System Requirements

Contents

System Requirements

Make sure these system requirements are met before using the application.

Learn about the required and supported system elements for the application. Don't forget that you should also have a plan to back up your installation!

Jive includes most of what you need to get the application running and configured for a simple evaluation or development installation, but running it in production requires you to set up a database and configure a distributed environment with multiple server nodes. Each production instance will include external components you'll need to provide. Please read the following requirements carefully before you begin your installation.

Note: Previous versions included a Postgres database as part of the installation package: this component is no longer included. See Quick Database Setup for instructions on how to set up your database if you want to create a single-computer installation for non-production use.

Jive Enterprise Architecture

Jive is compatible with a number of hardware configurations as well as network topologies.

The following illustrates the recommended deployment configuration for an on-premise installation. Your configuration may be different.

Note that except for an evaluation or development environment, you cannot deploy Jive and all of its services from one server. Your web app nodes, Activity Engine, cache server, search (if you don't use Cloud search) and document conversion services must all be stored on separate servers. You can store the Analytics database and core application database on one server, but you must ensure isolation. Be sure to read Database Issues and Best Practices.

Areas of Expertise Needed to Administer Jive

Lists the experts you need to manage systems and the professional expertise they require.

You need to round up the following experts in your company to get Jive up and running:

Community Administrator	Makes decisions for the community and set it up using the User Interface. The Community Admin needs to manage the community and set up permissions for places. For more information, see Administering the Community.
Database Administrator	Responsible for the administration of the database back-end to the Jive platform. DBAs must configure, implement, provision and monitor databases

	supporting the Jive environment, which supports PostgreSQL, MySQL, Oracle or SQL Server. The DBA or DBA Team will be responsible for database sizing, resource allocation, backups, high-availability and security of the database engine(s). For more information, look at our list of Supported Databases.
Directory Server Administrator	If you plan to provision Jive users from a directory server such as LDAP or Active Directory, you'll need in-house or consulting expertise in operating and maintaining enterprise-level directories.
Linux System Administrator	The Linux sysadmin should know how to navigate a Linux environment to set up and maintain Jive. Linux sysadmins will perform upgrades, provision, install/configure, operate, and maintain the Jive system hardware, software and related infrastructure. For more information, see Administering the Platform.
Storage Administrator	The storage admin will provision shared NAS/SAN storage for your Jive installation. For more information, see Shared Storage in Required External Components.

Hardware Requirements

Your application, cache, Activity Engine, document conversion, and search servers have different suggested hardware specifications.

Jive is compatible with a number of hardware configurations as well as network topologies. The following tables provide required minimum hardware specifications. Note that depending on your site's traffic patterns and sizing, you may require considerably more resources and a customized approach.

This topic covers the hardware on which you will install Jive components. However, to run Jive you'll also need to provide the additional resources (such as databases and a load balancer) described in Required External Components. You'll also need to provide the network resources and configuration described in Network Requirements.

Topology

- Separate VMs or physical machines for each application node, Activity Engine, document conversion server, cache server, and search server.

- Three freestanding databases. See Database Configuration and Best Practices for details about requirements and setup.
- At least two web application nodes. Running multiple application nodes allows for high-availability failover between the nodes, and allows you to more easily scale the number of requests your site can handle. Note that to run multiple web application nodes, you need to run a separate cache server, and you need to provision a load balancer.

Running in a Virtual Environment

If you install in a virtual environment, keep in mind the following best practices:

- Install SLES or RHEL as a guest operating system in a VMware environment per VMware instructions.
- Jive requires memory reservation to be dedicated for each node in the installation, including the cache server and the Activity Engine server.
- The VMware Best Practices Guide at http://kb.vmware.com/selfservice/microsites/search.do?cmd=displayKC&externalId=1008480 also has some valuable suggestions.

Application Machine

Component	Required Minimum
CPUs	• Multicore - 2 chips with multicore optimal • 2 GHz Minimum • x86_64 architecture
Memory	• 6 GB physical RAM • 2 GB memory heap (configured by default)
Storage	• Use a RAID configuration for best performance and reliability. Unless you have a very small installation indeed, you should provide external binary storage for your uploaded documents and images as described in Required External Components.

Activity Engine Machine

Component	Recommended Minimum
CPUs	• Multicore - 2 chips with multicore optimal • 2 GHz Minimum • x86_64 architecture
Memory	• 6 GB physical RAM; 4 recommended • 2 GB memory heap (configured by default).
Topology	• Activity Engine on a single machine separate from clustered application servers.

Document Conversion Machine

Component	Recommended Minimum
CPUs	• Multicore - 2 chips with multicore optimal • 2 GHz Minimum • x86_64 architecture
Memory	• 6 GB physical RAM • 256 MB memory heap
Topology	• Document conversion server on a single machine separate from clustered application servers.

Cache Server Machine

Component	Recommended Minimum
CPUs	• Multicore - 2 chips with multicore optimal • 2 GHz Minimum • x86_64 architecture
Memory	• 6 GB physical RAM • 1 GB memory heap (configured by default). 2+ GB recommended for sites with large amounts of content.
Topology	• Cache server on a single machine separate from clustered application servers. Jive supports either a single cache server or 3 (or more) cache servers. Using two cache servers is not supported.

Search Node Machine

Component	Recommended Minimum
CPUs	• Multicore - 2 chips with multicore optimal • 2 GHz Minimum • x86_64 architecture
Memory	• 6 GB physical RAM • 1 GB memory heap (configured by default). 2+ GB recommended for sites with large amounts of content.
Topology	• Search node on a single machine separate from clustered application servers.

Required External Components

The following external components are required in a production installation of Jive.

Databases	At a minimum, you'll need set up a database server for the core web application, Activity Engine, and Analytics. For detailed information about requirements and setup, see Database Configuration.
Load Balancer	Because you need multiple application nodes to run Jive in production, you'll need to set up a load balancer to manage incoming traffic. Note that SSL termination at the load balancer is required: see Configuring SSL for a Load Balancer. SSL encryption between the load balancer and each web node is optional. Make sure you also enable session affinity on the load balancer.
Shared Storage	For non-trivial deployments, we recommend that you provision a unit of shared storage on a SAN/NAS to store binary content. This single unit of storage must be mountable on all the web application nodes in your installation, and should be easy to expand because the amount of content in Jive grows over time. This shared storage will be used both for storing binary content such as uploaded documents, and for storing the output after the Search server has indexed the text content. For more information on binary storage see Configuring a Binary Storage Provider. To estimate the amount of disk space you will need for this component, see Sizing Binary Storage.

Optional Content Delivery Network (CDN)

If you are deploying a large, globally-dispersed community, you may want to use a third-party content delivery network (CDN) tool.

If you are deploying a large, globally-dispersed community, a CDN service can help your Jive pages load faster for remote community users. For an external community (typically one used for customers, vendors, and employees), Jive Software strongly recommends using a CDN tool.

For assistance with deploying a CDN and selecting an appropriate vendor, please contact Jive Support.

Sizing Binary Storage

To estimate your binary storage requirements, consider your likely number of users and the kinds of materials they will upload.

When estimating the size of your shared storage, the stored footprint for each version of each converted document is about 130 percent of the size of the uploaded document. So, for example, a 5 MB document uploaded by the user will mean about 6.5 MB of storage needed for each version of the document in your binary storage provider. That's because for each document for which the application generates a preview -- for each *version* of that document -- the application generates a preview, thumbnail images, and PDFs.

Note: You only see the increased stored footprint for certain uploaded document types, such as Word, PowerPoint, Excel, and PDF, and it does not occur for all documents. For example, you won't need increased storage for ZIP files or text files. Attachments, images, and any plugins that store binary content also use an increased stored footprint.

Customer Size	# of Users	Initial Size	Extra Storage Per Month	Notes
Small (Internal)	100 to 500	25 GB	1 GB	
Medium (Internal)	500 to 5,000	100 GB	5 GB	
Large (Internal)	50,000+	500 GB	20 GB	
Public	n/a	100 GB	1 GB	External sites commonly do not allow attachments or binary documents, so they typically don't use a lot of binary storage.

Network Requirements

Make sure your network is set up and optimized for Jive.

- When you set up Jive, make sure your network has Gigabit Ethernet and the capacity to handle your community's traffic.
- Make sure your application nodes are inside the same network. You can't distribute them across a WAN.
- See the List of Ports and Domains required to enable traffic between different components.
- Make sure that the PUT and DELETE methods are enabled on your router or proxy server. These methods are handled securely by the Jive web application, and are required to run the application. For a thorough explanation of why these methods are secure and how they relate to the product's web services architecture, see architect Craig McClanahan's extended discussion on Jive Community.

- Check out Configuring SSL on the Load Balancer. Running Jive in SSL mode is required for a production deployment.
- Several Jive services have additional connectivity requirements. See Connecting to Jive-Hosted Services.

Supported Operating Systems

Installing and running Jive requires a Linux server operating system.

The following operating systems are supported. You'll need the latest 3 service packs and a bash shell.

- RedHat Enterprise Linux (RHEL) version 6 or 7 for x86_64
- CentOS version 6 or 7 for x86_64
- SuSE Enterprise Linux Server (SLES) 11 and 12 for x86_64

Supported Browsers

Jive works with most current web browsers. Note that if you need to use Content Editor features such as cut and paste, script access to the Clipboard should not be disabled.

Minimum screen resolution: 1024 x 768. Results may vary if you use zoom to adjust your view to levels other than 100%.

- Microsoft Internet Explorer 9, 10, and 11.

  Note: Compatibility mode with earlier versions is not supported

- Apple Safari 7 and 8 (on Macs only)
- Mobile Safari on iPhone and iPad for iOS 7 and 8. (For the browser-independent native iOS app, look for the iOS for Jive app in the App Store.)
- Mobile Chrome on Android devices for Android 4.4. (For the browser-independent native Android app, look for the Android for Jive app in Google Play.)
- Mozilla Firefox*
- Google Chrome*

* The Google Chrome and Mozilla Firefox browsers are released frequently. Jive Software makes every effort to test and support the latest version.

Important Notes and Restrictions

- Beta versions of web browsers are not supported, but they are quickly added to the supported list after they're formally released.
- Apps and the Jive Apps Market are not supported on mobile devices. These features may not work correctly on mobile devices.

Deployment Sizing and Capacity Planning

The hardware capacity you need to plan for depends on your community's page view load.

Note: This topic only covers the main hardware where you'll install the application itself. You'll also need to consider sizing for the required external components included in your installation, for example your databases.

How Can I Estimate Deployment Size?

The usual calculation for estimating page views in preparation for a site deployment is to use the known page views per day and add 20% to the total as a buffer. (If you want to read more about the math behind this calculation, you can request the Jive 5 Performance Whitepaper from Support: it explains in detail how Jive is load-tested.) If you're replacing an existing site (such as a customer forum or intranet), you can use the page views from that site plus 20% to estimate the required resources. If your site is new, you can use page views from a comparable site. A page view is defined as a full page download: smaller interactions such as AJAX actions are non-significant for the purposes of this calculation.

Keep in mind that the page view counts shown in the table below are based on averaging page views over the course of a day. However, many sites have dramatic differences between peak usage and off-hour usage that are not adequately reflected in the daily average. If this is the case with your site, you should size for page views based on peak hours to avoid performance problems during high-traffic periods.

Required Capacity

Table 1:

Deployment Size	Required Servers	CPUs per Web Application Node	Memory per Web Application Node
Small Fewer than 100,000 page views per day	2 Web application 1 Activity Engine 1 Document Conversion 1 Cache 1 Search	6	2GB heap, 8GB total
Medium 100,000 to 500,000 page views per day	4 Web application 1 Activity Engine 1 Document Conversion 1 Cache 1 Search	6 or more	4GB heap, 10GB total

Deployment Size	Required Servers	CPUs per Web Application Node	Memory per Web Application Node
Large More than 500,000 page views per day*	8 or more Web application 1 Activity Engine 1 Document Conversion 1 Cache 1 Search	6 or more	6GB heap, 12GB total

* At Jive Software, we typically use the following math to determine peak page views per second: 500,000 / 8 hours (i.e., business hours) / 60 minutes (per hour) / 60 seconds (per minute) = approximately an average of 17 page views per second during business hours, assuming an even distribution of load across those 8 hours. Using this model, we'd expect to see spikes of up to 25-30 page views per second at peak.

Pre-Installation Requirements as Root on CLI

You need to complete some pre-installation tasks before installing the Jive package. These tasks need to be completed by a root user.

The pre-installation tasks outlined in the following steps apply to all supported operating systems.

Note: Clock synchronization using NTP is required. If you are using VMware, see http://kb.vmware.com/kb/1006427.

1. Obtain the Jive RPM and copy it to each server and application node in your Jive network.

   Here's an example using the Linux `scp` command to copy the package from a computer named "joesbox" to a target system at "targetsystem":

   ```
   scp -v joe@joesbox:/Users/joe/jive.rpm root@targetsystem:/root
   ```

   For more information, see Hardware Requirements on page 4 and Preparing to Connect to Jive-Hosted Services.
2. Obtain the `pdfswf` RPM here:https://static.jiveon.com/docconverter.
3. As root, modify `/etc/security/limits.conf` and add the following values. Once you've made the change, log out and back in again as the jive user.

   Note: If you are using a non-root user to install Jive, then replace "jive"with that username.

   ```
   jive    soft    nofile  100000
   jive    hard    nofile  200000
   ```
4. As root, modify `/etc/sysctl.conf` and add the following values.

Note: You only need to modify these values if your existing configuration does not meet or exceed them.

```
net.core.rmem_max = 16777216
net.core.wmem_max = 16777216
net.ipv4.tcp_wmem = 4096 65536 16777216
net.ipv4.tcp_rmem = 4096 87380 16777216
kernel.shmmax = 2147483648
```

5. Also in `/etc/sysctl.conf`, increase the `vm.max_map_count` to fit your implementation. The jive setup tool calculates a minimum required value based on how much memory is available. You may need to use a higher value than recommended depending on usage patterns or overall usage. The line in sysctl.conf should look like this:

```
vm.max_map_count = 500000
```

6. Run `sysctl -p`

RPM Dependencies by Operating System

Jive has a few operating system dependencies that you can preinstall.

RHEL 6 and RHEL 6-based operating system dependencies

Use yum update/install to install:

```
bash cairo cups-libs expat
 fontconfig keyutils-libs krb5-libs
 libpng libSM libX11 libXau libXdmcp
 libXext libXinerama libXrender
 mesa-libGL ntp openssl pam sysstat
```

RHEL 7 and RHEL 7-based operating system dependencies

Use yum update/install to install:

```
bash cairo cups-libs expat
 fontconfig keyutils-libs krb5-libs
 libpng libSM libX11 libXau libXdmcp
 libXext libXinerama libXrender
 mesa-libGL ntp openssl pam sysstat
```

SLES 11 dependencies

Use zypper update/install to install:

```
bash cairo cups-libs expat
 fontconfig krb5 libpng12-0 Mesa
 openssl pam sysstat termcap xntp
 xorg-x11-libs xorg-x11-libXrender
```

SLES 12 dependencies

Use zypper update/install to install:

```
bash cups-libs expat fontconfig krb5
 libcairo2 libpng12-0 Mesa openssl
 pam sysstat termcap xntp xorg-x11-
libs xorg-x11-libXrender
```

List of Required Ports and Domains

The following tables show the ports you need to open in order to enable key Jive components. For services that are hosted by Jive, you also need to ensure access to certain domains or IP addresses. These addresses are shown where required. For Jive core services, we've provided the name used in the Jive command-line interface for reference.

Jive Core Components

Component	Jive CLI Name	Port(s)	Direction	Domain(s) or IP(s)
Jive Web Application (Tomcat)	webapp	• HTTP monitor port: 9000 (does not need to be opened outside) • Server port: 9001 (does not need to be opened outside) • HTTP port: 9002 (does not need to be opened outside)	Open	
Jive - Apache	httpd	HTTP port: 8080	Open and public-facing	
Activity Engine	eae	TCP port: 7020 JMX port: 7021,8026 RMI ports: 33030,56844	Open	
Cloud Search Service		443	Outbound	directory-service.phx1.jivehosted.com or directory-service.ams1.jivehosted.com
On-Premise Search Service	search-service	Service port: 30000 Debug port: 27001 JMX port: 27002	Open	localhost

Component	Jive CLI Name	Port(s)	Direction	Domain(s) or IP(s)
Ingress Replicator Service	ingress-replicator-service	Service port: 29000 Debug port: 29001 JMX port: 29002	Open	localhost
Document Conversion	docconverter	19003	Open	
Analytics		none	Inbound	
Cloudalytics		443	Outbound	cloudalytics-api-phx.prod.jivehosted.com or cloudalytics-api-ams.prod.jivehosted.com
Jive Apps Market		80 or 443	Outbound	market.apps.jivesoftware.com, gateway.jivesoftware.com, apphosting.jivesoftware.com, developers.jivesoftware.com
Cache Service	cache	1024 - 65535	n/a	

Databases Server Default Ports

Component	Port(s)	Direction
Database - PostgreSQL	5432	Open/bidirectional
Database server - SQL	1433	Open/bidirectional
Database server - MySQL	3306	Open/bidirectional
Database server - Oracle	1521	Open/bidirectional

Jive Modules (all optional)

Component	Port(s)	Direction	Domain(s) or IP(s)
Jive Connects for Office	80 or 443 (we recommend using 443 to transmit content)	Open	
Mobile (all locations, including EMEA) when you are sending push notifications to the publicly available apps.	443	Outbound from Jive instance	mobilepush.prod.jiveon.com (204.93.64.255 and 204.93.64.252)

Component	Port(s)	Direction	Domain(s) or IP(s)
Mobile (all locations, including EMEA) when you are using your custom branded iOS app with your own push notification certificate	• TCP port 5223 (used by devices to communicate to the APNs servers) • TCP port 2195 (used to send notifications to the APNs) • TCP port 2196 (used by the APNs feedback service) • TCP Port 443 (used as a fallback on Wi-fi only, when devices are unable to communicate to APNs on port 5223)	Outbound from Jive instance	
Mobile (all locations, including EMEA) when you are using your custom branded Android app with your own Google Cloud Messaging key	443	Outbound from Jive instance	https://android.googleapis.com/gcm/send
Jive Present	443	Inbound to Jive instance	188.93.102.111 188.93.102.112 188.93.102.115 188.93.103.35 188.93.103.36 188.93.103.37
Jive for SharePoint	443 or 80	Inbound to public SSL-enabled VIP for Jive instance	
Jive StreamOnce	443	Inbound to Jive instance Outbound from Jive instance	209.93.64.0/19 192.250.208.0/20

Component	Port(s)	Direction	Domain(s) or IP(s)
Video	80, 443, and 1935	Open/outbound	See the Video FAQ in Jive Community for region-specific CDN information.
Video (cont.)	80 and 443 to a specific IP range (for example, 208.122.31.1 - 208.122.31.250)	Open/inbound	208.122.47.224/27 74.63.51.48/28 72.251.201.144/28 107.6.89.96/28 54.241.10.197/28
Video -- webcam	80 and 443 to a specific IP range (for example, 208.122.31.1 - 208.122.31.250)	Open/inbound	184.73.23.83
Jive for Office and Jive for Outlook	80		files.jivesoftware.com (for auto-updates only)