

**TO
THE
NEW™**



Assessment -18

JENKINS-1

Trainee Name : Arun Parmar

Mentor Name : Ravi Kumar

College: UPES

- 1. Create 2 users: developer1, developer2. The developer1 should be able to build job1 only and can't change the job configuration. The developer2 can configure and build the job2, also he is able to view job1 but can't build/configure it.**

Activities Firefox Web Browser Sat 12:48

Create User [Jenkins] - Mozilla Firefox

localhost:9999/securityRealm/addUser

Jenkins

Search

Arun Parmar log out

Jenkins > Jenkins' own user database

Back to Dashboard
Manage Jenkins
Create User

Create User

Username: Dev1

Password: *****

Confirm password: *****

Full name: Developer1

E-mail address: kunwararunji@gmail.com

Create User

Page generated: Apr 11, 2020, 12:48:41 PM IST Jenkins ver. 2.222.1

Activities Firefox Web Browser Sat 12:49

Create User [Jenkins] - Mozilla Firefox

localhost:9999/securityRealm/addUser

Jenkins

Search

Arun Parmar log out

Jenkins > Jenkins' own user database

Back to Dashboard
Manage Jenkins
Create User

Create User

Username: Dev2

Password: *****

Confirm password: *****

Full name: Developer2

E-mail address: 500053098@stu.upes.ac.in

Create User

Page generated: Apr 11, 2020, 12:49:02 PM IST Jenkins ver. 2.222.1

Activities

Firefox Web Browser

Sat 12:50

Dashboard [Jenkins] - Mozilla Firefox

How to In... Learning How to In... How to In... How To R... nginx - D... Assignme... Copy of 1... Apache T... How To In... linux - ho... Dashb... x

localhost:9999

enable auto refresh

New Item

People

Build History

Manage Jenkins

My Views

Lockable Resources

Credentials

New View

Jenkins

search

Arun Parmar

log out

All

+

S	W	Name	Last Success	Last Failure	Last Duration
		firstjob	1 mo 1 day - #4	N/A	65 ms
		secondjob	N/A	N/A	N/A

Icon: [S](#) [M](#) [L](#)

[Legend](#) [Atom feed for all](#) [Atom feed for failures](#) [Atom feed for just latest builds](#)

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

Page generated: Apr 11, 2020, 12:49:57 PM IST [REST API](#) [Jenkins ver. 2.222.1](#)

Activities Firefox Web Browser Sat 13:13 Jenkins - Mozilla Firefox

localhost:9999/role-strategy/manage-roles#

Jenkins Manage and Assign Roles

Role	Pattern	Create	Delete	ManageDomains	Update	View	Build	Cancel	Configure	Create	Delete	Discover	Move	Read	Workspace	Delete	Replay	Update	Tag	Reserve	Unlock	View
admin		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
developer		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Role to add:

Add

Item roles

Role	Pattern	Create	Delete	ManageDomains	Update	View	Build	Cancel	Configure	Create	Delete	Discover	Move	Read	Workspace	Delete	Replay	Update	Tag	Reserve	Unlock	View
firstjobfor2	"first2"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
secondjobfor2	"second2"	<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"/>	<input type="checkbox"/>	<input checked="" 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"/>
firstfor1	"first1"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Role to add:

Pattern:

Add

Node roles

Role	Pattern	Create	Delete	ManageDomains	Update	View	Build	Configure	Connect	Delete	Disconnect	Provision	Reserve	Unlock	View
		<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Activities Firefox Web Browser Sat 13:14 Jenkins - Mozilla Firefox

localhost:9999/role-strategy/assign-roles

Jenkins Manage and Assign Roles

No builds in the queue.

[Build Executor Status](#)

1	Idle
2	Idle

Item roles

User/group	firstfor1	firstjobfor2	secondjobfor2
Anonymous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
dev1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
dev2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

User/group to add:

Add

Node roles

User/group:

Anonymous

User/group to add:

Add

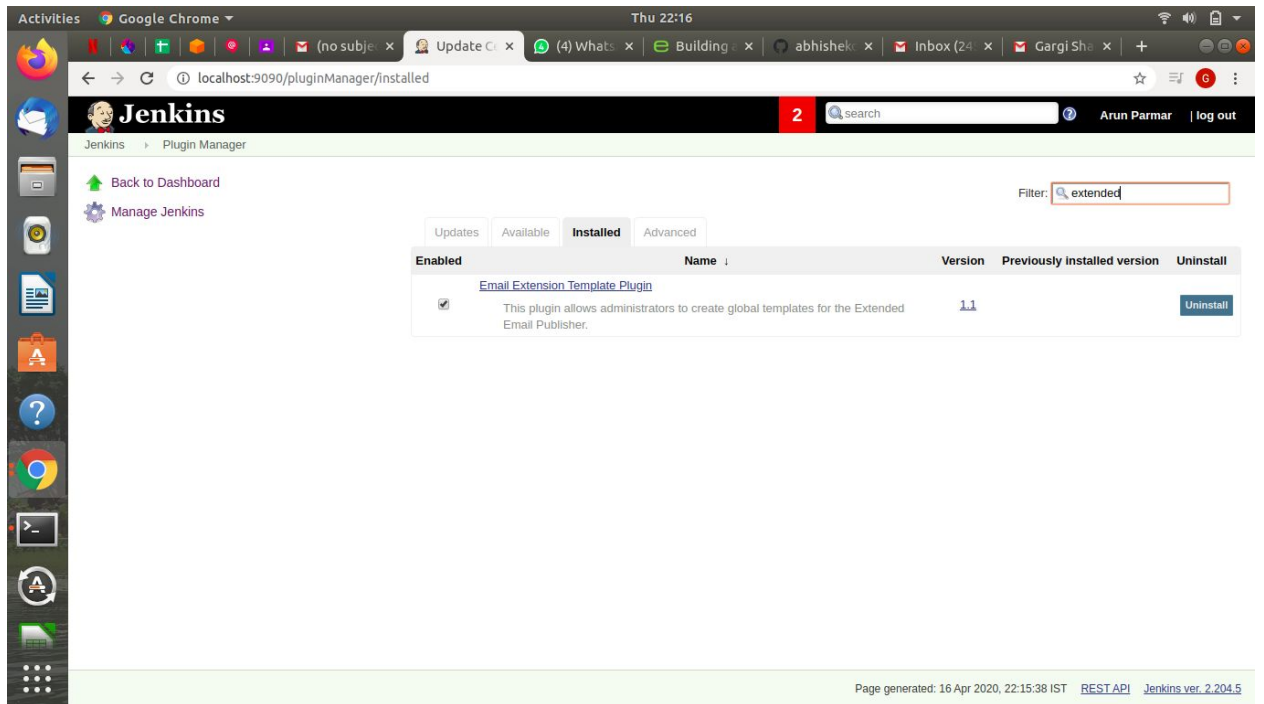
Save Apply

Page generated: Apr 11, 2020, 1:13:54 PM IST Jenkins ver. 2.222.1

2. Create a Jenkins Job to create a calculator. It should give you a dropdown to ask Addition, Subtraction, Multiplication or Division and

email the results.

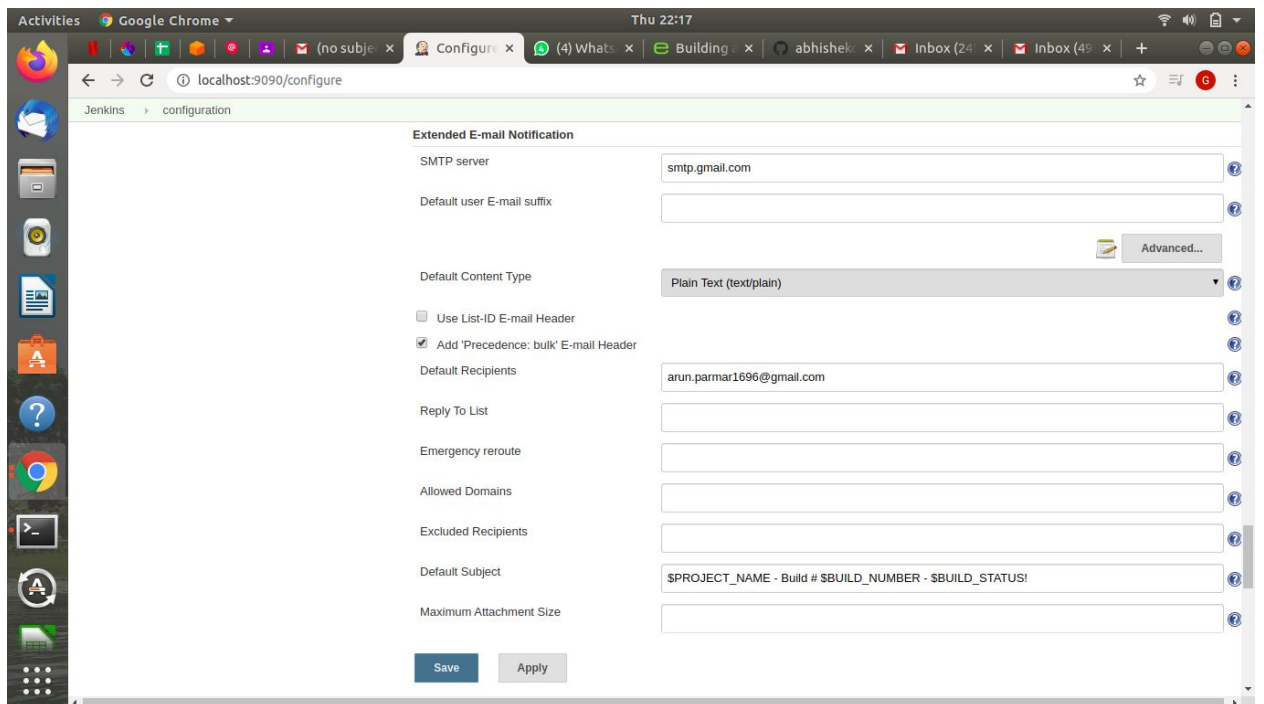
Hint: Plugin Used (Environment Injector, Extended Email Notification)



The screenshot shows the Jenkins Plugin Manager interface in a Google Chrome browser. The URL is `localhost:9090/pluginManager/installed`. The page title is "Jenkins" and the user is "Arun Parmar". The "Filter" is set to "extended". The "Installed" tab is selected, showing a table of installed plugins. The table has columns: "Enabled", "Name", "Version", "Previously installed version", and "Uninstall". One plugin is listed: "Email Extension Template Plugin" (Version 1.1). The description for this plugin is: "This plugin allows administrators to create global templates for the Extended Email Publisher." The "Uninstall" button is visible next to the plugin name.

Enabled	Name	Version	Previously installed version	Uninstall
<input checked="" type="checkbox"/>	Email Extension Template Plugin This plugin allows administrators to create global templates for the Extended Email Publisher.	1.1		Uninstall

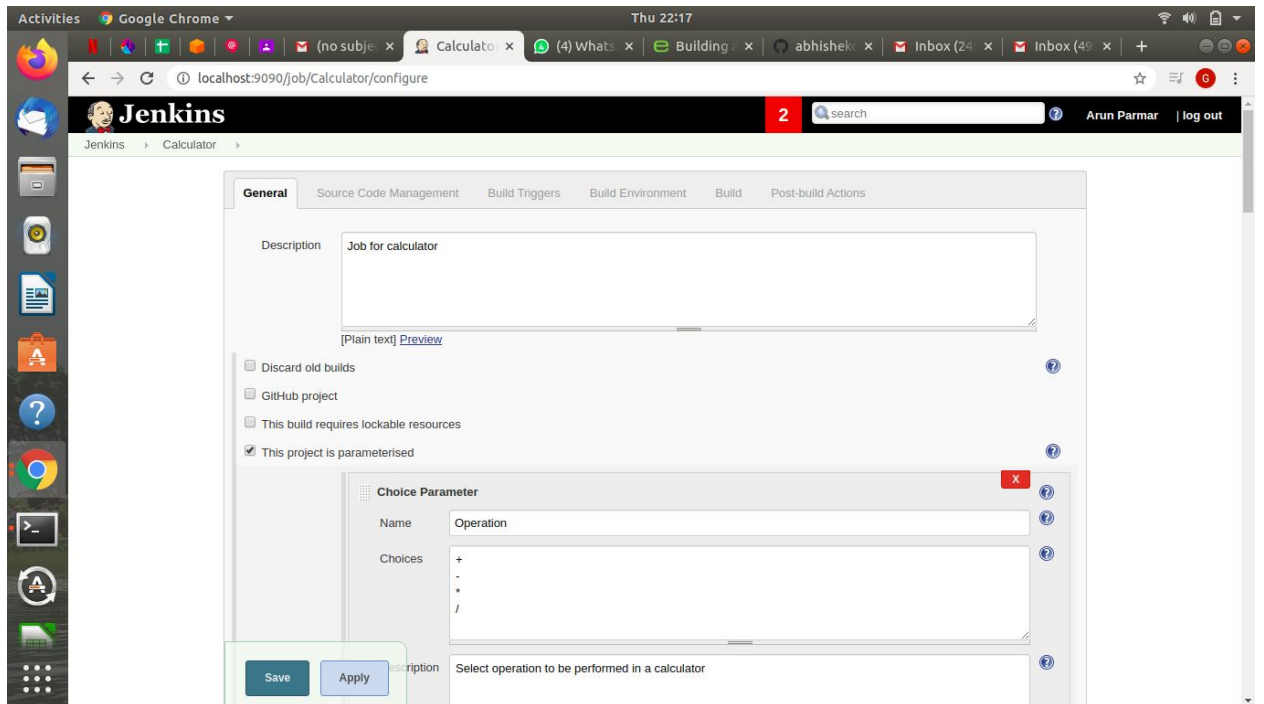
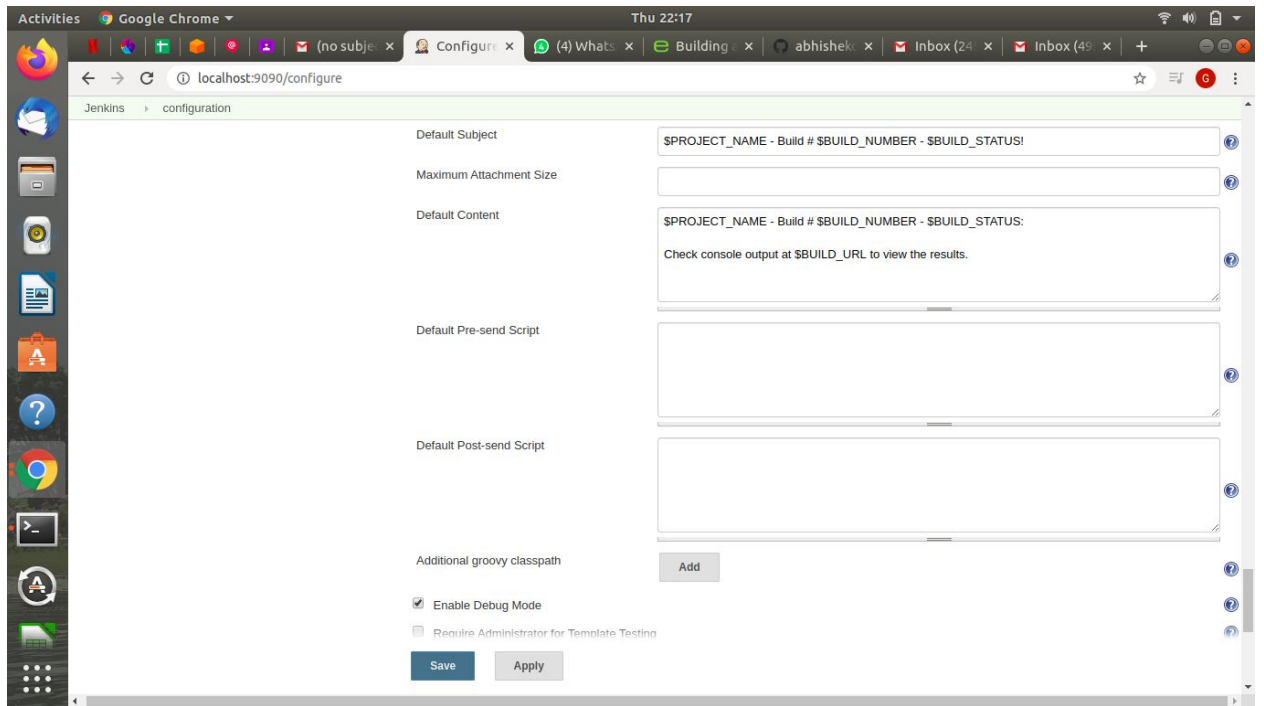
Page generated: 16 Apr 2020, 22:15:38 IST [REST API](#) Jenkins ver. 2.204.5

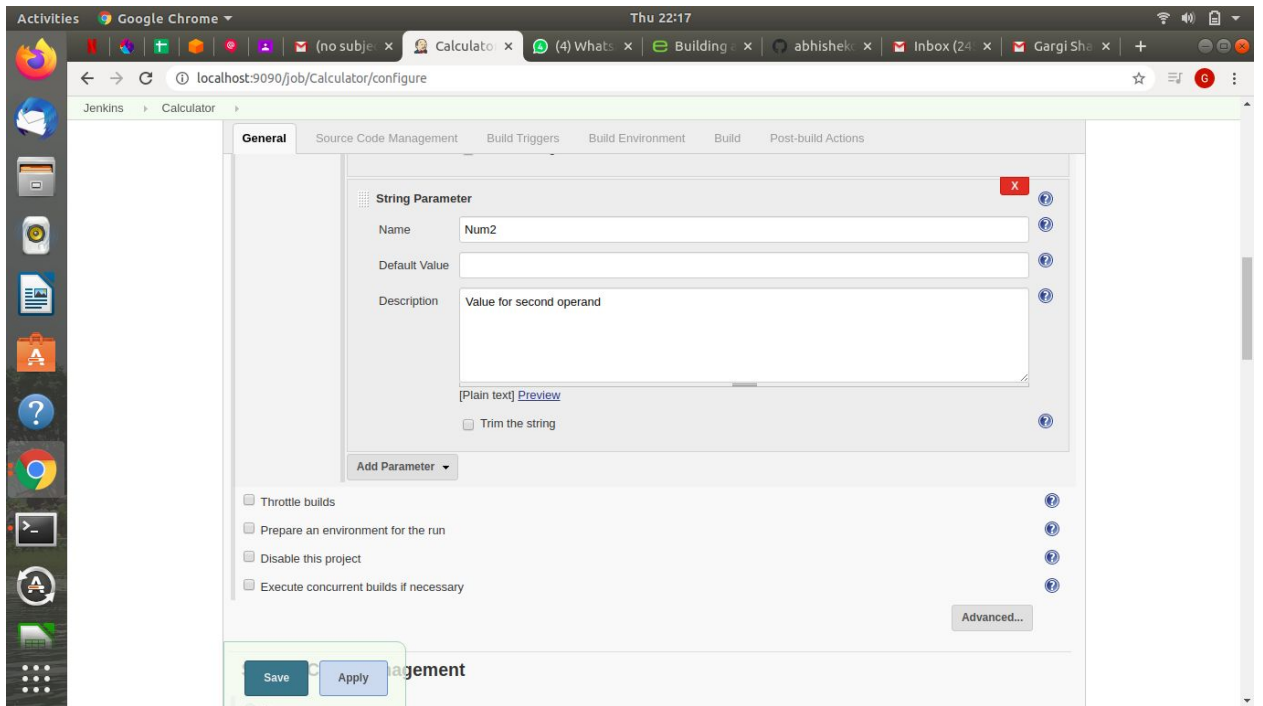
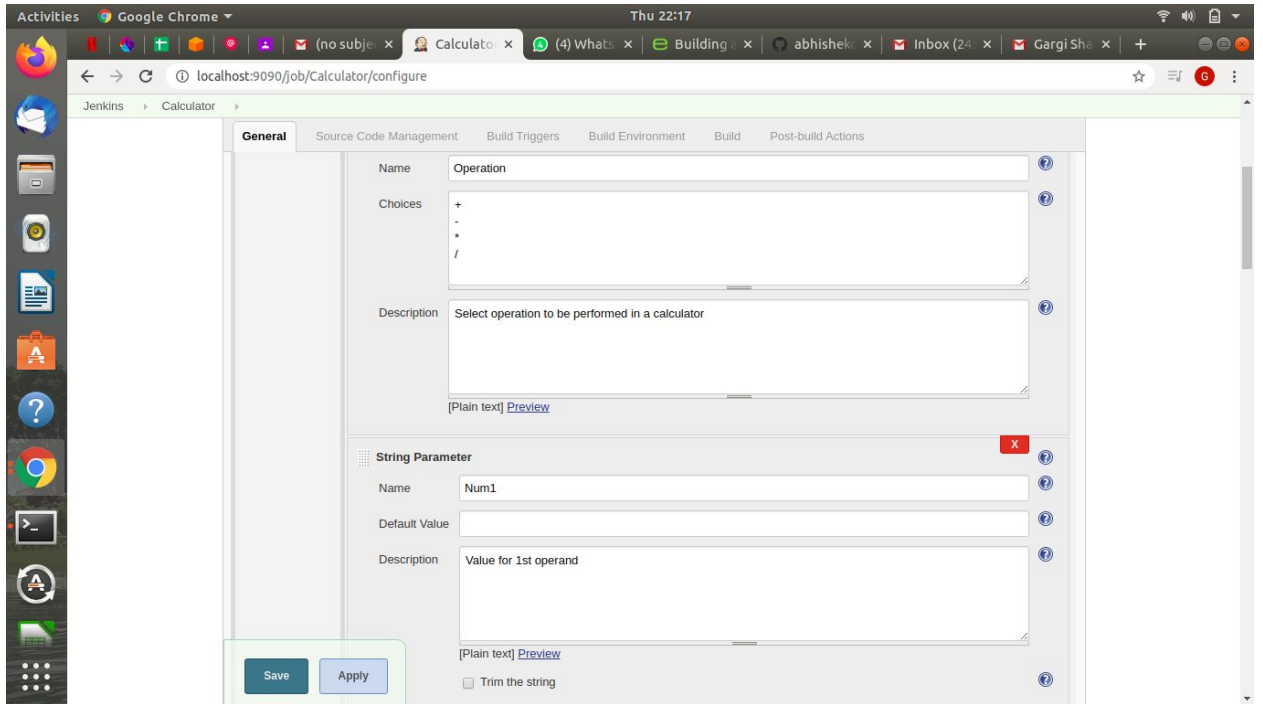


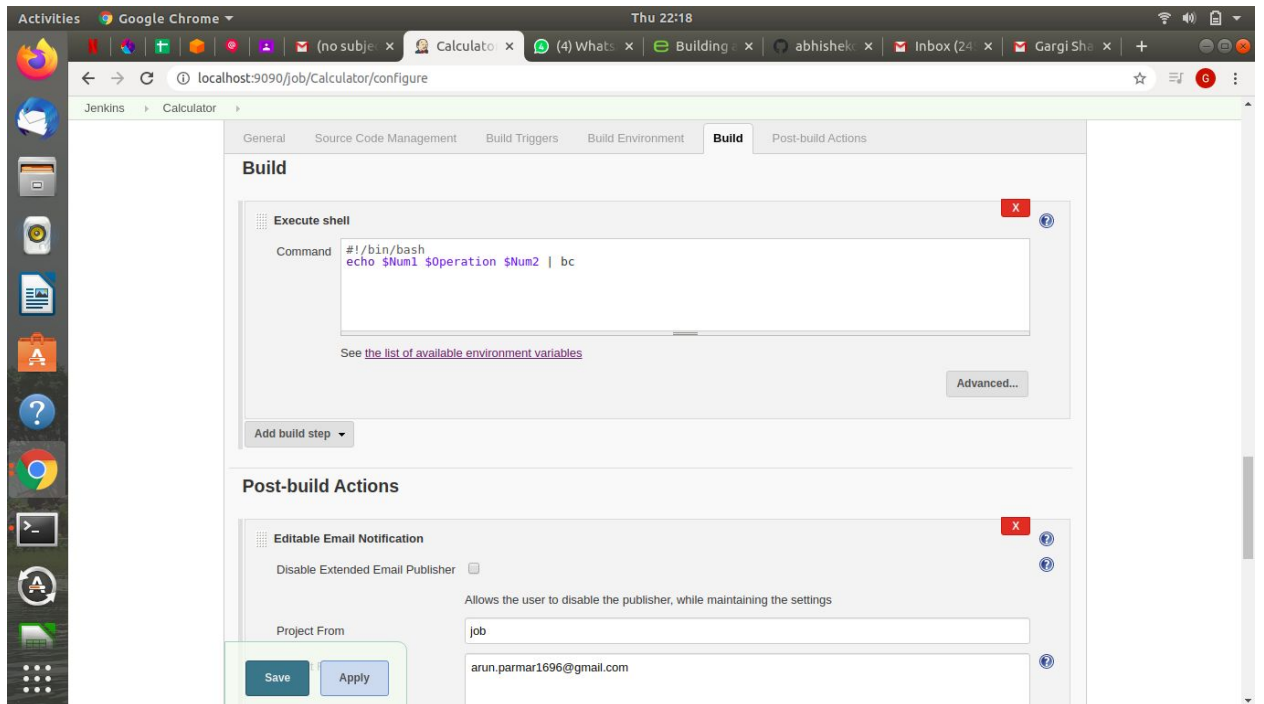
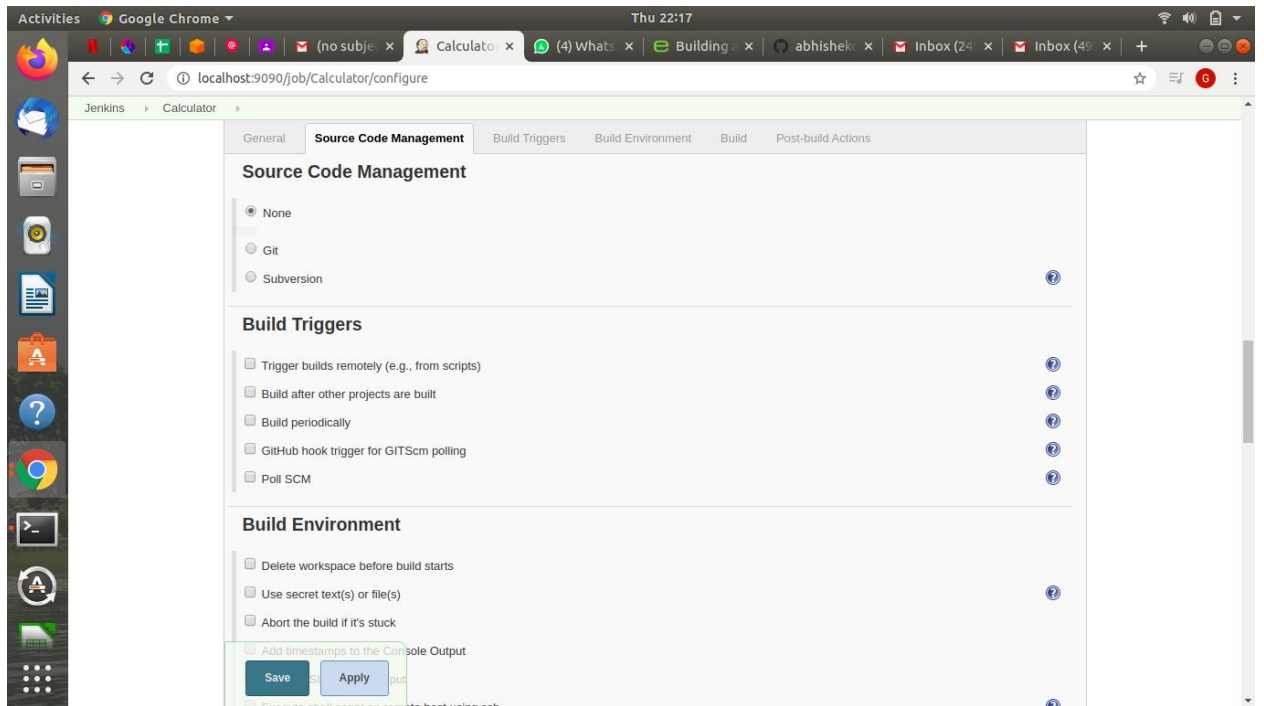
The screenshot shows the Jenkins Configuration page for the "Extended E-mail Notification" plugin. The URL is `localhost:9090/configure`. The page title is "Jenkins" and the user is "Arun Parmar". The "Advanced..." button is visible. The configuration fields are:

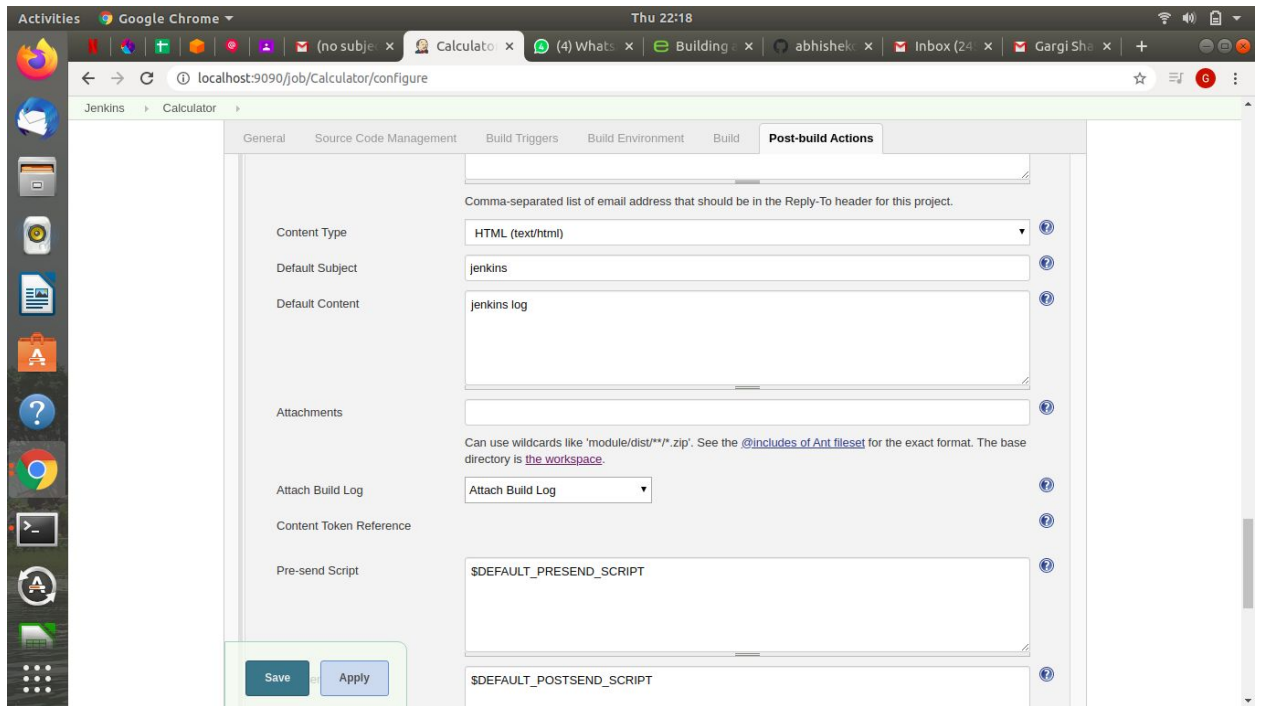
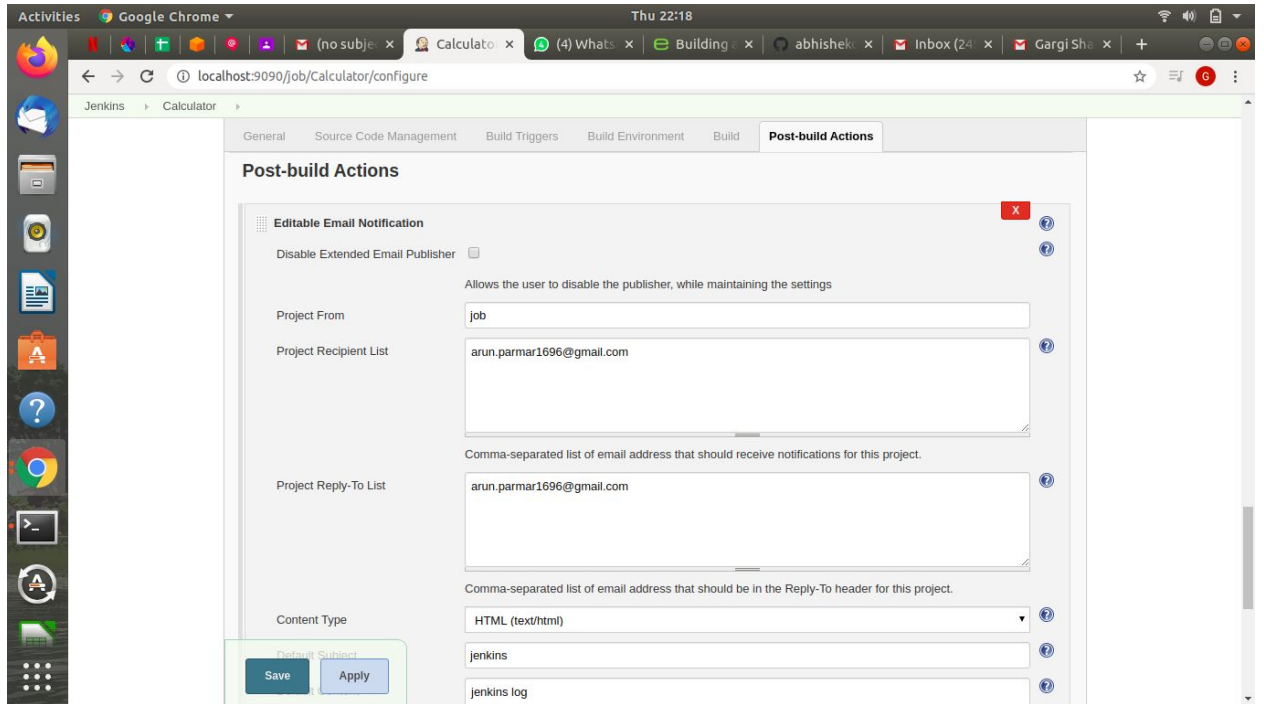
- SMTP server: `smtp.gmail.com`
- Default user E-mail suffix: (empty)
- Default Content Type: `Plain Text (text/plain)`
- Use List-ID E-mail Header: ☐
- Add 'Precedence: bulk' E-mail Header: ☒
- Default Recipients: `arun.parmar1696@gmail.com`
- Reply To List: (empty)
- Emergency reroute: (empty)
- Allowed Domains: (empty)
- Excluded Recipients: (empty)
- Default Subject: `$PROJECT_NAME - Build # $BUILD_NUMBER - $BUILD_STATUS!`
- Maximum Attachment Size: (empty)

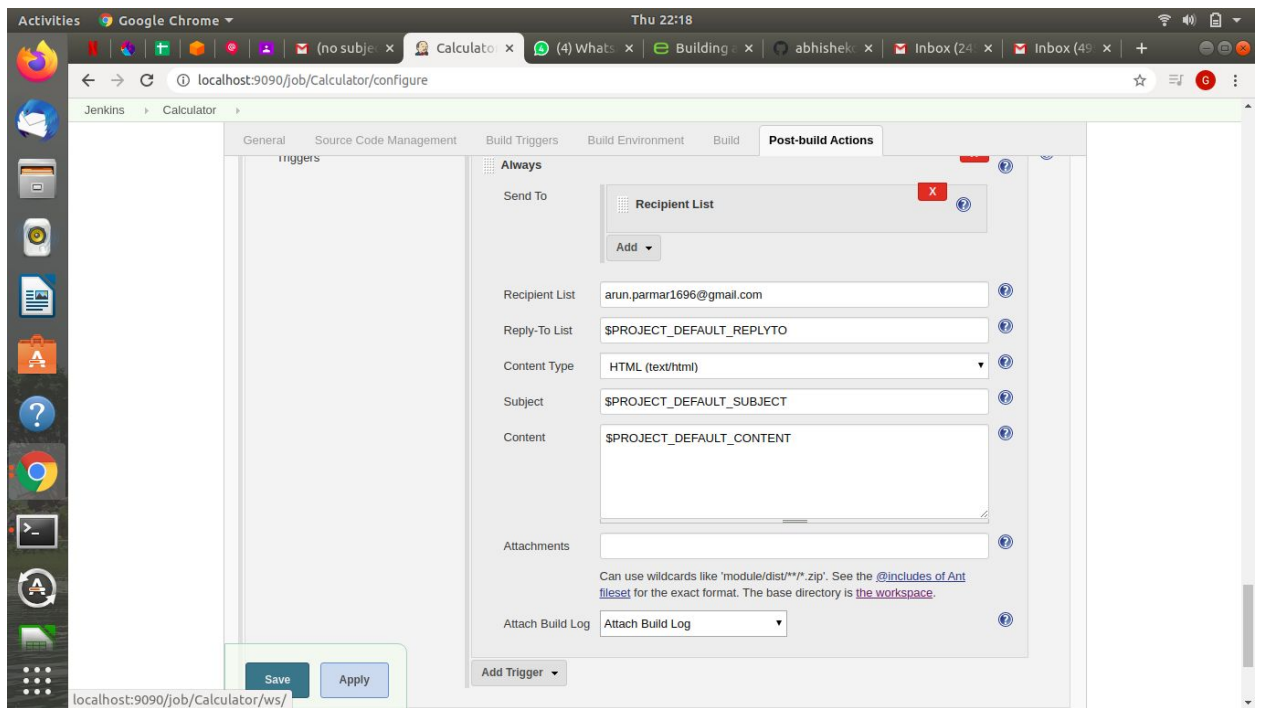
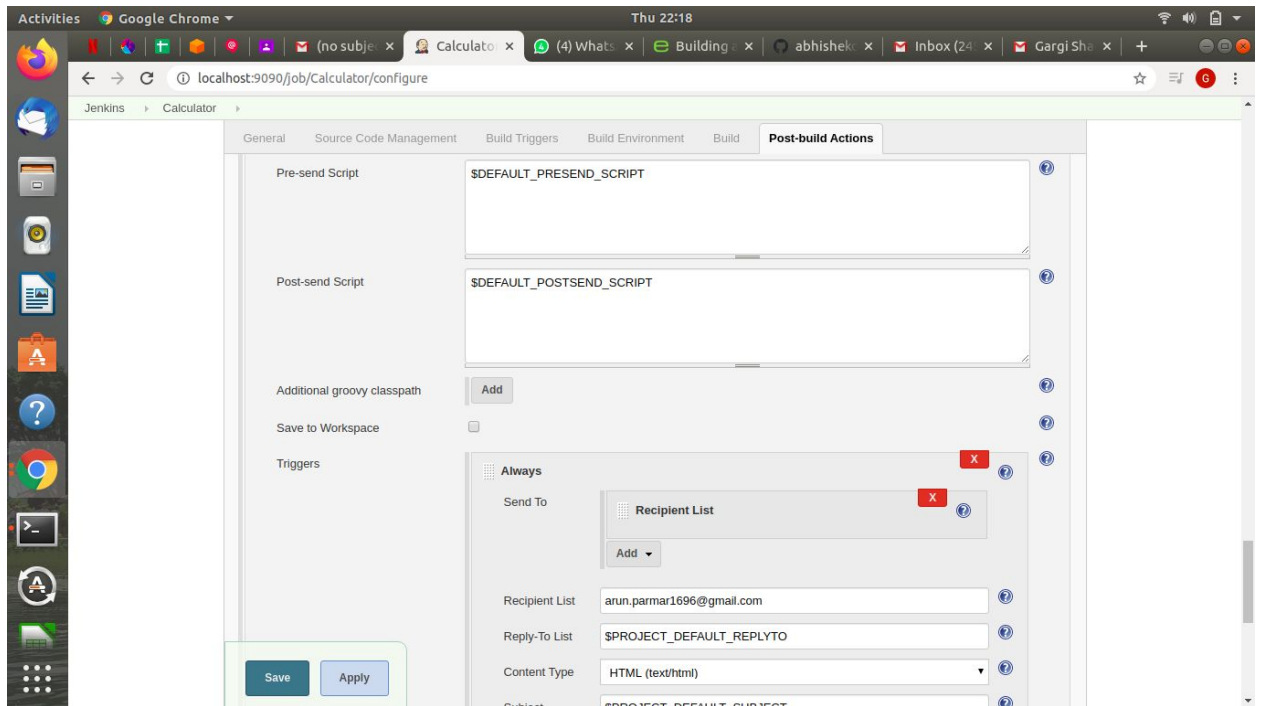
Buttons: Save, Apply











Activities

Google Chrome

Thu 22:18

localhost:9090/job/Calculator/build?delay=0sec

2

search

Arun Parmar | log out

Jenkins

Calculator

Back to Dashboard

Status

Changes

Workspace

Build with Parameters

Delete Project

Configure

Email Template Testing

Rename

Build History

find

#17

16 Apr 2020, 22:12

#16

1 Apr 2020, 20:00

#15

1 Apr 2020, 20:00

#14

1 Apr 2020, 19:21

#13

1 Apr 2020, 19:20

#12

31 Mar 2020, 16:46

#11

22 Mar 2020, 10:18

#10

21 Mar 2020, 09:48

Project Calculator

This build requires parameters:

Operation

+

Select operation to be performed in a calculator

Num1

10

Value for 1st operand

Num2

20

Value for second operand

Build

Activities Google Chrome Thu 22:18

localhost:9090/job/Calculator/17/console

Jenkins > Calculator > #17

Console Output

Started by user [Arun Parmar](#)
Running as SYSTEM
[EnvInject] - Loading node environment variables.
Building in workspace /var/lib/jenkins/workspace/Calculator
Checking for pre-build
Executing pre-build step
Checking if email needs to be generated
No emails were triggered.
[Calculator] \$ /bin/bash /tmp/jenkins17529020859841419001.sh
30
Checking for post-build
Performing post-build step
Checking if email needs to be generated
Email was triggered for: Always
Sending email for trigger: Always
messageContentType = text/html; charset=UTF-8
Request made to attach build log
Adding recipients from project recipient list
Analyzing: arun.parmar1696@gmail.com
Looking for: arun.parmar1696@gmail.com
starting at: 0
firstFoundIdx: 0
firstFoundIdx-substring: arun.parmar1696@gmail.com
=> found type: 0
Analyzing: arun.parmar1696@gmail.com
Looking for: arun.parmar1696@gmail.com
starting at: 0
firstFoundIdx: 0
firstFoundIdx-substring: arun.parmar1696@gmail.com
=> found type: 0
Analyzing: arun.parmar1696@gmail.com
Looking for: arun.parmar1696@gmail.com

Activities Google Chrome Thu 22:18

localhost:9090/job/Calculator/17/console

Jenkins > Calculator > #17

```
starting at: 0
firstFoundIdx: 0
firstFoundIdx-substring: arun.parmar1696@gmail.com
=> found type: 0
Analyzing: arun.parmar1696@gmail.com
Looking for: arun.parmar1696@gmail.com
starting at: 0
firstFoundIdx: 0
firstFoundIdx-substring: arun.parmar1696@gmail.com
=> found type: 0
Analyzing: arun.parmar1696@gmail.com
Looking for: arun.parmar1696@gmail.com
starting at: 0
firstFoundIdx: 0
firstFoundIdx-substring: arun.parmar1696@gmail.com
=> found type: 0
Analyzing: arun.parmar1696@gmail.com
Looking for: arun.parmar1696@gmail.com
starting at: 0
firstFoundIdx: 0
firstFoundIdx-substring: arun.parmar1696@gmail.com
=> found type: 0
Analyzing: arun.parmar1696@gmail.com
Looking for: arun.parmar1696@gmail.com
starting at: 0
firstFoundIdx: 0
firstFoundIdx-substring: arun.parmar1696@gmail.com
=> found type: 0
Analyzing: arun.parmar1696@gmail.com
Looking for: arun.parmar1696@gmail.com
starting at: 0
firstFoundIdx: 0
firstFoundIdx-substring: arun.parmar1696@gmail.com
=> found type: 0
Analyzing: arun.parmar1696@gmail.com
Looking for: arun.parmar1696@gmail.com
starting at: 0
firstFoundIdx: 0
firstFoundIdx-substring: arun.parmar1696@gmail.com
=> found type: 0
Successfully created MimeMessage
Sending email to: arun.parmar1696@gmail.com
Finished: SUCCESS
```

Page generated: 16 Apr 2020, 22:18:49 IST [REST API](#) [Jenkins ver. 2.204.5](#)

Create a freestyle job with parameters and choose choice parameters.

☒ This project is parameterised

Choice Parameter

Name

ENV

Choices

ENV1
ENV2
ENV3

Description

Choose the ENV. The nginx web page will be displayed using this.

[Plain text] [Preview](#)

Add Parameter

Now execute shell in build steps.

```
arun ALL=(ALL:ALL) NOPASSWD: ALL
jenkins ALL=(ALL:ALL) NOPASSWD: ALL
docker ALL=(ALL:ALL) NOPASSWD: ALL
```

Execute shell

Command

```
DEM01=/var/www/html/ENV1.html
DEM02=/var/www/html/ENV2.html
DEM03=/var/www/html/ENV3.html
if test -f "$DEM01";
then
    sudo rm -rf /var/www/html/ENV1.html
fi
if test -f "$DEM02";
then
    sudo rm -rf /var/www/html/ENV2.html
fi
if test -f "$DEM03";
then
    sudo rm -rf /var/www/html/ENV3.html
fi
sudo cp -r /var/www/html/ENV/$ENV.html /var/www/html
```

See [the list of available environment variables](#)

Advanced...

Now we create a directory in /var/www/html/ named ENV and create the 3 index files in it. Now

create a ENV.com in /etc/nginx/sites-available and create its soft link in sites-enabled which will contain the server and location block.

```
server{  
    listen 80;  
    root /var/www/html;  
    index ENV1.html ENV2.html ENV3.html;  
}
```

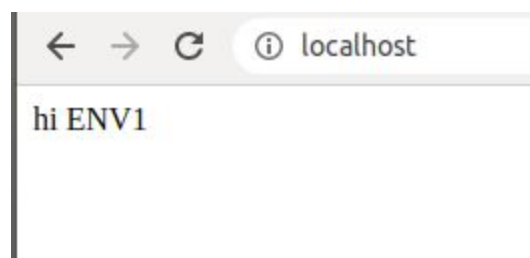
Now edit /etc/hosts file for ENV.com

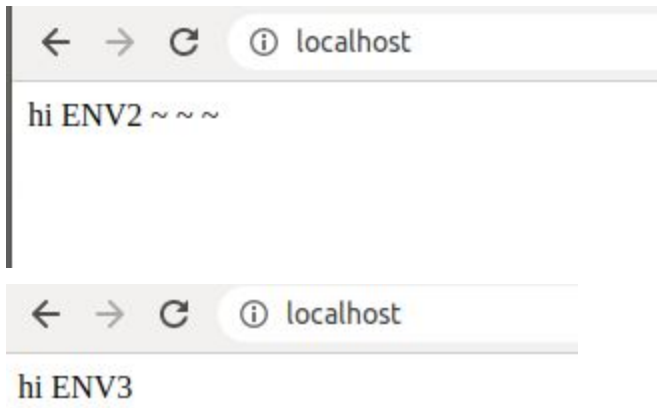
```
127.0.0.1    localhost  
127.0.0.1    ENV.com  
  
# The following lines are desirable for IPv6 capable hosts  
::1         ip6-localhost ip6-loopback  
fe00::0     ip6-localnet  
ff00::0     ip6-mcastprefix  
ff02::1     ip6-allnodes  
ff02::2     ip6-allrouters
```

Now edit /etc/sudoers list and give jenkins full permission with no password. Then add jenkins in roo usergroup. Once done edit the file permissions(give 777) of all the index files and ENV

```
arun ALL=(ALL:ALL) NOPASSWD: ALL  
jenkins ALL=(ALL:ALL) NOPASSWD: ALL  
docker ALL=(ALL:ALL) NOPASSWD: ALL
```

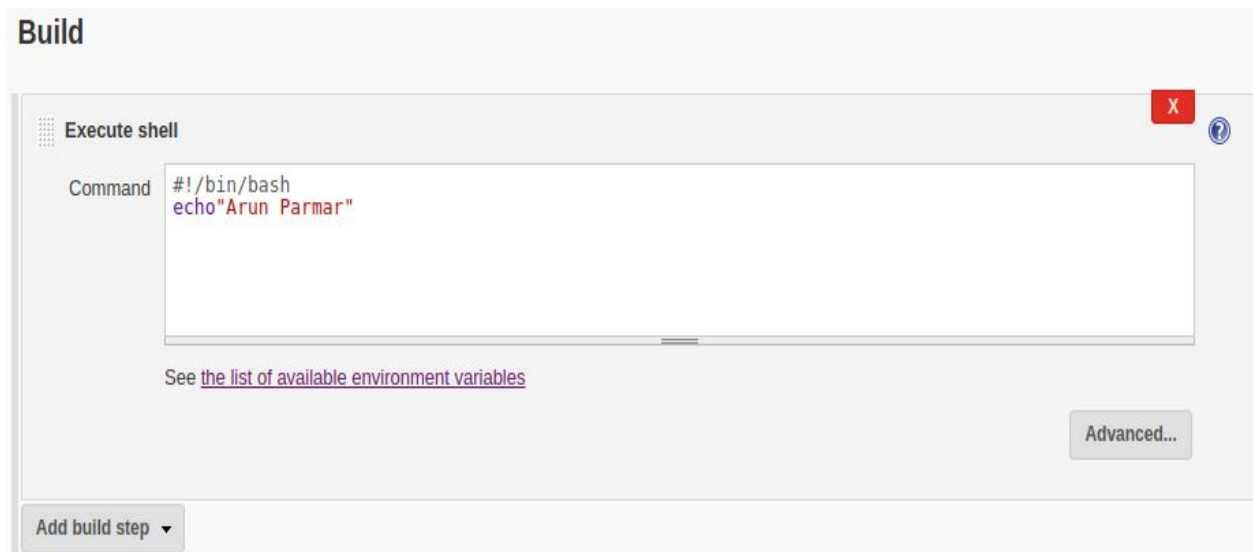
Now restart nginx . Restart jenkins and build the job with parameters. When we choose ENV1 as the parameter, the nginx web page picks up the index file of ENV1 and displays it on the browser.



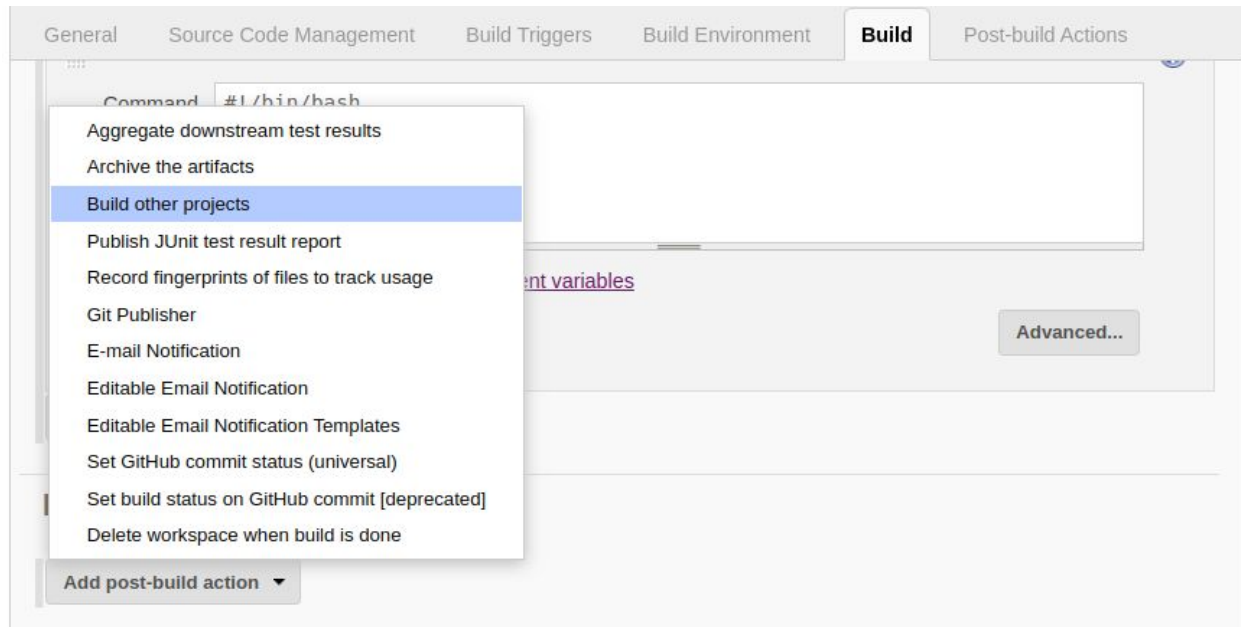


4. Create a job which on its failure will trigger another job.

Create a new job



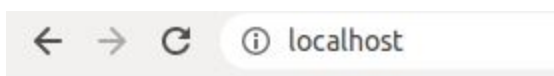
Add post build actions -> Build other projects.



When job fails, ENV is triggered:

Console Output

```
Started by user Arun Parmar
Running as SYSTEM
[EnvInject] - Loading node environment variables.
Building in workspace /var/lib/jenkins/workspace/Demo(ques4)
[Demo(ques4)] $ /bin/bash /tmp/jenkins17041334933319574985.sh
/tmp/jenkins17041334933319574985.sh: line 2: echoArun Parmar: command not found
Build step 'Execute shell' marked build as failure
Triggering a new build of Env
Finished: FAILURE
```



hi ENV1

- 5. Create a job which can set a cron job on another server. This server contains a script on its home directory and the script will print the two string parameters which will be given by the jenkins job.**

Launch an EC2 instance and ssh into it. Then Write a shell script in its home directory Also grant the script all permissions.

```
ubuntu@ip-10-0-0-75:~$ sudo vim newscript.sh
ubuntu@ip-10-0-0-75:~$ cat newscript.sh
#!/bin/bash
echo $1
echo $2
ubuntu@ip-10-0-0-75:~$
```

Now go to credentials and select SSH with a private key. Save the required details.

Jenkins > Credentials > System > Global credentials (unrestricted) > ubuntu

[Back to Global credentials \(unrestricted\)](#)

[Update](#)

[Delete](#)

[Move](#)

Scope: Global (Jenkins, nodes, items, all child items, etc) ?

ID: SSH_KEY ?

Description: ?

Username: ubuntu

Private Key: ☒ Enter directly

Key:

Concealed for Confidentiality [Replace](#)

Passphrase:

[Save](#)

Now add remote server details in system configuration.

SSH remote hosts

SSH sites

Hostname: 3.84.117.74 ?

SSH host to connect

Port: 22 ?

Credentials: ubuntu [Add](#)

Pty: ☐ ?

serverAliveInterval: ?

timeout: ?

Successfull connection

[Check connection](#)

[Delete](#)

[Add](#)

SSH sites that projects will want to connect

Now create a freestyle job with string parameters.

String Parameter

Namep1

Default Value

DescriptionEnter parameter 1

[Plain text] Preview

☐ Trim the string

String Parameter

Namep2

Default Value

DescriptionEnter parameter 2

[Plain text] Preview

☐ Trim the string

Apply

Go to build and execute shell on remote host using ssh..

Build

Execute shell script on remote host using ssh

SSH siteubuntu@3.84.117.74:22

Commandecho "***** /home/ubuntu/script.sh \$p1 \$p2 > /home/ubuntu/learn.txt " | sudo tee /var/spool/cron/crontabs/ubuntu
sudo chown -R ubuntu:ubuntu /var/spool/cron/crontabs/
crontab /var/spool/cron/crontabs/ubuntu

Execute each line☐

Hide command from console output☐

Start build with parameters.

Console Output

```
Started by user Arun Parmar
Running as SYSTEM
[EnvInject] - Loading node environment variables.
Building in workspace /var/lib/jenkins/workspace/cron_script
[SSH] script:
p1="tothe"
p2="newdigital"

echo " * * * * * /home/ubuntu/script.sh $p1 $p2 > /home/ubuntu/learn.txt " | sudo tee
/var/spool/cron/crontabs/ubuntu
sudo chown -R ubuntu:ubuntu /var/spool/cron/crontabs/
crontab /var/spool/cron/crontabs/ubuntu
```

Execute crontab -l to list the cronjob. Now check after one minute on the remote server

```
ubuntu@ip-10-0-0-75:~$ sudo chmod 777 newscript.sh
ubuntu@ip-10-0-0-75:~$ ./newscript.sh
tothe
newdigital
ubuntu@ip-10-0-0-75:~$
```

6. Create a job in which: Pull Dockerfile from GitHub, build it and push to Dockerhub. The docker image should have the tag: git commit id.

Dockerfile:

```
FROM ubuntu
RUN apt-get update -y
RUN apt-get -y install nginx
CMD ["echo", "Image Created"]
```

Push dockerfile to git repo.

Create a new job. Execute shell

Set SCM to git and execute shell:

Execute shell

Command

```
#!/bin/bash
pwd
ls
git checkout master
latest_commit_id=$(git log | git commit | head -1 | awk '{print $2}')
echo "$latest_commit_id"
echo -e "Building Dockerfile\n"
docker build -t commit id:${latest_commit_id} .
echo -e "Tagging Dockerfile\n"
docker tag commit id:${latest_commit_id} arunparmar16/sample:${latest_commit_id}
echo -e "Pushing Dockerfile\n"
docker push arunparmar16/sample:${latest_commit_id}
```

See [the list of available environment variables](#)

Advanced...

Add jenkins in the docker group and login docker in the jenkins user.

```
Authenticating with existing credentials...
WARNING! Your password will be stored unencrypted in /var/lib/jenkins/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
```

Once done, start the build and look for the image in dockerhub:

DIGEST	OS/ARCH	COMPRESSED SIZE ⓘ
e74c9c9c16a8	linux/amd64	69.9 MB

7. Host a static website on s3. Its static content should be in git repo. When a person commits any change in the repo, the job should automatically reflect the changes in the s3 website.

Install jenkins on EC2 server.

Create two files index.html and error.html and upload it to a new git repo.

error.html

Add files via upload

now

index.html

Add files via upload

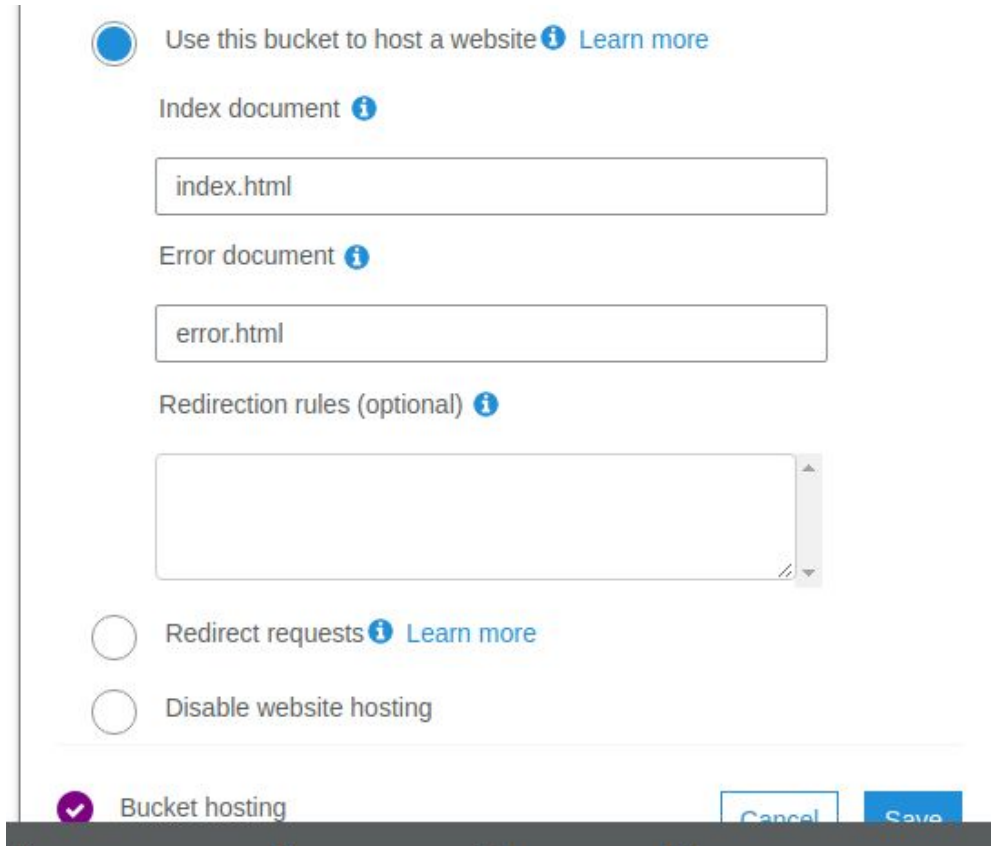
now

Help people interested in this repository understand your project by adding a README.

Add a README

Create a public s3 bucket and host a static website there. Make the objects public and enable static website hosting.

Static website hosting on:



The screenshot shows the 'Static website hosting' configuration page in the AWS S3 console. At the top, there is a radio button labeled 'Use this bucket to host a website' with an information icon and a 'Learn more' link. Below this, there are three input fields: 'Index document' with the value 'index.html', 'Error document' with the value 'error.html', and 'Redirection rules (optional)' which is currently empty. At the bottom, there are two radio buttons: 'Redirect requests' and 'Disable website hosting'. A purple checkmark icon is visible next to the 'Bucket hosting' label. At the bottom right, there are 'Cancel' and 'Save' buttons.

☒ Use this bucket to host a website [Learn more](#)

Index document [i](#)

index.html

Error document [i](#)

error.html

Redirection rules (optional) [i](#)

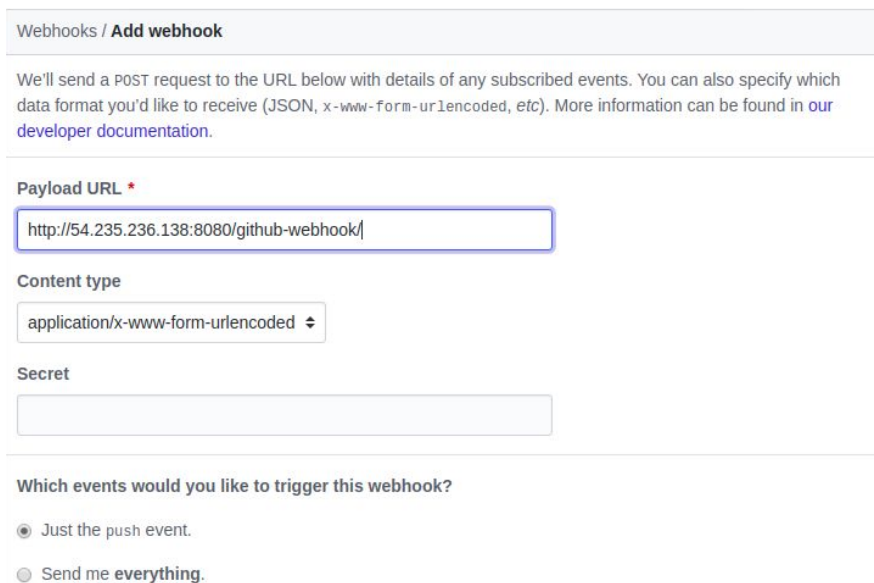
☐ Redirect requests [Learn more](#)

☐ Disable website hosting

☒ Bucket hosting

Cancel Save

Activate webhook in the newly created git repository.



The screenshot shows the 'Add webhook' configuration page in the GitHub interface. It includes a header 'Webhooks / Add webhook' and a descriptive paragraph about POST requests. The 'Payload URL' field is filled with 'http://54.235.236.138:8080/github-webhook/'. The 'Content type' dropdown is set to 'application/x-www-form-urlencoded'. There is an empty 'Secret' field. At the bottom, under 'Which events would you like to trigger this webhook?', the radio button for 'Just the push event.' is selected.

Webhooks / Add webhook

We'll send a POST request to the URL below with details of any subscribed events. You can also specify which data format you'd like to receive (JSON, x-www-form-urlencoded, etc). More information can be found in [our developer documentation](#).

Payload URL *

http://54.235.236.138:8080/github-webhook/

Content type

application/x-www-form-urlencoded

Secret

Which events would you like to trigger this webhook?

☒ Just the push event.

☐ Send me everything.

Webhooks

Add webhook

Webhooks allow external services to be notified when certain events happen. When the specified events happen, we'll send a POST request to each of the URLs you provide. Learn more in our [Webhooks Guide](#).

✓ <http://54.235.236.138:8080/github-webhook/> (push)

Edit

Delete

Create a jenkins job

Build

Execute shell

```
Command #!/bin/bash
aws s3 cp * s3://arun-bucket/
aws s3 sync . s3://arun-bucket/
```

See [the list of available environment variables](#)

Advanced...

Now make some changes in index.html and push it again to the git repository and check for the static website endpoint.

← → ↻ ⓘ Not secure | 35.174.6.223

This is my latest page