

Nexus Lab Nexus Installation and Usage

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Step 1 Run Nexus Docker Instance

1/ Create a folder called `nexus-data` in your current working directory,

Commands:

```
docker run -d -p 8081:8081 --name nexus \
-v nexus-data:/nexus-data \
sonatype/nexus3
```

The screenshot shows a terminal window with two panes. The left pane displays the command being run:

```
kevin@kevin-lt:~$ docker run -d -p 8081:8081 --name nexus \
> -v nexus-data:/nexus-data \
> sonatype/nexus3
```

The right pane shows the log output from the Nexus container:

```
kevin@kevin-lt:~$ 
kevin@kevin-lt:~$ internal system market watcher Grok ChatGPT DeepSeek (10) Feed | Lin... Go to Commands Used
• sudo usermod -aG docker $USER
• newgrp docker

Commands Explained
• (sudo usermod -aG docker $USER) adds your user to the docker group so you can run Docker commands without root privileges.
• (newgrp docker) applies the group change in your current terminal session immediately. Otherwise, you'd have to log out and log back in.

Step 3: Run Nexus Container
kevin@kevin-lt:~$ docker run -d -p 8081:8081 --name nexus \
> -v nexus-data:/nexus-data \
> sonatype/nexus3

(This runs Nexus in a container and stores data in a persistent Docker volume nexus-data)

Commands Explained
• docker run: Tells Docker to start a new container.
• -d: Detached mode — runs in the background.
• -p 8081:8081: Maps port 8081 on your machine to port 8081 inside the container. This is how you access the Nexus interface.
• --name nexus: Names your container "nexus" so you can refer to it easily later.
• -v nexus-data:/nexus-data: Creates and mounts a Docker volume named nexus-data to persist Nexus data (like configuration, repos, etc.) even if the container is deleted.
```

The log output shows the container starting up and various tasks running, including Quartz Task Info and Repository Health Checks.

Commands:

```
docker logs -f 3cedcd8a1a28e153695bfd553cc37c4464f73b2912ea5af9218b8a59b91eba9c &
```

Explanation:

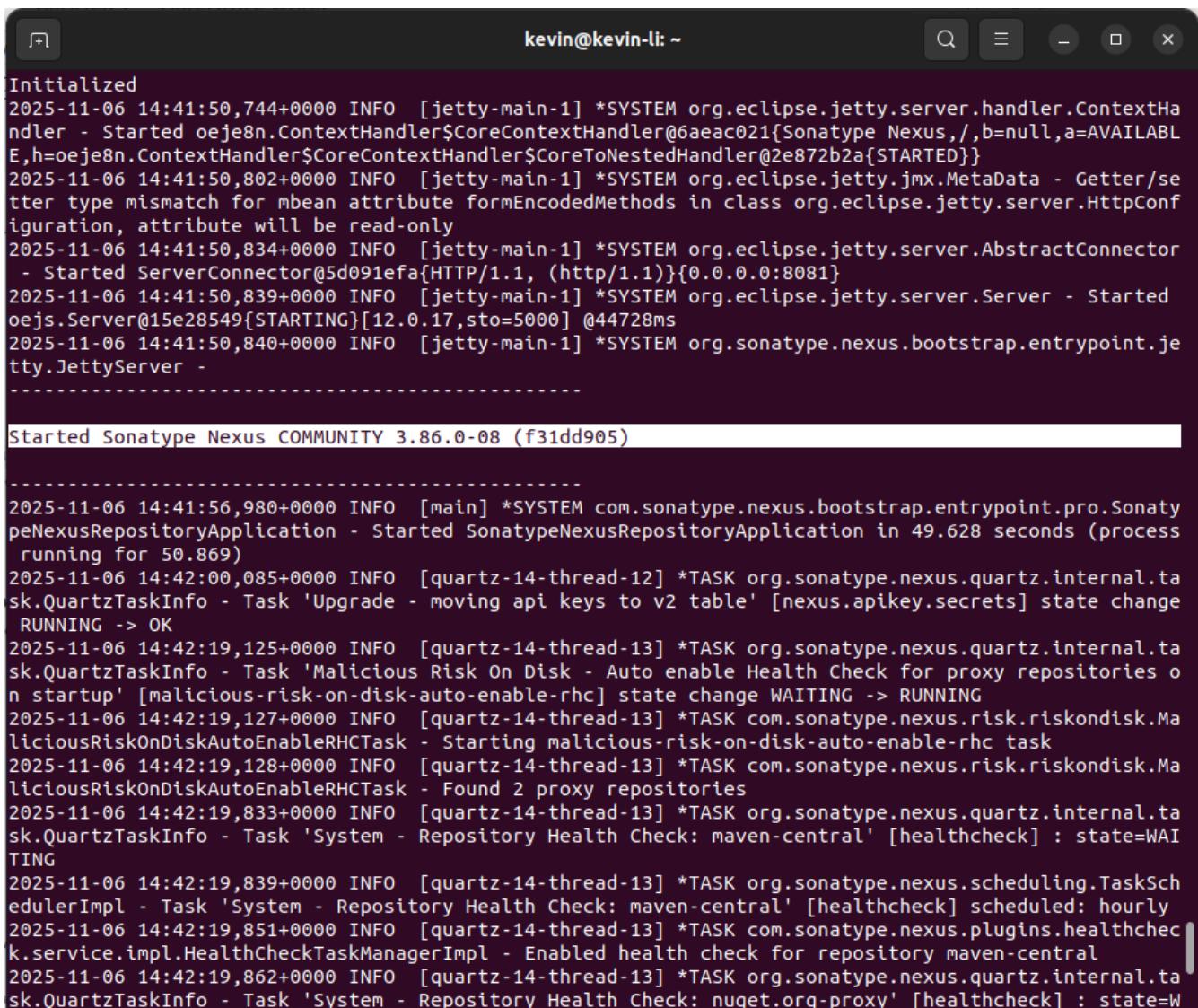
* The hash id `3cedcd8a1a28e153695bfd553cc37c4464f73b2912ea5af9218b8a59b91eba9c` is your container, please replace it and do not use this.

* `&` in the end is to release the terminal back to you. As it was run as a background job.
* `-f` is to output the log in realtime mode.

You can see in the bottom, if you hit enter, you can get your terminal back. This terminal process would not be hung there since the 'docker logs -f ...' process is running in the background.

```
2025-11-06 14:42:36,652+0000 INFO [quartz-14-thread-16] *TASK org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'System - Repository Health Check: maven-central' [healthcheck] state change WAITING -> RUNNING
2025-11-06 14:42:37,449+0000 INFO [quartz-14-thread-16] *TASK com.sonatype.nexus.plugins.healthcheck.task.HealthCheckTask - Received health check report for repository maven-central
2025-11-06 14:42:37,462+0000 INFO [quartz-14-thread-16] *TASK org.sonatype.nexus.scheduling.TaskSchedulerImpl - Task 'System - Repository Health Check: maven-central' [healthcheck] scheduled: hourly
2025-11-06 14:42:37,474+0000 INFO [quartz-14-thread-16] *TASK org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'System - Repository Health Check: maven-central' [healthcheck] state change RUNNING -> WAITING (OK)
2025-11-06 14:42:38,033+0000 INFO [quartz-14-thread-17] *TASK org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'System - Repository Health Check: nuget.org-proxy' [healthcheck] state change WAITING -> RUNNING
2025-11-06 14:42:38,944+0000 INFO [quartz-14-thread-17] *TASK com.sonatype.nexus.plugins.healthcheck.task.HealthCheckTask - Received health check report for repository nuget.org-proxy
2025-11-06 14:42:38,951+0000 INFO [quartz-14-thread-17] *TASK org.sonatype.nexus.scheduling.TaskSchedulerImpl - Task 'System - Repository Health Check: nuget.org-proxy' [healthcheck] scheduled: hourly
2025-11-06 14:42:38,952+0000 INFO [quartz-14-thread-17] *TASK org.sonatype.nexus.quartz.internal.task.QuartzTaskInfo - Task 'System - Repository Health Check: nuget.org-proxy' [healthcheck] state change RUNNING -> WAITING (OK)
kevin@kevin-li:~
```

Now in the log window, please scroll up and you should see a line like the one below.



The screenshot shows a terminal window with the title bar "kevin@kevin-li: ~". The log output is as follows:

```
Initialized
2025-11-06 14:41:50,744+0000 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.server.handler.ContextHandler - Started oeje8n.ContextHandler$CoreContextHandler@6aeac021{Sonatype Nexus,/,b=null,a=AVAILABLE,h=oeje8n.ContextHandler$CoreContextHandler$CoreToNestedHandler@2e872b2a[STARTED]}
2025-11-06 14:41:50,802+0000 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.jmx.MetaData - Getter/se
tter type mismatch for mbean attribute formEncodedMethods in class org.eclipse.jetty.server.HttpConfig
uration, attribute will be read-only
2025-11-06 14:41:50,834+0000 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.server.AbstractConnector
- Started ServerConnector@5d091efa[HTTP/1.1, (http/1.1)]{0.0.0.0:8081}
2025-11-06 14:41:50,839+0000 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.server.Server - Started
oejs.Server@15e28549[STARTING][12.0.17,sto=5000] @44728ms
2025-11-06 14:41:50,840+0000 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.bootstrap.entrypoint.je
tty.JettyServer -
-----
Started Sonatype Nexus COMMUNITY 3.86.0-08 (f31dd905)
-----
2025-11-06 14:41:56,980+0000 INFO [main] *SYSTEM com.sonatype.nexus.bootstrap.entrypoint.pro.Sonaty
peNexusRepositoryApplication - Started SonatypeNexusRepositoryApplication in 49.628 seconds (process
running for 50.869)
2025-11-06 14:42:00,085+0000 INFO [quartz-14-thread-12] *TASK org.sonatype.nexus.quartz.internal.ta
sk.QuartzTaskInfo - Task 'Upgrade - moving api keys to v2 table' [nexus.apikey.secrets] state change
RUNNING -> OK
2025-11-06 14:42:19,125+0000 INFO [quartz-14-thread-13] *TASK org.sonatype.nexus.quartz.internal.ta
sk.QuartzTaskInfo - Task 'Malicious Risk On Disk - Auto enable Health Check for proxy repositories o
n startup' [malicious-risk-on-disk-auto-enable-rhc] state change WAITING -> RUNNING
2025-11-06 14:42:19,127+0000 INFO [quartz-14-thread-13] *TASK com.sonatype.nexus.risk.riskondisk.Mal
iciousRiskOnDiskAutoEnableRHCTask - Starting malicious-risk-on-disk-auto-enable-rhc task
2025-11-06 14:42:19,128+0000 INFO [quartz-14-thread-13] *TASK com.sonatype.nexus.risk.riskondisk.Mal
iciousRiskOnDiskAutoEnableRHCTask - Found 2 proxy repositories
2025-11-06 14:42:19,833+0000 INFO [quartz-14-thread-13] *TASK org.sonatype.nexus.quartz.internal.ta
sk.QuartzTaskInfo - Task 'System - Repository Health Check: maven-central' [healthcheck] : state=WAI
TING
2025-11-06 14:42:19,839+0000 INFO [quartz-14-thread-13] *TASK org.sonatype.nexus.scheduling.TaskSch
edulerImpl - Task 'System - Repository Health Check: maven-central' [healthcheck] scheduled: hourly
2025-11-06 14:42:19,851+0000 INFO [quartz-14-thread-13] *TASK com.sonatype.nexus.plugins.healthche
ck.service.impl.HealthCheckTaskManagerImpl - Enabled health check for repository maven-central
2025-11-06 14:42:19,862+0000 INFO [quartz-14-thread-13] *TASK org.sonatype.nexus.quartz.internal.ta
sk.QuartzTaskInfo - Task 'System - Repository Health Check: nuget.org-proxy' [healthcheck] : state=W
```

What it shows is the version and the nexus instance has been run successfully.

Step 2: Get password and Login

Next, let us get the password,

Commands:

```
docker exec -it nexus cat /nexus-data/admin.password
```

```
sk.QuartzTaskInfo - Task 'System - Repository Health Check: nuget.org-proxy' [healthcheck] state change RUNNING -> WAITING (OK)
kevin@kevin-li:~$ docker exec -it nexus cat /nexus-data/admin.password
83952577-6b16-42ec-ac03-43f711834b48kevin@kevin-li:~$ █
```

Go to your browser and open this url,

localhost:8081

For me the password is:

83952577-6b16-42ec-ac03-43f711834b48

Note: For you, the password might be different.

The screenshot shows the Sonatype Nexus Repository Manager interface. At the top, there's a search bar with 'admin' and a user sign-in message 'User signed in: admin'. The left sidebar has links for Dashboard, Search, Browse, Upload, and Settings. The main area is titled 'Usage Center' with a green status indicator 'Usage below limits'. It says 'Monitor this instance's usage to ensure your deployment is appropriate for your needs.' Below this is 'Usage Metrics Overview' with a welcome message: 'Welcome to Sonatype Nexus Repository Manager. This wizard will guide you through setup tasks to get started.' It displays current and highest values of 0. To the right, there's a 'Next' button and a link to 'Browse my repositories'. At the bottom, there's a 'Notification Center' with a message 'You have 1 notification to review'.

Change password for the first time.

This screenshot shows the same dashboard as above, but the central wizard window is now prompting for a password. It asks 'Please choose a password for the admin user'. There are fields for 'New password:' and 'Confirm password:', both containing masked text. A tooltip for 'Confirm password:' says 'This field is required'. Below the fields is a 'Manage passwords...' button. The 'Back' and 'Next' buttons are at the bottom of the wizard window. The rest of the interface remains the same, including the 'Usage Center' and 'Notification Center' sections.

Next screen,

The screenshot shows the Sonatype Nexus Repository interface. On the left, there's a sidebar with options like Dashboard, Search, Browse, Upload, and Settings. The main area is titled "Usage Center" with a green status indicator "Usage below limits". It says "Monitor this instance's usage to ensure your deployment is appropriate for your needs." Below this is a "Usage Metrics Overview" section. A central modal window is open, titled "Agree End User License Agreement". It contains the text: "END USER LICENSE AGREEMENT PLEASE READ THIS AGREEMENT CAREFULLY". It explains the terms of the agreement between Sonatype and the user. At the bottom of the modal, there's a note: "By clicking 'Agree', you acknowledge that you have read and agree to the End User License Agreement." There are "Back" and "Agree" buttons. To the right of the modal, there's a progress bar showing "4 of 6" and a section titled "Logs Per Month" with a November entry. At the bottom, there's a "Browse my repositories" link.

Select the first option,

This screenshot shows the same Sonatype Nexus Repository interface. The main area is titled "Usage Center" with a green status indicator. It includes a "Usage Metrics Overview" section and a "Logs Per Month" section. A central modal window is open, titled "Configure Anonymous Access". It explains that enabling anonymous access allows users to search, browse, and download components without credentials. It also notes that disabling it requires credentials for all users. Below this, there's a "More information" section with two radio buttons: "Enable anonymous access" (selected) and "Disable anonymous access". There are "Back" and "Next" buttons at the bottom of the modal. To the right, there's a progress bar showing "5 of 6" and a "Browse my repositories" link.

As of now, we would choose “Enable anonymous access”,

The screenshot shows the Sonatype Nexus Repository interface during the setup process. On the left, a sidebar menu includes 'Dashboard', 'Search', 'Browse', 'Upload', and 'Settings'. A 'Collapse Menu' button is at the bottom. The main area is titled 'Usage Center' with a green status indicator 'Usage below limits'. Below it is 'Usage Metrics Overview'. A central modal window is titled 'Configure Anonymous Access' and displays the following text:

Enable anonymous access means that by default, users can search, browse and download components from repositories without credentials. Please **consider the security implications for your organization**.

Disable anonymous access should be chosen with care, as it **will require credentials for all** users and/or build tools.

More information

Enable anonymous access
 Disable anonymous access

At the bottom of the modal are 'Back' and 'Next' buttons. To the right of the modal, there are sections for 'Downloads Per Month', 'November', 'Downloads (12 months)', and 'Download count (12 months)'. At the bottom right of the main area is a 'Browse my repositories' link. A notification bar at the bottom right says 'You have 1 notification to review'.

For our future lab we will just work with this option.

The screenshot shows the Sonatype Nexus Repository interface after the setup process has completed. The sidebar and main layout are identical to the previous screenshot. The central modal window is now titled 'Setup Complete' and contains the following text:

Your instance is now ready to use. Explore Sonatype Nexus Repository to unlock its full potential.

At the bottom of the modal are 'Finish' and 'Browse my repositories' buttons. The right side of the screen shows the same metrics and notification bar as the previous screenshot.

The screenshot shows the Sonatype Nexus Repository interface. On the left, there's a sidebar with links for Dashboard, Search, Browse, Upload, and Settings. The main area is titled "Usage Center" with a green status indicator "Usage below limits". It includes a "Usage Metrics Overview" section with three cards: "Total Components" (0 Current, 100,000 Usage Limit), "Requests Per Day" (0 Last 24 hours, 200,000 Usage Limit), and "Requests Per Month" (0 Total requests in November, 0 Average requests (12 months), 0 Highest recorded count (12 months)). Below this are links for "System Health", "Cleanup Policies", and "Browse". A "Notification Center" section indicates 1 notification to review.

Step 3 Upload Artifact

First let us click on browse,

The screenshot shows the "Browse" page of the Sonatype Nexus Repository. The sidebar has links for Dashboard, Search, Browse (which is selected and highlighted in green), Upload, and Settings. The main content area is titled "Browse" and displays a table of repositories. The columns are Name (sorted by name), Type, Format, Status, URL, Health check, Firewall Re..., and a copy button. The repositories listed are: maven-central (proxy, maven2, Online - Ready to Connect), maven-public (group, maven2, Online), maven-releases (hosted, maven2, Online), maven-snapshots (hosted, maven2, Online), nugget-group (group, nuget, Online), nugget-hosted (hosted, nuget, Online), and nugget.org-proxy (proxy, nuget, Online - Ready to Connect).

Then click on maven-central,

sonatype nexus repository
Community Edition

Dashboard

Search

Browse

Upload

Settings

Collapse Menu

Browse

Name ↑	Type	Format	Status	URL	Health check	Firewall Re...
maven-central	proxy	maven2	Online - Ready to Connect	copy	0 0	
maven-public	group	maven2	Online	copy		
maven-releases	hosted	maven2	Online	copy		
maven-snapshots	hosted	maven2	Online	copy		
nuget-group	group	nuget	Online	copy		
nuget-hosted	hosted	nuget	Online	copy		
nuget.org-proxy	proxy	nuget	Online - Ready to Connect	copy	0 0	

Remember the <https://mvnrepository.com/>. That is similar to this.

Then let us go to upload an artifact,

sonatype nexus repository
Community Edition

Dashboard

Search

Browse

Upload

Settings

Collapse Menu

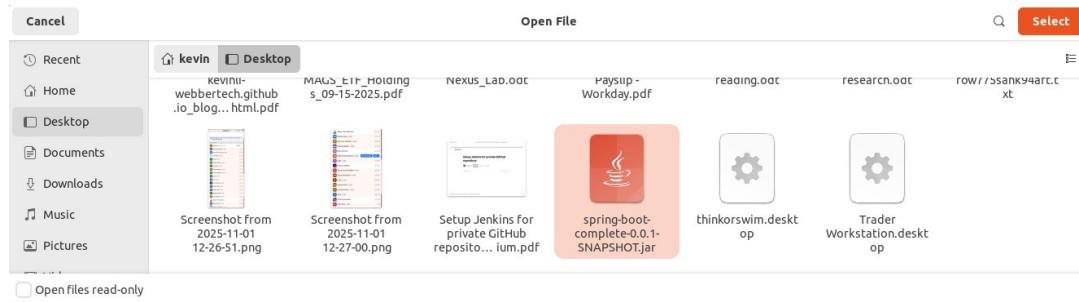
Upload

Upload content to the hosted repository

NAME ↑	FORMAT ↓	URL
maven-releases	maven2	>
nuget-hosted	nuget	>

Let us click on maven-releases, and you will see the following screen,

Pick a jar you built,



You will find out that the jar is uploaded and the Extension.

The screenshot shows the Sonatype Nexus Repository interface. In the top left, it says "sonatype nexus repository Community Edition". A search bar at the top right contains the placeholder "Search components". On the left, there's a sidebar with icons for Home, Search, and Upload. The main area has a title "Choose Assets/Components for maven-releases Repository". It shows a file upload section where "spring-boot-complete-0.0.1-SNAPSHOT.jar" has been selected. Below this, there are fields for "Classifier" (set to "") and "Extension" (set to "jar"). A button "+ Add another asset" is visible. Under "Component coordinates", there are fields for "Group ID" (empty), "Artifact ID" (empty), and "Version" (empty). A right-pointing arrow icon is located next to the version field.

For the fields,

This screenshot shows the same Sonatype Nexus Repository interface as the previous one, but with different values entered. The "Group ID" field now contains "abc", the "Artifact ID" field contains "abc.def", and the "Version" field contains "1.0". The "Generate a POM file with these coordinates" checkbox is unchecked. The "Packaging" field is empty. The right-pointing arrow icon is still present.

Click on the jar,

This screenshot shows the Sonatype Nexus Repository interface after a search. The search bar at the top left contains the keyword "/abc/abc.def/1.0/abc.def-1.0.jar". The search results table shows one entry: "abc.def" under "Name", "abc" under "Group", "11/6/2025, 11:44:45 AM" under "Last Updated", "1.0" under "Version", "maven2" under "Format", and "maven-releases" under "Repository". To the right of the table, a green box with a checkmark says "The form was saved successfully". The left sidebar includes a "Search" icon and a "More criteria" dropdown.

The screenshot shows the Sonatype Nexus Repository search interface at localhost:8081/#browse/search/generic=keyword%3D%2Fabc%2Fabc.def%2F1.0%2Fabc.def-1.0.jar. The search bar contains "abc.def". The results list shows several artifacts under the group "abc" and version "1.0":

- /abc/abc.def/1.0/abc.def-1.0.jar
- /abc/abc.def/1.0/abc.def-1.0.jar.md5
- /abc/abc.def/1.0/abc.def-1.0.jar.sha1
- /abc/abc.def/1.0/abc.def-1.0.jar.sha256
- /abc/abc.def/1.0/abc.def-1.0.jar.sha512

Click on the above jar,

The screenshot shows the Sonatype Nexus Repository asset details page for the artifact [/abc/abc.def/1.0/abc.def-1.0.jar](http://localhost:8081/#browse/search/generic=keyword%3D%2Fabc%2Fabc.def%2F1.0%2Fabc.def-1.0.jar). The summary tab is selected, displaying the following information:

Path	abc/abc.def/1.0/abc.def-1.0.jar
Content type	application/java-archive
File size	21.8 MB
Blob created	Thu Nov 06 2025 11:44:45 GMT-0500 (Eastern Standard Time)
Blob updated	Thu Nov 06 2025 11:44:45 GMT-0500 (Eastern Standard Time)
Last downloaded	has not been downloaded
Locally cached	true
Blob reference	default@c91ad4fa-5097-4d6e-9cba-5fe91cf0be44@2025-11-06T16:44
Containing repo	maven-releases
Uploader	admin
Uploader's IP Address	172.17.0.1

This is how it looks,

The screenshot shows a web browser window with the URL `localhost:8081/#browse/search/generic=keyword%3D%2Fabc%2Fabc.def%2F1.0%2Fabc.def-1.0.jar:maven2-4f1bbcdd:4f1bbcdd`. The page is titled "sonatype nexus repository Community Edition". The main content area displays a dependency entry for "abc.def". The "Usage" tab is selected, showing the Maven snippet:

```
<dependency>
  <groupId>abc</groupId>
  <artifactId>abc.def</artifactId>
  <version>1.0</version>
</dependency>
```