



# Jenkins

## Configuring Jenkins

# Section Contents

- In this section we will cover:
  - Review of "Manage Jenkins"
  - Configuring
    - Proxy
    - System Environment
    - Global Properties
    - Mail Server

# Review of "Manage Jenkins"

- Screen where administration of Jenkins takes place
- What is seen is dependent on the plugins that are installed
- Each link provided takes you to a dedicated screen to manage each plugin or setting
- Click on 'Manage Jenkins' to get to the management screen

# Manage Jenkins

Jenkins

search

dhinojosa | log out

Jenkins

ENABLE AUTO REFRESH

New Job

People

Build History

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

Build Queue


No builds in the queue.


Build Executor Status


#	Status
1	Idle
2	Idle


Manage Jenkins


New version of Jenkins (1.534) is available for [download](#) ([changelog](#)).


[Configure System](#)  
Configure global settings and paths.


[Configure Global Security](#)  
Secure Jenkins; define who is allowed to access/use the system.


[Reload Configuration from Disk](#)  
Discard all the loaded data in memory and reload everything from file system. Useful when you modified config files directly on disk.


[Manage Plugins](#)  
Add, remove, disable or enable plugins that can extend the functionality of Jenkins. **(updates available)**


[System Information](#)  
Displays various environmental information to assist trouble-shooting.


[System Log](#)  
System log captures output from java.util.logging output related to Jenkins.


[Load Statistics](#)  
Check your resource utilization and see if you need more computers for your builds.


[Jenkins CLI](#)  
Access/manage Jenkins from your shell, or from your script.


[Script Console](#)  
Executes arbitrary script for administration/trouble-shooting/diagnostics.


[Manage Nodes](#)  
Add, remove, control and monitor the various nodes that Jenkins runs jobs on.


[Manage Credentials](#)  
Create/delete/modify the credentials that can be used by Jenkins and by jobs running in Jenkins to connect to 3rd party services.

[About Jenkins](#)  
See the version and license information.

[Manage Old Data](#)  
Scrub configuration files to remove remnants from old plugins and earlier versions.

[Manage Users](#)  
Create/delete/modify users that can log in to this Jenkins

[Prepare for Shutdown](#)  
Stops executing new builds, so that the system can be eventually shut down safely.



# Upgrading Jenkins

- In the configuration screen, Jenkins will notify you if you have updates
- You can either download Jenkins or you can upgrade it while online
- If upgraded while online, you may have to complete a restart for changes to take effect
- After the upgrade, you may be given the opportunity to downgrade in 'Manage Jenkins'

# Lab: Upgrading Jenkins

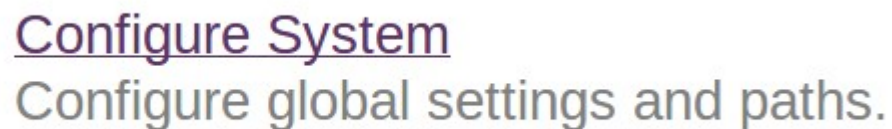
- Upgrade Jenkins using either method, download or upgrade online if necessary
- Lab may be avoided if version has a known bug, or if at the latest version



## Configure System

Configure global settings and paths.

- Manage paths
- Configure
  - Security options
  - Email servers
  - Plugin Settings



search dhinojosa | log out

Jenkins ► configuration

 My Views

No builds in the queue.

#	Status
---	--------

#	Status
1	Idle
2	Idle

```
/hudson
```

Advanced...

All evolutionnext.com builds

[Raw HTML] [Preview](#)

2

5

0

All

☐ Restrict project naming

### Global properties

- ☐ Environment variables

☐ Tool Locations

## Maven Configuration

Default settings provider

☐ Use default maven settings

### Default global settings provider

☐ Use default maven global settings

## JDK

JDK installations...

## Git

## Git installations



Name

Default

Path to Git executable

e ☐ git☐ Install automatically

Delete Git

Add Git ▼



# Configuring System Environment

- Where global configurations are made
- Organized by intuitive sections
- Plugins that are installed will have their own configuration sections



## Configure Global Security

Secure Jenkins; define who is allowed to access/use the system.

- Configure
  - System-wide access to Jenkins
  - TCP Ports for Jenkin's "Slave" machines
  - Select Security Source for Jenkins
    - Servlet Container
    - Jenkin's User Database
    - LDAP
    - Unix user/groups
  - Security Matrix




## Configure Global Security

Secure Jenkins; define who is allowed to access/use the system.

**Jenkins**  [?](#) [dhinojosa](#) | [log out](#)

Jenkins » Configure Global Security

 **Configure Global Security**

☒ Enable security

TCP port for JNLP slave agents ☐ Fixed :  ☒ Random ☐ Disable

Markup Formatter 

Raw HTML

Treat the text as HTML and use it as is without any translation

☐ Disable syntax highlighting

Access Control

**Security Realm**

☐ Delegate to servlet container

☒ Jenkins's own user database

☒ Allow users to sign up

☐ LDAP

☐ Unix user/group database

**Authorization**


☐ Anyone can do anything

☐ Legacy mode

☐ Logged-in users can do anything

☐ Matrix-based security

☒ Project-based Matrix Authorization Strategy

User/group	Administer	Read	RunScripts	UploadPlugins	Configure	UpdateCenter	Configure	Delete	Create	Disconnect	Connect
 dhinojosa	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Anonymous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

User/group to add:

☐ Prevent Cross Site Request Forgery exploits



### Reload Configuration from Disk

Discard all the loaded data in memory and reload everything from file system. Useful when you modified config files directly on disk.

- Helper utilities to migrate a "jobs" directory
- Prevents you from manually have to copy Jenkins builds to the new machine
- Builds not only build information, but history as well
- Restores configuration if `config.xml` editing manually
- May take a long time



### Manage Plugins

Add, remove, disable or enable plugins that can extend the functionality of Jenkins.

- Impressive Third Party Plugins
- Extend the functionality of Jenkins
- Tracks Versions
- Easy Upgrading
- All plugins are backed by .hpi files in `$JENKINS_HOME/plugins`



## Manage Plugins

Add, remove, disable or enable plugins that can extend the functionality of Jenkins.

# Jenkins

dhinojosa | [log out](#)

Jenkins ▶ Plugin Manager

[Back to Dashboard](#)

[Manage Jenkins](#)

Filter:

Updates			
Available			
Installed			
Advanced			
Install	Name ↓	Version	Installed
<input type="checkbox"/>	<a href="#">Cobertura Plugin</a> This plugin allows you to capture code coverage report from <a href="#">Cobertura</a> . Jenkins will generate the trend report of coverage.	1.9.2	1.9.1
<input type="checkbox"/>	<a href="#">Credentials Plugin</a> This plugin allows you to store credentials in Jenkins.	1.8.3	1.5
<input type="checkbox"/>	<a href="#">Email-ext plugin</a> This plugin allows you to configure every aspect of email notifications. You can customize when an email is sent, who should receive it, and what the email says.	2.34	2.30.2
<input type="checkbox"/>	<a href="#">Git Client Plugin</a> Shared library plugin for other Git related Jenkins plugins.	1.3.0	1.1.1
<input type="checkbox"/>	<a href="#">Git Plugin</a> This plugin allows use of <a href="#">Git</a> as a build SCM. Git 1.3.3 or newer is	1.5.0	1.4.0

[Install without restart](#)[Download now and install after restart](#)

# Plugins

- Filter box
  - Located on the upper-right hand
  - Used to filter plugins on the current tab displayed
- The plugin page is categorized with four tabs
  - Updates
  - Available
  - Installed
  - Advanced

# Update Plugin Tab

- List of plugins that require updates
- Check the plugins that you wish to update
- Check either:
  - "Install without restart"
  - "Download now and install after restart"
- New and old version are shown for comparison



# Available Plugin Tab

- List of plugins that are available with version
- Select the plugins that are needed
- Warnings will be displayed in red if there are issues that you'll need to be concerned with
  - e.g. incompatibilities
- Check either:
  - "Install without restart"
  - "Download now and install after restart"

# Installed Tab

- List of Plugins installed
- Left hand side selects whether the plugin is enabled
- Previously installed version are displayed and can be downgraded with a button
- Pinned Plugins
  - Plugins that are distributed with Jenkins
  - Preferred over any versions that you install
  - Backed by file <plugin-name>.hpi.pinned in the plugins directory
  - Unpinning will stop Jenkins from overriding your upgraded plugin
- Uninstall any plugin with the "Uninstall" button on the right side

# Advanced Tab

- HTTP Proxy Configuration
  - If you require any proxy settings so that Jenkins can establish a connection
  - No Proxy Host
    - delimited by a new line
    - (\*) is a wildcard for the host name
    - e.g. `www.jenkins*.org`
- Manual Plugin – Upload any .hpi file direct to Jenkins
- Update Site
  - Default website where Jenkins looks for plugins
  - Clicking "Check Now" will force an update of list of plugins

# Lab: Plugins

- Update All Plugins that require updating
- Add Github Plugin
- Add Cobertura Plugin



### System Information

Displays various environmental information to assist trouble-shooting.

- Displays
  - Current System Properties
  - Environment Variables
- Can be used to show current thread dumps
- Used for troubleshooting only



## System Information

Displays various environmental information to assist trouble-shooting.

[New Job](#)[People](#)[Build History](#)[Project Relationship](#)[Check File Fingerprint](#)[Manage Jenkins](#)[My Views](#)

### Build Queue

No builds in the queue.

### Build Executor Status

#	Status
1	Idle
2	Idle

## System Properties

Name ↓
bind.address
catalina.base
catalina.ext.dirs
catalina.home
catalina.useNaming
com.arjuna.ats.arjuna.objectstore.objectStoreDir
com.arjuna.ats.jta.lastResourceOptimisationInterface
com.arjuna.ats.tsmx.agentimpl
com.arjuna.common.util.logger
com.arjuna.common.util.logging.DebugLevel
com.arjuna.common.util.logging.FacilityLevel
com.arjuna.common.util.logging.VisibilityLevel
common.loader
file.encoding
file.encoding.pkg
file.separator
hibernate.bytecode.provider
java.awt.graphicsenv
java.awt.printerjob
java.class.path



### System Log

System log captures output from `java.util.logging` output related to Jenkins.

- View the live system log of the Jenkins system
- Used also primarily for troubleshooting
- Subscribe to any feeds based on type or all feeds



## [System Log](#)

System log captures output from `java.util.logging` output related to Jenkins.

# Jenkins



dhinojosa

| [log out](#)

Jenkins ▾ ▶ log ▶

[ENABLE AUTO REFRESH](#)



[Back to Dashboard](#)



[Manage Jenkins](#)



[Logger List](#)



[All Logs](#)



[New Log Recorder](#)



[Log Levels](#)



## Log Recorders

S

Name ↓



[All Jenkins Logs](#)

Add new log recorder





### [Load Statistics](#)

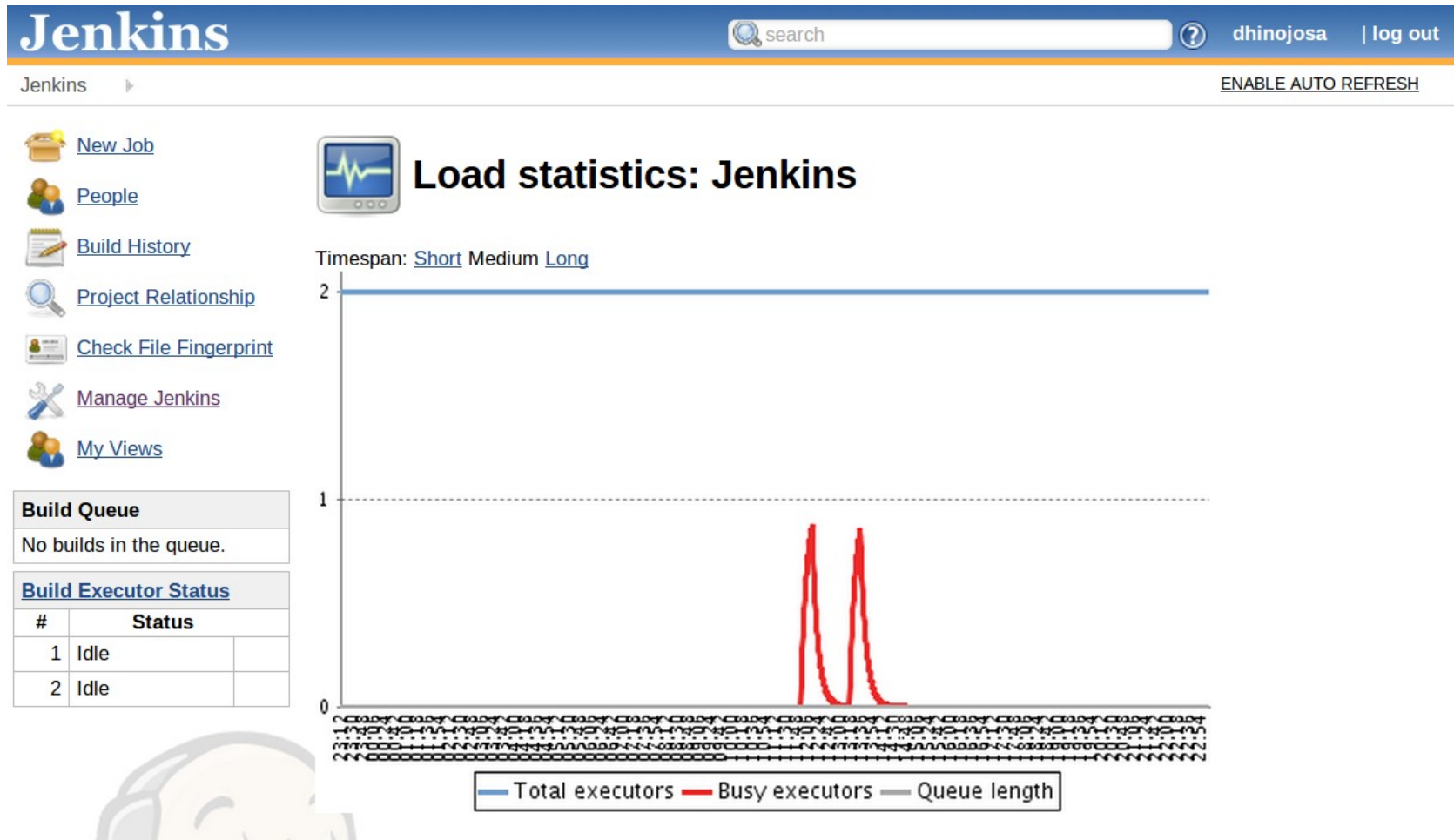
Check your resource utilization and see if you need more computers for your builds.

- Statistics of Resource Utilization
- Gives a general idea if more nodes are required for builds



## [Load Statistics](#)

Check your resource utilization and see if you need more computers for your builds.





### Jenkins CLI

Access/manage Jenkins from your shell, or from your script.

- Help Documentation on how to access Jenkins remotely from the command line and its nodes
- Can also be accessed remotely in a CLI command from `jenkins.jar`



## Jenkins CLI

Access/manage Jenkins from your shell, or from your script.

# Jenkins

[dhinojosa](#)[log out](#)

Jenkins ▶

[New Job](#)[People](#)[Build History](#)[Project Relationship](#)[Check File Fingerprint](#)[Manage Jenkins](#)[My Views](#)

Build Queue	
No builds in the queue.	
Build Executor Status	
#	Status
1	Idle
2	Idle



## Jenkins CLI

You can access various features in Jenkins through a command-line tool. See [the Wiki](#) for more details of this feature. To get started, download [jenkins-cli.jar](#), and run it as follows:

```
java -jar jenkins-cli.jar -s http://www.evolutionnext.com:8080/ help
```

### Available Commands

- **build**: Builds a job, and optionally waits until its completion.
- **cancel-quiet-down**: Cancel the effect of the "quiet-down" command.
- **clear-queue**: Clears the build queue
- **connect-node**: Reconnect to a node
- **console**: Retrieves console output of a build
- **copy-job**: Copies a job.
- **create-job**: Creates a new job by reading stdin as a configuration XML file.
- **delete-builds**: Deletes build record(s).
- **delete-job**: Deletes a job
- **delete-node**: Deletes a node
- **disable-job**: Disables a job
- **disconnect-node**: Disconnects from a node
- **enable-job**: Enables a job
- **get-job**: Dumps the job definition XML to stdout
- **groovy**: Executes the specified Groovy script.
- **groovysh**: Runs an interactive groovy shell.
- **help**: Lists all the available commands.
- **install-plugin**: Installs a plugin either from a file, an URL, or from update center.
- **install-tool**: Performs automatic tool installation, and print its location to stdout. Can be only called from inside a build.
- **keep-build**: Mark the build to keep the build forever.
- **list-changes**: Dumps the changelog for the specified build(s).
- **list-jobs**: Lists all jobs in a specific view or item group.
- **list-plugins**: Outputs a list of installed plugins.
- **login**: Saves the current credential to allow future commands to run without explicit credential information.



### Script Console

Executes arbitrary script for administration/trouble-shooting/diagnostics.

- Execute Groovy Scripts on the console
- Groovy
  - Optional (dynamic or static) type language
  - More flexible than Java
  - Constructs for function like syntax and closures
- Used for troubleshooting and diagnostics
- Advanced Management of Jenkins
- Based on the Jenkins API: <http://javadoc.jenkins-ci.org/>



## Script Console

Executes arbitrary script for administration/trouble-shooting/diagnostics.

# Jenkins

search

dhinojosa | log out

Jenkins

[New Job](#)

[People](#)

[Build History](#)

[Project Relationship](#)

[Check File Fingerprint](#)

[Manage Jenkins](#)

[My Views](#)

**Build Queue**

No builds in the queue.

**Build Executor Status**

#	Status
1	Idle
2	Idle

## Script Console

Type in an arbitrary [Groovy script](#) and execute it on the server. Useful for trouble-shooting and diagnostics. Use the 'println' command to see the output (if you use System.out, it will go to the server's stdout, which is harder to see.) Example:

```
println(Jenkins.instance.pluginManager.plugins)
```

All the classes from all the plugins are visible. jenkins.\*, jenkins.model.\*, hudson.\*, and hudson.model.\* are pre-imported.

```
1 def hi = hudson.model.Hudson.instance
2 hi.getItems(hudson.model.Project).each {project ->
3   println(project.displayName)
4 }
```

Run



### Manage Nodes

Add, remove, control and monitor the various nodes that Jenkins runs jobs on.

- Parallel and Distributed Builds
- Configure the Number of Builds
- Add Additional Nodes (Machines with Jenkins)



## Manage Nodes

Add, remove, control and monitor the various nodes that Jenkins runs jobs on.

# Jenkins

search

dhinojosa | log out

Jenkins » nodes » [ENABLE AUTO REFRESH](#)

[Back to Dashboard](#)

[Manage Jenkins](#)

[New Node](#)

[Configure](#)

**Build Queue**

No builds in the queue.

**Build Executor Status**

#	Status	
1	Idle	
2	Idle	

S	Name ↓	Response Time	Free Swap Space	Free Disk Space	Free Temp Space	Architecture	Cloud
	Data obtained	17 min	17 min	17 min	17 min	17 min	
	<a href="#">master</a>	0ms	2011MB	75GB	75GB	Linux (i386)	





### Manage Credentials

Create/delete/modify the credentials that can be used by Jenkins and by jobs running in Jenkins to connect to 3rd party services.

- Set up security credentials for use in third party systems, like:
  - ssh servers
  - VCS repositories
- Single point of credential establishment
- Provide aliases to sign onto other services (like SSH)



## Manage Credentials

Create/delete/modify the credentials that can be used by Jenkins and by jobs running in Jenkins to connect to 3rd party services.

[New Job](#)[People](#)[Build History](#)[Project Relationship](#)[Check File Fingerprint](#)[Manage Jenkins](#)[My Views](#)

## Manage Credentials

These credentials can be used by Jenkins and by jobs running in Jenkins.

Credentials not bound to a domain

Credentials

Add Credentials ▼

Add Domain

Save

### Build Queue

No builds in the queue.

### Build Executor Status

#	Status	
1	Idle	
2	Idle	



[About Jenkins](#)

See the version and license information.

- Standard information about Jenkins
- Open Source Dependencies that Jenkins uses
- Plugin Dependencies that is installed with Jenkins



## About Jenkins

See the version and license information.

# Jenkins



dhinojosa

| [log out](#)

[Jenkins](#) ▶ [About Jenkins](#)

## About Jenkins 1.525

[Jenkins](#) is a community-developed open-source continuous integration server.

Jenkins depends on the following 3rd party libraries.

Name	Maven ID	
<a href="#">Jenkins war</a>	org.jenkins-ci.main:jenkins-war:1.525	<a href="#">The MIT</a>
<a href="#">Spring Framework: Web MVC</a>	org.springframework:spring-webmvc:2.5.6.SEC03	<a href="#">The Apa</a>
<a href="#">Commons BeanUtils</a>	commons-beanutils:commons-beanutils:1.8.3	<a href="#">The Apa</a>
<a href="#">Apache Ant Launcher</a>	org.apache.ant:ant-launcher:1.8.3	<a href="#">The Apa</a>
<a href="#">Bouncy Castle Provider</a>	org.bouncycastle:bcprov-jdk15on:1.47	<a href="#">Bouncy</a>
<a href="#">oro</a>	oro:oro:2.0.8	<a href="#">The Apa</a>
<a href="#">ASM Analysis</a>	org.ow2.asm:asm-analysis:4.0	<a href="#">BSD</a>
<a href="#">StAX API</a>	stax:stax-api:1.0.1	<a href="#">The Apa</a>
<a href="#">jinterop-proxy</a>	org.kohsuke.jinterop:jinterop-proxy:1.1	<a href="#">MIT lice</a>
<a href="#">XStream Core</a>	org.jvnet.hudson:xstream:1.4.4-jenkins-3	<a href="#">BSD sty</a>
<a href="#">SSH CLI client authenticator</a>	org.jenkins-ci.modules:ssh-cli-auth:1.2	<a href="#">MIT Lice</a>
<a href="#">memory-monitor</a>	org.jenkins-ci:memory-monitor:1.7	<a href="#">MIT Lice</a>
<a href="#">commons-jelly-tags-xml</a>	commons-jelly:commons-jelly-tags-xml:1.1	<a href="#">The Apa</a>
<a href="#">ASM Commons</a>	org.ow2.asm:asm-commons:4.0	<a href="#">BSD</a>
<a href="#">Custom Access Modifier annotations</a>	org.kohsuke:access-modifier-annotation:1.4	<a href="#">MIT Lice</a>
<a href="#">Spring Framework: DAO</a>	org.springframework:spring-dao:1.2.9	<a href="#">The Apa</a>
<a href="#">JLine</a>	jline:jline:0.9.94	<a href="#">BSD</a>



### Manage Old Data

Scrub configuration files to remove remnants from old plugins and earlier versions.

- Previous plugins are stored in Jenkins indefinitely
- Makes downgrading possible
- Errors can occur
  - when old data remains
  - when new data is created by the plugin that the downgraded plugin cannot handle
- Removes any old data available



## Manage Old Data

Scrub configuration files to remove remnants from old plugins and earlier versions.

[New Job](#)[People](#)[Build History](#)[Project Relationship](#)[Check File Fingerprint](#)[Manage Jenkins](#)[My Views](#)

## Manage Old Data

When there are changes in how data is stored on disk, Jenkins uses the following strategy: data is migrated to the new structure when it is loaded, but the file is not resaved in the new format. This allows for downgrading Jenkins if needed. However, it can also leave data on disk in the old format indefinitely. The table below lists files containing such data, and the Jenkins version(s) where the data structure was changed.

Sometimes errors occur while reading data (if a plugin adds some data and that plugin is later disabled, if migration code is not written for structure changes, or if Jenkins is downgraded after it has already written data not readable by the older version). These errors are logged, but the unreadable data is then skipped over, allowing Jenkins to startup and function properly.

Type	Name	Version
------	------	---------

### Build Queue

No builds in the queue.

### Build Executor Status

#	Status
1	Idle
2	Idle

The form below may be used to resave these files in the current format. Doing so means a downgrade to a Jenkins release older than the selected version will not be able to read the data stored in the new format. Note that simply using Jenkins to create and configure jobs and run builds can save data that may not be readable by older Jenkins releases, even when this form is not used. Also if any unreadable data errors are reported in the right side of the table above, note that this data will be lost when the file is resaved.

Eventually the code supporting these data migrations may be removed. Compatibility will be retained for at least 150 releases since the structure change. Versions older than this are in bold above, and it is recommended to resave these files.

No old data was found.



### Manage Users

Create/delete/modify users that can log in to this Jenkins

- Manage usernames and passwords that will have access to the system
- It is a sublist of the "People" panel which reflect who committed code to any of the builds
- Can establish credentials and SSH keys for the user
- Will not be seen until security has been enabled



## Manage Users

Create/delete/modify users that can log in to this Jenkins

# Jenkins

search

dhinojosa | log out

Jenkins ▶ User Database ENABLE AUTO REFRESH

[Back to Dashboard](#)

[Manage Jenkins](#)

[Create User](#)

## Users

These users can log into Jenkins. This is a sub set of [this list](#), which also contains auto-created users who really just made some commits on some projects and have no direct Jenkins access.

User Id	Name	
<a href="#">dhinojosa</a>	<a href="#">Daniel Hinojosa</a>	
<a href="#">rfweine</a>	<a href="#">Ruth Weiner</a>	





## Manage Users

Create/delete/modify users that can log in to this Jenkins

# Jenkins



dhinojosa

| log out

Jenkins > User Database > Daniel Hinojosa



[People](#)



[Status](#)



[Builds](#)



[Configure](#)



[My Views](#)

Your name



Description



### API Token

Show API Token...

### Credentials

#### Credential Domain

Name



Description



Specification

Add ▼



Credentials

Add Credentials ▼

Remove Domain

Add Domain



#### Prepare for Shutdown

Stops executing new builds, so that the system can be eventually shut down safely.

- Prepares the entire system to shut down.
- Cleanly shuts down the system
- Prevents new builds from starting
- When builds are complete Jenkins will shutdown
- Preferable if the master node is on Windows since Windows does not automatically shutdown or restart.

# Setting Proxy

- Manage Jenkins > Manage Plugins > Advanced
- If using Microsoft's NTLM Scheme, user name should be DOMAIN\username
- Remember all other external tools may require their proxy configuration.


# Setting Proxy


# Jenkins

search

dhinojosa | log out

Jenkins > Plugin Manager

[Back to Dashboard](#)

[Manage Jenkins](#)

Updates

Available

Installed

Advanced

## HTTP Proxy Configuration

Server

?

Port

?

User name

?

Password

No Proxy Host

?

Submit

# Configuring the Basic System Environment

# Basic System Environment

Home directory

/home/danno/.jenkins



Advanced...

System Message



[Raw HTML] [Preview](#)

# of executors

2



Quiet period

5



SCM checkout retry count

0



☐ Restrict project naming

# Home Directory

- The location of JENKINS\_HOME
- Serves as reminder as to the location of all the configuration and builds

# System Messages

- Displays a message you wish to display to all users when logged into Jenkins
- HTML can be used
- Useful for
  - Downtime messages
  - Server information
- Is previewable by clicking Preview



# # of Executors

- Number of concurrent jobs that Jenkins can run.
- An executor in Java is a concurrent process
- Typically the number of executors is based on the number of processors on the machine

# Quiet Period

- Jenkins by default will trigger a build when version control detects a change
- Some VCS, will not commit as a group but one at a time, this requires a quiet period
- Quiet period is in seconds
- Jenkins will wait the required time before beginning the build
- Can also be used to wait for multiple atomic (group) commits
- Quiet Period is default, but Quiet Periods can be overridden in specific projects.

# SCM checkout retry count

- The number of times Jenkins will attempt to checkout code from the SCM
- Depends the SCM plugin for functionality
- Some plugins may not support being able to retry checkout

# Restrict Project Naming

- Allows the administrator to restrict what kind of name to name the project
- Default
  - Allows the user the choose any name
- Pattern
  - Define a pattern (regular expression) to check whether the job name is valid or not.
  - Only validates job naming, not builds

# Lab: Basic Configuration

- Add a shutdown message to the server.
- You can use the following HTML

```
<div style="background-color:red; color:white">  
  The system is going down in 5 minutes  
</div>
```

- Establish a Quiet Period
- Establish the # Executors based on # of processors

# Global Properties

## Global properties

---

- ☐ Environment variables
- ☐ Tool Locations

# Environment Variables

- Define variables that can be used in all builds
- Warning: Do not use the period character in any of the names
- e.g. `JAVA_HOME` is good `JAVA.HOME` is bad
- Environment Variables can be used:
  - inside of build scripts
  - in any of the goals in Jenkins

# Tool Locations

- Used to establish where certain tools are located
- Based upon what plugins are installed
- **Important step before establishing jobs**



# Maven, JDK, Ant Configuration

- Jenkins is very Java centric
- Maven and Ant are Java based build tools
- JDK (Java Development Kit) is the software suite that allows developers to compile their code

# Configuring Maven Tools

- Add multiple versions of Maven in Jenkins
- Label each Maven version for users to identify
- Install Automatically will install the tools as needed.
  - `.jenkins/tools/hudson.tasks.Maven_MavenInstallation`
- If you wish to manage your own installation, specify MAVEN\_HOME

# Configuring Maven Tools

## Maven

Maven installations

Maven Name	<input type="text" value="apache-maven-3.3.3"/>
MAVEN_HOME	<input type="text" value="/usr/lib/mvn/apache-maven-3.3.3"/>
<input type="checkbox"/> Install automatically	<a href="#">?</a>
<button>Delete Maven</button>	
Maven Name	<input type="text" value="apache-maven-3.2.3"/>
MAVEN_HOME	<input type="text" value="/usr/lib/mvn/apache-maven-3.2.3"/>
<input type="checkbox"/> Install automatically	<a href="#">?</a>
<button>Delete Maven</button>	
Maven Name	<input type="text" value="apache-maven-3.1.1"/>
MAVEN_HOME	<input type="text" value="/usr/lib/mvn/apache-maven-3.1.1"/>
<input type="checkbox"/> Install automatically	<a href="#">?</a>
<button>Delete Maven</button>	
<button>Add Maven</button>	

List of Maven installations on this system

# Lab: Setup Maven Installations

- Setup Maven Installations for every maven installation you already have on your hard drive
- Setup Maven Installations automatically for other installations automatically

# Configuring JDK Tools

- Add multiple versions of JDK in Jenkins
- Label each JDK version for users to identify
- Install Automatically will install the tools as needed. (Oracle username and password required)
- If you wish to manage your own installation, specify `JDK_HOME`

# Configuring JDK Tools

## JDK

### JDK installations

JDK	Name	jdk1.8.0 (Standard)
	JAVA_HOME	/usr/lib/jvm/jdk1.8.0_40
<input type="checkbox"/>	Install automatically	<a href="#">?</a>
		Delete JDK
JDK	Name	jdk1.7.0 (Standard)
	JAVA_HOME	/usr/lib/jvm/jdk1.7.0_55
<input type="checkbox"/>	Install automatically	<a href="#">?</a>
		Delete JDK
JDK	Name	jdk1.8.0_40
	JAVA_HOME	/usr/lib/jvm/jdk1.8.0_40
<input type="checkbox"/>	Install automatically	<a href="#">?</a>
		Delete JDK
JDK	Name	jdk1.8.0_05
	JAVA_HOME	/usr/lib/jvm/jdk1.8.0_05
<input type="checkbox"/>	Install automatically	<a href="#">?</a>
		Delete JDK

# Lab: Setup JDK Installations

- Setup JDK Installations for every JDK installation you already have on your hard drive

# Configuring Ant Tools

- Add multiple versions of Ant in Jenkins
- Label each Ant version for users to identify
- Install Automatically will install the tools as needed.
  - `.jenkins/tools/hudson.tasks.Ant_AntInstallation`
- If you wish to manage your own installation, specify `ANT_HOME`
- **Important:** Even though your project doesn't use Ant, it is handy for fine-grained work



# Configuring Ant Tools

## Ant

### Ant installations

Ant	Name	apache-ant-1.9.6	
<input checked="" type="checkbox"/>	Install automatically		<a href="#">?</a>
Install from Apache	Version	1.9.6 ▼	
			Delete Installer
	Add Installer ▼		
			Delete Ant
Ant	Name	apache-ant-1.9.2	
	ANT_HOME	/usr/lib/ant/apache-ant-1.9.2	
<input type="checkbox"/>	Install automatically		<a href="#">?</a>
			Delete Ant

# Lab: Setup Ant Installations

- Setup Ant Installations for every Ant installation you already have on your hard drive

# Setting Jenkins Location & Admin Email

- Jenkins URL
  - Add the actual name of your server as pointed by DNS
  - How the server will refer to itself
  - **Very Important!**
- System admin email
  - Default administrative email for all correspondence

# Setting Jenkins Location & Admin Email

## Jenkins Location

---

Jenkins URL

`http://www.xyzcorp.com/jenkins/`



System Admin e-mail address

`admin@xyzcorp.com`



# Lab: Setup Server Address and Admin Email

- Setup the server address as  
`http://<your-ipaddress>:8080/jenkins`
- Setup the admin email to your email address

# Shell Executable

- Normally can be left alone
- Enter if your sh (Windows) or /bin/sh (Unix, Linux, MacOSX) binary exists outside your PATH

Shell

---

Shell executable



# Basic Email Configuration

## E-mail Notification

---

SMTP server



Default user e-mail suffix



Advanced...

# Basic Email Configuration

- Backed by the Jenkins Emailer Plugin
- SMTP Server – Name of the SMTP email server
- Default Email Suffix, if any email is to be sent out to a user name, where the email is not provided, this suffix will be used instead
- Click on the 'Advanced...' button to display advanced email settings
- Check on 'Test configuration by sending test e-mail' to send a test email to a recipient



# Advanced Email Configuration

## E-mail Notification

SMTP server



Default user e-mail suffix



☐ Use SMTP Authentication



Use SSL

☐

SMTP Port



Reply-To Address

Charset

UTF-8

☐ Test configuration by sending test e-mail

# Advanced Email Configuration

- Use SMTP Authentication, check to add username, password
- SSL – Whether to use Secure Sockets Layer in communicating with the SMTP Server
- SMTP Port – The port where SMTP is located
- Reply-To Address – Override to set up an email address that all emails should reply to (e.g. admin@asurion.com)
- Charset – The character set the emails should use (e.g. UTF-8, UTF-16, Windows-1252)

# Google SMTP Settings

- SMTP Address: `smtp.gmail.com`
- SMTP Ports:
  - Port 465 (SSL required)
  - Port 587 (TLS required)
  - Dynamic IPs allowed
- Authentication: Your full Gmail or Google Apps email address required for authentication
- Warning: Google will not allow certain 3<sup>rd</sup> party software to send email, if you want to turn off visit:  
<https://www.google.com/settings/security/lesssecureapps>

# Yahoo SMTP Settings

- SMTP Address: `smtp.mail.yahoo.com`
- SMTP Ports:
  - Port 465 (SSL required)
- Authentication: Your full Yahoo email address required for authentication

# Lab: Setup Email Settings

- Setup email settings for Jenkins using your company email SMTP settings or your Gmail, or Yahoo email settings
- Send a test email to your business account or personal account to verify that the settings are working

# Thanks