



# **Jenkins**

Ву

Budibudi



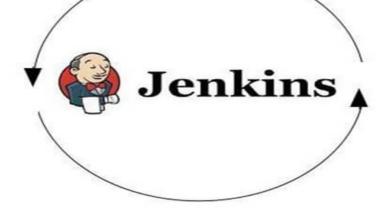
GitHub: web-based hosting service for software development projects

Commits code

Build Triggered Automatically



Build failed, team notified

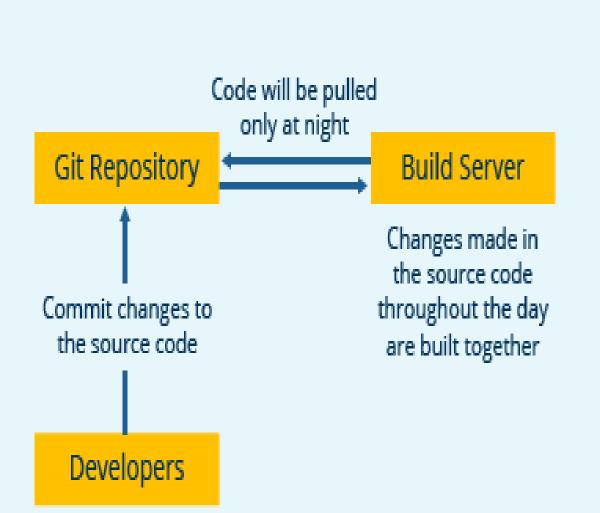


developer

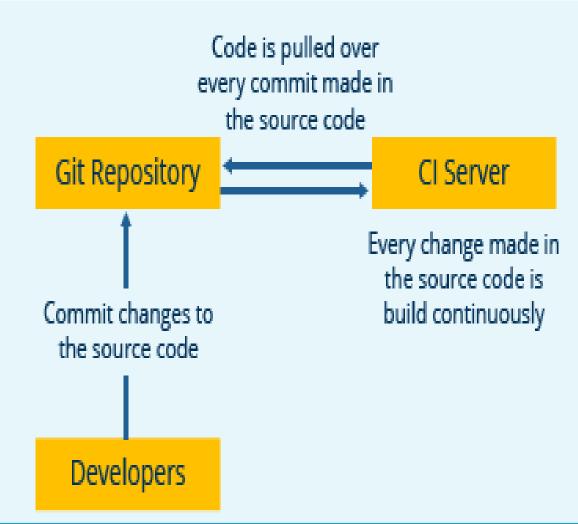
Jenkins C.I Server

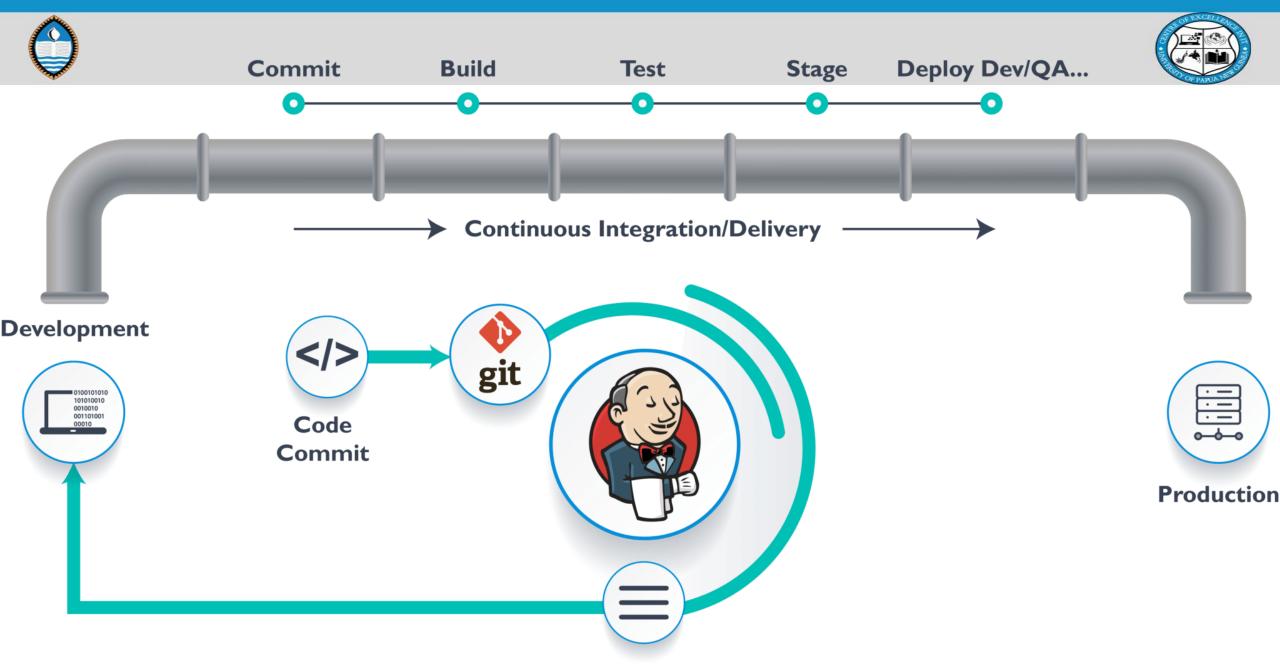














# Top 10 Continuous Integration Tool





















www.scmGalaxy.com



# **Improving Your Productivity**



- Continuous integration can help you go faster
  - Detect build breaks sooner
  - Report failing tests more clearly
  - Make progress more visible



# **Jenkins for Continuous Integration**



- Jenkins open source continuous integration server
- Jenkins (<a href="http://jenkins-ci.org/">http://jenkins-ci.org/</a>) is
  - Easy to install
  - Easy to use
  - Multi-technology
  - Multi-platform
  - Widely used
  - Extensible
  - Free





# More Power – Jenkins Plugins



- Jenkins has over 300 plugins
  - Software configuration management
  - Builders
  - Test Frameworks
  - Virtual Machine Controllers
  - Notifiers
  - Static Analyzers



# Jenkins Plugins - SCM



- Version Control Systems
  - Accurev
  - Bazaar
  - BitKeeper
  - Git
  - Team Foundation Server
  - Visual SourceSafe





```
cloud@ubuntu:~$ java
The program 'java' can be found in the following pa
ckages:
* default-jre
* gcj-5-jre-headless
* openjdk-8-jre-headless
* gcj-4.8-jre-headless
```

- \* gcj-4.9-jre-headless
- \* openjdk-9-jre-headless

Try: sudo apt install <selected package>
cloud@ubuntu:~\$

cloud@ubuntu:~\$ sudo apt install default-jre -y

cloud@ubuntu:~\$ sudo apt install default-jre -y

```
done.
Processing triggers for libc-bin (2.23-0ubuntu9) ...
Processing triggers for ca-certificates (20160104ub
untu1) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...
done.
done.
cloud@ubuntu:~$
```

cloud@ubuntu:~\$ java -version openjdk version "1.8.0 222" OpenJDK Runtime Environment (build 1.8.0 222-8u222b10-1ubuntu1~16.04.1-b10) OpenJDK 64-Bit Server VM (build 25.222-b10, mixed m ode) cloud@ubuntu:~\$

cloud@ubuntu:~\$ wget -q -0 - https://pkg.jenkins.io
/debian/jenkins-ci.org.key | sudo apt-key add OK
cloud@ubuntu:~\$

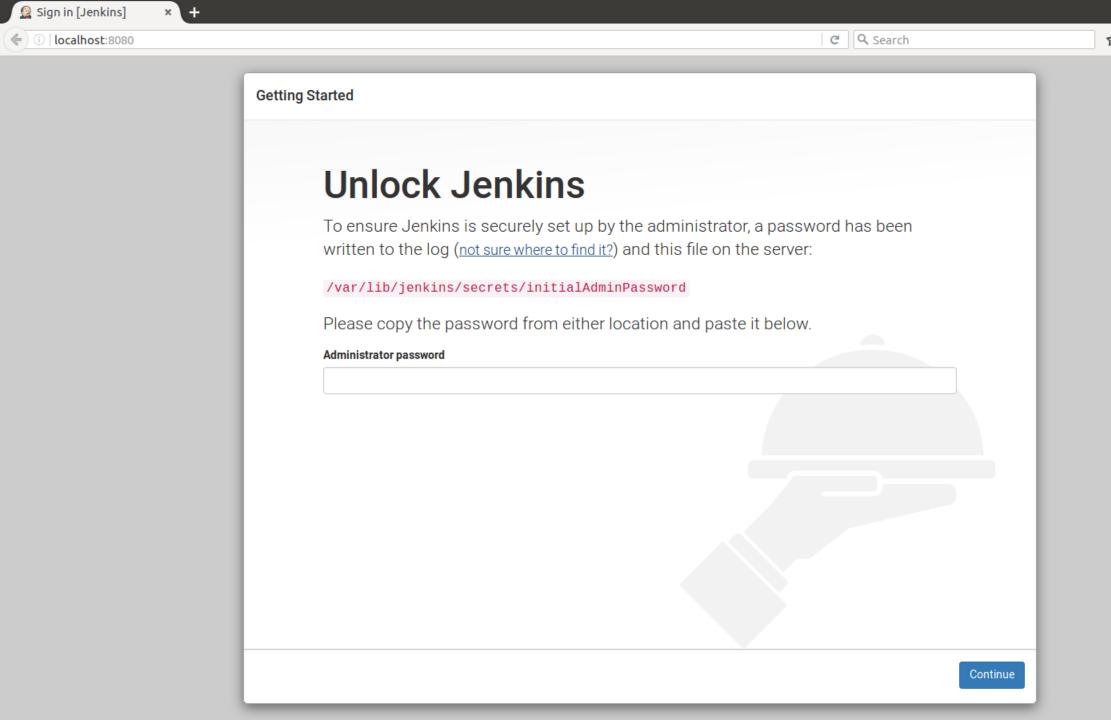
cloud@ubuntu:~\$ sudo sh -c 'echo deb http://pkg.jen
kins.io/debian-stable binary/ > /etc/apt/sources.li
st.d/jenkins.list'

cloud@ubuntu:~\$ sudo apt-get update -y

```
Release
Get:4 http://pkg.jenkins.io/debian-stable binary/ R
elease [2,042 B]
Hit:5 http://us.archive.ubuntu.com/ubuntu xenial-up
dates InRelease
Get:6 http://pkg.jenkins.io/debian-stable binary/ R
elease.gpg [181 B]
Get:7 http://pkg.jenkins.io/debian-stable binary/ P
ackages [15.8 kB]
Hit:8 http://us.archive.ubuntu.com/ubuntu xenial-ba
ckports InRelease
Fetched 18.1 kB in 1s (10.6 kB/s)
Reading package lists... Done
cloud@ubuntu:~$
```

cloud@ubuntu:~\$ sudo apt-get install jenkins -y

```
Preparing to unpack .../daemon_0.6.4-1_amd64.deb ..
Unpacking daemon (0.6.4-1) ...
Selecting previously unselected package jenkins.
Preparing to unpack .../jenkins 2.190.2 all.deb ...
Unpacking jenkins (2.190.2) ...
Processing triggers for man-db (2.7.5-1) ...
Processing triggers for systemd (229-4ubuntu19)
                                                 . . .
Processing triggers for ureadahead (0.100.0-19)
                                                 . . .
Setting up daemon (0.6.4-1) ...
Setting up jenkins (2.190.2) ...
Processing triggers for systemd (229-4ubuntu19)
Processing triggers for ureadahead (0.100.0-19)
cloud@ubuntu:~$
```



**Getting Started** 

### **Unlock Jenkins**

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

### /var/lib/jenkins/secrets/initialAdminPassword

Please copy the password from either location and paste it below.

Administrator password



cloud@ubuntu:~\$ sudo cat /var/lib/jenkins/secrets/i
nitialAdminPassword
6ebedd54cbf4408eb581d575db5b5726
cloud@ubuntu:~\$

cloud@ubuntu:~\$ sudo cat /var/lib/jenkins/secrets/i
nitialAdminPassword
6ebedd54cbf4408eb581d575db5b5726

cloud@ubuntu:~\$

**Getting Started** 

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Please copy the password from either location and paste it below.

Administrator password



### **Customize Jenkins**

Plugins extend Jenkins with additional features to support many different needs.

# Install suggested plugins

Install plugins the Jenkins community finds most useful.

# Select plugins to install

Select and install plugins most suitable for your needs.

### **Create First Admin User**

Username:	arun
Password:	•••
Confirm password:	•••
Full name:	Arunvel
E-mail address:	arunvela@cdac.in

Jenkins 2.190.2

### **Getting Started**

# Jenkins is ready!

Your Jenkins setup is complete.

Start using Jenkins

Qsearch

Arunvel | log out

ENABLE AUTO REFRESH

add description

Jenkins >

Mew Item



Build History



Manage Jenkins



Credentials



Lockable Resources



New View



No builds in the queue.

### **Build Executor Status**

1 Idle

2 Idle

### Welcome to Jenkins!

Please **create new jobs** to get started.



Page generated: Nov 19, 2019 7:48:42 AM PST REST API Jenkins ver. 2.190.2

### Enter an item name

jenkins-arun

» Required field



### Freestyle project

This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.



### **Pipeline**

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



### Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.



#### Folder

Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.



### **GitHub Organization**

Scans a GitHub organization (or user account) for all repositories matching some defined markers.



### Multibranch Pipeline

Creates a set of Pipeline projects according to detected branches in one SCM repository.

OK

**Q** search

Arunvel | log out

ENABLE AUTO REFRESH

Mew Item

Jenkins >



People

Build History



Manage Jenkins



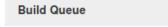




Lockable Resources



New View



No builds in the queue.

Ruil	Ы	Eve	cutor	Status
-		$ \sim$	outoi	Otatao

1 Idle

2 Idle



### People

Includes all known "users", including login identities which the current security realm can enumerate, as well as people mentioned in commit messages in recorded changelogs.

	User ID	Name	Last Commit Activity ↑	On
&	arun	Arunvel	N/A	

Icon: SML

**Q** search



Arunvel | log out

ENABLE AUTO REFRESH

Jenkins

Mew Item



People















No builds in the queue.



1 Idle

2 Idle

### Manage Jenkins



### **Configure System**

Configure global settings and paths.



### **Configure Global Security**

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



### 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 you modified config files directly on disk.



### **Manage Plugins**

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



### **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**

### Enter an item name

### jenkins-arun

» Required field



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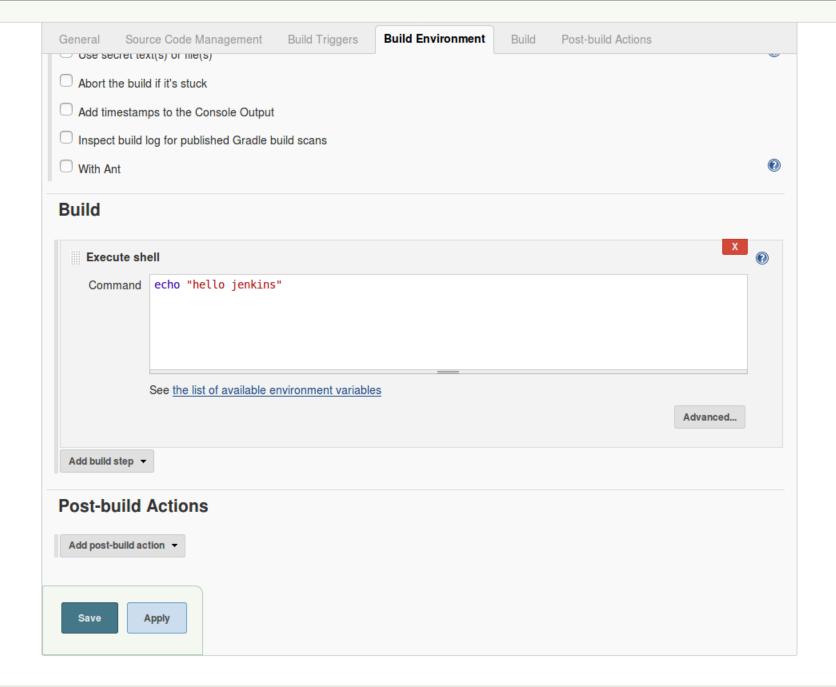
### Multibranch Pipeline

Creates a set of Pipeline projects according to detected branches in one SCM repository.



General	Source Code Management	Build Triggers	Build Environment	Build	Post-build Actions		
Descri	Ption [Plain text] Preview						
Disca	ard old builds						<b>②</b>
	ıb project						
	build requires lockable resources						
☐ This	project is parameterized						<b>②</b>
☐ Throt	ttle builds						<b>②</b>
Disab	ole this project						<b>②</b>
☐ Execu	ute concurrent builds if necessary						<b>②</b>
						Advanced	
Sourc	e Code Management						
O None	<del>)</del>						
Git							
	version						<b>?</b>
Duild	Trimmono						
Bulla	Triggers						
Save	by (e.g., from scrip	ts)					<b>②</b>
D. 11.1	0 1 1 1 1 1 1						

→ jenkins-arun → **Build Environment** Source Code Management Build Triggers Post-build Actions Build **?** ☐ Poll SCM **Build Environment**  Delete workspace before build starts **?** Use secret text(s) or file(s) Abort the build if it's stuck Add timestamps to the Console Output ☐ Inspect build log for published Gradle build scans **?** ☐ With Ant Build Х **Execute shell** Command echo "hello jenkins" See the list of available environment variables Advanced... Add build step -**Post-build Actions** Apply Save



A Back to Dashboard

Jenkins → jenkins-arun →

# Project jenkins-arun

Simple Jenkins Build



Disable Project





Status

Changes

Workspace









## **Permalinks**

**Q** search



Arunvel | log out

Jenkins → jenkins-arun → #1



Back to Project



Changes



Console Output



View as plain text



Edit Build Information



O Delete build '#1'



Started by user <u>Arunvel</u> Running as SYSTEM Building in workspace /var/lib/jenkins/workspace/jenkins-arun [jenkins-arun] \$ /bin/sh -xe /tmp/jenkins7314792372758983184.sh + echo hello jenkins hello jenkins Finished: SUCCESS

**Q** search

Arunvel log out

ENABLE AUTO REFRESH



Mew Item









Credentials



🔪 Lockable Resources



New View



**Build Queue** 

No builds in the queue.





1 Idle

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## **Script Console**

search

② Arunvel | log out

Jenkins > Plugin Manager

Back to Dashboard

Manage Jenkins

Update Center

Filter: 9 git

Update	es Available Installed Advanced			
Enabled	Name ↓	Version Pre	viously installed version	Uninstall
	Apache HttpComponents Client 4.x API Plugin  Bundles Apache HttpComponents Client 4.x and allows it to be used by Jenkins plugins.	4.5.10-2.0		
$\overline{\mathbf{v}}$	Credentials Plugin This plugin allows you to store credentials in Jenkins.	2.3.0		Uninstall
$\overline{\mathbf{v}}$	<u>Display URL API</u> Provides the DisplayURLProvider extension point to provide alternate URLs for use in notifications	2.3.2		
	Docker Pipeline  Build and use Docker containers from pipelines.	1.21		
	<u>Durable Task Plugin</u> Library offering an extension point for processes which can run outside of Jenkins yet be monitored.	1.33		Uninstall
	Git client plugin Utility plugin for Git support in Jenkins	3.0.0		
	Git plugin This plugin integrates Git with Jenkins.	4.0.0		
	GIT server Plugin  Allows Jenkins to act as a Git server.	1.8		
	GitHub API Plugin This plugin provides GitHub API for other plugins.	1.95		
	GitHub Branch Source Plugin  Multibranch projects and organization folders from GitHub. Maintained by CloudBees, Inc.	2.5.8		Uninstall
	GitHub plugin This plugin integrates GitHub to Jenkins.	1.29.5		
	Gradle Plugin This plugin allows Jenkins to invoke Gradle build scripts directly.	1.34		Uninstall
	Jackson 2 API Plugin  This plugin exposes the Jackson 2 JSON APIs to other Jenkins plugins.	2.10.0		
	JSch dependency plugin			

## Enter an item name

## jenkins-python-2

» Required field



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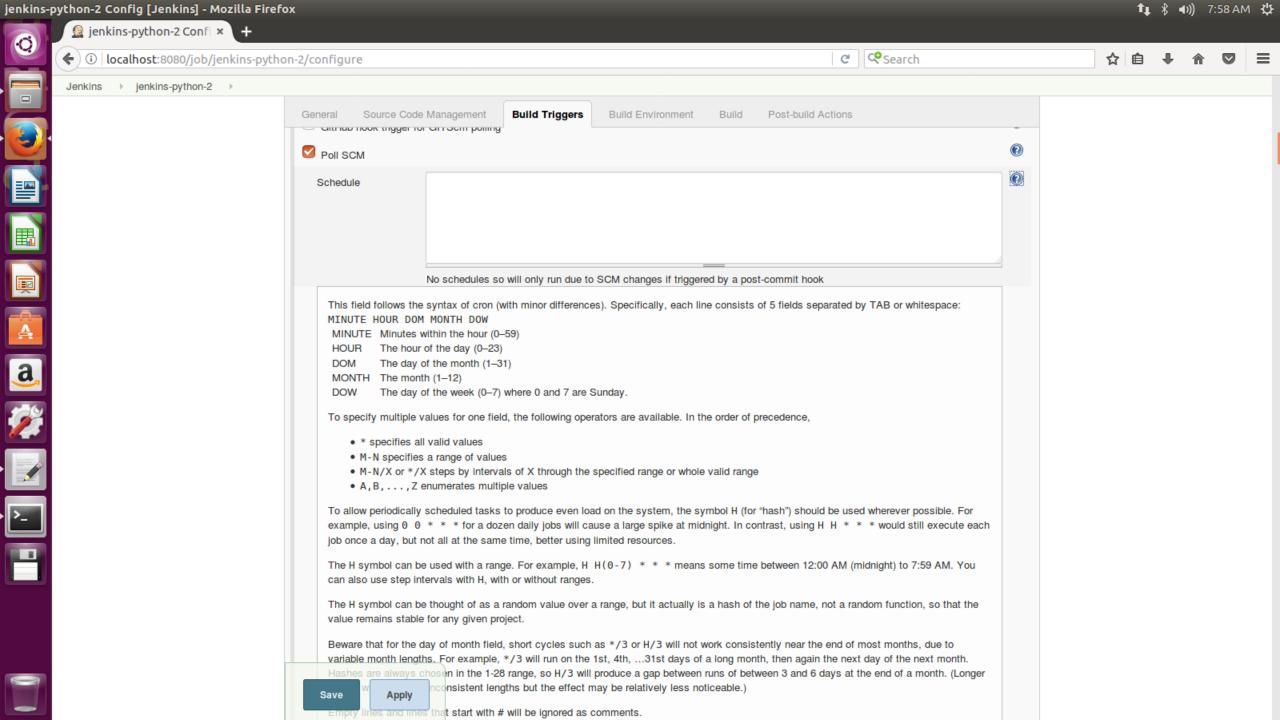
If you want to create a new item from other existing, you can use this option:

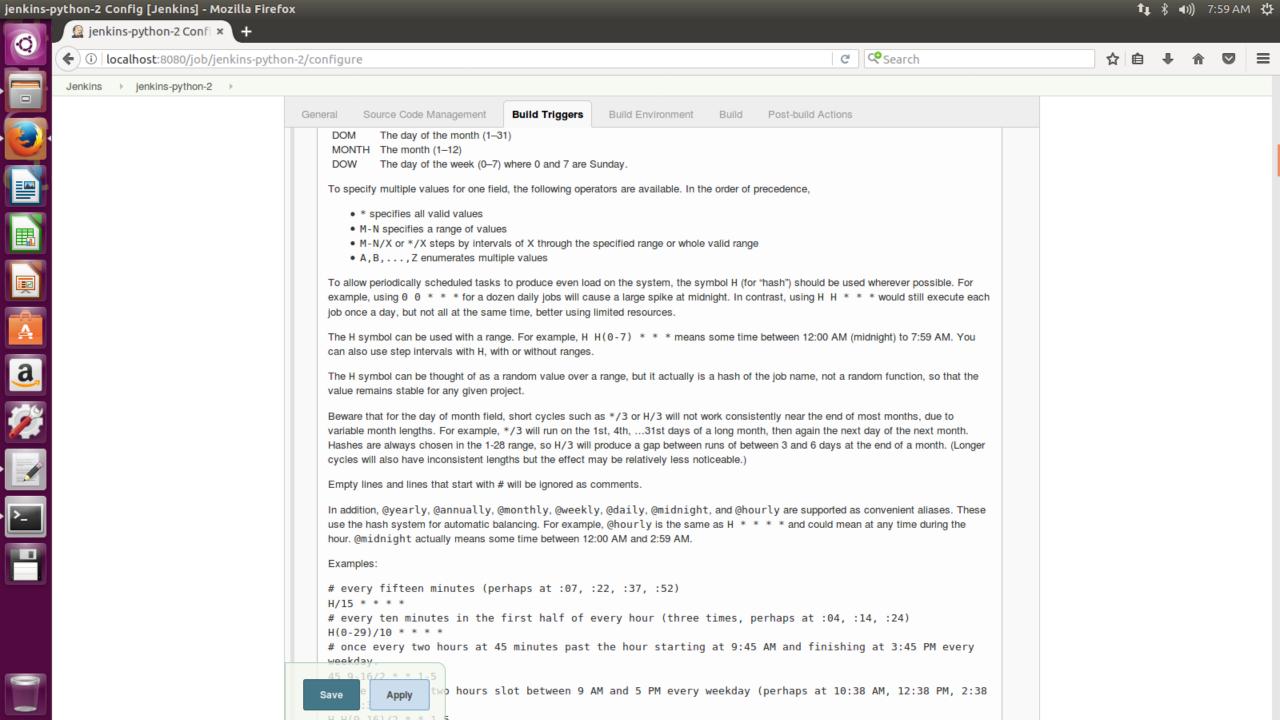


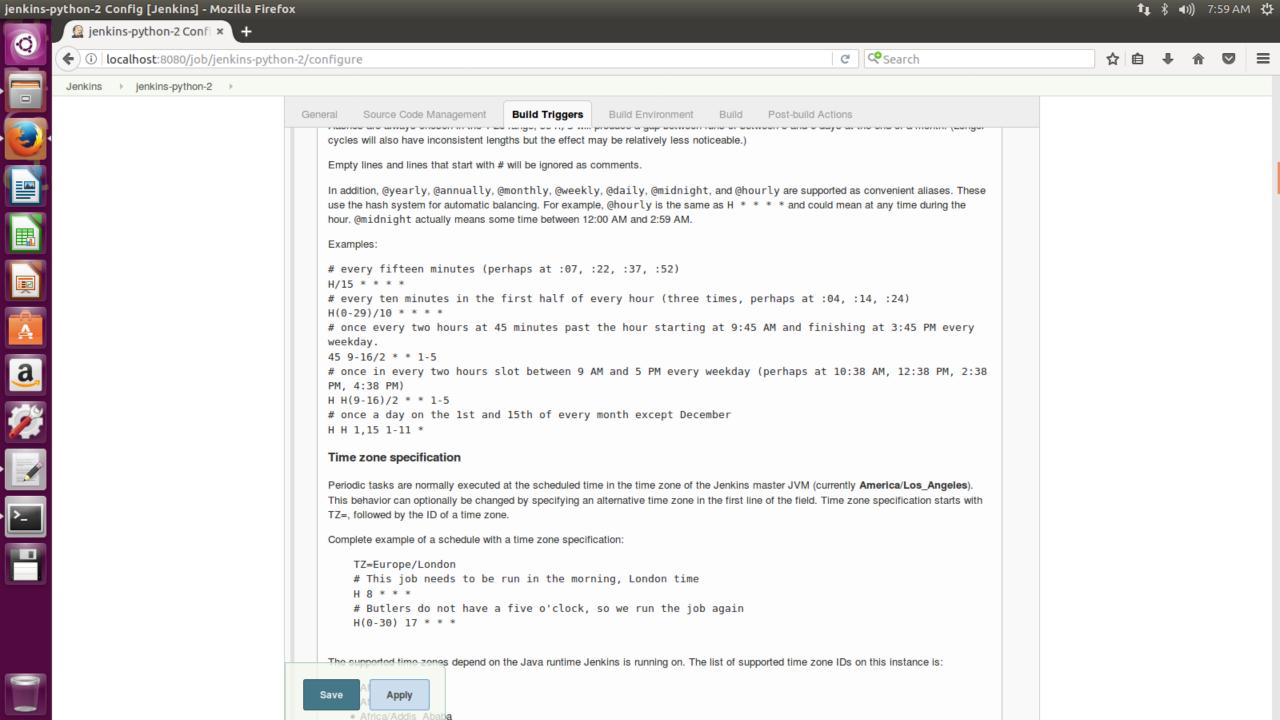
Type to autocomplete

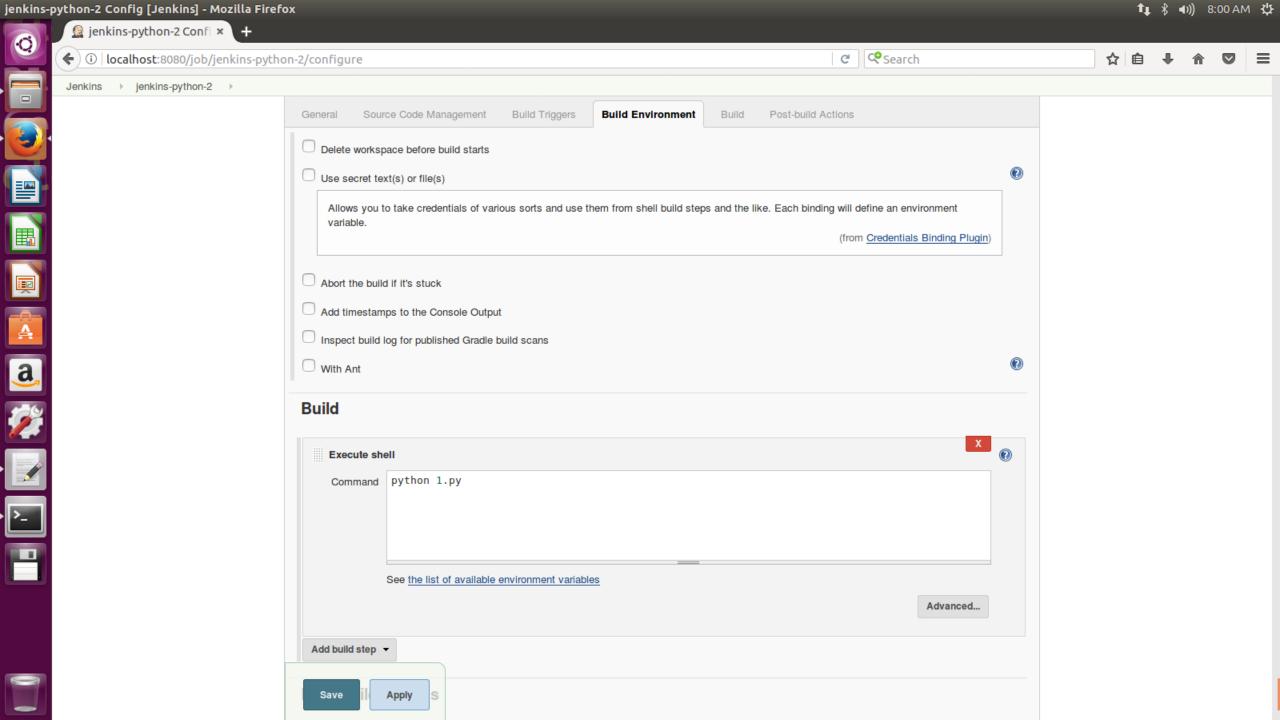
Jenkins → jenkins-python-2 →

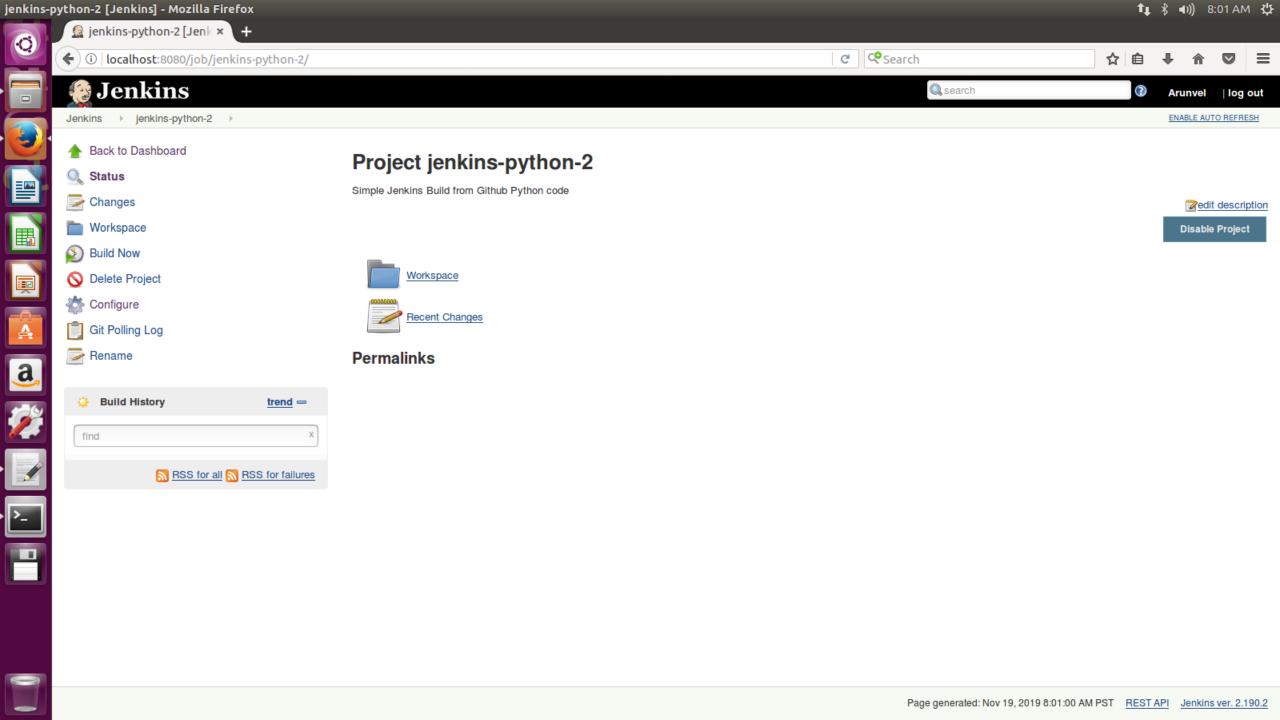
General	Source Code Management	Build Triggers	Build Environment	Build	Post-build Actions		
Descrip	Simple Jenkins Build from  [Plain text] Preview	<u>Github</u> Python code					
Disca	rd old builds						<b>?</b>
☐ GitHub project							
☐ This build requires lockable resources							
☐ This project is parameterized							<b>?</b>
☐ Throttle builds							<b>②</b>
☐ Disable this project							<b>?</b>
Execute concurrent builds if necessary						<b>?</b>	
						Advanced	
Sourc	e Code Management						
None							
O Git							
O Subversion							<b>②</b>
Build	Triggers						
Save	Apply y (e.g., from scrip	its)					<b>②</b>











Jenkins → configuration			
	Soldan Tool Solla Sollar		•
	Additional groovy classpath	Add	<b>②</b>
(	Enable Debug Mode		<b>?</b>
(	Require Administrator for Template Testin	g	<b>?</b>
(		<b>?</b>	
(		?	
		Default Triggers	
		<b>?</b>	
E	E-mail Notification		
	SMTP server	smtp.gmail.com	
	Default user e-mail suffix		•
	Use SMTP Authentication		<b>?</b>
	User Name	aryan.arunachalam@gmail.com	
	Password		ĺ
	Use SSL		<b>?</b>
	SMTP Port	465	<b>?</b>
	Reply-To Address		
	Charset	UTF-8	
(	Test configuration by sending test e-mail		
	Save		

@ search



Arunvel | log out

Jenkins → jenkins-arun → #4



Back to Project









View as plain text



Edit Build Information



O Delete build '#4'



Previous Build



Finished: SUCCESS

Started by user <u>Arunvel</u> Running as SYSTEM Building in workspace /var/lib/jenkins/workspace/jenkins-arun [jenkins-arun] \$ /bin/sh -xe /tmp/jenkins2997904872629428483.sh + echo hello jenkins hello jenkins Sending e-mails to: aryan.arunachalam@gmail.com Triggering a new build of jenkins-arun2