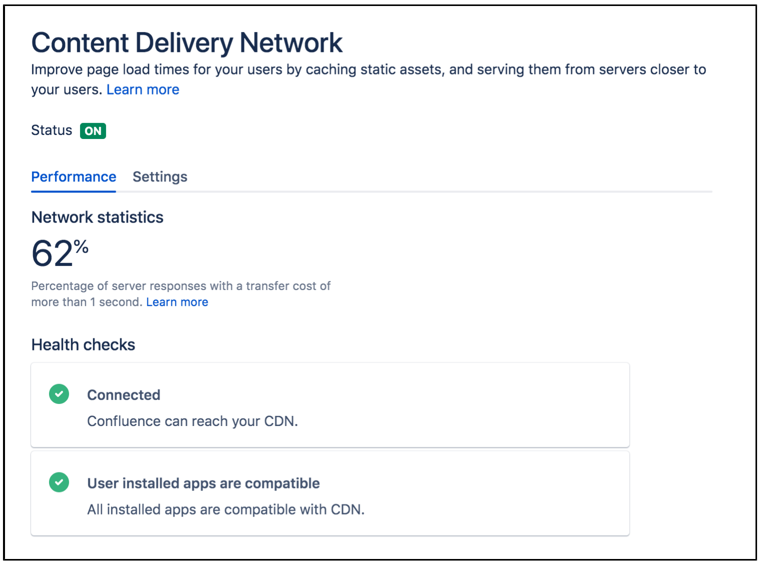
It's important to note that using a CDN will not make your application inherently faster, what it will do is reduce the load on your cluster,andreduce the latency experienced by some users, which should result in faster page load times for users.

Tests on our internal dogfooding instances located in Gdask, Poland have shown the response time for the View Issue action in Jira Data Center is ~50% faster for people accessing from US East, when CDN is enabled.

How to determine whether a CDN will help your users

A good starting point when assessing whether a CDN will help your users, is to take a look at the network overhead experienced in your site.

Go to**Content Delivery Network**in the admin console of your Data Center application. On the **Performance** tab you'll see the percentage of requests that had a transfer cost of more than one second. Put simply, the higher the percentage, the more likely it is that your users requests are being affected by network conditions, such as latency and connection quality.



Content Delivery Network

Improve page load times for your users by caching static assets, and serving them from servers closer to your users. Learn more

Status ON

Network statistics

62%

Percentage of server responses with a transfer cost of more than 1 second. Learn more

Health checks

✓ Connected

Confluence can reach your CDN.

✓ User installed apps are compatible

All installed apps are compatible with CDN.

This network statistic is a useful indicator of the network conditions your users experience when using the product. If the percentage is high, it's likely that using a CDN will benefit your users in these conditions.

> As users access pages in your site (for example a Confluence page, Jira issue, or Bitbucket pull request page), we measure the amount of time the browser has to wait to get the content of that page. We then subtract the time required to render the page on the server. This leaves us with the time it took to send the request and retrieve the response.
>
> This time is dependent mostly on the latency between the server and the browser, but also includes things like SSL connection setup time.
>
> This metric is collected on requests that don't use CDN, so it will continue to provide consistent statistics on your network, even after you enable CDN.

You should also consider where your users are geographically located.For example, if your servers are located in Frankfurt, and the majority of your teams are located in Germany and Austria, your team based in Malaysia may be suffering from high latency, resulting in slow page load times.

Network diagnostic tools such as `traceroute`, `ping`, and `mtr`can be helpful to determine the amount of latency being experienced.

> In these examples we'll use traceroute todisplay some basic network statistics, including latency information. Remember to replace yoursite.comwith your base URL.
>
> In Windows, open Command Prompt and enter the following:
>
> ```
> > tracert yoursite.com
> ```
>
> In Linux or Mac OS, open Terminal and enter the following:
>
> ```
> $ traceroute yoursite.com
> ```
>
> This will display the number of hops, and three latency times, in milliseconds, for each server. Average the three figures to get the latency for that server.
>
> The `mtr` command (my traceroute) is a useful combination of `ping` and `traceroute`. You will need to install `mtr` to be able to use it in MacOS or Windows.

What is cached?

We only cache static assets served by a Data Center application or Marketplace app. These are things that are only going to change when you upgrade your Data Center application or app.Dynamic content is not cached.

Here's a summary of what will be cached when you enable CDN:

Cached	Not cached
- CSS - JavaScript - Fonts	- attached files - pages or issues - personal information, including avatars - assets that are part of a theme

You shouldn't need to ever manually invalidate the cache, as we handle this when you upgrade your Data Center product, or an app.

Planning your CDN implementation

Infrastructure requirements

You can use any origin pull CDN.You're responsible for any costs associated with your CDN.

We've prepared a CloudFormation template that you can use to configure Amazon CloudFront with minimal effort. You can find all our AWS deployment resources in this repositoryhttps://bitbucket.org/atlassian/atlassian-aws-deployment/src/master/templates/cdn/.

There are some other infrastructure requirements that you need to be aware of before you start:

- **HTTP/2 is highly recommended**
  Your load balancer, firewall, or proxy should allow HTTP/2 traffic. Using HTTP/2 will provide the best performance for your end users. Check the documentation for your particular provider to find out how to do this.
- **Firewall considerations**
  Your CDN must be able to access and cache static assets. If your instance is not publicly accessible will you need to make some changes to your firewall to allow requests from the CDN to pass through.We recommend using application firewalls instead of standard IP range filtering, as CDN IP ranges can change without notice.

Considerations for private instances

If your site is publicly accessible on the internet, you should be able to enable CDN without any problems.

If your site is not publicly accessible you can:

- configure your firewall to allow requests from your CDN to pass through. More information on how to do this is provided in our step-by-step guides below.
- set up your own caching servers closer to your users which will not require opening any traffic to the internet, instead of using a CDN vendor. SeeHow to configure Apache for caching and HTTP/2to learn more about this workaround.

Marketplace apps and third party customizations

Some marketplace apps or customizations may not be compatible with the CDN feature. A health check, on the Content Delivery Network admin screen will let you know if any of your apps are not compatible.

SeeUser-installed apps health check fails in Data Center when configuring CDNto find out what to do if any of your apps are incompatible.

If you've developed your own plugin, seePreparing for Confluence 7.0for information about the APIs you can use to confirm your plugin is compatible.

Configure your CDN for Confluence Data Center

On this page:

If your users are distributed across the world and experience high latency when using Confluence Data Center, you may be able to improve their experience by using a Content Delivery Network (CDN). Common CDNs include AWS CloudFront, Cloudflare, Azure CDN, Akamai, and others.

Head toUse a CDN with Atlassian Data Center applicationsto learn about our CDN capabilities, and how to assess whether it will improve your users' experience.

Once you're ready to start using a CDN, there are three main steps:

1. Configure an internet-facing load balancer (optional)
2. Configure your CDN.
3. Enable the CDN feature in Confluence.

Configure an internet facing load balancer (optional)

If your site is not publicly accessible, you'll need to make sure that your CDN can reach it, but only to access and cache static assets. The way you do this depends on your particular load balancer and web application firewall. Refer to the documentation for your load balancer and firewall for detailed guidance.

Add an internet-facing load balancer

Add an internet-facing load balancer to your setup. This is in addition to your primary load balancer. Your CDN is the only entity that will interact with this load balancer. We recommend you:

- Enable HTTPS - the traffic from this load balancer will be sent over the public internet and should be encrypted.
- Enable HTTP/1.1 - currently, the caching proxies and CDNs do not handle HTTP/2 well (or at all) on the way to the origin.
- For AWS deployments, you would set up an internet-facing application load balancer.

Update your firewall rules for the internet-facing load balancer

Unlike your primary load balancer, this internet-facing load balancer must be locked down to ensure that your CDN can only pull data it is allowed to cache. When configuring your firewall rules we recommend:

1. The configuration should only allow requests for paths that start with "/s/". If your application is deployed with a context path (for example yoursite.com/wiki or yoursite.com/jira) you will need to include it in the path. All other requests must be blocked.
2. You can also choose to limit the allowedHTTP methods to GET, HEAD, OPTIONS.

For AWS deployments, you will configure a Web Access Control List (WebACL) in the Web Application Firewall attached to your application load balancer. The condition to use is a "string match condition" applied to "URI".

To check that your setup is secure, perform the following manual tests:

1. A GET on`https://internet-facing-proxy/` should return "403 FORBIDDEN".
2. A GET on`https://internet-facing-proxy/s` should return "403 FORBIDDEN".

3. A GET on`https://internet-facing-proxy/s/`should return "404 NOT FOUND".
4. A GET on`https://internet-facing-proxy/s/.`should return "403 FORBIDDEN".
5. A GET on`https://internet-facing-proxy/s/../s/`should return "404 NOT FOUND".

Configure your CDN to cache assets

You'll need an account with a CDN provider. You're responsible for all costs associated with your CDN.We only support serving static assets from a CDN at this time. This means page content, attached files, and personally identifiable information, including things like user avatars, won't be cached by your CDN.

We've prepared a CloudFormation template that you can use to configure Amazon CloudFront with minimal effort. You can find all our AWS deployment resources in this repositoryhttps://bitbucket.org/atlassian/atlassian-aws-deployment/src/master/templates/cdn/.

If you choose not to use our template, define the following in your CDN configuration. This example is based on AWS CloudFront.

Origin domain name	This is your Atlassian application base URL, including the context path if you've configured one. For example:`mycompany.com/confluence`
Origin path	Leave blank. There is no need to specify a path.
Allowed HTTP methods	Optionally limit to: GET, HEAD, OPTIONS
Viewer protocol policy	redirect HTTP to HTTPS
Object caching	Use origin cache headers
Forward cookies	None This is important to make sure static assets are cached without the user context.
Query String Forwarding and Caching	Forward all, cache based on all
HTTP protocols	Must include HTTP/2
Error pages/Error Caching Minimum TTL (seconds)	The default error page caching time for CloudFront is 5 minutes. Consider lowering it to a value in the range of 10-30 seconds to decrease the time required to recover from an outage.
Compress Objects Automatically	Yes

Using the default should be fine for most of the other settings.

You will need to adapt this information for your particularCDN provider. You should refer to the documentation for your CDN for details, as we've found that terminology differs between CDNs.

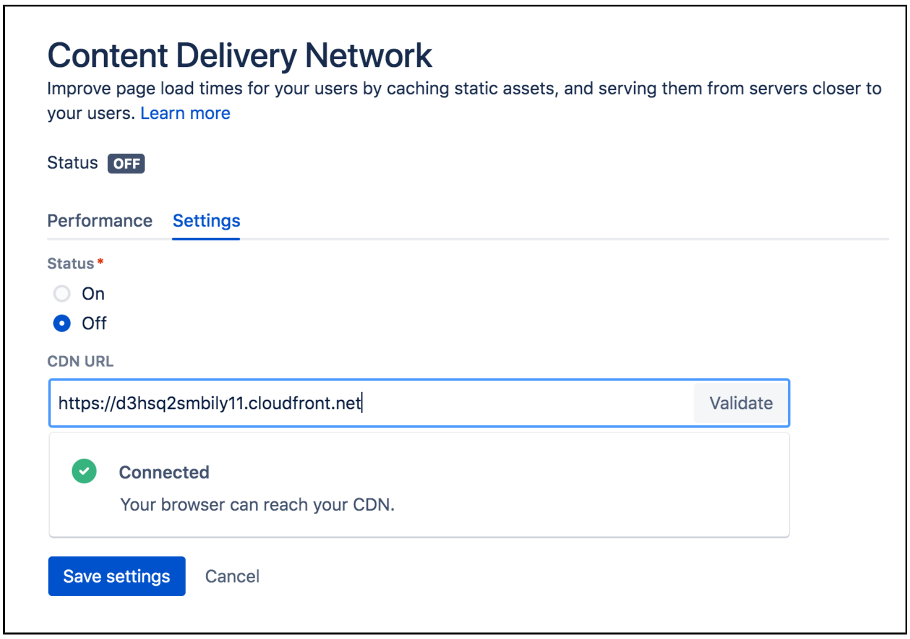
Enable CDN inConfluence

Once you've configured your CDN, you can enable the CDN option in Confluence.

To turn on CDN:

1. Go to⚙> **General Configuration**> **Content Delivery Network**.
2. Navigate to the**Settings**tab.
3. Set the status to**On**
4. Paste the URL generated by your CDNinto the URL field and hit**Validate**.

5. If successful,save your changes.



Content Delivery Network

Improve page load times for your users by caching static assets, and serving them from servers closer to your users. Learn more

Status OFF

Status*
○ On
● Off

CDN URL: https://d3hsq2smbily11.cloudfront.net

Connected
Your browser can reach your CDN.

As end users access Confluence, static assets will be cached on the edge server closest to them, and served from there until they expire. This means it might take some time before you can start measuring the impact of the CDN, depending on when your users are online and accessing the site in each location.

Configure CDN in Confluence via REST API

You can also interact with the CDN feature using the following REST endpoint:`<base-url>/rest/static-asset-caching/configuration`

- **GET** -returns the current CDN status, and URL.
- **DELETE** -deletes the existing configuration and reverts to the default state (CDN disabled, no URL). This is useful if you can't access the UI because of a caching problem.
- **PUT** -sets the CDN URL and status to the values passed in the body of the request as follows:

```
{
  enabled: true,
  url: https://yourcdnurl.com
}
```

Troubleshooting

Here are some common problems that you may encounter.

- **We only accept HTTPS CDN URLs**
  This is particularly important if you're using Azure CDN,as Azure CDN will mirror the same protocol as the originating request, which means your Data Center application will need to be provisioned with HTTPS.
- **Data Center application UI is inaccessible or not functional**
  Although unlikely, a misconfiguration of your CDNor a CDN service outage may mean your application's UI is not accessible.If this happens, you will need to disable the CDN feature using the REST API, as follows.

```
curl -v -u <admin username>:<admin password> -X DELETE http://<your-base-url>/rest/static-asset-
caching/configuration
```

This example uses Curl, but you can use any language. Don't forget to replace the username, password, and base URL placeholders with your own details.

- **HTTP/2 disabled**
  Your load balancer, firewall, or reverse proxy shouldallow HTTP/2 traffic.Using HTTP/2 will provide the best performance for your end users. See HTTP/2 health check fails in Data Center when configuring CDNfor more information.
- **User-installed apps may not be compatible**
  This warning is displayed when we detect that a Marketplace or other user-installed app is using a deprecated method, which may result in assets being cached incorrectly. SeeUser-installed apps health check fails in Data Center when configuring CDNfor more information on what to do if you see this warning.

Frequently asked questions

Can I control what static assets are cached?

No, the application controls this. All requests for static assets are routed to the CDN. Requests for non-static assets are routed directly to your product.

Is personally identifiable information cached?

User created content, usernames, mentions, avatars etc are not static assets, so are not cached. Your CDN should also be configured to pull content from your product with cookies stripped to make sure it operates without user context.

Is dynamic content such as `batch.js`cached?

Although dynamically generated, `batch.js`is considered static content, so is cached.

Improving instance stability with rate limiting

When automated integrations or scripts send requests to Confluence in huge bursts, it can affect Confluences stability, leading to drops in performance or even downtime. With rate limiting, you can control how many external REST API requests automations and users can make and how often they can make them, making sure that your Confluence instance remains stable.

Rate limiting is available for **Confluence Data Center**.

On this page:

How rate limiting works

Heres some details about how rate limiting works in Confluence.

Rate limiting targets only external REST API requests, which means that requests made within Confluence arent limited in any way. When users move around Confluence, creating pages, commenting, and completing other actions, they wont be affected by rate limiting, as were seeing this as a regular user experience that shouldnt be limited.

Lets use an example to better illustrate this:

- When a user visits a space in Confluence, a number of requests are sent in the background these requests ask Confluence for the pages, blog posts, etc. Since this traffic is internal to Confluence, it wont be limited.
- When the same user opens up the terminal on their laptop and sends a request (like the one below) to get the contents of a space, it will be rate limited because its made outside of Confluence.

```
curl -u user:password http://localhost:8090/rest/api/space/SPACEKEY/content
```

Authentication mechanisms

To give you more details on how we recognize which requests should be limited, were targeting external HTTP requests with these authentication mechanisms:

- Basic auth
- OAuth
- JSESSIONID cookie

Out of the many available techniques for enforcing rate limits, weve chosen to use token bucket, which gives users a balance of tokens that can be exchanged for requests. Heres a summary of how it works:

Users are given tokens that are exchanged for requests. One token equals one request.

Users get new tokens at a constant rate so they can keep making new requests. This is their Requests allowed, and can be, for example, 10 every 1 minute.

Tokens are added to a users personal bucket until its full. This is their Max requests and allows them to adjust the usage of tokens to their own frequency, for example 20 every 2 minutes instead of 10 every 1 minute, as specified in their usual rate.

When a user tries to send more requests than the number of tokens they have, only requests that can draw tokens from the bucket will be successful. The remaining ones will end in a 429 error message (too many requests). The user can retry those requests once they get new tokens.

Confluence tastes best when used with our other products like Jira. Technically, products like these are external to Confluence, so they should be limited. In this case, however, were treating them as belonging to the same user experience and dont want to enforce any limits for requests coming from or to these products.

The way it is now:

- Server: Not limited in any way.
- Cloud: Theres a known issue that applies rate limits to requests coming from/to cloud products. Were working hard to disable rate limits for cloud products and should make that happen soon. For now, if youre integrating Confluence with Jira cloud, you should make rate limits higher than usual.

The general assumption is that Marketplace apps are installed on a Confluence instance, make internal requests from within Confluence, and shouldnt be limited. But, as always, **it depends on how an app works**.

- **Internal**: If an app in fact works internally, enhancing the user experience, it wont be limited. An example of such app would be a special banner thats displayed in a Confluence space. Lets say this banner checks all pages that were created and shows this spaces winner a user whos created the most pages in the last month. Traffic like that would be internal, not limited.
- **External**: Apps whose requests are external to Confluence are limited. Lets say we have an app that displays a wallboard on TV. It asks Jira for details about boards, issues, assignees, etc. and then reshuffles and displays them in its own way as the earlier mentioned wallboard. An app like that sends external requests and behaves just like a user sending requests over a terminal.

It really depends on the app, but were assuming most of them shouldnt be limited.

Rate limiting is available for Data Center, so you most likely have a cluster of nodes behind a load balancer. You should know that each of your users will have a separate limit on each node (rate limits are applied per node, not per cluster).

In other words, if they have used their Requests allowed on one node and were rate limited, they could theoretically send requests again if they started a new session on a different node. Switching between the nodes isnt something users can do, but keep in mind that this can happen.

Whatever limit youve chosen (e.g. 100 requests every 1 hour), the same limit will apply to each node, you dont have to set it separately. This means that each users ability to send requests will still be limited, and Confluence will remain stable regardless of which node their requests are routed to.

Setting the right limit depends on many factors, so we cant give you a simple answer. We have some suggestions, though.

Finding the right limit

The first step is to understand the size of traffic that your instance receives. You can do this by parsing the access log and finding a user than made the most REST requests over a day. Since UI traffic is not rate limited, this number will be higher than what you need as your rate limit. Now, thats a base number you need to modify it further based on the following questions:

1. Can you afford to interrupt your users work? If your users integrations are mission-critical, consider upgrading your hardware instead. The more critical the integrations, the higher the limit should be consider multiplying the number you found by two or three.
2. Is your instance already experiencing problems due to the amount of REST traffic? If yes, then choose a limit thats close to the base number you found on a day when the instance didnt struggle. And if youre not experiencing significant problems, consider adding an extra 50% to the base number this shouldnt interrupt your users and you still keep some capacity.

In general, the limit you choose should keep your instance safe, not control individual users. Rate limiting is more about protecting Confluence from integrations and scripts going haywire, rather than stoping users from getting their work done.

How to turn on rate limiting

You need the System Administrator global permission to turn on rate limiting.

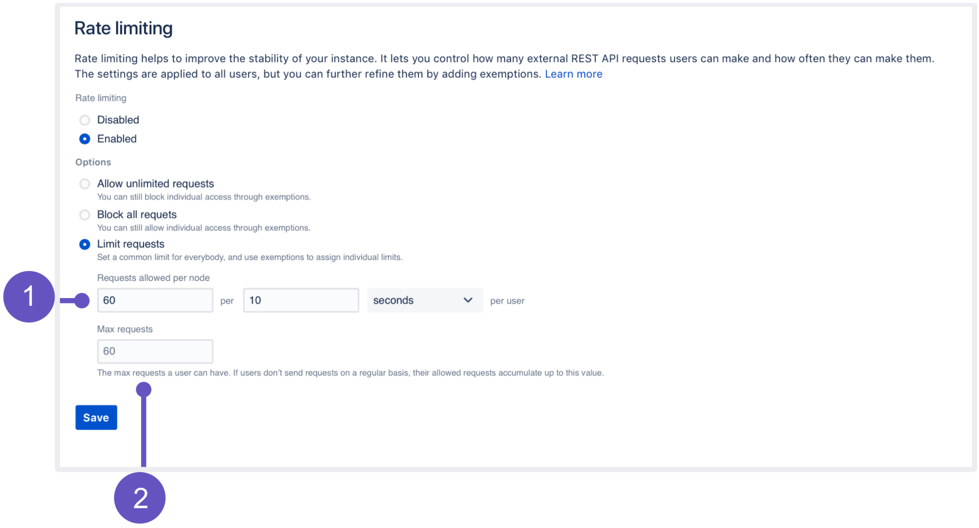
To turn on rate limiting:

1. In Confluence, go to ⚙ > **General Configuration** > **Rate limiting**.
2. Change the status to **Enabled**.
3. Select one of the options: **Allow unlimited requests**, **Block all requests**, or **Limit requests**. The first and second are all about allowlisting and blocklisting. For the last option, youll need to enter actual limits. You can read more about them below.
4. **Save** your changes.

Make sure to add exemptions for users who really need those extra requests, especially if youve chosen allowlisting or blocklisting. See Adding exemptions.

Limiting requests what its all about

As much as allowlisting and blocklisting shouldnt require additional explanation, youll probably be using the **Limit requests** option quite often, either as a global setting or in exemptions.



Rate limiting

Rate limiting helps to improve the stability of your instance. It lets you control how many external REST API requests users can make and how often they can make them. The settings are applied to all users, but you can further refine them by adding exemptions. Learn more

Rate limiting

○ Disabled
● Enabled

Options

○ Allow unlimited requests
You can still block individual access through exemptions.
○ Block all requets
You can still allow individual access through exemptions.
● Limit requests
Set a common limit for everybody, and use exemptions to assign individual limits.

Requests allowed per node: 60 per 10 seconds per user

Max requests: 60

The max requests a user can have. If users don't send requests on a regular basis, their allowed requests accumulate up to this value.

Lets have a closer look at this option and how it works:

1. **Requests allowed**: Every user is allowed a certain amount of requests in a chosen time interval. It can be 10 requests every second, 100 requests every hour, or any other configuration you choose.
2. **Max requests (advanced)**: Allowed requests, if not sent frequently, can be accumulated up to a set maximum per user. This option allows users to make requests at a different frequency than their usual rate (for example, 20 every 2 minutes instead of 10 every 1 minute, as specified in their rate), or accumulate more requests over time and send them in a single burst, if thats what they need. Too advanced? Just make it equal to Requests allowed, and forget about this field nothing more will be accumulated.

Examples

Requests allowed: 10/hour | Max requests: 100

One of the developers is sending requests on a regular basis, 10 per hour, throughout the day. If they try sending 20 requests in a single burst, only 10 of them will be successful. They could retry the remaining 10 in the next hour when theyre allowed new requests.

Another developer hasnt sent any requests for the past 10 hours, so their allowed requests kept accumulating until they reached 100, which is the max requests they can have. They can now send a burst of 100 requests and all of them will be successful. Once they used up all available requests, they have to wait for another hour, and theyll only get the allowed 10 requests.

If this same developer sent only 50 out of their 100 requests, they could send another 50 right away, or start accumulating again in the next hour.

Requests allowed: 1/second | Max requests: 60

A developer can choose to send 1 request every second or 60 requests every minute (at any frequency).

Since they can use the available 60 requests at any frequency, they can also send all of them at once or in very short intervals. In such a case, they would be exceeding their usual rate of 1 request per second.

Finding the right limit

Setting the right limit depends on many factors, so we cant give you a simple answer. We have some suggestions, though.

Finding the right limit

The first step is to understand the size of traffic that your instance receives. You can do this by parsing the access log and finding a user that made the most REST requests over a day. Since UI traffic is not rate limited, this number will be higher than what you need as your rate limit. Now, thats a base number you need to modify it further based on the following questions:

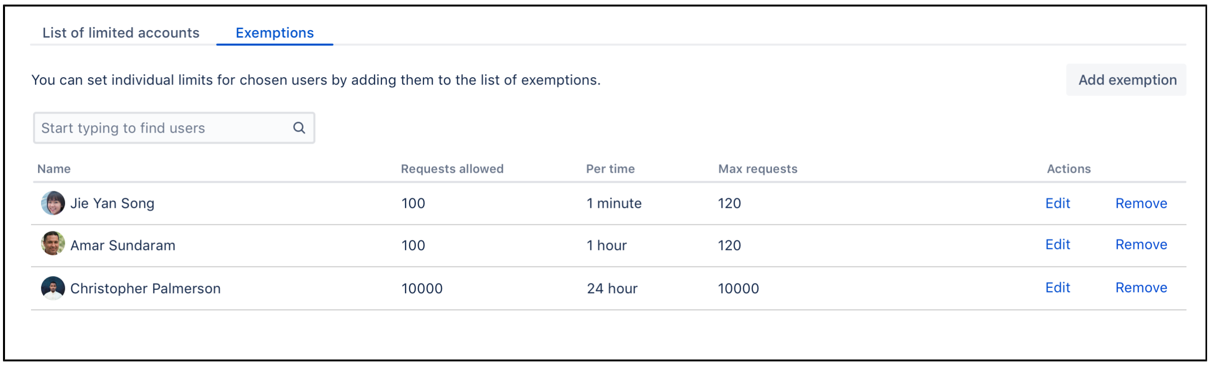
1. Can you afford to interrupt your users work? If your users integrations are mission-critical, consider upgrading your hardware instead. The more critical the integrations, the higher the limit should be consider multiplying the number you found by two or three.
2. Is your instance already experiencing problems due to the amount of REST traffic? If yes, then choose a limit thats close to the base number you found on a day when the instance didnt struggle. And if youre not experiencing significant problems, consider adding an extra 50% to the base number this shouldnt interrupt your users and you still keep some capacity.

In general, the limit you choose should aim at keeping your instance safe, not to control individual users. Rate limiting is more about protecting Jira from integrations and scripts going haywire, rather than stoping users from getting their work done.

Adding exemptions

Exemptions are, well, special limits for users who really need to make more requests than others. Any exemptions you choose will take precedence over global settings.

After adding or editing an exemption, youll see the changes right away, but it takes up to 1 minute to apply the new settings to a user.



You can set individual limits for chosen users by adding them to the list of exemptions.

Name	Requests allowed	Per time	Max requests	Actions	
Jie Yan Song	100	1 minute	120	Edit	Remove
Amar Sundaram	100	1 hour	120	Edit	Remove
Christopher Palmerson	10000	24 hour	10000	Edit	Remove

To add an exemption:

1. Go to the **Exemptions** tab.
2. Click **Add exemption**.
3. Find the user and choose their new settings.
   You cant choose groups, but you can select multiple users.
4. The options available here are just the same as in global settings: **Allow unlimited requests**, **Block all requests**, or **Assign custom limit**.
5. **Save** your changes.

If you want to edit an exemption later, just click **Edit** next to a users name in the **Exemptions** tab.

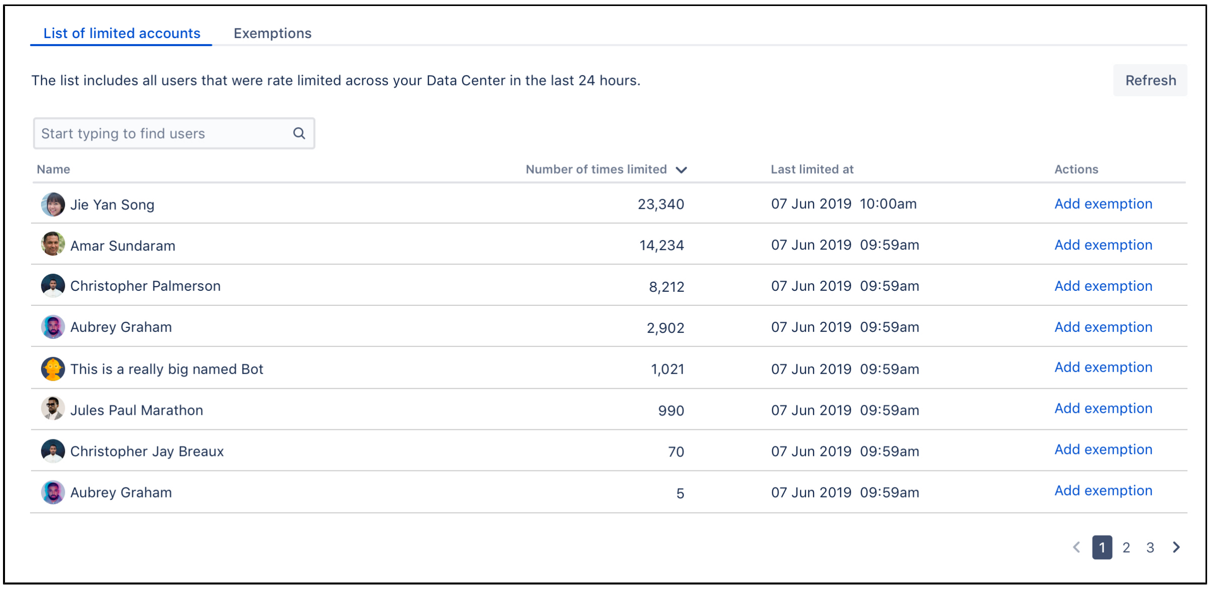
Recommended: Add an exemption for anonymous access

Confluence sees all anonymous traffic as made by one user: **Anonymous**. If your site is public, and your rate limits are not too high, a single person may drain the limit assigned to anonymous. Its a good idea to add an exemption for this account with a higher limit, and then observe whether you need to increase it further.

Identifying users who have been rate limited

When a user is rate limited, theyll know immediately as theyll receive an HTTP 429 error message (too many requests). You can identify users that have been rate limited by opening the **List of limited accounts** tab on the rate limiting settings page. The list shows all users from the whole cluster.

> When a user is rate limited, it takes up to 5 minutes to show it in the table.



The list includes all users that were rate limited across your Data Center in the last 24 hours.

Name	Number of times limited	Last limited at	Actions
Jie Yan Song	23,340	07 Jun 2019 10:00am	Add exemption
Amar Sundaram	14,234	07 Jun 2019 09:59am	Add exemption
Christopher Palmerson	8,212	07 Jun 2019 09:59am	Add exemption
Aubrey Graham	2,902	07 Jun 2019 09:59am	Add exemption
This is a really big named Bot	1,021	07 Jun 2019 09:59am	Add exemption
Jules Paul Marathon	990	07 Jun 2019 09:59am	Add exemption
Christopher Jay Breaux	70	07 Jun 2019 09:59am	Add exemption
Aubrey Graham	5	07 Jun 2019 09:59am	Add exemption

Unusual accounts

Youll recognize the users shown on the list by their name. It might happen, though, that the list will show some unusual accounts, so heres what they mean:

- **Unknown**: Thats a user that has been deleted in Confluence. They shouldnt appear on the list for more than 24 hours (as they cant be rate limited anymore), but you might see them in the list of exemptions. Just delete any settings for them, they dont need rate limiting anymore.
- **Anonymous**: This entry gathers all requests that werent made from an authenticated account. Since one user can easily use the limit for anonymous access, it might be a good idea to add an exemption for anonymous traffic and give it a higher limit.

Viewing limited requests in the Confluence log file

You can also view information about rate limited users and requests in the Confluence log file. This is useful if you want to get more details about the URLs that requests targeted or originated from.

When a request has been rate limited youll see a log entry similar to this one:

```
2019-12-24 10:18:23,265 WARN [http-nio-8090-exec-7] [ratelimiting.internal.filter.RateLimitFilter]
lambda$userHasBeenRateLimited$0 User [2c9d88986ee7cdaa016ee7d40bd20002] has been rate limited
 -- url: /rest/api/space/DS/content | traceId: 30c0edcb94620c83 | userName: exampleuser
```

Getting rate limited users perspective

When users make authenticated requests, theyll see rate limiting headers in the response. These headers are added to every response, not just when youre rate limited.

Header	Description
`X-RateLimit-Limit`	The max number of requests (tokens) you can have. New tokens wont be added to your bucket after reaching this limit. Your admin configures this as Max requests.
`X-RateLimit-Remaining`	The remaining number of tokens. This value is as accurate as it can be at the time of making a request, but it might not always be correct.
`X-RateLimit-Interval-Seconds`	The time interval in seconds. You get a batch of new tokens every time interval.
`X-RateLimit-FillRate`	The number of tokens you get every time interval. Your admin configures this as Requests allowed.
`retry-after`	How long you need to wait until you get new tokens. If you still have tokens left, it shows 0; this means you can make more requests right away.

When youre rate limited and your request doesnt go through, youll see the HTTP 429 error message (too many requests). You can use these headers to adjust scripts and automations to your limits, making them send requests at a reasonable frequency.

Other tasks

Allowlisting URLs and resources

Weve also added a way to allow whole URLs and resources on your Confluence instance using a system property. This should be used as quick fix for something that gets rate limited, but shouldnt.

> For example, a Marketplace app added some new API to Confluence. The app itself is used from the UI, so it shouldnt be limited, but it might happen that Confluence sees this traffic as external and applies the rate limit. In this case, you could disable the app or increase the rate limit, but this brings additional complications.
>
> To work around issues like this, you can allowlist the whole resource added by the app so it works without any limits.

To allow specific URLs to be excluded from rate limiting:

1. Stop Confluence.
2. Add the`com.atlassian.ratelimiting.whitelisted-url-patterns`system property, and set the value to a comma-separated list of URLs, for example:

```
-Dcom.atlassian.ratelimiting.whitelisted-url-patterns=/**/rest/applinks/**,/**/rest/capabilities,
/**/rest/someapi
```

   The way you add system properties depends on how you run Confluence. See Configuring System Properties for more information.
3. Restart Confluence.

For more info on how to create URL patterns, see AntPathMatcher: URL patterns.

Allowlisting external applications

You can also allowlist consumer keys, which lets you remove rate limits for external applications integrated through AppLinks.

> If you're integrating Confluence with other Atlassian products, you don't have to allowlist them as this traffic isn't limited.

1. Find the consumer key of your application.
   a. Go to ⚙> **General Configuration> Application Links**.
   b. Find your application, and click **Edit**.
   c. Copy the Consumer Key from**Incoming Authentication**.
2. Allowlist the consumer key.
   a. Stop Confluence.
   b. Add the`com.atlassian.ratelimiting.whitelisted-oauth-consumers` system property, and set the value to a comma-separated list of consumer keys, for example:

      ```
      -Dcom.atlassian.ratelimiting.whitelisted-oauth-consumers=app-connector-for-confluence-
      server
      ```

      The way you add system properties depends on how you run Confluence. SeeConfiguring System Propertiesfor more information.
   c. Restart Confluence.

After entering the consumer key, the traffic coming from the related application will no longer be limited.

Adjusting your code for rate limiting

Weve created a set of strategies you can apply in your code (scripts, integrations, apps) so it works with rate limits, whatever they are.

For more info, see Adjusting your code for rate limiting.

Adjusting your code for rate limiting

Whether its a script, integration, or app youre using if its making external REST API requests, it will be affected by rate limiting. Until now, you could send an unlimited number of REST API requests to retrieve data from Confluence, so were guessing you havent put any restrictions on your code. When admins enable rate limiting in Confluence, theres a chance your requests will get limited eventually, so we want to help you prepare for that.

Before you begin

To better understand the strategies weve described here, its good to have some some basic knowledge about rate limiting in Confluence. When in doubt, head to Improving instance stability with rate limiting and have a look at the first paragraph.

Quick reference

Success: When your request is successful, youll get a 2xx code.

Error: When your request fails, youll get a 4xx code. If youre rate limited, it will be 429 (too many requests).

The following HTTP headers are added to every **authenticated** request affected by rate limiting:

Header	Description
`X-RateLimit-Limit`	The max number of requests (tokens) you can have. New tokens wont be added to your bucket after reaching this limit. Your admin configures this as Max requests.
`X-RateLimit-Remaining`	The remaining number of tokens. This value is as accurate as it can be at the time of making a request, but it might not always be correct.
`X-RateLimit-Interval-Seconds`	The time interval in seconds. You get a batch of new tokens every time interval.
`X-RateLimit-FillRate`	The number of tokens you get every time interval. Your admin configures this as Requests allowed.
`retry-after`	How long you need to wait until you get new tokens. If you still have tokens left, it shows 0; this means you can make more requests right away.

Strategies

Weve created a set of strategies you can apply in your code so it works with rate limits. From very specific to more universal, these reference strategies will give you a base, which you can further refine to make an implementation that works best for you.

1. Exponential backoff

This strategy is the most universal and the least complex to implement. Its not expecting HTTP headers or any information specific to a rate limiting system, so the same code will work for the whole Atlassian suite, and most likely non-Atlassian products, too. The essence of using it is observing whether youre already limited (wait and retry, until requests go through again) or not (just keep sending requests until youre limited).

✓Universal, works with any rate limiting system.

✓Doesnt require too much knowledge about limits or a rate limiting system.

❌High impact on a Confluence instance because of concurrency. Were assuming most active users will send requests whenever theyre available. This window will be similar for all users, making spikes in Confluence performance. The same applies to threads most will either be busy at the same time or idle.

❌Unpredictable. If you need to make a few critical requests, you cant be sure all of them will be successful.

Summary of this strategy

Heres the high-level overview of how to adjust your code:

1. **Active**: Make requests until you encounter a 429. Keep concurrency to a minimum to know exactly when you reached your rate limit.
2. **Timeout**: After you receive a 429, start the timeout. Set it to 1 second for starters. Its a good idea to wait longer than your chosen timeout up to 50%.
3. **Retry**: After the timeout has passed, make requests again:
    a. **Success**: If you get a 2xx message, go back to step 1 and make more requests.
    b. **Limited**: If you get a 429 message, go back to step 2 and double the initial timeout. You can stop once you reach a certain threshold, like 20 minutes, if thats enough to make your requests work.

With this strategy, youll deplete tokens as quickly as possible, and then make subsequent requests to actively monitor the rate limiting status on the server side. It guarantees youll get a 429 if your rate is above the limits.

2. Specific timed backoff

This strategy is a bit more specific, as its using the `retry-after` header. Were considering this header an industry standard and plan to use it across the Atlassian suite, so you can still be sure the same code will work for Bitbucket and Confluence, Server and Cloud, etc. This strategy makes sure that you will not be limited, because youll know exactly how long you need to wait before youre allowed to make new requests.

✅Universal, works with any rate limiting system within the Atlassian suite (and other products using `retry-after`) Bitbucket and Confluence, Server and Cloud, etc.

✅Doesnt require too much knowledge about limits or a rate limiting system.

❌High impact on a Confluence instance because of concurrency. Were assuming most active users will send requests whenever theyre available. This window will be similar for all users, making spikes in Jira performance. The same applies to threads most will either be busy at the same time or idle.

Summary of this strategy

Heres the high-level overview of how to adjust your code:

1. **Active**: Make requests and observe the `retry-after` response header, which shows the number of seconds you need to wait to get new tokens. Keep concurrency level to a minimum to know exactly when the rate limit kicks in.
    a. **Success**: If the header says 0, you can make more requests right away.
    b. **Limited**:If the header has a number greater than 0, for example 5, you need to wait that number of seconds.
2. **Timeout**: If the header is anything above 0, start the timeout with the number of seconds specified in the header. Consider increasing the timeout by a random fraction, up to 20%.
3. **Retry**: After the timeout specified in the header has passed, go back to step 1 and make more requests.

With this strategy, youll deplete tokens as quickly as possible, and then pause until you get new tokens. You should never hit a 429 if your code is the only agent depleting tokens and sends requests synchronously.

3. Rate adjustment

This strategy is very specific and expects particular response headers, so its most likely to work for Confluence Data Center only. When making requests, youll observe headers returned by the server (number of tokens, fill rate, time interval) and adjust your code specifically to the number of tokens you have and can use.

✅It can have the least performance impact on a Confluence instance, if used optimally.

✓Highly recommended, especially for integrations that require high-volume traffic.

✓Safe, as you can easily predict that all requests that must go through will in fact go through. It also allows for a great deal of customization.

✗Very specific, depends on specific headers and rate limiting system.

Summary of this strategy

Heres the high-level overview of how to adjust your code:

1. **Active:** Make requests and observe all response headers.
2. **Adjust:** With every request, recalculate the rate based on the following headers:
    a. `x-ratelimit-interval-seconds`: The time interval in seconds. You get a batch of new tokens every time interval.
    b. `x-ratelimit-fillrate`: The number of tokens you get every time interval.
    c. `retry-after`: The number of seconds you need to wait for new tokens. Make sure that your rate assumes waiting longer than this value.
3. **Retry:** If you encounter a 429, which shouldnt happen if you used the headers correctly, you need to further adjust your code so it doesnt happen again. You can use the `retry-after` header to make sure that you only make requests when the tokens are available.

Customizing your code

Depending on your needs, this strategy helps you to:

By following the headers, you should know how many tokens you have, when you will get the new ones, and in what number. The most useful headers here are `x-ratelimit-interval-seconds` and `x-ratelimit-fillrate`, which show the number of tokens available every time interval. They help you choose the perfect frequency of making your requests.

You can wait to perform complex operations until youre sure you have enough tokens to make all the consecutive requests you need to make. This allows you to reduce the risk of leaving the system in an inconsistent state, for example when your task requires 4 requests, but it turns out you can only make 2. The most useful headers are `x-ratelimit-remaining` and `x-ratelimit-interval-seconds`, which show how many tokens you have right now and how long you need to wait for the new ones.

With all the information returned by the headers, you can create more strategies that work best for you, or mix the ones weve described here. For example:

If youre making requests once a day, you can focus on the max requests you can accumulate (`x-ratelimit-limit`), or lean towards the remaining number of tokens if a particular action in Confluence triggers your app to make requests (`x-ratelimit-remaining`).

If your script needs to work both for Confluence Data Center and some other application, use all headers for Confluence and focus on the universal retry-after or request codes if the app detects different software.

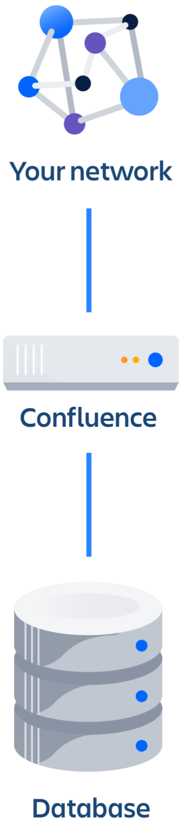
Running Confluence Data Center on a single node

Data Center allows you to run Confluence in a cluster with multiple nodes, or on a single server (also known as non-clustered, or standalone Data Center).

This page outlines the architecture and requirements of a non-clustered Confluence Data Center deployment, as well as some of the benefits and considerations.

Architecture

The deployment architecture of a non-clustered Data Center deployment is the same as a Server installation. Heres what a typical setup looks like:



As you can see, Confluence Data Center deployed on a single node looks just as a Server installation, and consists of:

- Confluence Data Center, running on a single node
- A database that Confluence reads and writes to

SeeGetting started as a Confluence administrator to learn more about single server Confluence installations.

Requirements

Non-clustered Confluence Data Center installations have the same minimum requirements as a Confluence Server installation. Check our Confluence System Requirements guide for a full overview of the supported platforms and hardware youll need.

Benefits of running a non-clustered Data Center deployment

There are a range of reasons you may choose a single node Data Center. Some of the benefits include:

- **Keeping your existing infrastructure**
  Running on a single node means that you can upgrade from Server to Data Center without adding to your infrastructure. In most cases, moving to Data Center will be as simple as updating your license.
- **Accessing Data Center-only features**
  Your Data Center license unlocks a suite of additional security, compliance, and administration features to help you easily manage enterprise-grade Confluence site like SAML single sign-on, advanced permission management, rate limiting, and more. See the complete list.

As non-clustered Confluence Data Center installations are cluster-compatible, you can still enable and configure clustering whenever youre ready to scale. Learn more about setting up a cluster.

Considerations

Non-clustered Data Center is the simplest setup, but it has some limitations. Just like a Server installation, youll still have the application server as a single point of failure, so it cant support high availability or disaster recovery strategies.

Some deployments start to experience performance or stability issues once their size profile hits Large or XLarge. Most clustered deployments provide you the flexibility to scale up your infrastructure to address heavy loads (or even scale down to save costs during light loads). On AWS or Azure, you can also quickly address most stability issues by replacing misbehaving nodes with fresh ones.

✓ For more information about size profiles, see Data Center performance sizing. We also explain our own strategies for managing our clustered deployments in How Atlassians monitor their enterprise deployments.