Installing Standard Edition on CentOS, RHE, and Fedora

1. Install Standard Edition Using YUM | 2. Install Standard Edition Manually | 3. Configure and Start the CDP Server Web-based User Interface | 4. Install CDP Linux Device Driver | Next Steps

1. Install Standard Edition Using YUM

1.1 Configure YUM Repository

YUM is the easiest way to keep programs up-to-date on RedHat-compatible distributions. YUM downloads and installs the latest version of a program. The YUM repository should be configured to manage installations of and upgrades to CDP Standard Edition.

First, create a YUM `.repo` file with the R1Soft repository information. Save the file in the `yum.repos.d` directory, which is typically located in `/etc/`.

1. Open the new file with a text editor such as vi or nano:

```
# cd /etc/yum.repos.d
# vi r1soft.repo
```

or

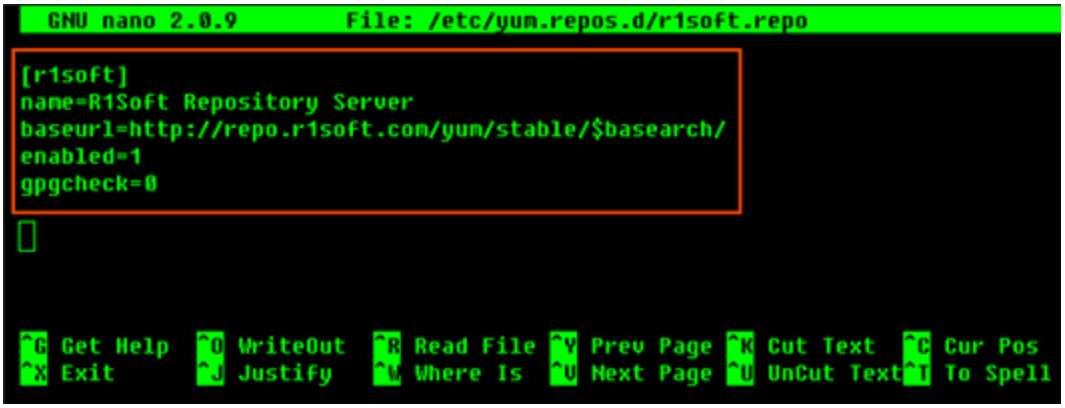
```
# nano -w /etc/yum.repos.d/r1soft.repo
```



2. Insert the following text into the file and save the file:

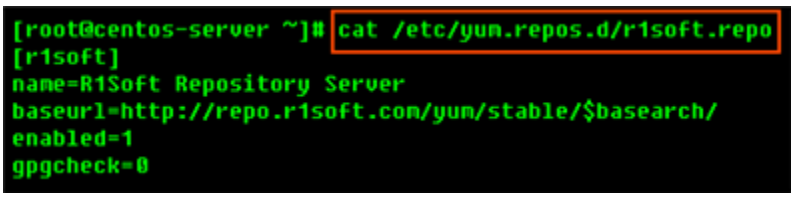
```
[r1soft]
name=R1Soft Repository Server
baseurl=http://repo.r1soft.com/yum/stable/$basearch/
enabled=1
gpgcheck=0
```

> **Tip**
> `$basearch` is a YUM variable, i.e., the base architecture (32-bit, 64-bit, etc.).



3. To verify what is written to the file, use the following command:

```
# cat /etc/yum.repos.d/r1soft.repo
```



1.2 Install the Package

1. With the installed YUM repository, you can use the following command to install CDP Standard Edition:

```
# yum install r1soft-cdp-standard-edition
```

```
[root@centos-server ~]# yum install r1soft-cdp-standard-edition
Loaded plugins: fastestmirror, presto
Loading mirror speeds from cached hostfile
 * base: centos.itt-consulting.com
 * extras: centos.itt-consulting.com
 * updates: centos.itt-consulting.com
Setting up Install Process
Resolving Dependencies
--> Running transaction check
---> Package r1soft-cdp-standard-edition.i386 0:4.2.0-17723 will be installed
--> Processing Dependency: r1soft-cdp-agent >= 4.2.0 for package: r1soft-cdp-sta
ndard-edition-4.2.0-17723.i386
--> Processing Dependency: r1soft-setup >= 4.2.0 for package: r1soft-cdp-standar
d-edition-4.2.0-17723.i386
--> Processing Dependency: r1soft-cdp-server >= 4.2.0 for package: r1soft-cdp-st
andard-edition-4.2.0-17723.i386
--> Running transaction check
---> Package r1soft-cdp-agent.i386 0:4.2.0-17723 will be installed
--> Processing Dependency: r1soft-cdp-async-agent-2-6 >= 4.2.0 for package: r1so
ft-cdp-agent-4.2.0-17723.i386
---> Package r1soft-cdp-server.i386 0:4.2.0-17723 will be installed
---> Package r1soft-setup.i386 0:4.2.0-17723 will be installed
--> Running transaction check
---> Package r1soft-cdp-async-agent-2-6.i386 0:4.2.0-17723 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================
 Package                        Arch      Version           Repository   Size
================================================================================
Installing:
 r1soft-cdp-standard-edition    i386      4.2.0-17723       r1soft      8.9 k
Installing for dependencies:
 r1soft-cdp-agent               i386      4.2.0-17723       r1soft      4.6 M
 r1soft-cdp-async-agent-2-6     i386      4.2.0-17723       r1soft       13 M
 r1soft-cdp-server              i386      4.2.0-17723       r1soft      108 M
 r1soft-setup                   i386      4.2.0-17723       r1soft      688 k

Transaction Summary
================================================================================
Install       5 Package(s)

Total download size: 127 M
Installed size: 233 M
Is this ok [y/N]:
```

2. In order to to download all dependencies of the package and install them, enter "y" and press <Enter>.

```
Is this ok [y/N]: y
Downloading Packages:
Setting up and reading Presto delta metadata
Processing delta metadata
Package(s) data still to download: 127 M
(1/5): r1soft-cdp-agent-4.2.0.i386.rpm                    | 4.6 MB     00:13
(2/5): r1soft-cdp-async-agent-2-6-4.2.0.i386.rpm          |  13 MB     00:40
(3/5): r1soft-cdp-server-4.2.0.i386.rpm                   | 108 MB     05:44
(4/5): r1soft-cdp-standard-edition-4.2.0.i386.rpm         | 8.9 kB     00:00
(5/5): r1soft-setup-4.2.0.i386.rpm                        | 688 kB     00:02
--------------------------------------------------------------------------------
Total                                          323 kB/s | 127 MB     06:42
Running rpm_check_debug
Running Transaction Test
Transaction Test Succeeded
Running Transaction
Warning: RPMDB altered outside of yum.
  Installing : r1soft-setup-4.2.0-17723.i386                               1/5
  Installing : r1soft-cdp-server-4.2.0-17723.i386                          2/5
Error: server.conf missing. Did you specify which CDP product to install?
Please contact R1Soft Support (support@r1soft.com)
  Installing : r1soft-cdp-async-agent-2-6-4.2.0-17723.i386                 3/5
  Installing : r1soft-cdp-agent-4.2.0-17723.i386                           4/5
/etc/init.d/cdp-agent stop: cdp (no pid file) not running
Attempting to get a kernel module from 'krnlbld.r1soft.com'

No binary module was found for your kernel. The kernel headers will be required
to build a module. See '/usr/bin/r1soft-setup --help' for more information
/etc/init.d/cdp-agent start: cdp started
  Installing : r1soft-cdp-standard-edition-4.2.0-17723.i386                5/5
Warning: Recommended memory for installation is 1024MB

Installed:
  r1soft-cdp-standard-edition.i386 0:4.2.0-17723

Dependency Installed:
  r1soft-cdp-agent.i386 0:4.2.0-17723
  r1soft-cdp-async-agent-2-6.i386 0:4.2.0-17723
  r1soft-cdp-server.i386 0:4.2.0-17723
  r1soft-setup.i386 0:4.2.0-17723

Complete!
```

3. The installation is complete:

4. Once complete, you can use the help command to list all available options:

```
# r1soft-setup --help
```

5. Now, proceed to Step 3.

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2. Install Standard Edition Manually

2.1 Download CDP Standard Edition

See Obtaining Linux CDP Standard Edition.

2.2 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:

```
/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 RHE, CentOS, and Fedora:

```
# yum install unzip
```

```
[root@centos-server ~]# yum install unzip
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
 * base: centos.itt-consulting.com
 * extras: centos.itt-consulting.com
 * updates: centos.itt-consulting.com
base                                                     | 3.7 kB     00:00
extras                                                   | 3.5 kB     00:00
extras/primary_db                                        | 6.3 kB     00:00
updates                                                  | 3.5 kB     00:00
updates/primary_db                                       | 1.1 MB     00:00
Setting up Install Process
Resolving Dependencies
--> Running transaction check
---> Package unzip.x86_64 0:6.0-1.el6 set to be updated
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================
 Package          Arch              Version                Repository       Size
================================================================================
Installing:
 unzip            x86_64            6.0-1.el6              base            149 k

Transaction Summary
================================================================================
Install       1 Package(s)
Upgrade       0 Package(s)

Total download size: 149 k
Installed size: 313 k
Is this ok [y/N]: y
Downloading Packages:
unzip-6.0-1.el6.x86_64.rpm                               | 149 kB     00:00
Running rpm_check_debug
Running Transaction Test
Transaction Test Succeeded
Running Transaction
  Installing     : unzip-6.0-1.el6.x86_64                                  1/1

Installed:
  unzip.x86_64 0:6.0-1.el6

Complete!
```

2.3 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
```

```
[root@centos-server ~]# 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-standard-edition-linux64.zip").

```
# mv cdp-standard-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-standard-edition-linux32.zip
```

```
[root@centos-server cdp]# unzip cdp-standard-edition-linux32.zip
Archive:  cdp-standard-edition-linux32.zip
  inflating: StandardEdition-README.txt
   creating: deb-linux32/
  inflating: deb-linux32/r1soft-cdp-agent-i386-4.2.0.deb
  inflating: deb-linux32/r1soft-cdp-server-i386-4.2.0.deb
  inflating: deb-linux32/r1soft-cdp-standard-edition-i386-4.2.0.deb
  inflating: deb-linux32/r1soft-setup-i386-4.2.0.deb
   creating: rpm-linux32/
  inflating: rpm-linux32/r1soft-cdp-agent-4.2.0.i386.rpm
  inflating: rpm-linux32/r1soft-setup-4.2.0.i386.rpm
  inflating: rpm-linux32/r1soft-cdp-standard-edition-4.2.0.i386.rpm
  inflating: rpm-linux32/r1soft-cdp-server-4.2.0.i386.rpm
```

2.4 Install the Packages

> **Notice**
> You must be a Linux root user to install CDP Standard 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 RedHat and CentOS, select the `.rpm` package.

Each folder contains a set of CDP components:

- `r1soft-cdp-standard-edition`
- `r1soft-setup`
- `r1soft-cdp-agent`
- `r1soft-cdp-async-agent-2-6`
- `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:

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

```
# rpm -i *.rpm
```

```
[root@centos-server rpm-linux64]# rpm -i *.rpm
You will need to assign a username and password to the R1Soft CDP Server.
You can do this with '/usr/bin/r1soft-setup' utility.
Use '/usr/bin/r1soft-setup --help' for more information.
/etc/init.d/cdp-agent stop: cdp (no pid file) not running
Attempting to get a kernel module from 'krnlbld.r1soft.com'

No binary module was found for your kernel. The kernel headers will be required
to build a module. See '/usr/bin/r1soft-setup --help' for more information
/etc/init.d/cdp-agent start: cdp started
```

---

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

1. You must define a username and password for the CDP Server Web Interface before you can begin using CDP Standard Edition.

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

For example, you can set the "admin" login and "r1soft" password:

```
# r1soft-setup --user admin --pass r1soft
```

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

```
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.
```

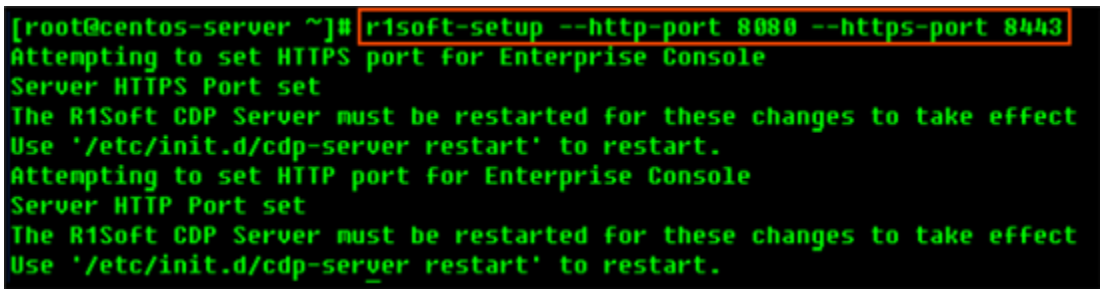
```
[root@centos-server ~]# r1soft-setup --user admin --pass r1soft
Server username and password set
The R1Soft CDP Server must be restarted for these changes to take effect
Use '/etc/init.d/cdp-server restart' to restart.
```

2. Configure ports, if necessary.

By default, the embedded web server in CDP Standard 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. Example:

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



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

3. Start the Web Interface (CDP Server):

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



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

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4. 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, and this is standard on all popular Linux distributions.

4.1 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.

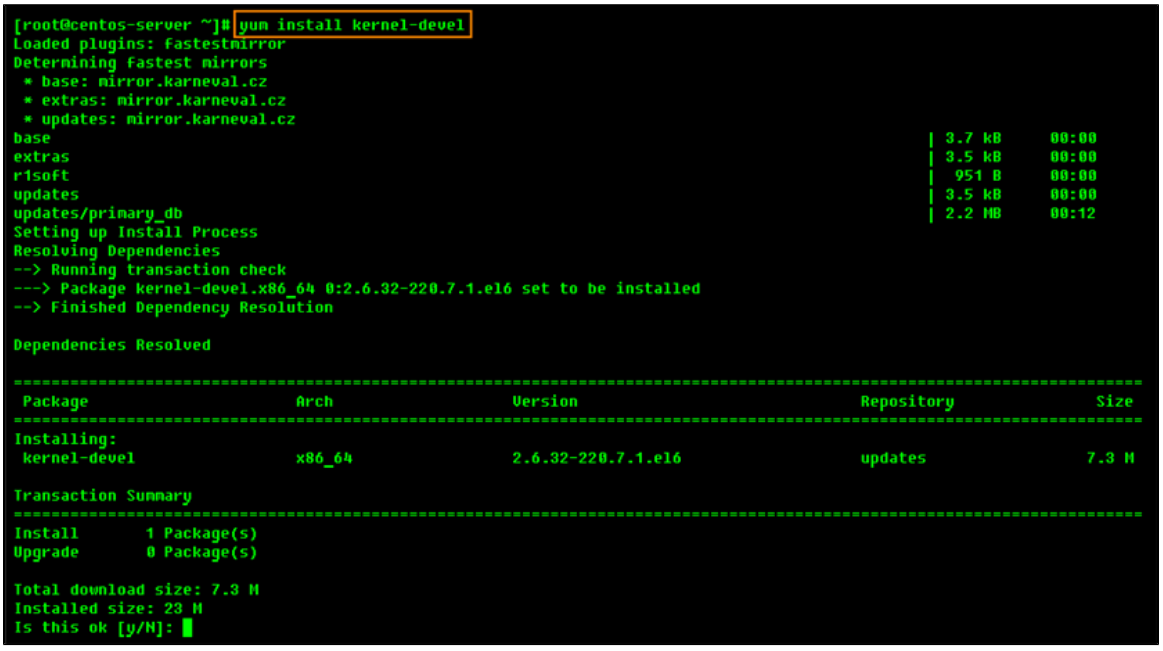
You can test connectivity with the following command (this may take a minute):

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

4.2 Install Kernel Sources

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

```
# yum install kernel-devel
```



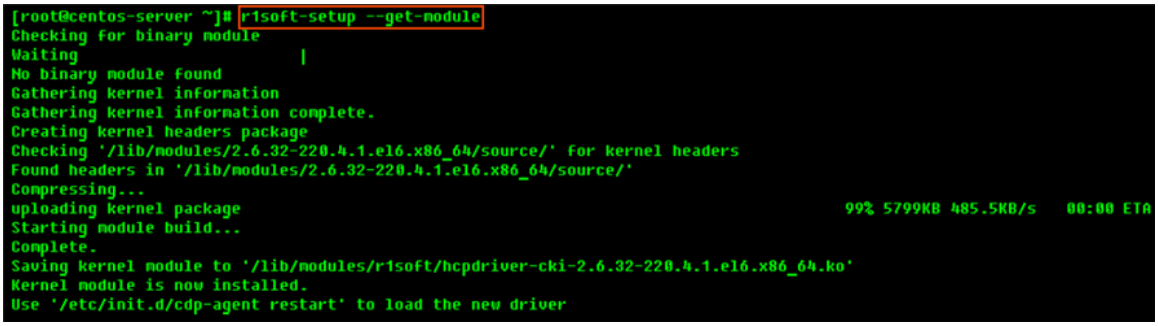
4.3 Verify that the Source Matches Your Running Kernel

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.

4.4 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
```



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
```

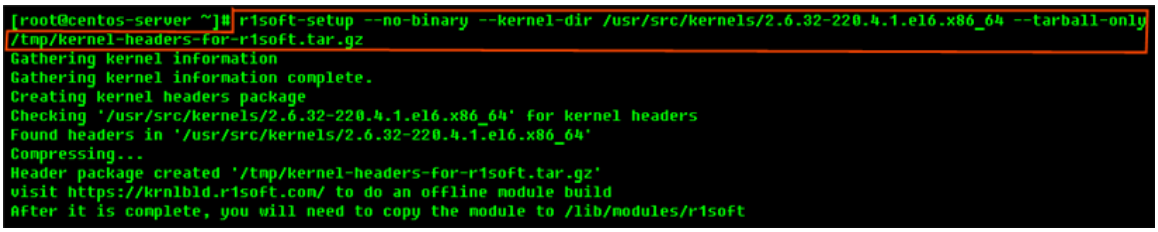
4.5 Build the CDP Kernel Module Offline (without direct Internet connection to R1Soft build server)

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
```



4.6 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 Standard Edition Web Interface
- Logging in to CDP Server
- Activating CDP Standard Edition