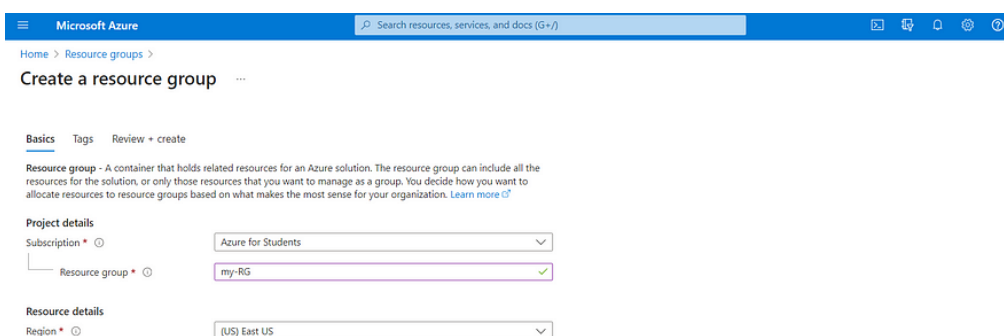
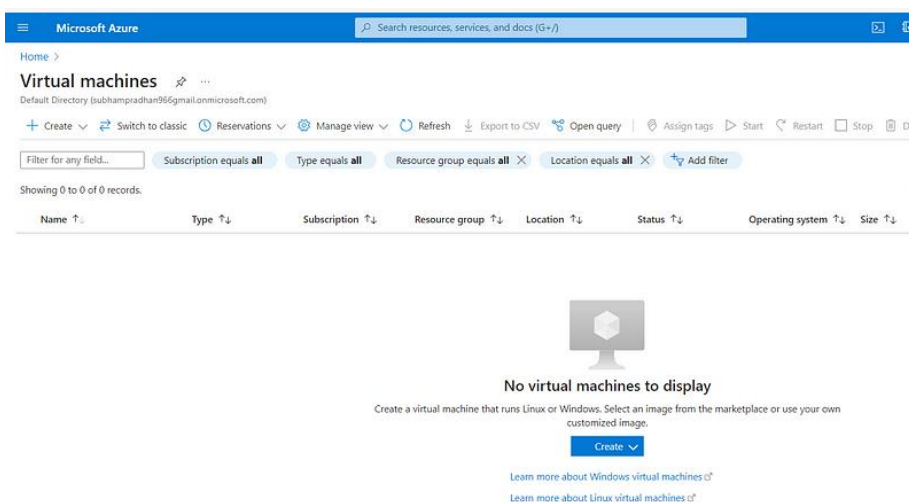


Install and configure Jenkins on Azure Linux VM

Step 1: To launch a virtual machine (VM) instance on Microsoft Azure, follow these steps:

1. Sign in to the Azure portal: Go to <https://portal.azure.com> and sign in with your Azure account.
2. Create a new virtual machine:
3. In the Azure portal's left-hand menu, click on "Create a resource".
4. In the search box, type "Virtual Machine" and press Enter.
5. Select "Virtual machine" from the search results.



Microsoft Azure

Search resources, services, and docs (G+)

[Home](#) > [Virtual machines](#) >

Create a virtual machine

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Azure for Students

Resource group *

my-RG

Create new

Instance details

Virtual machine name *

jenkin-VM

Region *

(US) East US

Availability options

No infrastructure redundancy required

Security type

Trusted launch virtual machines

[Configure security features](#)

Image *

Ubuntu Server 20.04 LTS - x64 Gen2

See all images | Configure VM generation

VM architecture

Arm64

☒ x64

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Create a virtual machine

Authentication type

Authentication type

☒ SSH public key

☐ Password

Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.

Username *

azureuser

SSH public key source

Generate new key pair

Key pair name *

jenkin-VM_key

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports *

None

☒ Allow selected ports

Generate new key pair

i An SSH key pair contains both a public key and a private key. **Azure doesn't store the private key.** After the SSH key resource is created, you won't be able to download the private key again. [Learn more](#)

Download private key and create resource

Return to create a virtual machine

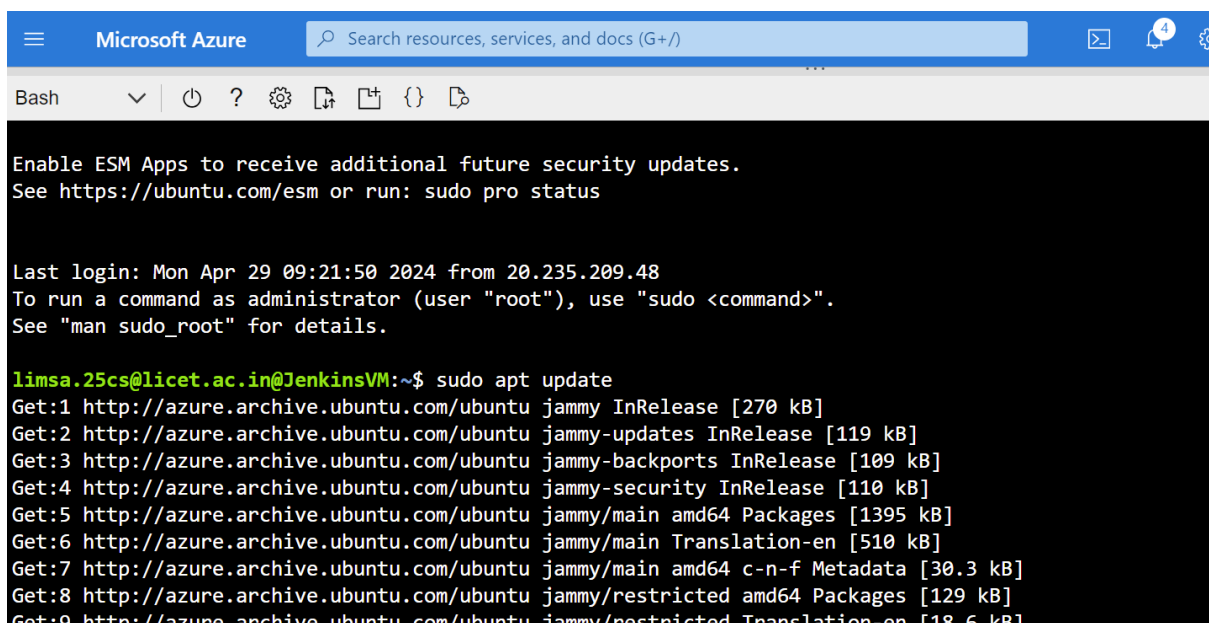
Step 2: Connect to the VM using SSH using Azure CLI and Install Jenkins.

Pre-Requisites: Java (JDK)

Run the below commands to install Java and Jenkins

Install Java

```
sudo apt update
```

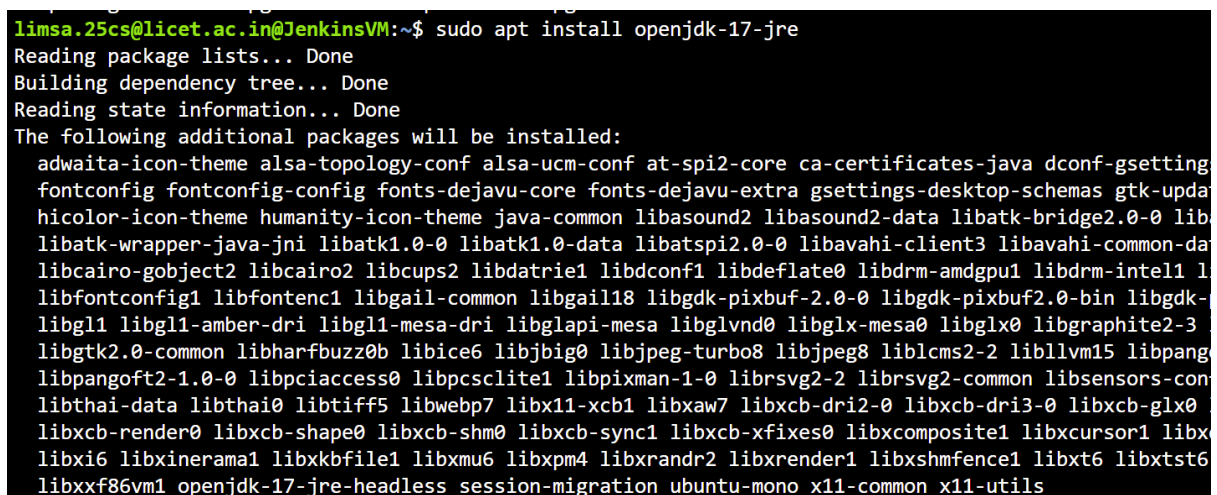


```
Microsoft Azure Search resources, services, and docs (G+/)
Bash
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Mon Apr 29 09:21:50 2024 from 20.235.209.48
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

limsa.25cs@licet.ac.in@JenkinsVM:~$ sudo apt update
Get:1 http://azure.archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
Get:2 http://azure.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://azure.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:4 http://azure.archive.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:5 http://azure.archive.ubuntu.com/ubuntu jammy/main amd64 Packages [1395 kB]
Get:6 http://azure.archive.ubuntu.com/ubuntu jammy/main Translation-en [510 kB]
Get:7 http://azure.archive.ubuntu.com/ubuntu jammy/main amd64 c-n-f Metadata [30.3 kB]
Get:8 http://azure.archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [129 kB]
Get:9 http://azure.archive.ubuntu.com/ubuntu jammy/restricted Translation-en [18.6 kB]
```

```
sudo apt install openjdk-17-jre
```



```
limsa.25cs@licet.ac.in@JenkinsVM:~$ sudo apt install openjdk-17-jre
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  adwaita-icon-theme alsa-topology-conf alsa-ucm-conf at-spi2-core ca-certificates-java dconf-gsetting
  fontconfig fontconfig-config fonts-dejavu-core fonts-dejavu-extra gsettings-desktop-schemas gtk-updat
  hicolor-icon-theme humanity-icon-theme java-common libasound2 libasound2-data libatk-bridge2.0-0 lib
  libatk-wrapper-java-jni libatk1.0-0 libatk1.0-data libatspi2.0-0 libavahi-client3 libavahi-common-da
  libcairo-gobject2 libcairo2 libcups2 libdatatr1 libdconf1 libdeflate0 libdrm-amdgpu1 libdrm-intel1 l
  libfontconfig1 libfontenc1 libgail-common libgail18 libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin libgdk-
  libgl1 libgl1-amd64 libgl1-mesa-dri libglapi-mesa libglvnd0 libglx-mesa0 libglx0 libgraphite2-3
  libgtk2.0-common libharfbuzz0b libice6 libjbig0 libjpeg-turbo8 libjpeg8 liblcms2-2 libllvm15 libpang
  libpangoft2-1.0-0 libpciaccess0 libpcsc-lite1 libpixmap-1-0 librsvg2-2 librsvg2-common libsensors-con
  libthai-data libthai0 libtiff5 libwebp7 libx11-xcb1 libxaw7 libxcb-dri2-0 libxcb-dri3-0 libxcb-glx0
  libxcb-render0 libxcb-shape0 libxcb-shm0 libxcb-sync1 libxcb-xfixes0 libxcomposite1 libxcursor1 libx
  libxi6 libxinerama1 libxkbfile1 libxmu6 libxpm4 libxrandr2 libxrender1 libxshmfence1 libxt6 libxtst6
  libxxf86vm1 openjdk-17-jre-headless session-migration ubuntu-mono x11-common x11-utils
```

```
limsa.25cs@licet.ac.in@JenkinsVM:~$ java -version
openjdk version "17.0.10" 2024-01-16
OpenJDK Runtime Environment (build 17.0.10+7-Ubuntu-122.04.1)
OpenJDK 64-Bit Server VM (build 17.0.10+7-Ubuntu-122.04.1, mixed mode, sharing)
```

Install Jenkins

```
curl -fsSL
```

```
https://pkg.jenkins.io/debian/jenkins.io-2023.key | sudo tee \
```

```
  /usr/share/keyrings/jenkins-keyring.asc > /dev/null
```

```
echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \
```

```
  https://pkg.jenkins.io/debian binary/ | sudo tee \
```

```
  /etc/apt/sources.list.d/jenkins.list > /dev/null
```

```
limsa.25cs@licet.ac.in@JenkinsVM:~$ curl -fsSL https://pkg.jenkins.io/debian/jenkins.io-2023.key | sudo tee /usr/share/keyrings-jenkins-keyring.asc > /dev/null
limsa.25cs@licet.ac.in@JenkinsVM:~$ echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] https://pkg.jenkins.io/debian binary/ | sudo tee /etc/apt/sources.list.d/jenkins.list > /dev/null
limsa.25cs@licet.ac.in@JenkinsVM:~$ sudo apt-get update
Hit:1 http://azure.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://azure.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://azure.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://azure.archive.ubuntu.com/ubuntu jammy-security InRelease
Ign:5 https://pkg.jenkins.io/debian binary/ InRelease
Get:6 https://pkg.jenkins.io/debian binary/ Release [2044 B]
Get:7 https://pkg.jenkins.io/debian binary/ Release.gpg [833 B]
Get:8 https://pkg.jenkins.io/debian binary/ Packages [61.5 kB]
Get:9 https://packages.microsoft.com/repos/microsoft-ubuntu-jammy-prod jammy InRelease [3632 B]
Fetched 68.0 kB in 1s (71.4 kB/s)
Reading package lists... Done
```

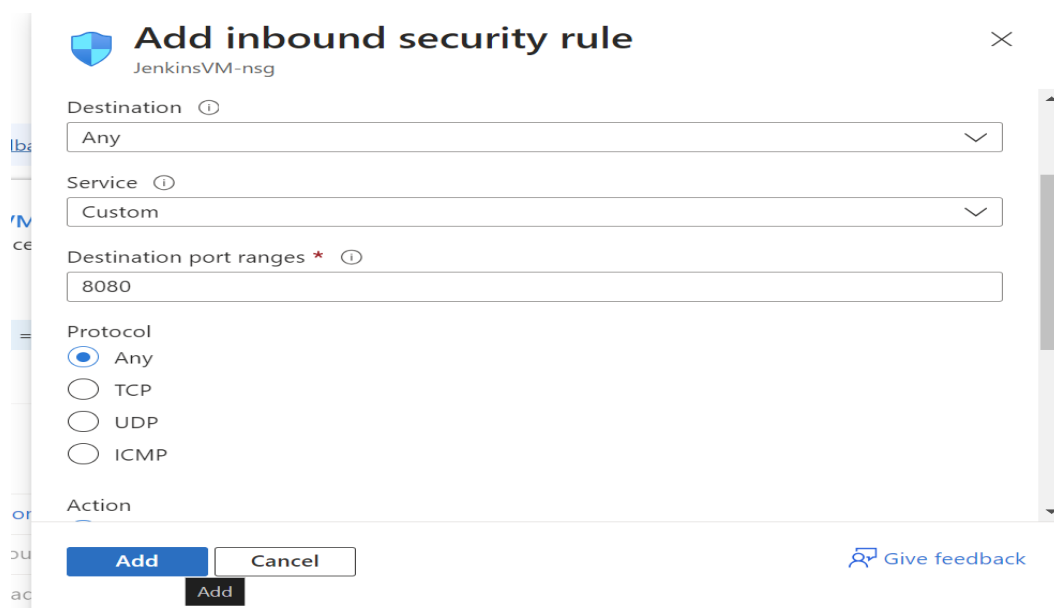
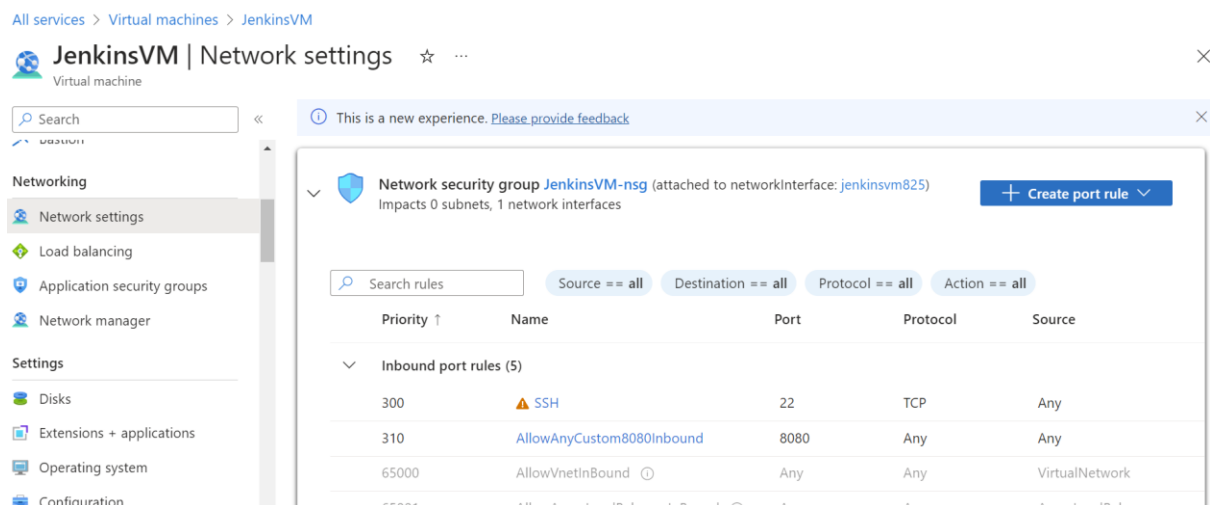
```
sudo apt-get update
```

```
sudo apt-get install Jenkins
```

```
limsa.25cs@licet.ac.in@JenkinsVM:~$ sudo apt-get install jenkins
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  net-tools
The following NEW packages will be installed:
  jenkins net-tools
0 upgraded, 2 newly installed, 0 to remove and 37 not upgraded.
Need to get 91.5 MB of archives.
After this operation, 94.2 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://azure.archive.ubuntu.com/ubuntu jammy/main amd64 net-tools amd64 1.60+git20181103.0eebece-1ubuntu5 [204 kB]
Get:2 https://pkg.jenkins.io/debian binary/ jenkins 2.455 [91.3 MB]
Fetched 91.5 MB in 8s (11.9 MB/s)
Selecting previously unselected package net-tools.
(Reading database ... 77655 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20181103.0eebece-1ubuntu5_amd64.deb ...
Unpacking net-tools (1.60+git20181103.0eebece-1ubuntu5) ...
Selecting previously unselected package jenkins.
Preparing to unpack .../archives/jenkins_2.455_all.deb ...
Unpacking jenkins (2.455) ...
```

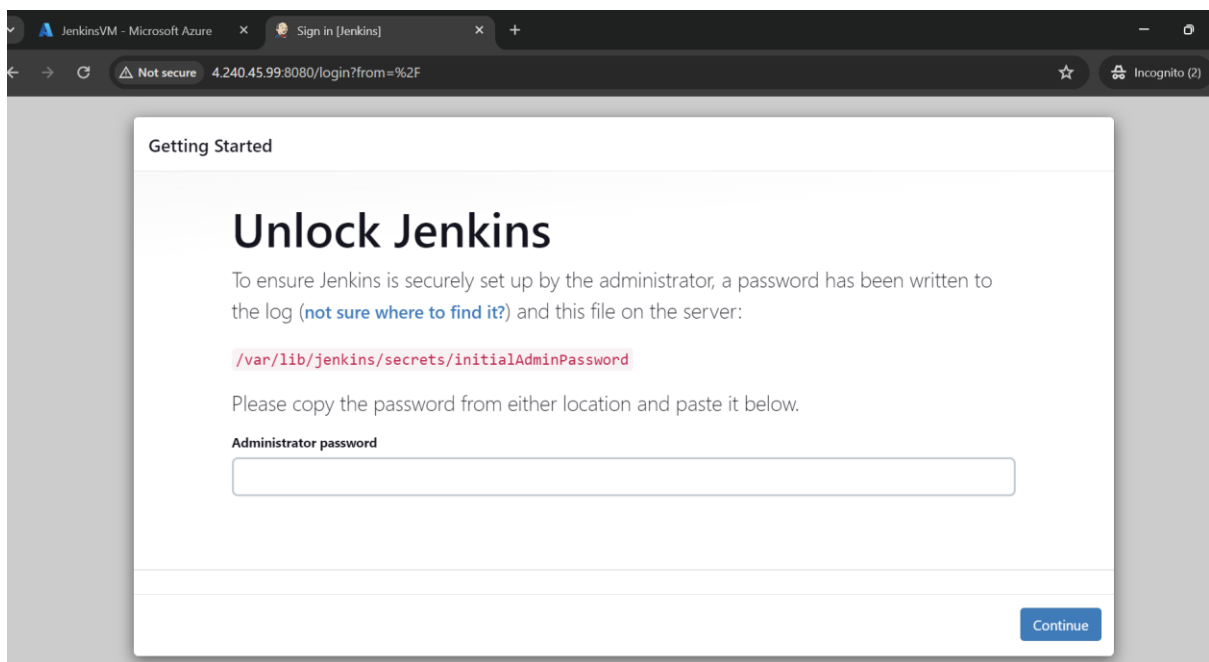
By default, Jenkins will not be accessible to the external world due to the inbound traffic restriction by Azure. Open port 8080 in the inbound traffic rules as show below.

- Add inbound security rule
- Add inbound traffic rules as shown in the image (you can just allow 8080 as well, in my case, I allowed **All traffic**).



Step 3: Login to Jenkins using the below URL and configure Jenkins

<http://VM-public-ip/:8080> [You can get the VM-public-ip-address from your Azure console page]



```
Microsoft Azure Search resources, services, and docs (G+/)
Bash
limsa.25cs@licet.ac.in@JenkinsVM:~$ cat /var/lib/jenkins/secrets/initialAdminPassword
cat: /var/lib/jenkins/secrets/initialAdminPassword: Permission denied
limsa.25cs@licet.ac.in@JenkinsVM:~$ sudo -i
root@JenkinsVM:~# cat /var/lib/jenkins/secrets/initialAdminPassword
dd625c822a414529904723276fa7f323
root@JenkinsVM:~#
```

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

Continue

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.

Getting Started

Getting Started

✓ Folders	Formatter			Git
✓ Timestampers	✓ Workspace Cleanup	✓ Ant	✓ Gradle	** GitHub
✓ Pipeline	✓ GitHub Branch Source	✓ Pipeline: GitHub Groovy Libraries	✓ Pipeline: Stage View	GitHub Branch Source
✓ Git	✓ SSH Build Agents	✓ Matrix Authorization Strategy	✓ PAM Authentication	Pipeline: GitHub Groovy Libraries
✓ LDAP	✓ Email Extension	✓ Mailer		** Pipeline Graph Analysis
				** Pipeline: REST API
				Pipeline: Stage View
				Git
				SSH Build Agents
				Matrix Authorization Strategy
				PAM Authentication
				LDAP
				Email Extension
				Mailer

Getting Started

Create First Admin User

Username

Password

Confirm password

Jenkins 2.455

[Skip and continue as admin](#)

[Save and Continue](#)

Full name

E-mail address

:455

[Skip and continue as admin](#)

[Save and Continue](#)

Getting Started

Instance Configuration

Jenkins URL:

The Jenkins URL is used to provide the root URL for absolute links to various Jenkins resources. That means this value is required for proper operation of many Jenkins features including email notifications, PR status updates, and the `BUILD_URL` environment variable provided to build steps.

The proposed default value shown is **not saved yet** and is generated from the current request, if possible. The best practice is to set this value to the URL that users are expected to use. This will avoid confusion when sharing or viewing links.

Jenkins 2.455

[Not now](#)

[Save and Finish](#)

Getting Started

Jenkins is ready!

Your Jenkins setup is complete.

[Start using Jenkins](#)

Jenkins 2.455