

New issue

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Installing .NET 6 on Ubuntu 22.04 (Jammy) #7699



richlander opened this issue on Aug 10 · 50 comments

richlander commented on Aug 10 • edited ▾

Installing .NET 6 on Ubuntu 22.04 (Jammy)

We announced support for .NET 6 on Ubuntu 22.04 with our [May 2022 Updates](#). At that time, the [supported installation methods](#) were manual installation via a tarball or a `.deb` package via `packages.microsoft.com` (PMC). .NET 6 is now available natively via Jammy feeds, which can cause conflicts with PMC feeds. You need to apply the following guidance to install .NET 6 reliably and correctly on Ubuntu 22.04+.

More information will be shared shortly on .NET 6 being available natively in the `jammy-updates` feed. In general, we recommend that you use the native packages from this feed since it is much easier and simpler.

You can use one of the following scenarios:

- The first two scenarios assume a clean machine. You want .NET 6 packages and haven't installed them before.
- The second two scenarios assume your machine is in a mixed-state, that you've installed .NET 6 packages before and don't have the ones you want or are in a bad state.

Related:

- [Installing Powershell and .NET 6 on Ubuntu 22.04 \(Jammy\)](#) #7713

Clean machine scenario 1: Use .NET 6 Package via Jammy feed

The easiest approach is to use the .NET 6 package available in Jammy feeds. In this scenario, just install `dotnet6` and don't register the PMC feed.

You can do that via the following commands:

```
sudo apt update && sudo apt -y install dotnet6
```

You can see this demonstrated with Docker:

```
$ docker run --rm -it ubuntu:jammy
root@4c9d58f507a3:/# apt update && apt install -y dotnet6
root@444999ffd672:/# dotnet --version
6.0.108
```

Note: This build of .NET 6 is for the `6.0.1xx` band. `6.0.4xx` builds are available via PMC. That difference matters most to Windows users. Both builds are supported.

Clean machine scenario 2: Use .NET 6 Package via PMC

You can install .NET 6 on Ubuntu 22.04 from `packages.microsoft.com` using the following steps:

```
wget https://packages.microsoft.com/config/ubuntu/22.04/packages-microsoft-prod.deb -O
packages-microsoft-prod.deb
sudo dpkg -i packages-microsoft-prod.deb
rm packages-microsoft-prod.deb
```

Configure apt preferences, to prioritize PMC repository, by creating the following file:

```
/etc/apt/preferences
```

To create the file:

```
sudo touch /etc/apt/preferences
```

with contents:

```
Package: *
Pin: origin "packages.microsoft.com"
Pin-Priority: 1001
```

Update your APT information:

```
sudo apt update
```

Install .NET SDK 6.0:

```
sudo apt install dotnet-sdk-6.0
```

Mixed state scenario 1: Use native Jammy packages after installing a previous .NET release from PMC

You may want to switch to using the .NET 6 package available in Jammy after [installing .NET 6 from PMC](#).

Do the following:

1. Remove all .NET packages

```
sudo apt remove dotnet*
```

```
sudo apt remove aspnetcore*
```

2. Delete PMC repository from APT, using any of the typical methods, for instance by deleting the repo .list file

```
sudo rm /etc/apt/sources.list.d/microsoft-prod.list
```

3. Update APT

```
sudo apt update
```

4. Install .NET SDK 6.0

```
sudo apt install dotnet-sdk-6.0
```

Mixed state scenario 2: Use PMC packages after installing native Jammy packages

You may want to switch to using `packages.microsoft.com` packages after installing native packages, potentially because you want to use `6.0.4xx` builds.

Do the following:

1. Remove all .NET packages

```
sudo apt remove dotnet*
```

```
sudo apt remove aspnetcore*
```

2. Create apt preferences file as specified in the section above

3. Install .NET SDK 6.0

```
sudo apt install dotnet-sdk-6.0
```

How to identify which packages you'd installed

We'll install .NET 6 with both feeds, from a clean state, and then point the various ways you can identify which feed you installed the package from.

First, let's install the native Jammy packages using the "Clean machine scenario 1" guidance.

```
rich@kamloops:~$ docker run --rm -it ubuntu:jammy
root@db7fd8ec177e:/# apt update && apt install -y dotnet6
Get:18 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 dotnet6 amd64 6.0.10
root@db7fd8ec177e:/# dotnet --info
.NET SDK (reflecting any global.json):
  Version:   6.0.108
  Commit:    4e3a463d2b

Runtime Environment:
  OS Name:   ubuntu
  OS Version: 22.04
```

```
OS Platform: Linux
RID:         ubuntu.22.04-x64
Base Path:   /usr/lib/dotnet/dotnet6-6.0.108/sdk/6.0.108/
```

```
global.json file:
  Not found
```

```
Host:
  Version:      6.0.8
  Architecture: x64
  Commit:       55fb7ef977
```

```
.NET SDKs installed:
  6.0.108 [/usr/lib/dotnet/dotnet6-6.0.108/sdk]
```

```
.NET runtimes installed:
  Microsoft.AspNetCore.App 6.0.8 [/usr/lib/dotnet/dotnet6-6.0.108/shared/Microsoft.AspNetCore.App]
  Microsoft.NETCore.App 6.0.8 [/usr/lib/dotnet/dotnet6-6.0.108/shared/Microsoft.NETCore.App]
```

```
Download .NET:
  https://aka.ms/dotnet-download
```

```
Learn about .NET Runtimes and SDKs:
  https://aka.ms/dotnet/runtimes-sdk-info
```

Notice that we've installed .NET SDK 6.0.108, installed to /usr/lib/dotnet/, and that the dotnet6 package is being installed from <http://archive.ubuntu.com/ubuntu/jammy-updates/universe>. That's expected for the native packages.

Let's try the same thing with PMC, but with the "Clean machine scenario 2" guidance.

```
rich@kamloops:~$ docker run --rm -it ubuntu:jammy
root@626dcadc888b:/# apt update && apt install -y wget
root@626dcadc888b:/# wget https://packages.microsoft.com/config/ubuntu/22.04/packages-microsoft-prod.deb
root@626dcadc888b:/# dpkg -i packages-microsoft-prod.deb
root@626dcadc888b:/# rm packages-microsoft-prod.deb
root@626dcadc888b:/# touch /etc/apt/preferences
root@626dcadc888b:/# echo "Package: *" >> /etc/apt/preferences
root@626dcadc888b:/# echo "Pin: origin \"packages.microsoft.com\"" >> /etc/apt/preferences
root@626dcadc888b:/# echo Pin-Priority: 1001 >> /etc/apt/preferences
root@626dcadc888b:/# cat /etc/apt/preferences
Package: *
Pin: origin "packages.microsoft.com"
Pin-Priority: 1001
root@626dcadc888b:/# apt update && apt -y install dotnet-sdk-6.0
Get:11 https://packages.microsoft.com/ubuntu/22.04/prod jammy/main amd64 dotnet-sdk-6.0 a
root@626dcadc888b:/# dotnet --info
.NET SDK (reflecting any global.json):
  Version:      6.0.400
  Commit:       7771abd614

Runtime Environment:
  OS Name:      ubuntu
  OS Version:   22.04
  OS Platform:  Linux
  RID:          ubuntu.22.04-x64
  Base Path:    /usr/share/dotnet/sdk/6.0.400/
```

```
global.json file:
  Not found
```

Host:

```
Version:      6.0.8
Architecture: x64
Commit:       55fb7ef977
```

.NET SDKs installed:

```
6.0.400 [/usr/share/dotnet/sdk]
```

.NET runtimes installed:

```
Microsoft.AspNetCore.App 6.0.8 [/usr/share/dotnet/shared/Microsoft.AspNetCore.App]
Microsoft.NETCore.App 6.0.8 [/usr/share/dotnet/shared/Microsoft.NETCore.App]
```

Download .NET:

```
https://aka.ms/dotnet-download
```

Learn about .NET Runtimes and SDKs:

```
https://aka.ms/dotnet/runtimes-sdk-info
```

Notice that we've installed .NET SDK `6.0.400`, installed to `/usr/share/dotnet/`, and that the `dotnet6` package is being installed from `https://packages.microsoft.com/ubuntu/22.04/prod jammy/main`. That's expected for PMC packages.

We can also tell if the Microsoft PMC feed is registered:

```
root@626dcadc888b:/# ls /etc/apt/sources.list.d/
microsoft-prod.list
root@626dcadc888b:/# cat /etc/apt/sources.list.d/microsoft-prod.list
deb [arch=amd64,arm64,armhf] https://packages.microsoft.com/ubuntu/22.04/prod jammy main
```

If you are using native packages, that file won't and shouldn't be present.



53



14



5



MichaelSimons mentioned this issue on Aug 10

.Net core SDK not found #7661

✓ Closed



richlander mentioned this issue on Aug 10

[Ubuntu 22.04] dotnet doesn't find installed SDKs dotnet/sdk#27082

✓ Closed

omajid commented on Aug 10

Should we add these to <https://docs.microsoft.com/en-us/dotnet/core/install/linux-package-mixup> ?

 4

mirespace commented on Aug 10

Should we add these to <https://docs.microsoft.com/en-us/dotnet/core/install/linux-package-mixup> ?

A set of modifications for the page was here too: [dotnet/docs#30457](#) ([comment](#))

smitssjors commented on Aug 10

<https://docs.microsoft.com/en-us/dotnet/core/install/linux-ubuntu#2204> should be updated too.

 2



baronfel mentioned this issue on Aug 11

"The application 'run' does not exist" after updating to 6.0.8 on Ubuntu 22.04
[dotnet/sdk#27097](#)

 Closed

richlander commented on Aug 11

Can you elaborate [@bastare](#)?



joshspicer mentioned this issue on Aug 11

update `dotnet / oryx` features to use recommended install location for dotnet6
[devcontainers/features#91](#)

 Merged



baronfel mentioned this issue on Aug 12

Installed .NET 6.0 SDKs not showing with `dotnet --info` or `dotnet --list-sdks` and commands depeding on SDK fail (Linux/Ubuntu) [dotnet/sdk#27129](#)

 Open

 1 task

khteh commented on Aug 13

Tried the steps but to no avail.

Ubuntu 22.04

```
$ dn --info

global.json file:
  Not found

Host:
  Version:      6.0.8
  Architecture: x64
  Commit:       55fb7ef977

.NET SDKs installed:
  No SDKs were found.

.NET runtimes installed:
  Microsoft.AspNetCore.App 6.0.8 [/usr/lib/dotnet/dotnet6-
6.0.108/shared/Microsoft.AspNetCore.App]
  Microsoft.NETCore.App 6.0.8 [/usr/lib/dotnet/dotnet6-
6.0.108/shared/Microsoft.NETCore.App]

Download .NET:
  https://aka.ms/dotnet-download

Learn about .NET Runtimes and SDKs:
  https://aka.ms/dotnet/runtimes-sdk-info
```

owenholloway commented on Aug 13

This is specific to package version 6.0.8+. Downgrading to 6.0.7 resulted in the SDK showing.

richlander commented on Aug 13

Did folks who are having this problem follow the instructions? If so, did you go with scenario 1 or 2?

jareer12 commented on Aug 13 • edited ▼

Thanks so much, I've been trying to fix the error for hours, Scenario 1 did it for me.

Edit: I was using Ubuntu Jammy.



1

richlander commented on Aug 13 • edited ▼

I updated the scenarios to make them clearer. We now have two "Clean machine" scenarios and two "Mixed-state" scenarios. I've kept the numbering the same.

BTW: We are very sorry that this situation occurred. We should have predicted that it would but sadly did not. That's on us. We've learned that mix-and-matching package feeds with the same package names that install to different locations is a recipe for what we're seeing here. Again, we're sorry about that and won't repeat it.

khteh commented on Aug 13

Why is there this sudden change of installation steps?
Is this going to be the one used moving forward?



1

ar0311 commented on Aug 13

What do we do if we want powershell installed from PMC but to install SDK from jammy repo?

Also removing and re-installing dotnet* and aspnetcore* did not fix the issue for me either.

alexisatkinson commented on Aug 14

Did folks who are having this problem follow the instructions? If so, did you go with scenario 1 or 2?

After some trial and error, found this github issue and went with "Clean machine scenario 2: Use .NET 6 Package via PMC" as this allows using the latest dotnet 6 sdk version. These instructions worked well.

mickdelaney commented on Aug 15

How can I get dotnet 5 SDK installed on 22.04 ?
Its not supported using packages.
does this mean i *cant* use the native packages if i want to use SDK 5 & 6 ?



1



Idennington added a commit to Idennington/git-credential-manager that referenced this issue on Aug 15



install from source: use Jammy feed for Ubuntu ...

cdd5357



Idennington added a commit to Idennington/git-credential-manager that referenced this issue on Aug 15

 install from source: use Jammy feed for Ubuntu ...

de9bdab



Idennington added a commit to Idennington/git-credential-manager that referenced this issue on Aug 15

 install from source: use Jammy feed for Ubuntu ...

855f12f



 **Idennington** mentioned this issue on Aug 15

install from source: use native feeds for Ubuntu 22.04 [GitCredentialManager/git-credential-manager#839](#)

 Merged



 **dagood** mentioned this issue on Aug 15

Installing with `apt install dotnet-sdk-6.0` yields no executable file on Ubuntu 20.04 [dotnet/installer#12939](#)

 Closed



Idennington added a commit to Idennington/git-credential-manager that referenced this issue on Aug 15

 install from source: manually install dotnet on Ubuntu/Debian ...

4267250



 **adegeo** mentioned this issue on Aug 15

Installing SDK 6.0 on Ubuntu 22.04 installs the runtime only [dotnet/docs#30686](#)

 Closed



Idennington added a commit to Idennington/git-credential-manager that referenced this issue on Aug 15

 install from source: add support for Jammy Jellyfish ...

c5d0a81

carstencodes commented on Aug 15

In our company we're using a mirror with the same starting url for both feeds - PMC and Ubuntu sources.
Hence pinning won't work by setting

```
Pin: release mirror.company.com
```

Instead the following configuration works for me:

```
Package: *
Pin: release o=microsoft-ubuntu-jammy-prod jammy, n=jammy, a=jammy, c=main
Pin-Priority: 1001
```

Just in case anybody has a similar issue...

richlander commented on Aug 15

@**mickdelaney** Only .NET 6+ is supported on Ubuntu 22.04. That's unrelated to this discussion. See: [#7038 \(comment\)](#)

.NET 6 is our [first release to support OpenSSL v3](#). Ubuntu 22.04 only includes OpenSSL v3. As a result .NET 5 cannot function. You can install OpenSSL v1.x yourself if needed. We don't support that. Same thing with .NET Core 3.1. Also, .NET 5 is EOL.



1



Idennington added a commit to Idennington/git-credential-manager that referenced this issue on Aug 15



install from source: add support for Jammy Jellyfish ...

132a247



Idennington added a commit to Idennington/git-credential-manager that referenced this issue on Aug 15



install from source: add support for Jammy Jellyfish ...

✖ e039779

27 hidden items

[Load more...](#)

aaronfranke commented on Aug 28

When will support for Arm64 .NET 6 come to the Ubuntu package? It's not available when I try to install it. [This website](#) says it's only for amd64 (aka x86_64), but [Microsoft's download page](#) also provides binaries for Arm32 and Arm64 Linux. Please add the Arm64 architecture version to the Ubuntu package.

SaeidAshian commented on Aug 29

Is Microsoft released package for .net 7 sdk on 22.04?



1

mirespace commented on Aug 29

When will support for Arm64 .NET 6 come to the Ubuntu package? It's not available when I try to install it. [This website](#) says it's only for amd64 (aka x86_64), but [Microsoft's download page](#) also provides binaries for Arm32 and Arm64 Linux. Please add the Arm64 architecture version to the Ubuntu package.

We're working on it.



1



 ErikEJ mentioned this issue on Aug 29

[net 6.0] [linux] Microsoft.Data.SqlClient is not supported on this platform
dotnet/SqlClient#1423

🕒 Open



 omajid mentioned this issue on Aug 29

I'm having trouble writing c# for ubuntu #7747

🔒 Closed



 Jo-Zh mentioned this issue on Aug 31

Problem encountered on <https://dotnet.microsoft.com/en-us/learn/aspnet/blazor-tutorial/create> #7735

✅ Closed



 Xyaneon mentioned this issue on Aug 31

The unit tests silently fail to run Xyaneon/Xyaneon.Games.Cards#44

✅ Closed

lonix1 commented on Sep 3 • edited ▼

Upgraded to ubuntu 22 and hit this problem. I want the latest version, from the MS repo, not an older version from canonical. I've [tried](#) every [approach](#) but [none](#) worked (for me).

Does someone have a complete working script that installs from the MS repo?

a-l-e-x-d-s-9 commented on Sep 3 • edited ▼

@lonix1

I have used [dotnet-install.sh](#) to install dotnet sdk 6.0.400 and runtime in home/.dotnet folder, it worked alongside existing version (6.0.108) installed in the system with package manager. I'm not sure, if it is possible to remove the version from package manager, and use dotnet-install.sh to install latest version into systems' folders for all users.



1

mickdelaney commented on Sep 3

Upgraded to ubuntu 22 and hit this problem. I want the latest version, from the MS repo, not an older version from canonical. I've [tried](#) every [approach](#) but [none](#) worked (for me).

Does someone have a complete working script that installs from the MS repo?

I removed all the packages and went for manual install using the dotnet-install.sh also, works for me



1

lonix1 commented on Sep 3

Thanks guys. What eventually worked for me [was this](#) approach. It uses apt pinning.



1



scovetta mentioned this issue on Sep 4

Docker build is broken (.NET) ossf/alpha-omega#18

✓ Closed



PapaSmurf-ML64 mentioned this issue on Sep 5

Forces uninstall of Discord client. Maia-Everett/xivlauncher-core-ubuntu-packaging#1

✓ Closed



byroniac mentioned this issue on Sep 7

E: Unable to locate package dotnet-sdk-6.0 #7775

✓ Closed

flyfishMT commented on Sep 8

Hello, I'm confused over whether to install the dotnet-sdk-6.0 or dotnet6 package. I followed "Mixed state scenario 1: Use native Jammy packages after installing a previous .NET release from PMC" and installed dotnet-sdk-6.0 and all is well (I have an sdk and runtime listed in dotnet --info), but throughout this thread it often states to install package dotnet6, which do I want?



rasmunk added a commit to ucphhpc/nbi-jupyter-docker-stacks that referenced this issue on Sep 9



Update the qsharp notebook to install dotnet in Ubuntu 22.04 as recom...



76d964f

FilBot3 commented on Sep 9 • edited ▼

I just installed (on Ubuntu 22.04), following [this](#):

```
sudo apt install dotnet6
```

then when I

```
dotnet --list-sdks
```

Nothing shows up.

Then when I attempt to build a package, I get

```
> dotnet build
The command could not be loaded, possibly because:
* You intended to execute a .NET application
  The application build does not exist.
* You intended to execute a .NET SDK command
  No .NET SDKs were found.
```

However, the install log says other wise...

► Ubuntu apt install log

Am I missing something?

omajid commented on Sep 9

@**FilBot3** Thanks for the install log. It shows this bit:

```
Setting up aspnetcore-runtime-6.0 (6.0.108-0ubuntu1~22.04.1) ...
Setting up dotnet-sdk-6.0 (6.0.400-1) ...
```

The first package here is from the Ubuntu repositories. The second is from packages.microsoft.com. You are in a mixed state and that's why things don't work. See "Mixed state scenario 1" or "Mixed state scenario 2" from the top post in this issue and follow that advice.



FilBot3 commented on Sep 9

Ah,yeah. Removing the microsoft-prod deb source and updating helped.

```
sudo apt remove dotnet\  
sudo rm /etc/apt/sources.list.d/microsoft-prod.list  
sudo apt update  
sudo apt install -y dotnet6
```

However, I may have a similar issue on Fedora next...



omajid commented on Sep 9

For Fedora, see <https://docs.microsoft.com/en-us/dotnet/core/install/linux-package-mixup#solutions>



FilBot3 commented on Sep 9

Yup, same thing on Fedora.

```
sudo rm /etc/yum.repos.d/microsoft-prod.repo  
sudo dnf remove dotnet\  
sudo dnf install dotnet-sdk-6.0
```

I am fixed now.

squallshaw commented on Sep 15

Tried the steps but to no avail. Ubuntu 22.04

```
$ dn --info  
  
global.json file:  
Not found
```

```
Host:
  Version:      6.0.8
  Architecture: x64
  Commit:       55fb7ef977

.NET SDKs installed:
  No SDKs were found.

.NET runtimes installed:
  Microsoft.AspNetCore.App 6.0.8 [/usr/lib/dotnet/dotnet6-6.0.108/shared/Microsoft.AspNetCore.App]
  Microsoft.NETCore.App 6.0.8 [/usr/lib/dotnet/dotnet6-6.0.108/shared/Microsoft.NETCore.App]

Download .NET:
  https://aka.ms/dotnet-download

Learn about .NET Runtimes and SDKs:
  https://aka.ms/dotnet/runtimes-sdk-info
```

I resolve the same problem by installing runtimes first then SDK. I run "sudo apt install aspnetcore-runtime-6.0" first, then run "sudo apt install dotnet6".

FilBot3 commented on Sep 16

Tried the steps but to no avail. Ubuntu 22.04

```
$ dn --info

global.json file:
  Not found

Host:
  Version:      6.0.8
  Architecture: x64
  Commit:       55fb7ef977

.NET SDKs installed:
  No SDKs were found.

.NET runtimes installed:
  Microsoft.AspNetCore.App 6.0.8 [/usr/lib/dotnet/dotnet6-6.0.108/shared/Microsoft.AspNetCore.App]
  Microsoft.NETCore.App 6.0.8 [/usr/lib/dotnet/dotnet6-6.0.108/shared/Microsoft.NETCore.App]

Download .NET:
  https://aka.ms/dotnet-download

Learn about .NET Runtimes and SDKs:
  https://aka.ms/dotnet/runtimes-sdk-info
```

I resolve the same problem by installing runtimes first then SDK. I run "sudo apt install aspnetcore-runtime-6.0" first, then run "sudo apt install dotnet6".

Did you uninstall the previous installations of dotnet you had? Did you also remove any mention of the microsoft-prod.repo or source for Ubuntu?

squallshaw commented 28 days ago

Yes,I uninstall all the things you mention before I did this. But if I install dotnet6 first I would confront the same problem no matter I do the clean up or not. So just install runtime first work for me for this particular issue.



lara-ec mentioned this issue 21 days ago

Regular "java.io.IOException: Stream closed" exception from rider plugin

belav/csharpier#717

✓ Closed

khteh commented 20 days ago

Ah,yeah. Removing the microsoft-prod deb source and updating helped.

```
sudo apt remove dotnet\*
sudo rm /etc/apt/sources.list.d/microsoft-prod.list
sudo apt update
sudo apt install -y dotnet6
```

However, I may have a similar issue on Fedora next...

How to install libmsquic if packages.microsoft.com/keys/microsoft.asc is removed?

<https://learn.microsoft.com/en-us/windows-server/administration/linux-package-repository-for-microsoft-software>

richlander commented 12 days ago

@khteh -- These related instructions (linked from the top) for PowerShell might help: [#7713](#).

truthadjuster commented 12 days ago

I have `dotnet` in an older previous Ubuntu, and then I updated to `Ubuntu Jammy 22.04`. After this, `dotnet --list-sdks` no longer return anything. So I have to fix it by:


```
sudo apt remove dotnet*
sudo apt remove aspnetcore*
sudo rm /etc/apt/sources.list.d/microsoft-prod.list*
sudo apt update
sudo apt install dotnet6
```

And it is fixed now.

miroljub1995 commented 7 days ago • edited ▾

Will you ever support **SDK 6.0.401** via Jammy feed?
I like the simplicity of Jammy feed, but I also need latest SDK.

  **cicuz** mentioned this issue 6 days ago

The framework 'Microsoft.AspNetCore.App', version '3.1.0' (x64) was not found
#7373

✓ Closed

Assignees

No one assigned

Labels

None yet

Projects

None yet

Milestone

No milestone

Development

No branches or pull requests

25 participants

