



Installing or upgrading the ONTAP Mediator service

ONTAP MetroCluster

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Installing or upgrading the ONTAP Mediator service

To install the ONTAP Mediator service, you must ensure all prerequisites are met, get the installation package and run the installer on the host.

Before you begin

You must meet the following prerequisites.

Mediator version	Supported Linux versions
1.3	Red Hat Enterprise Linux or CentOS 7.6, 7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3
1.2	Red Hat Enterprise Linux or CentOS 7.6, 7.7, 7.8, 8.0, 8.1

- 64-bit physical installation or virtual machine
 - 8 GB RAM
 - User: Root access The best practices for installing Red Hat Enterprise Linux or CentOS and the associated repositories on your system are listed below. Systems installed or configured differently might require additional steps.
 - You must install Red Hat Enterprise Linux or CentOS according to Red Hat best practices.
 - While installing the ONTAP Mediator service on Red Hat Enterprise Linux or CentOS, the system must have access to the appropriate repository so that the installation program can access and install all the required software dependencies.
 - For the yum installer to find dependent software in the Red Hat Enterprise Linux repositories, you must have registered the system during the Red Hat Enterprise Linux installation or afterwards by using a valid Red Hat subscription.

See the Red Hat documentation for information about the Red Hat Subscription Manager.

- The following ports must be unused and available for the Mediator:
 - 31784
 - 3260
- If using a third-party firewall: refer to [Firewall requirements for ONTAP Mediator](#)
- If the Linux host is in a location without access to the internet, you can either install the packages manually or you must ensure that the required packages are available in a local repository.

You can use the following link for information about setting up a repository.

If you are using Link Aggregation Control Protocol (LACP) in a Linux environment, you must correctly configure the kernel and make sure the `sysctl net.ipv4.conf.all.arp_ignore` is set to [2](#).

The following packages are required by the ONTAP Mediator service:

All RHEL/CentOS versions	Additional packages for RHEL/CentOS 7.x	Additional packages for RHEL/CentOS 8.x
<ul style="list-style-type: none"> • openssl • openssl-devel • kernel-devel • gcc • libselinux-utils • make • redhat-lsb-core • patch • bzip2 • python36 • python36-devel • perl-Data-Dumper • perl-ExtUtils-MakeMaker • python3-pip 	<ul style="list-style-type: none"> • policycoreutils-python • python36-pip 	<ul style="list-style-type: none"> • elfutils-libelf-devel • policycoreutils-python-utils

- If signature verification is configured, it must be disabled. This can be done in one of two ways:
 - If the UEFI SecureBoot mechanism is configured, disable it.
 - Disable the signature verification mechanism by updating and regenerating the grub.cfg file:
 - i. Open the /etc/default/grub file.
 - ii. Add the string module.sig_enforce=0 to the end of the GRUB_CMDLINE_LINUX statement.
 - iii. Regenerate the grub.cfg file to implement the change: `update-bootloader || update-grub || grub2-mkconfig -o /boot/grub2/grub.cfg`
 - iv. Reboot the host.

The Mediator installation package is a self-extracting compressed tar file that includes:

- An RPM file containing all dependencies that cannot be obtained from the supported release's repository.
- An install script.

A valid SSL certification is recommended, as documented in this procedure.

This procedure is used for an installation or an upgrade of an existing installation.

[Guidelines for upgrading the ONTAP Mediator in a MetroCluster configuration](#)

Enable access to the repositories

If your operating system is...	You must provide access to these repositories...
RHEL 7.x	rhel-7-server-optional-rpms

If your operating system is...	You must provide access to these repositories...
CentOS 7.x	C7.6.1810 - Base repository
RHEL 8.x	<ul style="list-style-type: none"> • rhel-8-for-x86_64-baseos-rpms • rhel-8-for-x86_64-appstream-rpms
CentOS 8.0	kernel-devel

Enable access to the repositories listed above so Mediator can access the required packages during the installation process. Use the procedure below for your operating system.

If your operating system is **RHEL 7.x**:

1. Subscribe to the required repository: `subscription-manager repos --enable rhel-7-server-optional-rpms`

The following example shows the execution of this command:

```
[root@localhost ~]# subscription-manager repos --enable rhel-7-server-optional-rpms
Repository 'rhel-7-server-optional-rpms' is enabled for this system.
```

2. Run the yum repolist command.

The following example shows the execution of this command. The rhel-7-server-optional-rpms repository should appear in the list.

```
[root@localhost ~]# yum repolist
Loaded plugins: product-id, search-disabled-repos, subscription-manager
rhel-7-server-optional-rpms | 3.2 kB  00:00:00
rhel-7-server-rpms | 3.5 kB  00:00:00
(1/3): rhel-7-server-optional-rpms/7Server/x86_64/group
| 26 kB  00:00:00
(2/3): rhel-7-server-optional-rpms/7Server/x86_64/updateinfo
| 2.5 MB  00:00:00
(3/3): rhel-7-server-optional-rpms/7Server/x86_64/primary_db
| 8.3 MB  00:00:01
```

repo id	repo name
rhel-7-server-optional-rpms/7Server/x86_64	Red Hat Enterprise Linux 7
Server - Optional (RPMs)	19,447
rhel-7-server-rpms/7Server/x86_64	Red Hat Enterprise Linux 7
Server (RPMs)	26,758
repolist: 46,205	

```
[root@localhost ~]#
```

If your operating system is **RHEL 8.x**:

1. Subscribe to the required repository: `subscription-manager repos --enable rhel-8-for-x86_64-baseos-rpms`subscription-manager repos --enable rhel-8-for-x86_64-appstream-rpms`

The following example shows the execution of this command:

```
[root@localhost ~]# subscription-manager repos --enable rhel-8-for-x86_64-baseos-rpms
[root@localhost ~]# subscription-manager repos --enable rhel-8-for-x86_64-appstream-rpms
Repository 'rhel-8-for-x86_64-baseos-rpms' is enabled for this system.
Repository 'rhel-8-for-x86_64-appstream-rpms' is enabled for this system.
```

2. Run the yum repolist command.

The newly subscribed repositories should appear in the list.

If your operating system is **CentOS 7.x**:

1. Add the C7.6.1810 - Base repository. The C7.6.1810 - Base vault repository contains the kernel-devel package needed for ONTAP Mediator.
2. Add the following lines to /etc/yum.repos.d/CentOS-Vault.repo.

```
[C7.6.1810-base]
name=CentOS-7.6.1810 - Base
baseurl=http://vault.centos.org/7.6.1810/os/$
basearch/gpgcheck=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
enabled=1
```

3. Run the yum repolist command.

The following example shows the execution of this command. The CentOS-7.6.1810 - Base repository should appear in the list.

```
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
* base: distro.ibiblio.org
* extras: distro.ibiblio.org
* updates: ewr.edge.kernel.org
C7.6.1810-base | 3.6
kB 00:00:00
(1/2): C7.6.1810-base/x86_64/group_gz | 166
kB 00:00:00
(2/2): C7.6.1810-base/x86_64/primary_db | 6.0
MB 00:00:04
repo id repo name
status
C7.6.1810-base/x86_64 CentOS-7.6.1810 - Base
10,019
base/7/x86_64 CentOS-7 - Base
10,097
extras/7/x86_64 CentOS-7 - Extras
307
updates/7/x86_64 CentOS-7 - Updates
1,010
repolist: 21,433
[root@localhost ~]#
```

If your operating system is **CentOS 8.0.1905 or later builds**:

Because the latest version of the 8.0 (CentOS 8.0.1905) core resides in the CentOS Vault, you must provide access to the matching kernel-devel package to compile the needed kernel module. Issue the following command to directly install the kernel-devel package: `rpm -i http://vault.centos.org/8.0.1905/BaseOS/x86_64/os/Packages/kernel-devel-\$\(uname -r\).rpm`

If the system displays an error indicating that the package is already installed, remove the package and try again:

1. Remove the kernel-devel package: `yum remove kernel-devel`
2. Repeat the rpm command shown above.

Download the Mediator installation package

1. Download the Mediator installation package from the ONTAP Mediator page.

[ONTAP Mediator download page](#)

2. Confirm that the Mediator installation package is in the target directory: `ls`

```
[root@mediator-host ~]#ls
./ontap-mediator_1.3
```

If you are at a location without access to the internet, you must ensure that the installer has access to the required packages.

3. If necessary, move the Mediator installation package from the download directory to the installation directory on the Linux Mediator host.

Install the ONTAP Mediator installation package

1. Install the Mediator installation package and respond to the prompts as required: `./ontap-mediator_1.3`

The installation process proceeds to create the required accounts and install required packages. If you have a previous version of Mediator installed on the host, you will be prompted to confirm that you want to upgrade.

Example of a fresh ONTAP Mediator installation

The following example shows a fresh installation of the Mediator service:

```
[root@red-hat-enterprise-linux ~]# ./ontap-mediator_1.3
ONTAP Mediator: Self Extracting Installer

ONTAP Mediator requires two user accounts. One for the service (netapp),
and one for use by ONTAP to the mediator API (mediatoradmin).

Would you like to use the default account names: netapp + mediatoradmin?
(Y(es)/n(o)): y

Enter ONTAP Mediator system service account (mediatoradmin) password:
```


Re-Enter ONTAP Mediator system service account (mediatoradmin) password:

Checking for default Linux firewall

Linux firewall is running. Open ports 31784 and 3260? y(es)/n(o): y
success
success

#####

Preparing for installation of ONTAP Mediator packages.

Do you wish to continue? y(es)/n(o): y

+ Installing required packages.

Loaded plugins: product-id, search-disabled-repos, subscription-manager
epel/x86_64/metalink

| 17 kB 00:00:00

epel-extra

| 4.9 kB 00:00:00

ius

| 1.3 kB 00:00:00

rhel-7-server-rpms

| 3.5 kB 00:00:00

(1/3): ius/x86_64/primary

| 129 kB 00:00:00

(2/3): epel-extra/group_gz

| 88 kB 00:00:01

(3/3): epel-extra/primary_db

| 6.7 MB 00:00:06

ius

538/538

Package 1:make-3.82-23.el7.x86_64 already installed and latest version

.
.
.

=====
=====

Preparing for installation of ONTAP Mediator packages.

Do you wish to continue? y(es)/n(o): y

+ Installing required packages.

```

Loaded plugins: product-id, search-disabled-repos, subscription-manager
epel/x86_64/metalink
| 17 kB 00:00:00
epel-extra
| 4.9 kB 00:00:00
ius
| 1.3 kB 00:00:00
rhel-7-server-rpms
| 3.5 kB 00:00:00
(1/3): ius/x86_64/primary
| 129 kB 00:00:00
(2/3): epel-extra/group_gz
| 88 kB 00:00:01
(3/3): epel-extra/primary_db
| 6.7 MB 00:00:06
ius
538/538

```

```

Package 1:make-3.82-23.el7.x86_64 already installed and latest version

```

```

.
.
.
.

```

```

=====
Package                               Arch
Version                               Repository
Size
=====
===
Installing:
  bzip2                               x86_64
1.0.6-13.el7                           rhel-7-server-rpms
52 k
  gcc                               x86_64
4.8.5-36.el7_6.2                       rhel-7-server-rpms
16 M
  kernel-devel                       x86_64
3.10.0-957.el7                         rhel-7-server-rpms
17 M
  openssl-devel                       x86_64
1:1.0.2k-16.el7_6.1                   rhel-7-server-rpms
1.5 M
  patch                               x86_64
2.7.1-10.el7_5                         rhel-7-server-rpms
110 k
  perl-Compress-Raw-Zlib              x86_64

```

```

1:2.061-4.el7                                rhel-7-server-rpms
57 k
    perl-Digest-MD5                            x86_64
2.52-3.el7                                    rhel-7-server-rpms
30 k
    perl-Digest-SHA                            x86_64
1:5.85-4.el7                                    rhel-7-server-rpms
58 k
    perl-ExtUtils-CBuilder                    noarch
1:0.28.2.6-294.el7_6                          rhel-7-server-rpms
68 k
    perl-ExtUtils-MakeMaker                  noarch
6.68-3.el7                                    rhel-7-server-rpms
275 k
    perl-JSON-PP                              noarch
2.27202-2.el7                                rhel-7-server-rpms
55 k
    python36                                  x86_64
3.6.8-2.el7.ius                              ius
60 k
    python36-devel                            x86_64
3.6.8-2.el7.ius                              ius
206 k
    python36-pip                              noarch
9.0.1-2.el7.ius                              ius
1.7 M
    redhat-lsb-core                            x86_64
4.1-27.el7                                    rhel-7-server-rpms
37 k

Updating:
    openssl                                    x86_64
1:1.0.2k-16.el7_6.1                          rhel-7-server-rpms
493 k

Installing for dependencies:
    at                                          x86_64
3.1.13-24.el7                                rhel-7-server-rpms
51 k
    avahi-libs                                x86_64
0.6.31-19.el7                                rhel-7-server-rpms
62 k
    bc                                          x86_64
1.06.95-13.el7                                rhel-7-server-rpms
115 k
    cpp                                          x86_64

```

4.8.5-36.el7_6.2	rhel-7-server-rpms
6.0 M	
cups-client	x86_64
1:1.6.3-35.el7	rhel-7-server-rpms
151 k	
cups-libs	x86_64
1:1.6.3- 35.el7	rhel-7-server-rpms
357 k	
dwz	x86_64
0.11-3.el7	rhel-7-server-rpms
99 k	
ed	x86_64
1.9-4.el7	rhel-7-server-rpms
72 k	
gdbm-devel	x86_64
1.10-8.el7	rhel-7-server-rpms
47 k	
glibc-devel	x86_64
2.17-260.el7_6.6	rhel-7-server-rpms
1.1 M	
glibc-headers	x86_64
2.17-260.el7_6.6	rhel-7-server-rpms
684 k	
kernel-headers	x86_64
3.10.0-957.27.2.el7	rhel-7-server-rpms
8.0 M	
keyutils-libs-devel	x86_64
1.5.8-3.el7	rhel-7-server-rpms
37 k	
krb5-devel	x86_64
1.15.1-37.el7_6	rhel-7-server-rpms
271 k	
libcom_err-devel	x86_64
1.42.9-13.el7	rhel-7-server-rpms
31 k	
libdb-devel	x86_64
5.3.21-24.el7	rhel-7-server-rpms
38 k	
libkadm5	x86_64
1.15.1-37.el7_6	rhel-7-server-rpms
178 k	
libmpc	x86_64
1.0.1-3.el7	rhel-7-server-rpms
51 k	
libselinux-devel	x86_64
2.5-14.1.el7	rhel-7-server-rpms

187 k		
libsepol-devel	x86_64	
2.5-10.el7	rhel-7-server-rpms	
77 k		
libverto-devel	x86_64	
0.2.5-4.el7	rhel-7-server-rpms	
12 k		
m4	x86_64	
1.4.16-10.el7	rhel-7-server-rpms	
256 k		
mailx	x86_64	
12.5- 19.el7	rhel-7-server-rpms	
245 k		
mpfr	x86_64	
3.1.1-4.el7	rhel-7-server-rpms	
203 k		
pcre-devel	x86_64	
8.32-17.el7	rhel-7-server-rpms	
480 k		
perl	x86_64	
4:5.16.3-294.el7_6	rhel-7-server-rpms	
8.0 M		
perl-Carp	noarch	
1.26-244.el7	rhel-7-server-rpms	
19 k		
perl-Data-Dumper	x86_64	
2.145-3.el7	rhel-7-server-rpms	
47 k		
perl-Digest	noarch	
1.17-245.el7	rhel-7-server-rpms	
23 k		
perl-Encode	x86_64	
2.51-7.el7	rhel-7-server-rpms	
1.5 M		
perl-Exporter	noarch	
5.68-3.el7	rhel-7-server-rpms	
28 k		
perl-ExtUtils-Install	noarch	
1.58-294.el7_6	rhel-7-server-rpms	
75 k		
perl-ExtUtils-Manifest	noarch	
1.61-244.el7	rhel-7-server-rpms	
31 k		
perl-ExtUtils-ParseXS	noarch	
1:3.18-3.el7	rhel-7-server-rpms	
77 k		

perl-File-Path	noarch
2.09-2.el7	rhel-7-server-rpms
27 k	
perl-File-Temp	noarch
0.23.01-3.el7	rhel-7-server-rpms
56 k	
perl-Filter	x86_64
1.49-3.el7	rhel-7-server-rpms
76 k	
perl-Getopt-Long	noarch
2.40-3.el7	rhel-7-server-rpms
56 k	
perl-HTTP-Tiny	noarch
0.033-3.el7	rhel-7-server-rpms
38 k	
perl-IPC-Cmd	noarch
1:0.80-4.el7	rhel-7-server-rpms
34 k	
perl-Locale-Maketext	noarch
1.23-3.el7	rhel-7-server-rpms
93 k	
perl-Locale-Maketext-Simple	noarch
1:0.21-294.el7_6	rhel-7-server-rpms
50 k	
perl-Module-CoreList	noarch
1:2.76.02-294.el7_6	rhel-7-server-rpms
86 k	
perl-Module-Load	noarch
1:0.24-3.el7	rhel-7-server-rpms
11 k	
perl-Module-Load-Conditional	noarch
0.54-3.el7	rhel-7-server-rpms
18 k	
perl-Module-Metadata	noarch
1.000018-2.el7	rhel-7-server-rpms
26 k	
perl-Params-Check	noarch
1:0.38-2.el7	rhel-7-server-rpms
18 k	
perl-PathTools	x86_64
3.40-5.el7	rhel-7-server-rpms
83 k	
perl-Perl-OSType	noarch
1.003-3.el7	rhel-7-server-rpms
20 k	
perl-Pod-Escapes	noarch

1:1.04-294.el7_6	rhel-7-server-rpms
51 k	
perl-Pod-Perldoc	noarch
3.20-4.el7	rhel-7-server-rpms
87 k	
perl-Pod-Simple	noarch
1:3.28-4.el7	rhel-7-server-rpms
216 k	
perl-Pod-Usage	noarch
1.63-3.el7	rhel-7-server-rpms
27 k	
perl-Scalar-List-Utills	x86_64
1.27-248.el7	rhel-7-server-rpms
36 k	
perl-Socket	x86_64
2.010-4.el7	rhel-7-server-rpms
49 k	
perl-Storable	x86_64
2.45-3.el7	rhel-7-server-rpms
77 k	
perl-Test-Harness	noarch
3.28-3.el7	rhel-7-server-rpms
302 k	
perl-Text-ParseWords	noarch
3.29-4.el7	rhel-7-server-rpms
14 k	
perl-Time-HiRes	x86_64
4:1.9725-3.el7	rhel-7-server-rpms
45 k	
perl-Time-Local	noarch
1.2300-2.el7	rhel-7-server-rpms
24 k	
perl-constant	noarch
1.27-2.el7	rhel-7-server-rpms
19 k	
perl-devel	x86_64
4:5.16.3-294.el7_6	rhel-7-server-rpms
453 k	
perl-libs	x86_64
4:5.16.3-294.el7_6	rhel-7-server-rpms
688 k	
perl-macros	x86_64
4:5.16.3-294.el7_6	rhel-7-server-rpms
44 k	
perl-parent	noarch
1:0.225-244.el7	rhel-7-server-rpms

12 k	perl-podlators	noarch
2.5.1-3.el7		rhel-7-server-rpms
112 k	perl-srpm-macros	noarch
1-8.el7		rhel-7-server-rpms
4.7 k	perl-threads	x86_64
1.87-4.el7		rhel-7-server-rpms
49 k	perl-threads-shared	x86_64
1.43-6.el7		rhel-7-server-rpms
39 k	perl-version	x86_64
3:0.99.07-3.el7		rhel-7-server-rpms
84 k	psmisc	x86_64
22.20-15.el7		rhel-7-server-rpms
141 k	pyparsing	noarch
1.5.6-9.el7		rhel-7-server-rpms
94 k	python-rpm-macros	noarch
3-24.el7		epel-extra
7.9 k	python-srpm-macros	noarch
3-24.el7		epel-extra
7.3 k	python3-rpm-macros	noarch
3-24.el7		epel-extra
6.9 k	python36-libs	x86_64
3.6.8-2.el7.ius		ius
8.6 M	python36-setuptools	noarch
39.2.0-4.el7.ius		ius
621 k	redhat-lsb-submod-security	x86_64
4.1-27.el7		rhel-7-server-rpms
15 k	redhat-rpm-config	noarch
9.1.0-87.el7		rhel-7-server-rpms
81 k	spax	x86_64
1.5.2-13.el7		rhel-7-server-rpms
260 k		


```

systemtap-sdt-devel                                x86_64
3.3-3.el7                                          rhel-7-server-rpms
74 k
time                                              x86_64
1.7-45.el7                                        rhel-7-server-rpms
30 k
zip                                              x86_64
3.0-11.el7                                        rhel-7-server-rpms
260 k
zlib-devel                                        x86_64
1.2.7-18.el7                                     rhel-7-server-rpms
50 k

```

Updating for dependencies:

```

glibc                                              x86_64
2.17-260.el7_6.6                                rhel-7-server-rpms
3.6 M
glibc-common                                     x86_64
2.17-260.el7_6.6                                rhel-7-server-rpms
11 M
krb5-libs                                         x86_64
1.15.1-37.el7_6                                  rhel-7-server-rpms
803 k
libgcc                                            x86_64
4.8.5-36.el7_6.2                                rhel-7-server-rpms
102 k
libgomp                                           x86_64
4.8.5-36.el7_6.2                                rhel-7-server-rpms
158 k
openssl-libs                                     x86_64
1:1.0.2k-16.el7_6.1                             rhel-7-server-rpms
1.2 M

```

Transaction Summary

```

=====
=====

```

```

Install 15 Packages (+84 Dependent packages)
Upgrade 1 Package (+ 6 Dependent packages)

```

Total download size: 97 M

Is this ok [y/d/N]: y

Downloading packages:

Delta RPMs disabled because /usr/bin/applydeltarpm not installed.

```

.
.
.
.
+ Installing ONTAP Mediator. (Log: /tmp/ontap_mediator.jx6UrF/ontap-
mediator/install.log)
+ Install successful. (Moving log to
/opt/netapp/lib/ontap_mediator/log/install.log)

[root@red-hat-enterprise-linux ~]#

```

Upgrading the ONTAP Mediator service

The following example shows an upgrade of the Mediator service:

1. Use the following steps to configure third-party certification.

Third-party certification is recommended. .. The certificate must be placed in the following directory:
/opt/netapp/lib/ontap_mediator/ontap_mediator/ server_config

+ You must overwrite the following files with your certificate, renaming the certificate files if necessary to
ontap_mediator_server.crt and ontap_mediator_server.key.

+	#	SSL	Certificates	cert_path:
				key_path:
			'/opt/netapp/lib/ontap_mediator/ontap_mediator/server_config/ontap_mediator_server.crt'	
			'/opt/netapp/lib/ontap_mediator/ontap_mediator/server_config/ontap_mediator_server.key'	

+ Note: You must be sure to follow security best practices for your operating system. If you are not using a third-party certificate, the Mediator installation process will create a self-signed certificate.

- a. Along with the server certificates, you must update the CA certificates as well.

You must overwrite the following files with your certificate, renaming the certificate files if necessary to:

- ontap_mediator_server.crt
- ontap_mediator_server.key
- ca.crt
- ca.key
- ca.srl

```
# SSL Certificates
cert_path:
'/opt/netapp/lib/ontap_mediator/ontap_mediator/server_config/ontap_mediator_server.crt'
key_path:
'/opt/netapp/lib/ontap_mediator/ontap_mediator/server_config/ontap_mediator_server.key'
ca_cert_path:
'/opt/netapp/lib/ontap_mediator/ontap_mediator/server_config/ca.crt'
ca_key_path:
'/opt/netapp/lib/ontap_mediator/ontap_mediator/server_config/ca.key'
ca_serial_path:
'/opt/netapp/lib/ontap_mediator/ontap_mediator/server_config/ca.serial'
```

Verify the installation.

Run the following command to view the status of the ONTAP Mediator services: `systemctl`

```
[root@scspr1915530002 ~]# systemctl status ontap_mediator mediator-scst

• ontap_mediator.service - ONTAP Mediator
   Loaded: loaded
   (/opt/netapp/lib/ontap_mediator/systemd/ontap_mediator.service; enabled;
   vendor preset: disabled)

   Active: active (running) since Thu 2020-06-18 09:55:02 EDT; 3
   days ago

   Main PID: 3559 (uwsgi)

   Status: "uWSGI is ready"

   CGroup: /system.slice/ontap_mediator.service

           \u251c\u25003559
/opt/netapp/lib/ontap_mediator/pyenv/bin/uwsgi --ini
/opt/netapp/lib/ontap_mediator/uwsgi/ontap_mediator.ini

           \u251c\u25004510
/opt/netapp/lib/ontap_mediator/pyenv/bin/uwsgi --ini
/opt/netapp/lib/ontap_mediator/uwsgi/ontap_mediator.ini
```

```
\u2514\u25004512
/opt/netapp/lib/ontap_mediator/pyenv/bin/uwsgi --ini
/opt/netapp/lib/ontap_mediator/uwsgi/ontap_mediator.ini
```

```
Jun 18 09:54:43 scspr1915530002 systemd[1]: Starting ONTAP
Mediator...
```

```
Jun 18 09:54:45 scspr1915530002 ontap_mediator[3559]: [uWSGI]
getting INI configuration from
/opt/netapp/lib/ontap_mediator/uwsgi/ontap_mediator.ini
```

```
Jun 18 09:55:02 scspr1915530002 systemd[1]: Started ONTAP
Mediator.
```

```
• mediator-scst.service
  Loaded: loaded
        (/opt/netapp/lib/ontap_mediator/systemd/mediator-scst.service; enabled;
        vendor preset: disabled)
```

```
Active: active (running) since Thu 2020-06-18 09:54:51 EDT; 3
days ago
```

```
Process: 3564 ExecStart=/etc/init.d/scst start (code=exited,
status=0/SUCCESS)
```

```
Main PID: 4202 (iscsi-scstd)
```

```
CGroup: /system.slice/mediator-scst.service
```

```
\u2514\u25004202 /usr/local/sbin/iscsi-scstd
```

```
Jun 18 09:54:43 scspr1915530002 systemd[1]: Starting mediator-
scst.service...
```

```
Jun 18 09:54:48 scspr1915530002 iscsi-scstd[4200]:
max_data_seg_len 1048576, max_queued_cmds 2048
```

```
Jun 18 09:54:51 scspr1915530002 scst[3564]: Loading and
configuring SCST[ OK ]
```

```
Jun 18 09:54:51 scspr1915530002 systemd[1]: Started mediator-  
scst.service.
```

```
[root@scspr1915530002 ~]#
```

1. Confirm the ports the ONTAP Mediator service is using: netstat

```
[root@scspr1905507001 ~]# netstat -anlt | grep -E '3260|31784'
```

LISTEN	tcp	0	0 0.0.0.0:31784	0.0.0.0:*
LISTEN	tcp	0	0 0.0.0.0:3260	0.0.0.0:*
LISTEN	tcp6	0	0 :::3260	:::*

Result

The ONTAP Mediator service is now installed and running. Further configuration must be performed in the ONTAP storage system to use the Mediator features.

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