



Jenkins

Jeeva S. Chelladhurai
CEO, Comorin Consulting Services
+91 97319 77222
jeeva@comorin.co



8. Jenkins CLI

- Introduction
- Steps to Use CLI
- With Authentication (Username & Password)
- More CLI commands





Introduction



- Built-in command line interface
- Allows users and administrators to access Jenkins from a script or shell environment
- Can be convenient for scripting of routine tasks, bulk updates, troubleshooting, & more
- CLI can be accessed over SSH or with the Jenkins CLI client, a **.jar** file distributed with Jenkins
- Easier, Faster
- Memory Management (Efficient)
- Continuous Integration





Steps to Use CLI

- **Step 1:**
- Start Jenkins
 - Locate your Jenkins Folder
 - Hit the given command

```
Amit@LAPTOP-JRR5G8TK MINGW64 /c/Program Files (x86)/Jenkins  
$ java -jar jenkins.war --httpPort=9090
```



Note: For the first time, it will ask for secret key to login admin which is available on your Jenkins folder



Please wait while Jenkins is getting ready to work ...

Your browser will reload automatically when Jenkins is ready.



Cont'd...



Step 2

- Go to **Manage Jenkins** -> **Configure Global Security** -> **Enable Security**
- **Apply** -> **Save**

The screenshot shows the Jenkins web interface. At the top is the Jenkins logo and name. Below it is a sidebar with navigation links: New Item, People, Build History, Manage Jenkins (highlighted), My Views, Credentials, Lockable Resources, and New View. The main content area is titled 'Manage Jenkins' and contains several configuration options, each with an icon and a description:

- Configure System**: Configure global settings and paths.
- Configure Global Security**: Secure Jenkins; define who is allowed to access/use the system. This option is highlighted with a red box.
- Configure Credentials**: Configure the credential providers and types.
- Global Tool Configuration**: Configure tools, their locations and automatic installers.
- Reload Configuration from Disk**: Discard all the loaded data in memory and reload everything from file system. Useful when y...
- Manage Plugins**: Add, remove, disable or enable plugins that can extend the functionality of Jenkins.


At the bottom of the sidebar, there are two expandable sections:


- Build Queue**: No builds in the queue.
- Build Executor Status**:
 - 1 Idle
 - 2 Idle



Cont'd...



 **Configure Global Security**



☒ **Enable security**
☐ Disable remember me

Access Control

Security Realm

☐ Delegate to servlet container
☒ Jenkins' own user database
☐ Allow users to sign up
☐ LDAP

Authorization

☐ Anyone can do anything
☐ Legacy mode
☒ Logged-in users can do anything
☐ Allow anonymous read access
☐ Matrix-based security
☐ Project-based Matrix Authorization Strategy



Cont'd...

Note: In **Authorization** we selected **Anyone can do anything**

Later we will see different ways to authenticate

The screenshot shows the Jenkins 'Configure Global Security' interface. At the top, the Jenkins logo and 'Configure Global Security' breadcrumb are visible. The main section is titled 'Configure Global Security' with a yellow padlock icon. It includes several configuration options:

- ☒ Enable security
- Disable remember me: ☐
- Access Control
- Security Realm**
 - ☐ Delegate to servlet container
 - ☒ Jenkins' own user database
 - ☐ Allow users to sign up
 - ☐ LDAP
- Authorization** (highlighted with a black box)
 - ☒ Anyone can do anything
 - ☐ Legacy mode
 - ☐ Logged-in users can do anything
 - ☐ Matrix-based security
 - ☐ Project-based Matrix Authorization Strategy
- Markup Formatter**
 - Markup Formatter: Plain text



Cont'd...

Step 3:

- Go to > <http://localhost:9090/cli/>

**Jenkins**

Jenkins > Jenkins CLI

 New Item

 People

 Build History

 Manage Jenkins

 My Views

 Credentials

 Lockable Resources

 New View

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

**Jenkins CLI**

You can access various features in Jenkins through a command-line tool. See [the documentation](#) for more c

```
java -jar jenkins-cli.jar -s http://localhost:9090/ help
```

Available Commands

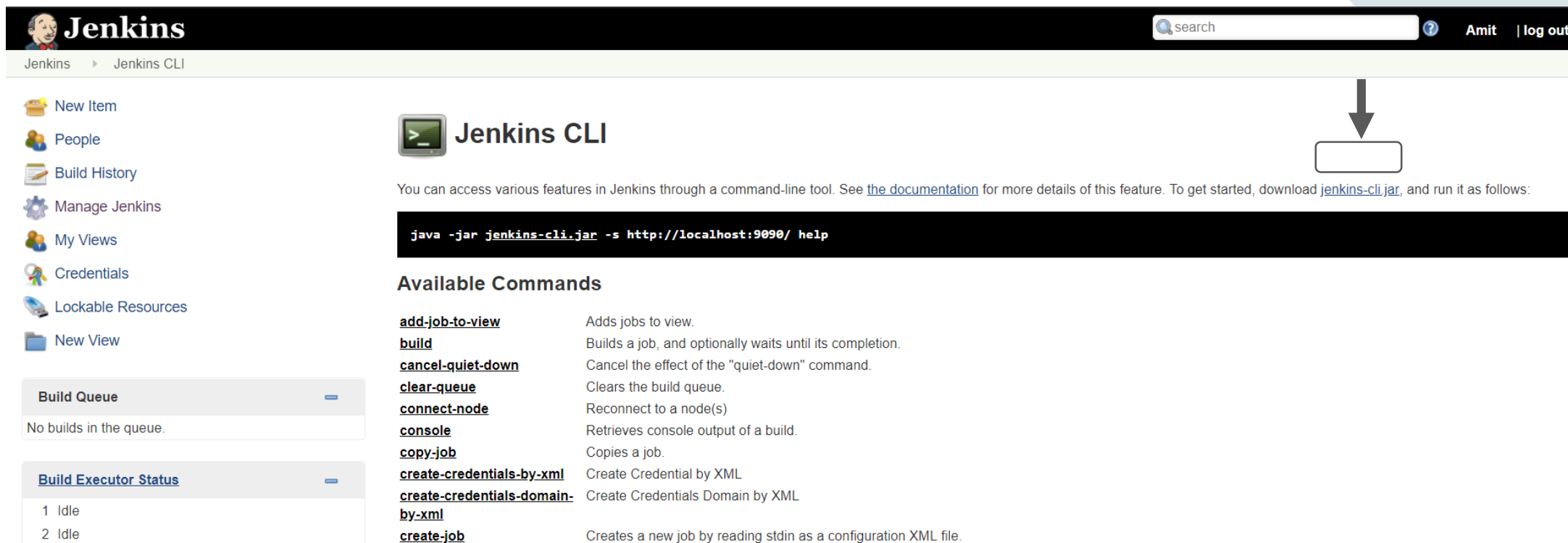
<u>add-job-to-view</u>	Adds jobs to view.
<u>build</u>	Builds a job, and optionally waits until its completion.
<u>cancel-quiet-down</u>	Cancel the effect of the "quiet-down" command.
<u>clear-queue</u>	Clears the build queue.
<u>connect-node</u>	Reconnect to a node(s)
<u>console</u>	Retrieves console output of a build.
<u>copy-job</u>	Copies a job.
<u>create-credentials-by-xml</u>	Create Credential by XML
<u>create-credentials-domain-by-xml</u>	Create Credentials Domain by XML
<u>create-job</u>	Creates a new job by reading stdin as a configuration XML file.
<u>create-node</u>	Creates a new node by reading stdin as a XML configuration.
<u>create-view</u>	Creates a new view by reading stdin as a XML configuration.
<u>declarative-linter</u>	Validate a Jenkinsfile containing a Declarative Pipeline



Cont'd...

Step 4:

- Download ***Jenkins-cli.jar*** from the link
- Place at any location



The screenshot shows the Jenkins web interface. The top navigation bar includes the Jenkins logo, a search bar, and user information (Amit | log out). The left sidebar contains links to various Jenkins features. The main content area displays the 'Jenkins CLI' section, which includes a terminal icon and the title 'Jenkins CLI'. Below this, a text block explains that users can access Jenkins features via a command-line tool and provides a link to the documentation. A large arrow points from this text to a box containing the command to run Jenkins CLI. Below the command box, a section titled 'Available Commands' lists various CLI commands and their descriptions.

Jenkins search ? Amit | log out

Jenkins » Jenkins CLI

New Item
People
Build History
Manage Jenkins
My Views
Credentials
Lockable Resources
New View

Build Queue —
No builds in the queue.

Build Executor Status —
1 Idle
2 Idle

Jenkins CLI

You can access various features in Jenkins through a command-line tool. See [the documentation](#) 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://localhost:9090/ help
```

Available Commands

<u>add-job-to-view</u>	Adds jobs to view.
<u>build</u>	Builds a job, and optionally waits until its completion.
<u>cancel-quiet-down</u>	Cancel the effect of the "quiet-down" command.
<u>clear-queue</u>	Clears the build queue.
<u>connect-node</u>	Reconnect to a node(s)
<u>console</u>	Retrieves console output of a build.
<u>copy-job</u>	Copies a job.
<u>create-credentials-by-xml</u>	Create Credential by XML
<u>create-credentials-domain-by-xml</u>	Create Credentials Domain by XML
<u>create-job</u>	Creates a new job by reading stdin as a configuration XML file.



Cont'd...



Step 5:

- Test the Jenkins command line
 - Locate your ***jenkins-cli.jar*** file
 - Run the given command *Note you will observe all the commands to use

```
Amit@LAPTOP-JRR5G8TK MINGW64 /c/Program Files (x86)/Jenkins/Jenkins-cli
$ java -jar jenkins-cli.jar -s http://localhost:9090/ help
add-job-to-view
    Adds jobs to view.
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(s)
console
    Retrieves console output of a build.
copy-job
```



Sample Build

- Out of all the commands we use **Build** command to build a sample job
- **Sample** – name of the job created for this demo (you can create your own job)

```
Amit@LAPTOP-JRR5G8TK MINGW64 /c/Program Files (x86)/Jenkins/Jenkins-cli
$ java -jar jenkins-cli.jar -s http://localhost:9090/ build sample

Amit@LAPTOP-JRR5G8TK MINGW64 /c/Program Files (x86)/Jenkins/Jenkins-cli
$
```



Build Success

- There are different other **flags** inside each **command**, for e.g. we use **-f**
- Hit the given command to check if the build is success or not
- Use other flags to check different features



Command build

```
java -jar jenkins-cli.jar -s http://localhost:9090/ build JOB [-c] [-f] [-p] [-r N] [-s] [-v] [-w]
```

```
Amit@LAPTOP-JRR5G8TK MINGW64 /c/Program Files (x86)/Jenkins/Jenkins-cli
$ java -jar jenkins-cli.jar -s http://localhost:9090/ build sample -f
Started sample #4
Completed sample #4 : SUCCESS

Amit@LAPTOP-JRR5G8TK MINGW64 /c/Program Files (x86)/Jenkins/Jenkins-cli
$
```



Build History

- Can check Build History inside the Job

The screenshot shows the Jenkins web interface for a project named 'sample'. The left sidebar contains navigation links: Back to Dashboard, Status, Changes, Workspace, Build Now, Delete Project, Configure, and Rename. The main content area is titled 'Project sample' and includes links for Workspace and Recent Changes. Below this is a 'Permalinks' section with four links: Last build (#5), Last stable build (#5), Last successful build (#5), and Last completed build (#5), all indicating they occurred 51 seconds ago. At the bottom, the 'Build History' section is highlighted with a rounded rectangle. It features a search bar with the text 'find' and a list of builds. The list shows five builds, with the most recent being build #5 on August 5, 2019, at 5:59 PM. Below the list are links for 'RSS for all' and 'RSS for failures'.

Build Number	Timestamp
#5	Aug 5, 2019 5:59 PM
#4	Aug 4, 2019 12:03 AM
#3	Aug 3, 2019 11:52 PM
#2	Aug 3, 2019 2:33 PM
#1	Aug 3, 2019 2:33 PM

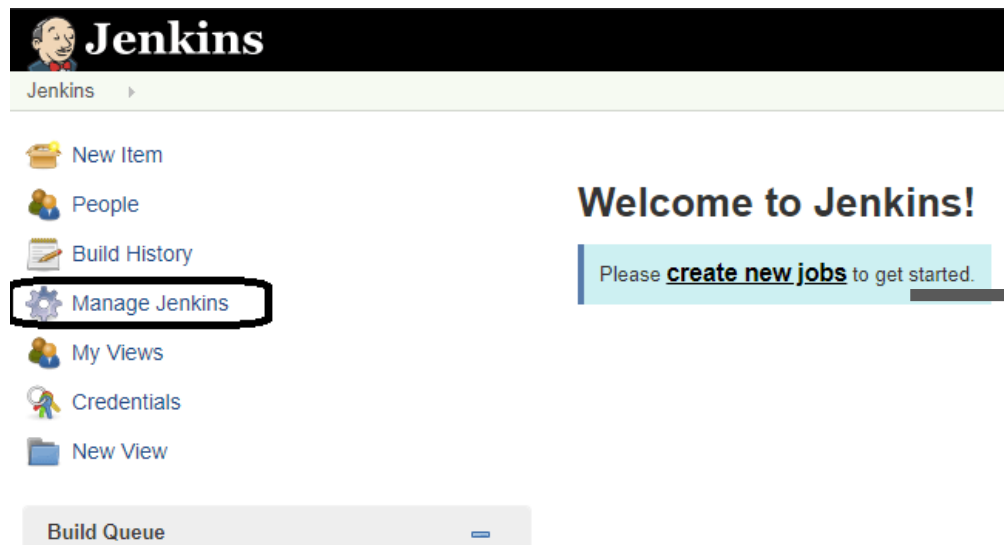


With Authentication (Username & Password)



Step 1


- Go to **Manage Jenkins** → **Configure Global Security** → Select **Logged in Users can do anything** → Also check **Allow anonymous read access** → **Save & Apply**






Cont'd...



 **Jenkins**

Jenkins » Configure Global Security

 **Configure Global Security**

☒ Enable security

Disable remember me ☐

Access Control

Security Realm

☐ Delegate to servlet container

☒ Jenkins' own user database

☐ Allow users to sign up

☐ LDAP

Authorization

☐ Anyone can do anything

☐ Legacy mode

☒ Logged-in users can do anything

☒ Allow anonymous read access

☐ Matrix-based security

☐ Project-based Matrix Authorization Strategy

Markup Formatter

Markup Formatter

Plain text

Treats all input as plain text. HTML unsafe characters like < and & are escaped.

Agents

TCP port for inbound agents ☐ Fixed :

☒ Random

☐ Disable

Save

Apply



Cont'd...



Step 2

- Hit the given command from your terminal:

```
Amit@LAPTOP-JRR5G8TK MINGW64 /c/Program Files (x86)/Jenkins/Jenkins-cli  
$ java -jar jenkins-cli.jar -s http://localhost:9090/ -http -auth admin:admin build sample
```

Note

- ***admin:admin*** is ***<username:password>***



Build History

- Observe Previously it was 5th & Now its build 6th times

The screenshot shows the Jenkins web interface for a project named 'sample'. The left sidebar contains navigation links: Back to Dashboard, Status, Changes, Workspace, Build Now, Delete Project, Configure, and Rename. The main content area is titled 'Project sample' and includes links for Workspace and Recent Changes. Below this is a 'Permalinks' section with four links: Last build (#6), 30 sec ago; Last stable build (#6), 30 sec ago; Last successful build (#6), 30 sec ago; and Last completed build (#6), 30 sec ago. The 'Build History' section is expanded, showing a list of builds. Build #6 is highlighted with a red box and is the most recent build, dated Aug 5, 2019 7:04 PM. Below it are builds #5, #4, #3, #2, and #1, all dated Aug 3, 2019. At the bottom of the build history section are links for RSS for all and RSS for failures.

Jenkins

Jenkins > sample

[Back to Dashboard](#)

[Status](#)

[Changes](#)

[Workspace](#)

[Build Now](#)

[Delete Project](#)

[Configure](#)

[Rename](#)

Project sample

[Workspace](#)

[Recent Changes](#)

Permalinks

- [Last build \(#6\), 30 sec ago](#)
- [Last stable build \(#6\), 30 sec ago](#)
- [Last successful build \(#6\), 30 sec ago](#)
- [Last completed build \(#6\), 30 sec ago](#)

Build History [trend](#)

Build Number	Timestamp
#6	Aug 5, 2019 7:04 PM
#5	Aug 5, 2019 5:59 PM
#4	Aug 4, 2019 12:03 AM
#3	Aug 3, 2019 11:52 PM
#2	Aug 3, 2019 2:33 PM
#1	Aug 3, 2019 2:33 PM

[RSS for all](#) [RSS for failures](#)



More commands on CLI



- Command to check the Jenkins Version

```
java -jar jenkins-cli.jar -s http://localhost:9090/ version
```

- Command to report your credential and permissions

```
java -jar jenkins-cli.jar -s http://localhost:9090/ who-am-i
```

- Command to create a new job

```
java -jar jenkins-cli.jar -s http://localhost:9090/ create-job NAME
```

- Command to add-job-to-view

```
java -jar jenkins-cli.jar -s http://localhost:9090/ add-job-to-view VIEW JOB ...
```



Cont'd...



- Command to build-job

```
java -jar jenkins-cli.jar -s http://localhost:9090/ build JOB [-c] [-f] [-p] [-r N] [-s] [-v] [-w]
```

- Command to get-job

```
java -jar jenkins-cli.jar -s http://localhost:9090/ get-job JOB
```

- Command to delete-job

```
java -jar jenkins-cli.jar -s http://localhost:9090/ delete-job VAL ...
```

- Command groovy

```
java -jar jenkins-cli.jar -s http://localhost:9090/ groovy [SCRIPT] [ARGUMENTS ...]
```