Installing Advanced Edition on Debian and Ubuntu

1. Download CDP Advanced Edition

See Obtaining Linux CDP Advanced Edition.

2. Configure APT Repository

You should configure an APT repository on Debian and Ubuntu to manage upgrades of CDP Advanced Edition (See Upgrading Advanced Edition for Linux), to install the unzip utility, etc.

Modify your `/etc/apt/sources.list` to include the R1Soft repository, and then download the R1Soft `apt gpg` key.

```
# echo deb http://repo.r1soft.com/apt stable main >> /etc/apt/sources.list
# wget http://repo.r1soft.com/r1soft.asc
# apt-key add r1soft.asc
# apt-get update
```

```
root@debian-server:~# echo deb http://repo.r1soft.com/apt stable main >> /etc/apt/sources.list
root@debian-server:~# wget http://repo.r1soft.com/r1soft.asc
--2012-02-05 14:07:43--  http://repo.r1soft.com/r1soft.asc
Resolving repo.r1soft.com... 198.64.248.201
Connecting to repo.r1soft.com|198.64.248.201|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2819 (2.8K) [text/plain]
Saving to: `r1soft.asc'

100%[======================================================================>] 2,819       15.4K/s   in 0.2s

2012-02-05 14:07:45 (15.4 KB/s) - `r1soft.asc' saved [2819/2819]

root@debian-server:~# apt-key add r1soft.asc
OK
root@debian-server:~# apt-get update
Get:1 http://security.debian.org squeeze/updates Release.gpg [836 B]
Get:2 http://repo.r1soft.com stable Release.gpg [189 B]
Ign http://security.debian.org/ squeeze/updates/main Translation-en
Ign http://security.debian.org/ squeeze/updates/main Translation-en_US
Get:3 http://cdn.debian.net squeeze Release.gpg [1,672 B]
Ign http://cdn.debian.net/debian/ squeeze/main Translation-en
Ign http://cdn.debian.net/debian/ squeeze/main Translation-en_US
Get:4 http://cdn.debian.net squeeze-updates Release.gpg [836 B]
Ign http://cdn.debian.net/debian/ squeeze-updates/main Translation-en
Ign http://cdn.debian.net/debian/ squeeze-updates/main Translation-en_US
Get:5 http://cdn.debian.net squeeze Release [107 kB]
Get:6 http://security.debian.org squeeze/updates Release [86.9 kB]
Get:7 http://cdn.debian.net squeeze-updates Release [113 kB]
Ign http://repo.r1soft.com/apt/ stable/main Translation-en
Get:8 http://cdn.debian.net squeeze/main Sources [5,767 kB]
Ign http://repo.r1soft.com/apt/ stable/main Translation-en_US
Get:9 http://security.debian.org squeeze/updates/main Sources [78.8 kB]
Get:10 http://repo.r1soft.com stable Release [2,047 B]
Get:11 http://security.debian.org squeeze/updates/main amd64 Packages [247 kB]
Get:12 http://repo.r1soft.com stable/main amd64 Packages [1,388 B]
Get:13 http://cdn.debian.net squeeze/main amd64 Packages [8,603 kB]
Get:14 http://cdn.debian.net squeeze-updates/main Sources/DiffIndex [2,023 B]
Get:15 http://cdn.debian.net squeeze-updates/main amd64 Packages/DiffIndex [2,023 B]
Get:16 http://cdn.debian.net squeeze-updates/main Sources [4,305 B]
Get:17 http://cdn.debian.net squeeze-updates/main amd64 Packages [14.9 kB]
Fetched 15.0 MB in 4s (3,275 kB/s)
Reading package lists... Done
root@debian-server:~#
```

Option 1 - Install Advanced Edition Using APT-GET

Once the APT repository is configured, you can use the following command to install the CDP Advanced Edition :

```
#apt-get install r1soft-cdp-adnavced-edition
```

```
root@debian-server:~# apt-get install r1soft-cdp-advanced-edition
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  r1soft-cdp-agent r1soft-cdp-async-agent-2-6 r1soft-cdp-server r1soft-setup
Suggested packages:
  r1soft-kernel-modules
The following NEW packages will be installed:
  r1soft-cdp-advanced-edition r1soft-cdp-agent r1soft-cdp-async-agent-2-6
  r1soft-cdp-server r1soft-setup
0 upgraded, 5 newly installed, 0 to remove and 0 not upgraded.
Need to get 0 B/129 MB of archives.
After this operation, 0 B of additional disk space will be used.
Do you want to continue [Y/n]?
Selecting previously deselected package r1soft-setup.
(Reading database ... 35320 files and directories currently installed.)
Unpacking r1soft-setup (from .../r1soft-setup_4.2.0_amd64.deb) ...
```

4. Option 2 - Install Advanced Edition Manually (using dkpg)

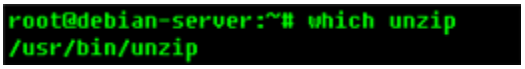
4.1 Make Sure You Can Unzip the Download

Most Linux distributions come with the unzip utility pre-installed. To determine if you have the unzip utility, run:

```
# which unzip
```

This should return an output similar to the following:

```
# which unzip
/usr/bin/unzip
```

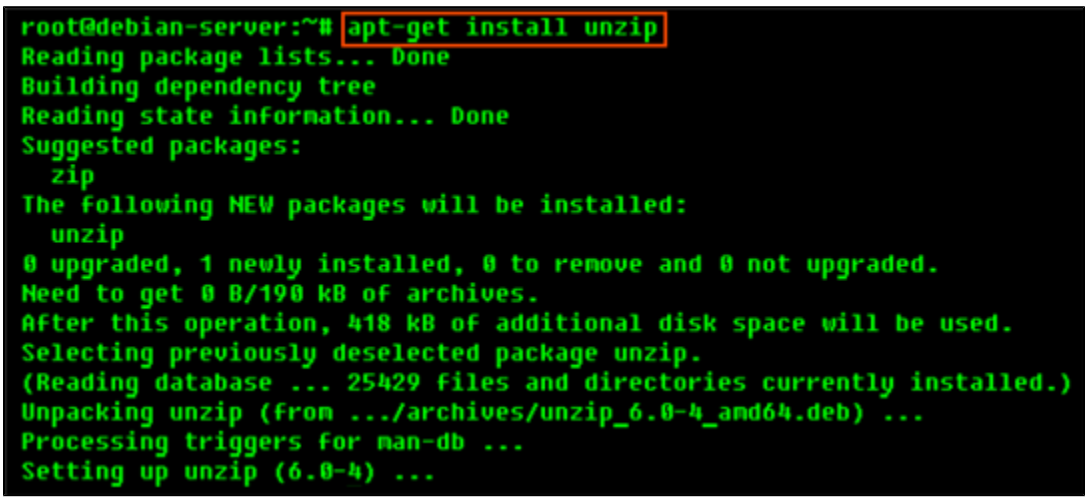


If it returns the following output, you need to install the unzip utility first:

```
unzip: Command not found.
```

To install unzip on Debian or Ubuntu:

```
# apt-get install unzip
```



4.2 Extract the Zip File

We recommend creating a temporary directory to which you can extract the contents of the ZIP file.

1. Use the `mkdir` command to create a temporary directory (in our case, `cdp`).

```
# mkdir cdp
```

2. Use the `mv` command to move the archive to that directory. Note that Linux file names are case-sensitive. Make sure you type the name correctly (in our case, "cdp-advanced-edition-linux64.zip").

```
# mv cdp-advanced-edition-linux64.zip cdp
```

3. Use the `cd` command to go to that directory.

```
# cd cdp
```

4. Use the `unzip` command to extract the files.

```
# unzip cdp-advanced-edition-linux64.zip
```

4.3 Install the Packages

> **Notice**
> You must be a Linux root user to install CDP Advanced Edition.

The archive you have extracted contains two folders: one with `.deb` packages (in our case, "deb-linux32") and one with `.rpm` packages ("rpm-linux32"). If you are installing on Debian or Ubuntu, choose the `.deb` package.

Each folder contains a set of CDP components:

- `r1soft-cdp-advanced-edition`
- `r1soft-setup`
- `r1soft-cdp-agent`
- `r1soft-cdp-server`

You will need to install all of them in one step. Use the `cd` command to go to the folder with the packages (in our case, "deb-linux32") and run the following command:

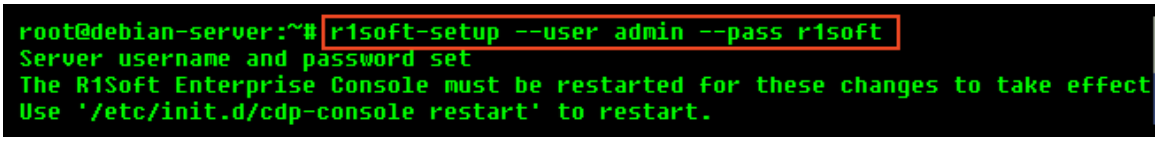
DEB 32-bit (x86) / DEB 64-bit (x86_64)

```
# dpkg -i *.deb
```

5. Configure and Start the CDP Server Web-based User Interface

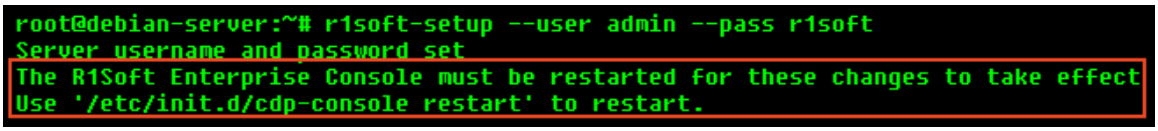
You will need to define a username and password for the CDP Server Web Interface before you can begin using CDP Advanced Edition.

```
# r1soft-setup --user DESIRED_USERNAME --pass DESIRED_PASSWORD
```



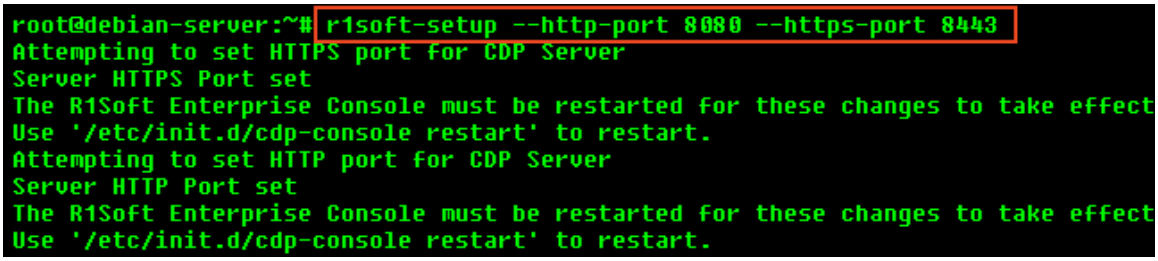
After running this command, you will see an output similar to the following:

```
# r1soft-setup --user admin --pass r1soft
Server username and password set
The R1Soft CDP Server must be restarted for these changes to take effect
Use '/etc/init.d/cdp-server restart' to restart.
```



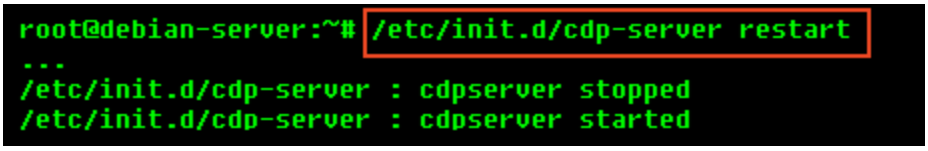
By default, the embedded web server in CDP Advanced Edition required for the Web-based Interface will listen on TCP ports 80 (HTTP) and 443 (HTTPS). These ports are frequently used by your Linux server (e.g., by Apache). If you are already using ports 80 and 443, you will need to define different ports. Ports 8080 (HTTP) and 8443 (HTTPS) are recommended alternatives to standard 80 and 443. However, you can choose any other valid and unused TCP port.

```
# r1soft-setup --http-port 8080 --https-port 8443
```



Start the Web Interface (CDP Server):

```
/etc/init.d/cdp-server restart
```



> **Note**
> You may need to change the firewall rules, depending on where you are connecting to the Web Interface from.

You should now be able to connect to the CDP Advanced Edition Web Interface using Firefox or Internet Explorer.

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6. Install CDP Linux Device Driver

CDP Device Driver is a proprietary, loadable Linux kernel module distributed by R1Soft. It is loadable at run-time without restarting Linux, and you do not need to recompile your Linux kernel to use it. R1Soft does not provide prebuilt modules for the popular kernels anymore, so you will have to compile the module from source.

> **Notice**
> You need to have loadable modules enabled as a feature in your kernel. This is an advanced feature on all popular Linux distributions.

6.1 Compiling CDP Kernel Module Against Kernel Headers or Kernel Source Tree

Using a pre-built binary module package is not possible anymore. You will have to compile this module against kernel headers or a kernel source tree. We are not always able to compile kernel modules from kernel-devel packages supplied by most major Linux distributions. In some cases, packages are missing header files (broken), or the packages have been stripped of information that any device driver would need to compile a kernel module. In these cases, we can build using your installed kernel-devel package on your Linux server, as r1soft-setup will obtain the missing information it needs to compile a module from your running kernel.

In order for kernel module compilation to work, you should have Internet connectivity directly from the Linux server you are installing CDP on, to TCP port HTTPS (443), on the host `krnlbld.r1soft.com`.

You can test connectivity with the following command (this may take a minute):

```
# r1soft-setup --test-connection
```

```
root@debian-server:~# r1soft-setup --test-connection
Checking connection to server
Waiting                       /          Connected successfully to 'krnlbld.r1so
ft.com'
```

6.2 Install Kernel Sources

If you are using an unmodified kernel provided by Ubuntu installer, install the kernel-devel package:

```
# apt-get install kernel-devel
```

6.3 Verify that the Source Matches Your Running Kernel

Sometimes, the kernel-devel package is newer than the installed and running kernel. If the kernel-devel is too old and not found, please follow the instructions on how to setup access to older yum packages as documented here.

6.4 Build the CDP Kernel Module Online (direct Internet connection to R1Soft build server)

To attempt to build the kernel module, run the following command (this may take several minutes):

```
# r1soft-setup --get-module
```

```
root@debian-server:~# /usr/bin/r1soft-setup --get-module
Checking for binary module
Waiting                       |
No binary module found
Gathering kernel information
Gathering kernel information complete.
Creating kernel headers package
Checking '/tmp/r1soft-cki.1346229167' for kernel headers
Found headers in '/tmp/r1soft-cki.1346229167'
Compressing...
uploading kernel package                        99% 4216KB  37.2KB/s    00:00 ETA
Starting module build...
Complete.
Saving kernel module to '/lib/modules/r1soft/hcpdriver-cki-2.6.32-5-amd64.ko'
Kernel module is now installed.
Use '/etc/init.d/cdp-agent restart' to load the new driver
```

If module has been compiled and installed successfully, you will see an output similar to the following:

```
Saving kernel module to '/lib/modules/r1soft/hcpdriver-cki-2.6.32-220.4.1.el6.x86_64.ko'
Kernel module is now installed.
Use '/etc/init.d/cdp-agent restart' to load the new driver
```

```
root@debian-server:~# /usr/bin/r1soft-setup --get-module
Checking for binary module
Waiting                        |
No binary module found
Gathering kernel information
Gathering kernel information complete.
Creating kernel headers package
Checking '/tmp/r1soft-cki.1346229167' for kernel headers
Found headers in '/tmp/r1soft-cki.1346229167'
Compressing...
uploading kernel package                        99% 4216KB  37.2KB/s    00:00 ETA
Starting module build...
Complete.
Saving kernel module to '/lib/modules/r1soft/hcpdriver-cki-2.6.32-5-amd64.ko'
Kernel module is now installed.
Use '/etc/init.d/cdp-agent restart' to load the new driver
```

6.5 Build the CDP Kernel Module Offline (without direct Internet connection to R1Soft build server)

If there is no direct Internet connection between your CDP server and R1Soft build server, it is still possible to compile the kernel module. In this case, this will be tree-step process. First, you will have to create tarball file with the kernel headers. When you should copy this tarball file from the server to some other computer which has Internet connection to R1Soft build server. From this computer you should upload the tarball to the R1Soft build server and wait for the compilation to finish. When it is finished, you should download binary module and copy it back to the CDP server. Start with executing the following command:

```
# r1soft-setup --no-binary --kernel-dir /usr/src/kernels/YOUR_KERNEL_TREE
--tarball-only /tmp/kernel-headers-for-r1soft.tar.gz
```

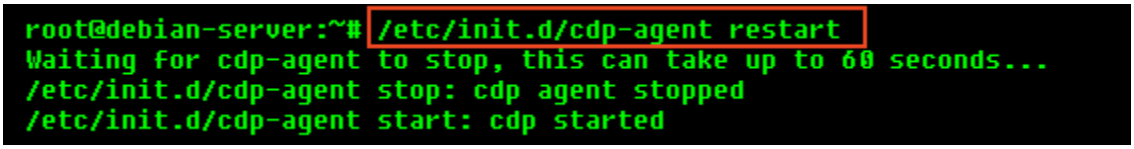
After running this command, you will see:

```
# r1soft-setup --no-binary --kernel-dir /usr/src/kernels/2.6.32-220.4.1.el6.x86_64
--tarball-only /tmp/kernel-headers-for-r1soft.tar.gz
Gathering kernel information
Gathering kernel information complete.
Creating kernel headers package
Checking '/usr/src/kernels/2.6.32-220.4.1.el6.x86_64' for kernel headers
Found headers in '/usr/src/kernels/2.6.32-220.4.1.el6.x86_64'
Compressing...
Header package created '/tmp/kernel-headers-for-r1soft.tar.gz'
visit https://krnlbld.r1soft.com/ to do an offline module build
After it is complete, you will need to copy the module to /lib/modules/r1soft
```

```
root@debian-server:~# r1soft-setup --no-binary --kernel-dir /usr/src/linux-heade
rs-2.6.32-5-amd64/ --tarball-only /tmp/kernel-headers-for-r1soft.tar.gz
Gathering kernel information
Gathering kernel information complete.
Creating kernel headers package
Checking '/usr/src/linux-headers-2.6.32-5-amd64/' for kernel headers
Found headers in '/usr/src/linux-headers-2.6.32-5-amd64/'
Compressing...
Header package created '/tmp/kernel-headers-for-r1soft.tar.gz'
visit https://krnlbld.r1soft.com/ to do an offline module build
After it is complete, you will need to copy the module to /lib/modules/r1soft
```

Last Step

- Copy the generated `tar.gz` file and paste it to a computer with Internet access.
- Go to https://krnlbld.r1soft.com/ and upload the `.tar.gz` file to build a kernel module.
- After the build, you will download a kernel module.
- Copy this module and paste it to your Linux Server and the folder `/lib/modules/r1soft` .
- Restart the Agent (`/etc/init.d/cdp-agent restart`).



Next Steps

- Accessing Advanced Edition Web Interface
- Logging in to CDP Server
- Activating CDP Advanced Edition