



First Thursdays

May 2 - Webinar 1: Discover Renode for PolarFire® SoC Design and Debug

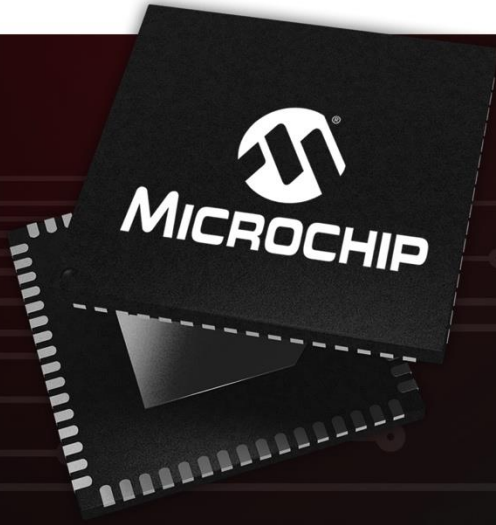
June 6 - Webinar 2: How to Get Started With Renode for PolarFire SoC

July 4 - Webinar 3: Learn to Debug a Bare-Metal PolarFire SoC Application With Renode

Aug. 1 - Webinar 4: Tips and Tricks for Even Easier PolarFire SoC Debug With Renode

Sept. 5 - Webinar 5: Add and Debug PolarFire SoC Peripherals With Renode

Oct. 3 - Webinar 6: Intro to PolarFire SoC MSS Configuration and Software Flow



A Leading Provider of Microcontroller, Security,
Mixed-Signal, Analog & Flash-IP Solutions



Getting Started With the RISC-V Based PolarFire® SoC FPGA Webinar Series
Session 2: “How to Get Started With Renode for PolarFire SoC”

Hugh Breslin, Embedded Linux Engineer

Thursday June 6, 2019

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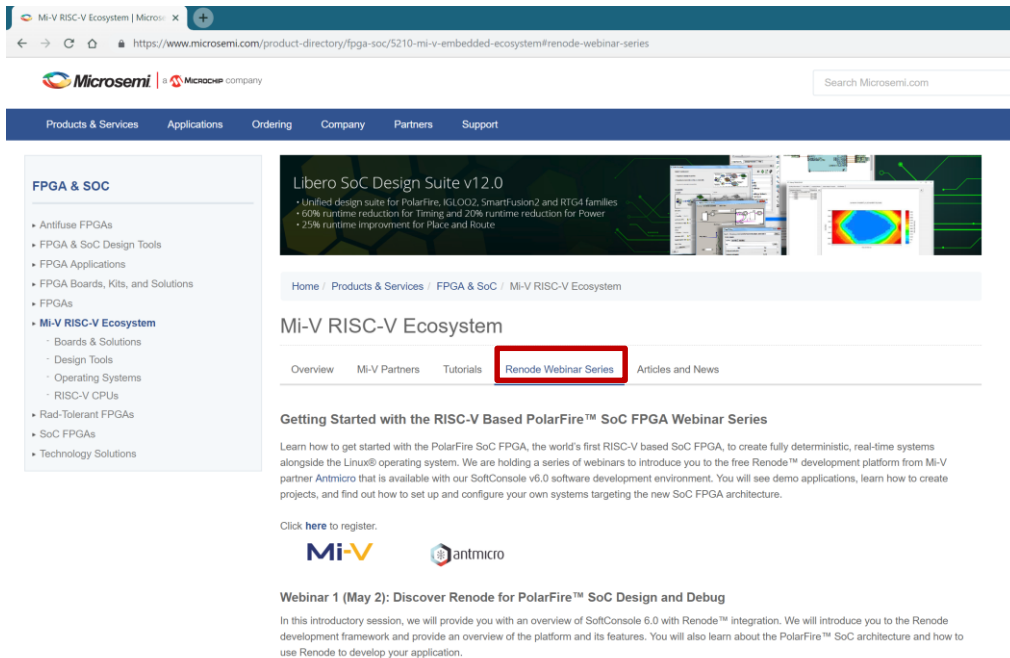
Oct. 3 - Webinar 6: Intro to PolarFire SoC MSS Configuration and Software Flow



Installing SoftConsole and Running Your First Project in Renode

- **SoftConsole v6.0 With Renode Installation on Ubuntu 16.04**
 - Installing SoftConsole
 - Running post install steps
- **SoftConsole v6.0 With Renode Installation on Windows 10**
- **Demo Renode Using Included Sample Projects**
 - Systick and interrupt blinky on Ubuntu
 - Mandelbrot and ray tracer on Windows®

Supporting Content



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Getting Started with the RISC-V Based PolarFire™ SoC FPGA Webinar Series

Learn how to get started with the PolarFire SoC FPGA, the world's first RISC-V based SoC FPGA, to create fully deterministic, real-time systems alongside the Linux® operating system. We are holding a series of webinars to introduce you to the free Renode™ development platform from Mi-V partner Antmicro that is available with our SoftConsole v6.0 software development environment. You will see demo applications, learn how to create projects, and find out how to set up and configure your own systems targeting the new SoC FPGA architecture.

Click [here](#) to register.

Mi-V 

Webinar 1 (May 2): Discover Renode for PolarFire™ SoC Design and Debug

In this introductory session, we will provide you with an overview of SoftConsole 6.0 with Renode™ integration. We will introduce you to the Renode development framework and provide an overview of the platform and its features. You will also learn about the PolarFire™ SoC architecture and how to use Renode to develop your application.

www.microsemi.com/Mi-V “Renode Webinar Series”

- **Recordings of previous webinars**
- **Installation Videos Also Available for:**
 - Windows - 10
 - Ubuntu - 16.04
 - Debian - 9
 - RHEL - 7
 - openSUSE - LEAP 15

Supported Platforms

- **Windows**
 - 7
 - 8.1
 - 10
- **Ubuntu**
 - 14.04 LTS
 - 16.04 LTS
- **openSUSE**
 - LEAP 15
- **Debian**
 - 9
- **CentOS and Red Hat Enterprise Linux (RHEL)**
 - 7

Installing SoftConsole v6.0 on Ubuntu

1. Download installer and release notes

2. Make the installer executable (chmod +x ...) and run to install SoftConsole

3. Post install commands

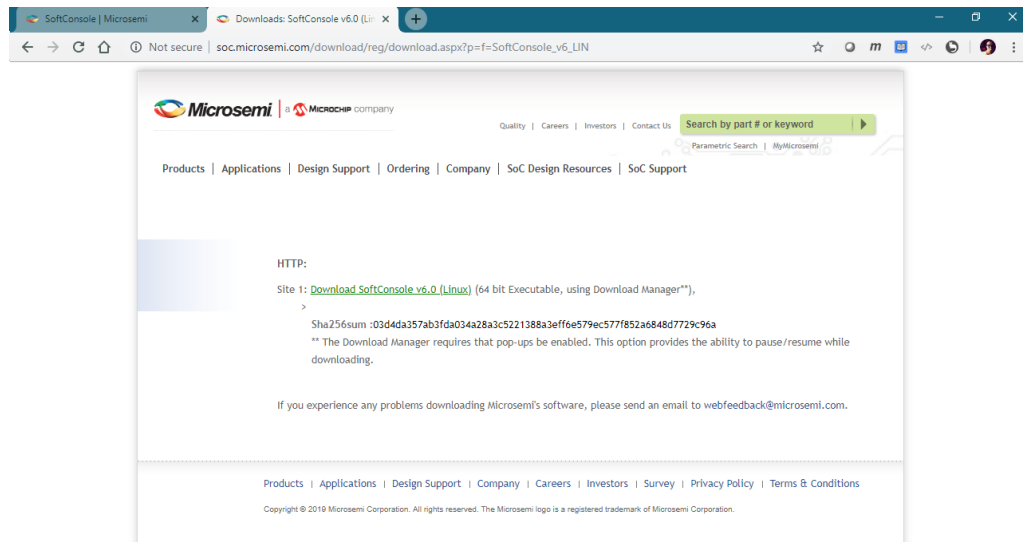
```
dpkg --add-architecture i386 && apt-get update && apt-get install libstdc++6:i386  
apt-get install build-essential
```

4. Mono complete needs to be installed

Add sources from: <https://www.mono-project.com/download/stable/#download-lin>
apt-get install mono-complete gtk-sharp2 libcanberra-gtk-module

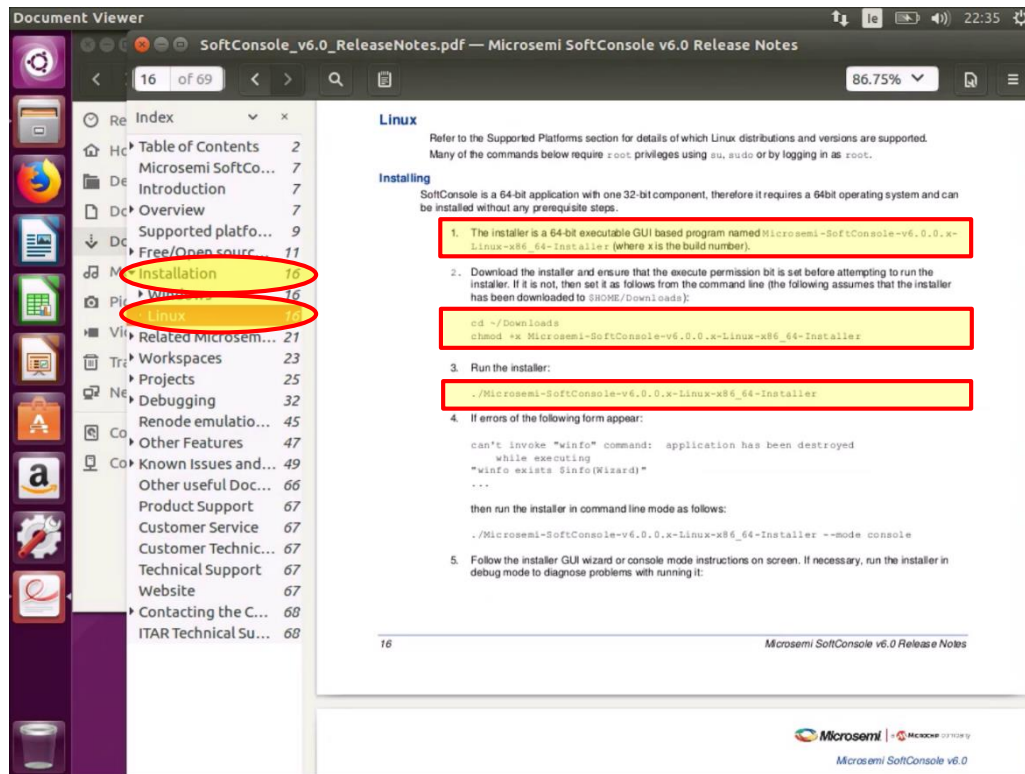
Installing SoftConsole v6.0 on Ubuntu

Download installer and
release notes



Installing SoftConsole v6.0 on Ubuntu

SoftConsole release notes



Document Viewer
SoftConsole_v6.0_ReleaseNotes.pdf — Microsemi SoftConsole v6.0 Release Notes

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Linux
Refer to the Supported Platforms section for details of which Linux distributions and versions are supported. Many of the commands below require `root` privileges using `su`, `sudo` or by logging in as `root`.

Installing
SoftConsole is a 64-bit application with one 32-bit component, therefore it requires a 64bit operating system and can be installed without any prerequisite steps.

1. The installer is a 64-bit executable GUI based program named `Microsemi-SoftConsole-v6.0.0.x-Linux-x86_64-Installer` (where `x` is the build number).
2. Download the installer and ensure that the execute permission bit is set before attempting to run the installer. If it is not, then set it as follows from the command line (the following assumes that the installer has been downloaded to `$HOME/Downloads`):

```
cd ~/Downloads  
chmod +x Microsemi-SoftConsole-v6.0.0.x-Linux-x86_64-Installer
```
3. Run the installer:

```
./Microsemi-SoftConsole-v6.0.0.x-Linux-x86_64-Installer
```
4. If errors of the following form appear:

```
can't invoke "wininfo" command: application has been destroyed  
while executing  
"wininfo exists $info(Wizard)"  
...
```


then run the installer in command line mode as follows:

```
./Microsemi-SoftConsole-v6.0.0.x-Linux-x86_64-Installer --mode console
```
5. Follow the installer GUI wizard or console mode instructions on screen. If necessary, run the installer in debug mode to diagnose problems with running it:

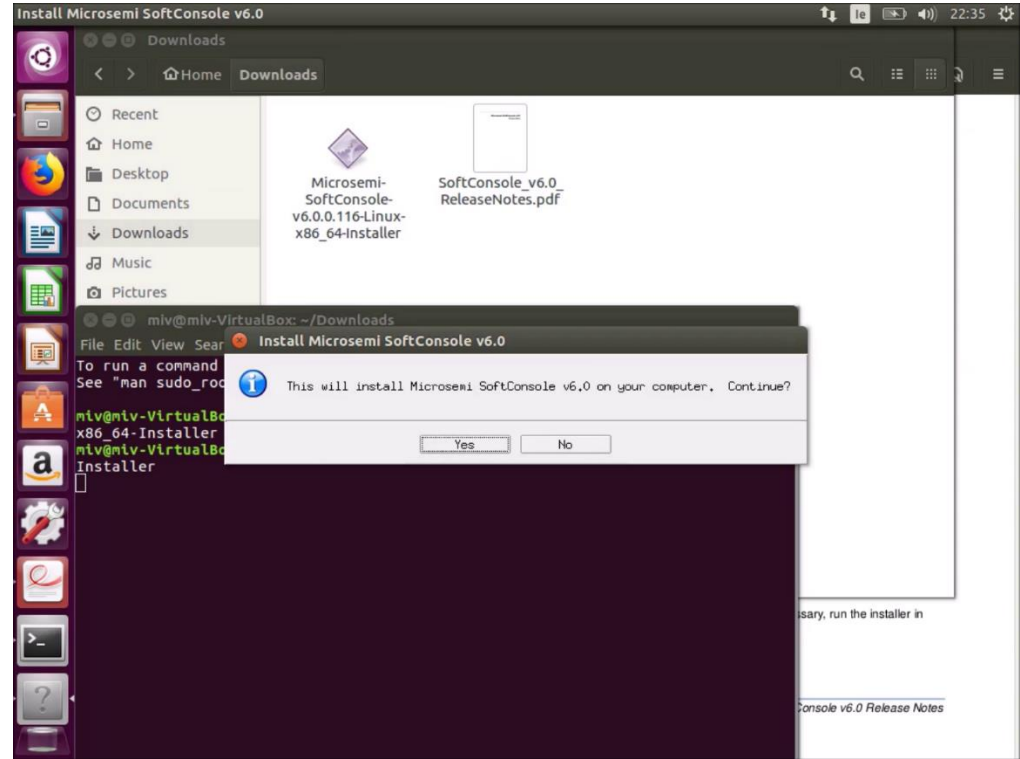
16 Microsemi SoftConsole v6.0 Release Notes

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Microsemi SoftConsole v6.0

Installing SoftConsole v6.0 on Ubuntu

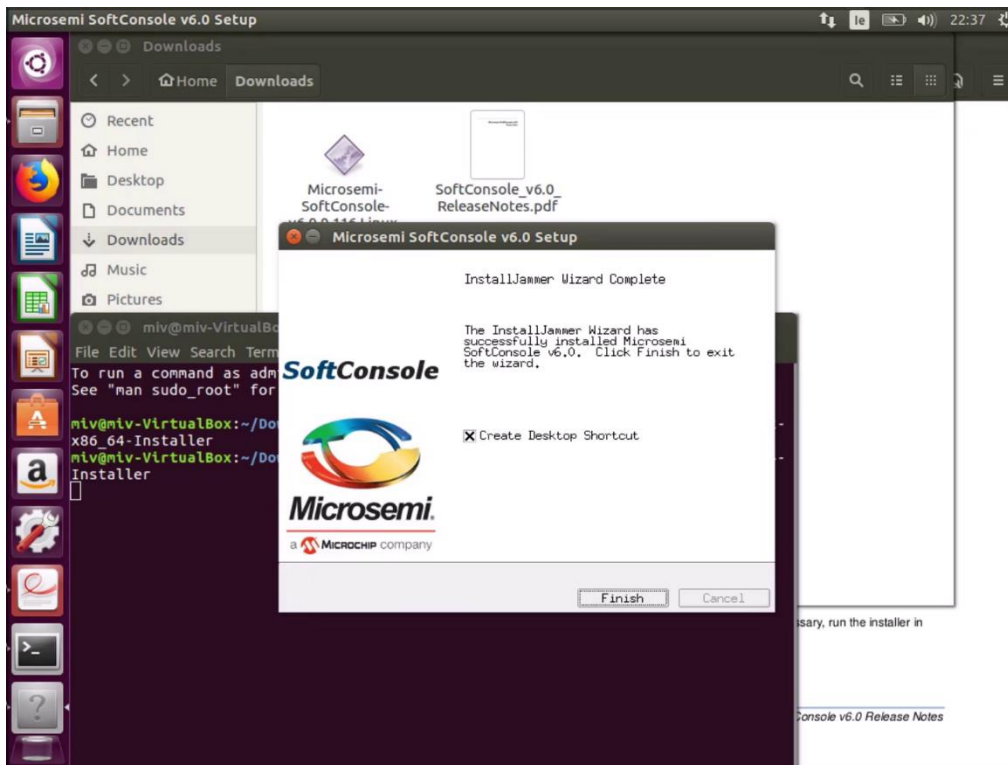
**Make sure installer is
executable (chmod +x ...)**

Run to install SoftConsole



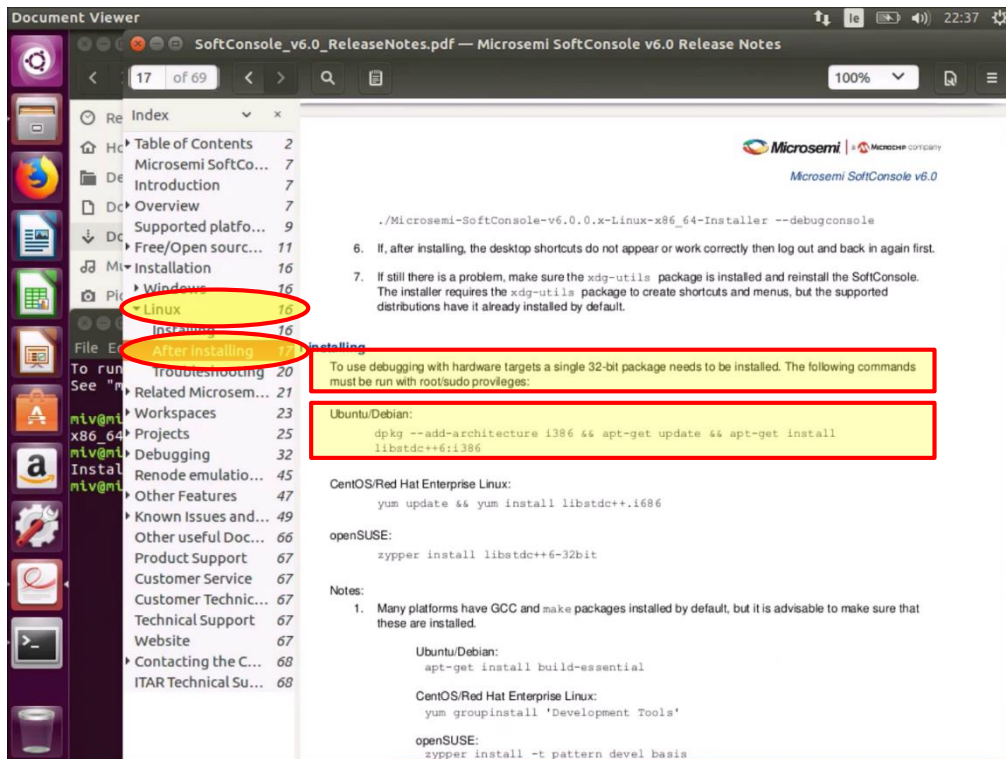
Installing SoftConsole v6.0 on Ubuntu

Installing



Installing SoftConsole v6.0 on Ubuntu

Post installation steps



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SoftConsole_v6.0_ReleaseNotes.pdf — Microsemi SoftConsole v6.0 Release Notes

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100%

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Microsemi SoftConsole v6.0

./Microsemi-SoftConsole-v6.0.0.x-Linux-x86_64-Installer --debugconsole

6. If, after installing, the desktop shortcuts do not appear or work correctly then log out and back in again first.

7. If still there is a problem, make sure the `xdg-utils` package is installed and reinstall the SoftConsole. The installer requires the `xdg-utils` package to create shortcuts and menus, but the supported distributions have it already installed by default.

To use debugging with hardware targets a single 32-bit package needs to be installed. The following commands must be run with root/sudo privileges:

Ubuntu/Debian:

```
dpkg --add-architecture i386 && apt-get update && apt-get install libstdc++6:i386
```

CentOS/Red Hat Enterprise Linux:

```
yum update && yum install libstdc++-i686
```

openSUSE:

```
zypper install libstdc++6-32bit
```

Notes:

1. Many platforms have GCC and make packages installed by default, but it is advisable to make sure that these are installed.

Ubuntu/Debian:

```
apt-get install build-essential
```

CentOS/Red Hat Enterprise Linux:

```
yum groupinstall 'Development Tools'
```

openSUSE:

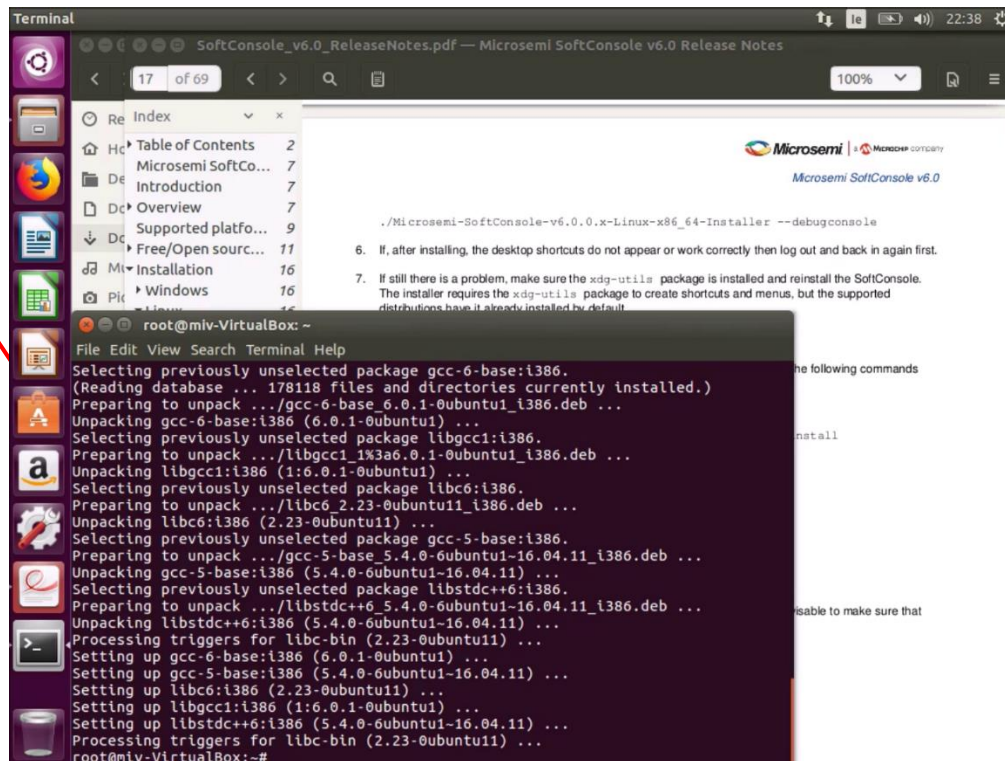
```
zypper install -t pattern devel basis
```

Installing SoftConsole v6.0 on Ubuntu

Post installation steps

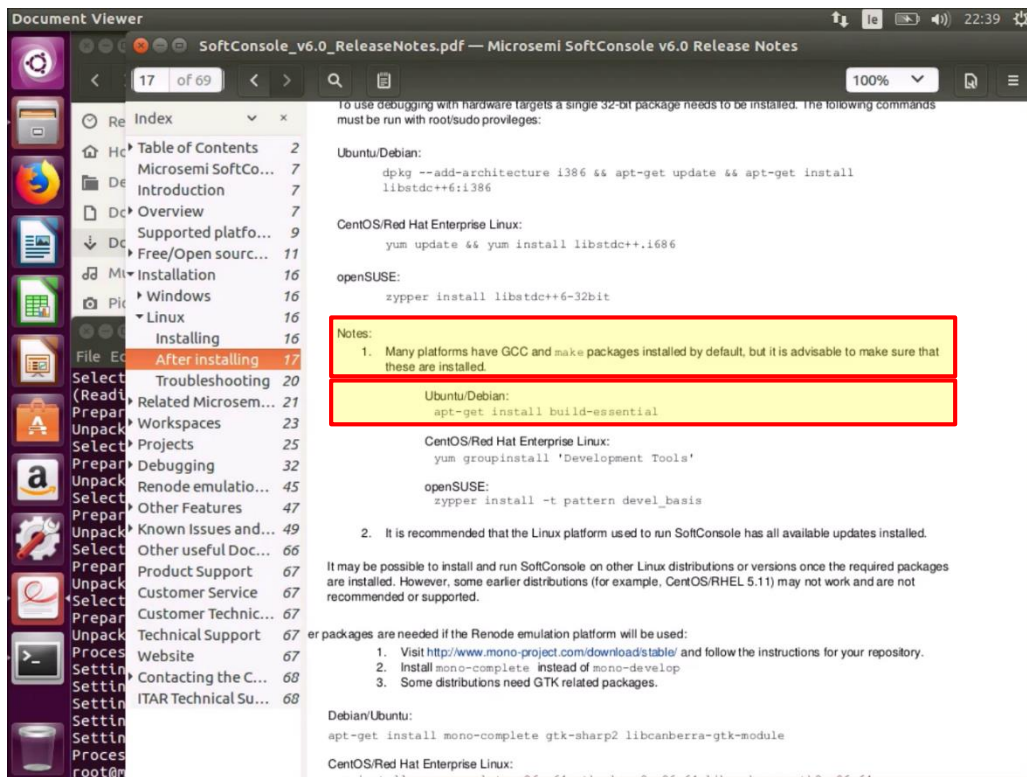
Ubuntu/Debian:

```
dpkg --add-architecture i386 && apt-get update && apt-get install  
libstdc++6:i386
```



Installing SoftConsole v6.0 on Ubuntu

Post installation steps



Document Viewer

SoftConsole_v6.0_ReleaseNotes.pdf — Microsemi SoftConsole v6.0 Release Notes

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100%

To use debugging with hardware targets a single 32-bit package needs to be installed. The following commands must be run with root/sudo privileges:

Ubuntu/Debian:

```
dpkg --add-architecture i386 && apt-get update && apt-get install libstdc++6:i386
```

CentOS/Red Hat Enterprise Linux:

```
yum update && yum install libstdc++-i686
```

openSUSE:

```
zypper install libstdc++6-32bit
```

Notes:

1. Many platforms have GCC and make packages installed by default, but it is advisable to make sure that these are installed.

Ubuntu/Debian:

```
apt-get install build-essential
```

CentOS/Red Hat Enterprise Linux:

```
yum groupinstall 'Development Tools'
```

openSUSE:

```
zypper install -t pattern devel_basis
```

2. It is recommended that the Linux platform used to run SoftConsole has all available updates installed.

It may be possible to install and run SoftConsole on other Linux distributions or versions once the required packages are installed. However, some earlier distributions (for example, CentOS/RHEL 5.11) may not work and are not recommended or supported.

For packages are needed if the Renode emulation platform will be used:

1. Visit <http://www.mono-project.com/download/stable/> and follow the instructions for your repository.
2. Install mono-complete instead of mono-develop
3. Some distributions need GTK related packages.

Debian/Ubuntu:

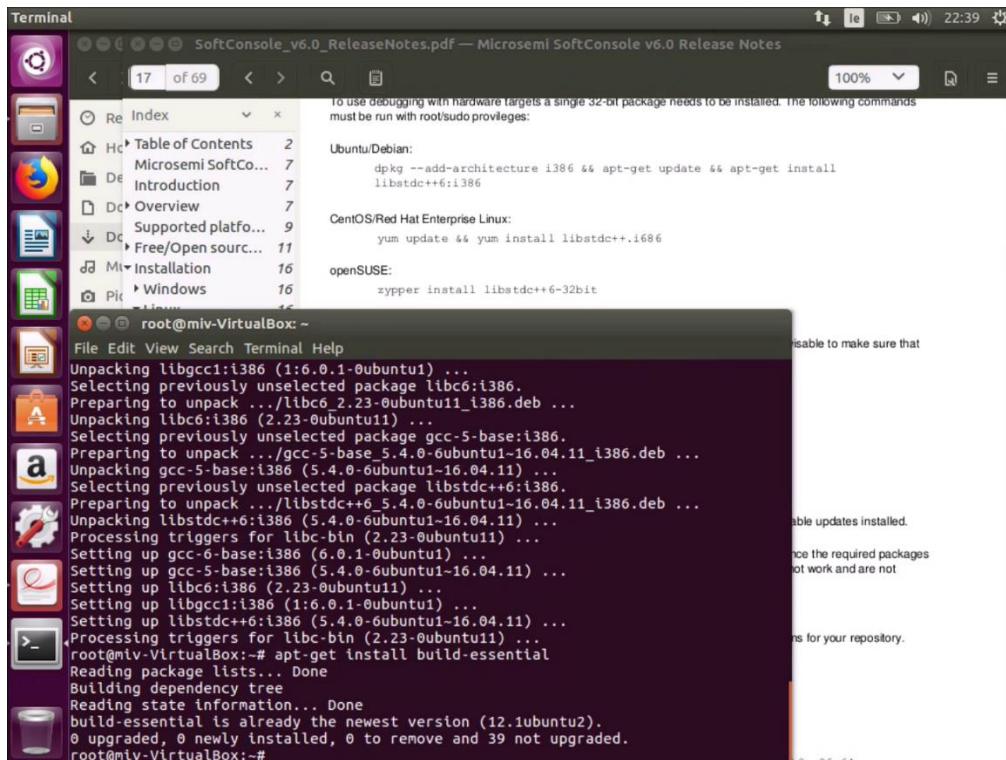
```
apt-get install mono-complete gtk-sharp2 libcanberra-gtk-module
```

CentOS/Red Hat Enterprise Linux:

```
yum install libcanberra-gtk2
```


Installing SoftConsole v6.0 on Ubuntu

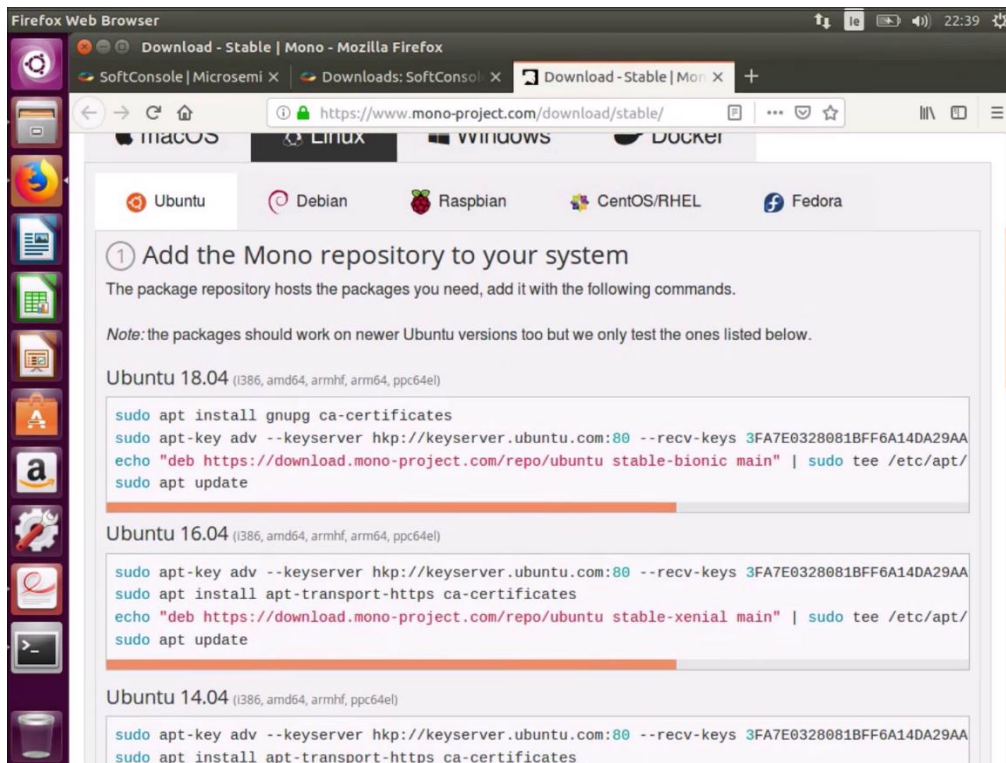
Post installation steps



```
root@miv-VirtualBox: ~  
File Edit View Search Terminal Help  
Unpacking libgcc1:i386 (1:6.0.1-0ubuntu1) ...  
Selecting previously unselected package libc6:i386.  
Preparing to unpack .../libc6_2.23-0ubuntu11_i386.deb ...  
Unpacking libc6:i386 (2.23-0ubuntu11) ...  
Selecting previously unselected package gcc-5-base:i386.  
Preparing to unpack .../gcc-5-base_5.4.0-6ubuntu1-16.04.11_i386.deb ...  
Unpacking gcc-5-base:i386 (5.4.0-6ubuntu1-16.04.11) ...  
Selecting previously unselected package libstdc++6:i386.  
Preparing to unpack .../libstdc++6_5.4.0-6ubuntu1-16.04.11_i386.deb ...  
Unpacking libstdc++6:i386 (5.4.0-6ubuntu1-16.04.11) ...  
Processing triggers for libc-bin (2.23-0ubuntu11) ...  
Setting up gcc-6-base:i386 (6.0.1-0ubuntu1) ...  
Setting up gcc-5-base:i386 (5.4.0-6ubuntu1-16.04.11) ...  
Setting up libc6:i386 (2.23-0ubuntu11) ...  
Setting up libgcc1:i386 (1:6.0.1-0ubuntu1) ...  
Setting up libstdc++6:i386 (5.4.0-6ubuntu1-16.04.11) ...  
Processing triggers for libc-bin (2.23-0ubuntu11) ...  
root@miv-VirtualBox:~# apt-get install build-essential  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
build-essential is already the newest version (12.1ubuntu2).  
0 upgraded, 0 newly installed, 0 to remove and 39 not upgraded.  
root@miv-VirtualBox:~#
```


Installing SoftConsole v6.0 on Ubuntu

Post installation steps



Firefox Web Browser

Download - Stable | Mono - Mozilla Firefox

SoftConsole | Microsemi X Downloads: SoftConsole X Download - Stable | Mono X +

https://www.mono-project.com/download/stable/

macOS LINUX WINDOWS DOCKER

Ubuntu Debian Raspbian CentOS/RHEL Fedora

① Add the Mono repository to your system

The package repository hosts the packages you need, add it with the following commands.

Note: the packages should work on newer Ubuntu versions too but we only test the ones listed below.

Ubuntu 18.04 (i386, amd64, armhf, arm64, ppc64el)

```
sudo apt install gnupg ca-certificates
sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys 3FA7E0328081BFF6A14DA29AA
echo "deb https://download.mono-project.com/repo/ubuntu stable-bionic main" | sudo tee /etc/apt/sources.list.d/mono.list
sudo apt update
```

Ubuntu 16.04 (i386, amd64, armhf, arm64, ppc64el)

```
sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys 3FA7E0328081BFF6A14DA29AA
sudo apt install apt-transport-https ca-certificates
echo "deb https://download.mono-project.com/repo/ubuntu stable-xenial main" | sudo tee /etc/apt/sources.list.d/mono.list
sudo apt update
```

Ubuntu 14.04 (i386, amd64, armhf, ppc64el)

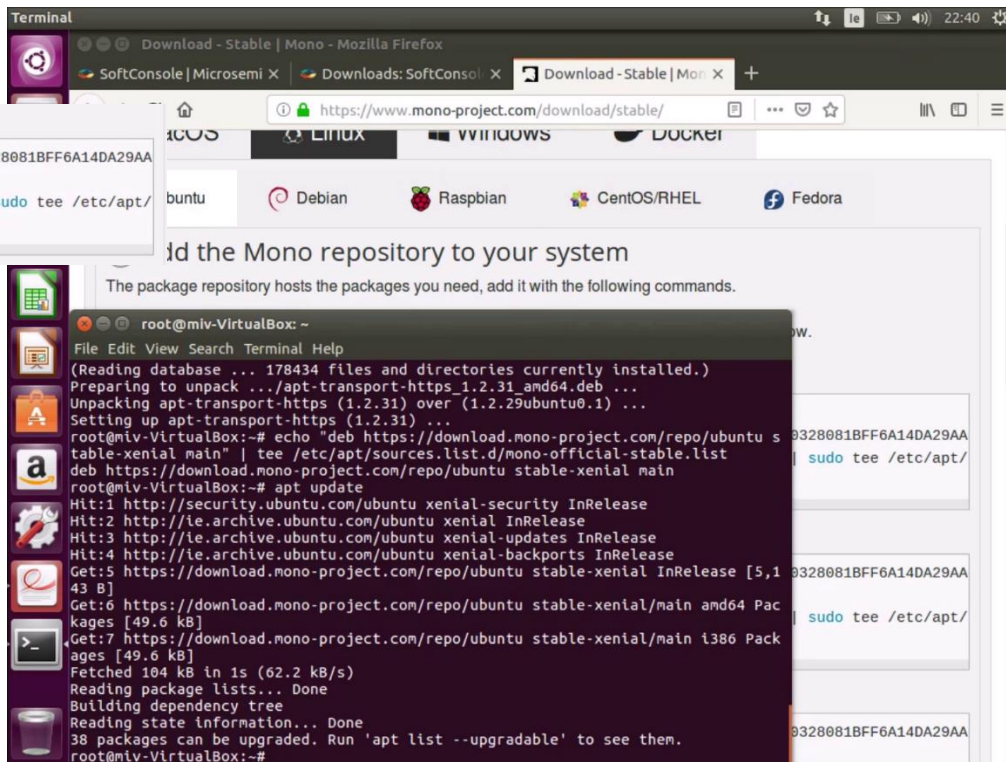
```
sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys 3FA7E0328081BFF6A14DA29AA
sudo apt install apt-transport-https ca-certificates
```

Installing SoftConsole v6.0 on Ubuntu

Post installation steps

Ubuntu 16.04 (i386, amd64, armhf, arm64, ppc64el)

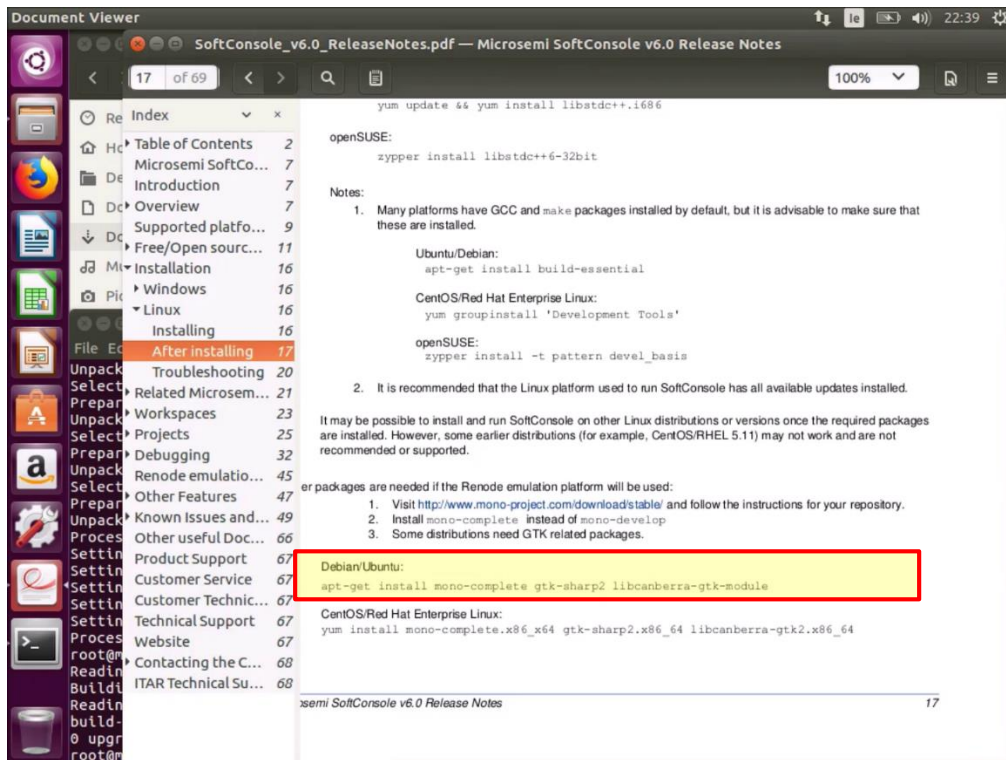
```
sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys 3FA7E0328081BFF6A14DA29AA
sudo apt install apt-transport-https ca-certificates
echo "deb https://download.mono-project.com/repo/ubuntu stable-xenial main" | sudo tee /etc/apt/
sudo apt update
```



```
Terminal
Download - Stable | Mono - Mozilla Firefox
SoftConsole | Microsemi X Downloads: SoftConsole X Download - Stable | Mono X +
https://www.mono-project.com/download/stable/
buntu Debian Raspbian CentOS/RHEL Fedora
Add the Mono repository to your system
The package repository hosts the packages you need, add it with the following commands.
root@miv-VirtualBox: ~
File Edit View Search Terminal Help
(Reading database ... 178434 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_1.2.31_amd64.deb ...
Unpacking apt-transport-https (1.2.31) over (1.2.29ubuntu0.1) ...
Setting up apt-transport-https (1.2.31) ...
root@miv-VirtualBox:~# echo "deb https://download.mono-project.com/repo/ubuntu s
table-xenial main" | tee /etc/apt/sources.list.d/mono-official-stable.list
deb https://download.mono-project.com/repo/ubuntu stable-xenial main
root@miv-VirtualBox:~# apt update
Hit:1 http://security.ubuntu.com/ubuntu xenial-security InRelease
Hit:2 http://ie.archive.ubuntu.com/ubuntu xenial InRelease
Hit:3 http://ie.archive.ubuntu.com/ubuntu xenial-updates InRelease
Hit:4 http://ie.archive.ubuntu.com/ubuntu xenial-backports InRelease
Get:5 https://download.mono-project.com/repo/ubuntu stable-xenial InRelease [5,1
43 B]
Get:6 https://download.mono-project.com/repo/ubuntu stable-xenial/main amd64 Pac
kages [49.6 kB]
Get:7 https://download.mono-project.com/repo/ubuntu stable-xenial/main i386 Pac
kages [49.6 kB]
Fetched 104 kB in 1s (62.2 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
38 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@miv-VirtualBox:~#
```

Installing SoftConsole v6.0 on Ubuntu

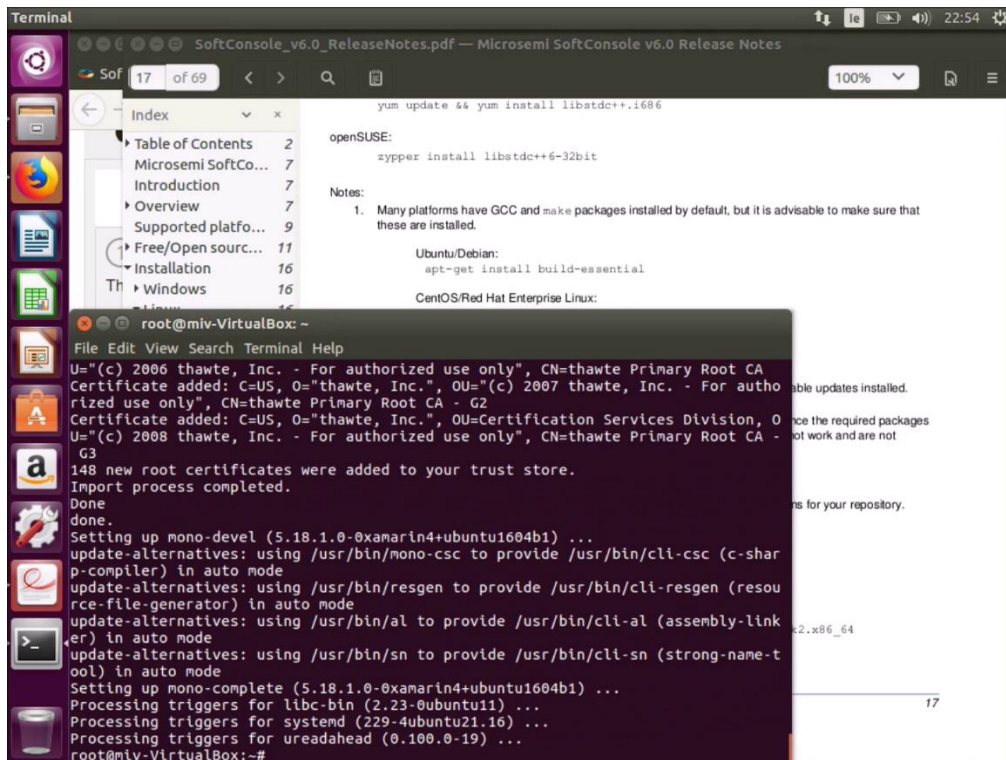
Post installation steps



Installing SoftConsole v6.0 on Ubuntu

Post installation steps

>20 minutes is normal



```
root@miv-VirtualBox: ~  
File Edit View Search Terminal Help  
U="(c) 2006 thawte, Inc. - For authorized use only", CN=thawte Primary Root CA  
Certificate added: C=US, O="thawte, Inc.", OU="(c) 2007 thawte, Inc. - For authorized use only", CN=thawte Primary Root CA - G2  
Certificate added: C=US, O="thawte, Inc.", OU="Certification Services Division, O  
U="(c) 2008 thawte, Inc. - For authorized use only", CN=thawte Primary Root CA - G3  
148 new root certificates were added to your trust store.  
Import process completed.  
Done.  
Setting up mono-devel (5.18.1.0-xamarin4+ubuntu1604b1) ...  
update-alternatives: using /usr/bin/mono-csc to provide /usr/bin/cli-csc (c-sharp-compiler) in auto mode  
update-alternatives: using /usr/bin/resgen to provide /usr/bin/cli-resgen (resource-file-generator) in auto mode  
update-alternatives: using /usr/bin/al to provide /usr/bin/cli-al (assembly-linker) in auto mode  
update-alternatives: using /usr/bin/sn to provide /usr/bin/cli-sn (strong-name-tool) in auto mode  
Setting up mono-complete (5.18.1.0-xamarin4+ubuntu1604b1) ...  
Processing triggers for libc-bin (2.23-0ubuntu11) ...  
Processing triggers for systemd (229-4ubuntu21.16) ...  
Processing triggers for ureadahead (0.100.0-19) ...  
root@miv-VirtualBox:~#
```

Installing SoftConsole v6.0 on Ubuntu

1. Download installer and release notes

2. Make the installer executable (chmod +x ...) and run to install SoftConsole

3. Post install commands:

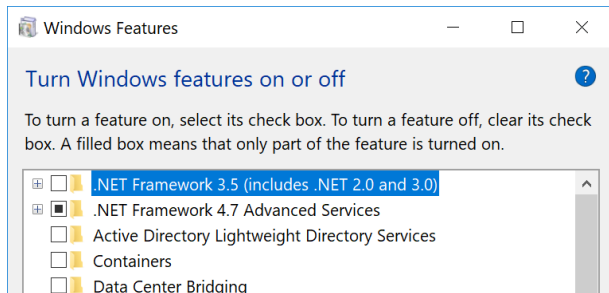
```
dpkg --add-architecture i386 && apt-get update && apt-get install libstdc++6:i386  
apt-get install build-essential
```

4. Mono complete needs to be installed:

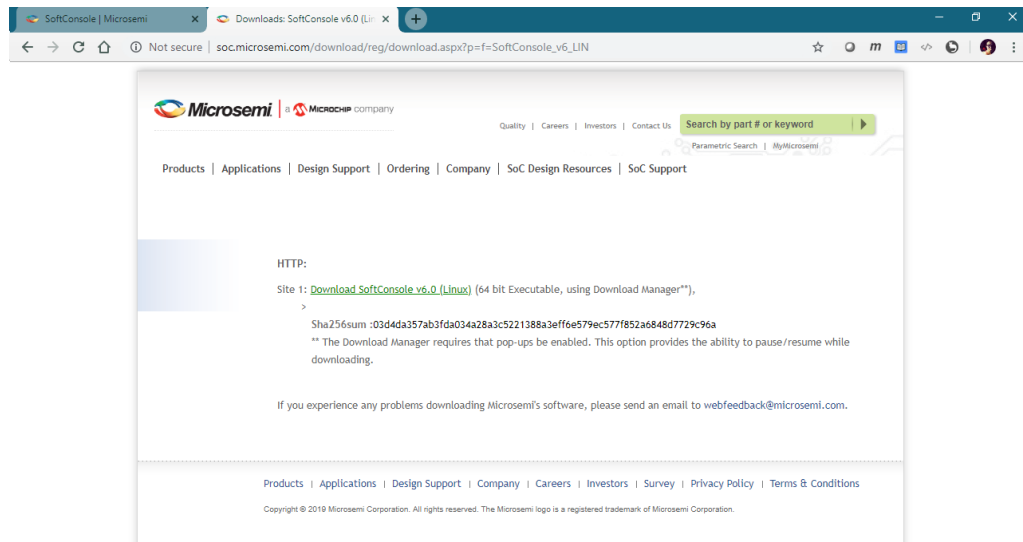
Add sources from: <https://www.mono-project.com/download/stable/#download-lin>
apt-get install mono-complete gtk-sharp2 libcanberra-gtk-module

Installing SoftConsole v6.0 on Windows 10 / 8.1 / 7

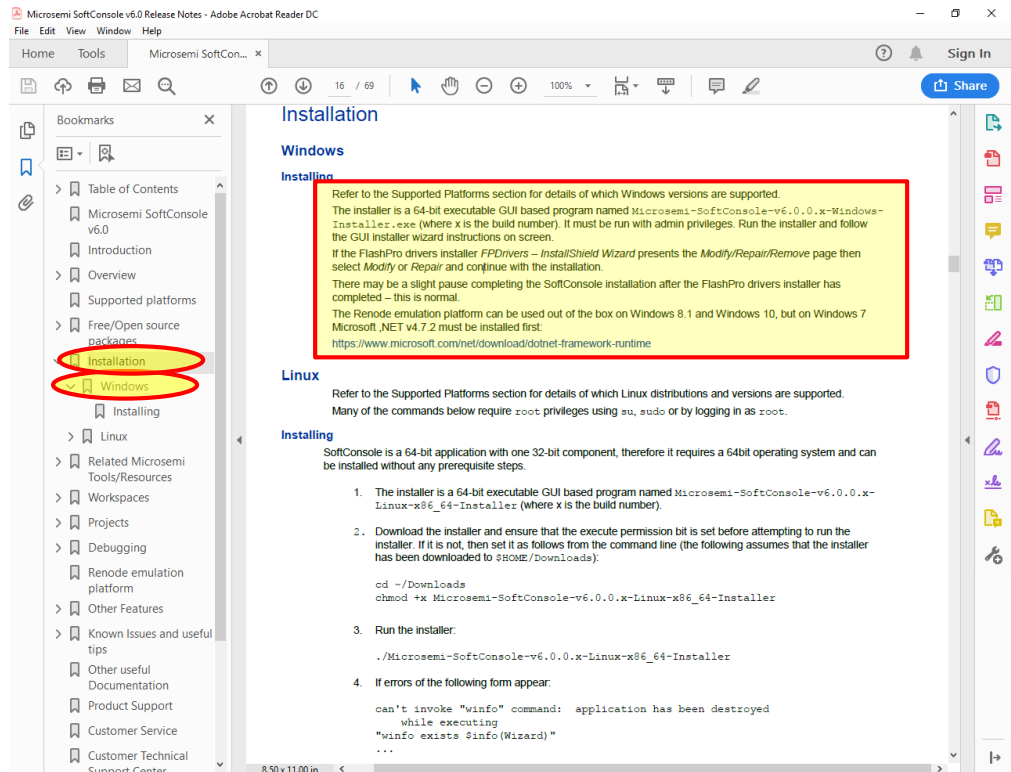
1. **Download installer and release notes and run the installer with administrator privileges**
- **To check if you have v4.7.2 of the Microsoft® .NET Framework use the “Turn Windows features on or off” dialog**
 - Needs to be installed on Windows 7, normally installed on Windows 8.1 and Windows 10
 - <https://dotnet.microsoft.com/download/dotnet-framework> (link in release notes)



Download installer and release notes



SoftConsole release notes



Microsemi SoftConsole v6.0 Release Notes - Adobe Acrobat Reader DC

File Edit View Window Help

Home Tools Microsemi SoftCon...

16 / 69 100%

Sign In Share

Installation

Windows

Installing

Refer to the Supported Platforms section for details of which Windows versions are supported.

The installer is a 64-bit executable GUI based program named `Microsemi-SoftConsole-v6.0.0.x-Windows-Installer.exe` (where x is the build number). It must be run with admin privileges. Run the installer and follow the GUI installer wizard instructions on screen.

If the FlashPro drivers installer `FPDrivers - InstallShield Wizard` presents the `Modify/Repair/Remove` page then select `Modify` or `Repair` and continue with the installation.

There may be a slight pause completing the SoftConsole installation after the FlashPro drivers installer has completed - this is normal.

The Renode emulation platform can be used out of the box on Windows 8.1 and Windows 10, but on Windows 7 Microsoft .NET v4.7.2 must be installed first:

<https://www.microsoft.com/net/download/dotnet-framework-runtime>

Linux

Refer to the Supported Platforms section for details of which Linux distributions and versions are supported. Many of the commands below require `root` privileges using `su`, `sudo` or by logging in as `root`.

Installing

SoftConsole is a 64-bit application with one 32-bit component, therefore it requires a 64bit operating system and can be installed without any prerequisite steps.

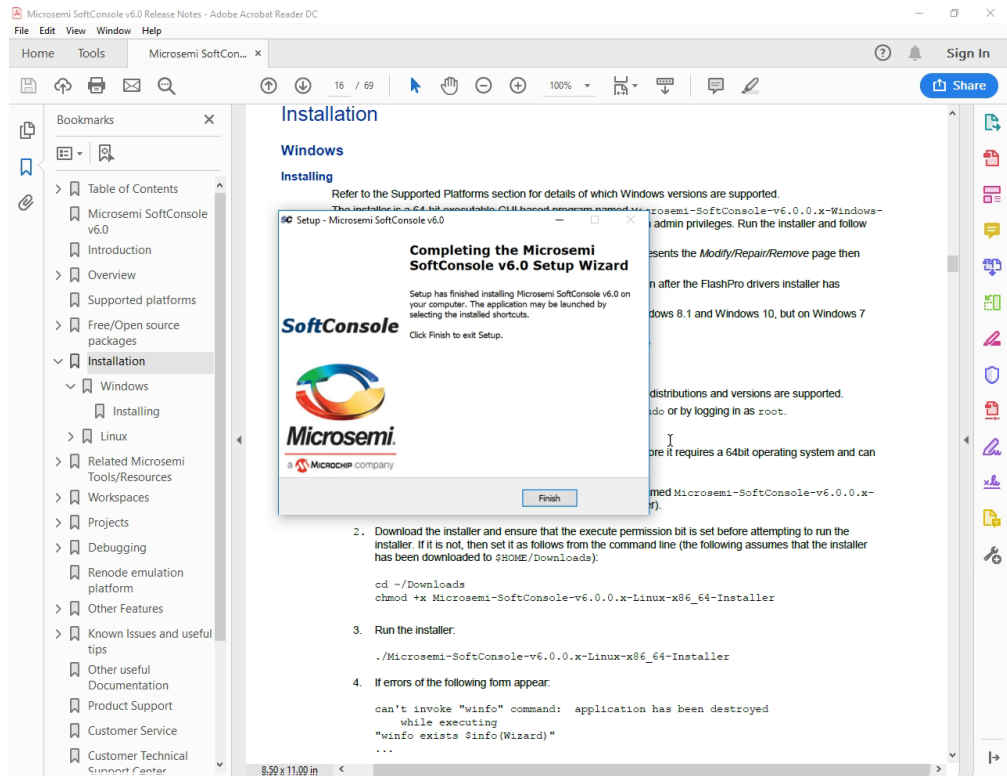
1. The installer is a 64-bit executable GUI based program named `Microsemi-SoftConsole-v6.0.0.x-Linux-x86_64-Installer` (where x is the build number).
2. Download the installer and ensure that the execute permission bit is set before attempting to run the installer. If it is not, then set it as follows from the command line (the following assumes that the installer has been downloaded to `$HOME/Downloads`):

```
cd ~/Downloads
chmod +x Microsemi-SoftConsole-v6.0.0.x-Linux-x86_64-Installer
```
3. Run the installer:

```
./Microsemi-SoftConsole-v6.0.0.x-Linux-x86_64-Installer
```
4. If errors of the following form appear:

```
can't invoke "winfo" command: application has been destroyed
while executing
"winfo exists $info(Wizard)"
...
```


Installing



The screenshot shows the Microsemi SoftConsole v6.0 Setup Wizard completion screen overlaid on the Microsemi SoftConsole v6.0 Release Notes document. The setup wizard window displays the Microsemi logo and the text: "Completing the Microsemi SoftConsole v6.0 Setup Wizard", "Setup has finished installing Microsemi SoftConsole v6.0 on your computer. The application may be launched by selecting the installed shortcuts.", and a "Finish" button.

The release notes document, titled "Microsemi SoftConsole v6.0 Release Notes - Adobe Acrobat Reader DC", shows the "Installation" section. It includes a "Table of Contents" on the left with "Installation" expanded, showing "Windows" and "Installing". The main content area shows the "Installing" section, which refers to the "Supported Platforms" section for details of which Windows versions are supported. It states: "Then, installation is as follows: 1. Download the installer and ensure that the execute permission bit is set before attempting to run the installer. If it is not, then set it as follows from the command line (the following assumes that the installer has been downloaded to \$HOME/Downloads):"

```
cd ~/Downloads
chmod +x Microsemi-SoftConsole-v6.0.0-Linux-x86_64-Installer
```

2. Run the installer:

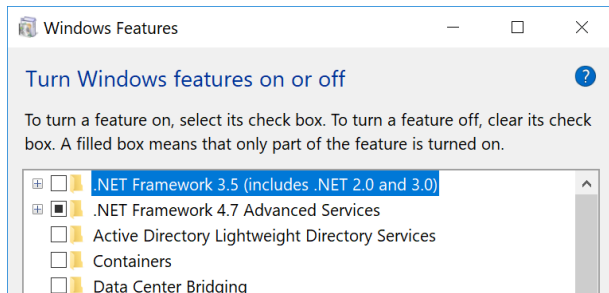
```
./Microsemi-SoftConsole-v6.0.0-Linux-x86_64-Installer
```

4. If errors of the following form appear:

```
can't invoke "wininfo" command: application has been destroyed
while executing
"wininfo exists $info(Wizard)"
...
```

Installing SoftConsole v6.0 on Windows 10 / 8.1 / 7

1. **Download installer and release notes and run the installer with administrator privileges**
- **To check if you have v4.7.2 of the Microsoft® .NET Framework use the “Turn Windows features on or off” dialog**
 - Needs to be installed on Windows 7, normally installed on Windows 8.1 and Windows 10
 - <https://dotnet.microsoft.com/download/dotnet-framework> (link in release notes)



Demo Projects

- **Ubuntu demos:**

- MiV interrupt blinky
- MiV systick blinky

- **Windows demos:**

- MiV Mandelbrot project
- MiV ray tracer project

First Thursdays

May 2 - Webinar 1: Discover Renode for PolarFire® SoC Design and Debug

June 6 - Webinar 2: How to Get Started With Renode for PolarFire SoC

July 4 - Webinar 3: Learn to Debug a Bare-Metal PolarFire SoC Application With Renode

Aug. 1 - Webinar 4: Tips and Tricks for Even Easier PolarFire SoC Debug With Renode

Sept. 5 - Webinar 5: Add and Debug PolarFire SoC Peripherals With Renode

Oct. 3 - Webinar 6: Intro to PolarFire SoC MSS Configuration and Software Flow



Q&A



Thank You
