Red Hat Enterprise Linux 9.0 Beta

Getting the most from your Support experience

Gathering troubleshooting information from RHEL servers with the sos utility

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Legal Notice

Abstract

This document describes using the sos utility to collect configuration, diagnostic, and troubleshooting data, and how to provide those files to Red Hat Technical Support.

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RHEL BETA RELEASE

Red Hat provides Red Hat Enterprise Linux Beta access to all subscribed Red Hat accounts. The purpose of Beta access is to:

- Provide an opportunity to customers to test major features and capabilities prior to the general availability release and provide feedback or report issues.
- Provide Beta product documentation as a preview. Beta product documentation is under development and is subject to substantial change.

Note that Red Hat does not support the usage of RHEL Beta releases in production use cases. For more information, see What does Beta mean in Red Hat Enterprise Linux and can I upgrade a RHEL Beta installation to a General Availability (GA) release?.

MAKING OPEN SOURCE MORE INCLUSIVE

Red Hat is committed to replacing problematic language in our code, documentation, and web properties. We are beginning with these four terms: master, slave, blacklist, and whitelist. Because of the enormity of this endeavor, these changes will be implemented gradually over several upcoming releases. For more details, see our CTO Chris Wright's message.

PROVIDING FEEDBACK ON RED HAT DOCUMENTATION

We appreciate your input on our documentation. Please let us know how we could make it better. To do so:

- For simple comments on specific passages:
  1. Make sure you are viewing the documentation in the *Multi-page HTML* format. In addition, ensure you see the **Feedback** button in the upper right corner of the document.
  2. Use your mouse cursor to highlight the part of text that you want to comment on.
  3. Click the **Add Feedback** pop-up that appears below the highlighted text.
  4. Follow the displayed instructions.
- For submitting more complex feedback, create a Bugzilla ticket:
  1. Go to the Bugzilla website.
  2. As the Component, use **Documentation**.
  3. Fill in the **Description** field with your suggestion for improvement. Include a link to the relevant part(s) of documentation.
  4. Click **Submit Bug**.

CHAPTER 1. GENERATING AN sos REPORT FOR TECHNICAL SUPPORT

1.1. WHAT THE sos REPORT UTILITY DOES

An **sos** report is a common starting point for Red Hat technical support engineers when performing analysis of a service request for a RHEL system. The utility provides a standardized way to collect diagnostic information that Red Hat support engineers can reference throughout their investigation of issues reported in support cases. Using the **sos report** utility helps to ensure that you are not repeatedly asked for data output.

The **sos report** utility allows to collect various debugging information from one or more systems, optionally clean sensitive data, and upload it in a form of a report to Red Hat. More specifically, the three **sos report** components do the following:

- **sos report** collects debugging information from *one* system. Note that this program was originally named **sosreport**. Running **sosreport** still works as **sos report** is called instead, with the same arguments.
- **sos collect** allows to run and collect individual **sos** reports from a specified set of nodes.
- **sos clean** obfuscates potentially sensitive information such as usernames, hostnames, IP or MAC addresses, or other user-specified data.

The information collected in a report contains configuration details, system information, and diagnostic information from a RHEL system, such as:

- The running kernel version.
- Loaded kernel modules.
- System and service configuration files.
- Diagnostic command output.
- A list of installed packages.

The **sos report** utility writes the data it collects to an archive named **sosreport-*<host_name>*-*<support_case_number>*-*<YYYY-MM-DD>*-*<unique_random_characters>*.tar.xz**.

The utility stores the archive and its MD5 checksum in the **/var/tmp/** directory:

```
[root@server1 ~]# ll /var/tmp/sosreport*
total 18704
-rw-------. 1 root root 19136596 Jan 25 07:42 sosreport-server1-12345678-2021-01-25-tgictvu.tar.xz
-rw-r--r--. 1 root root       33 Jan 25 07:42 sosreport-server1-12345678-2021-01-25-tgictvu.tar.xz.md5
```

Additional resources

- **sosreport** man page

1.2. INSTALLING THE sos PACKAGE FROM THE COMMAND LINE

To use the **sos report** utility, install the **sos** package.

Prerequisites

- You need **root** privileges.

Procedure

- Install the **sos** package.

```
[root@server ~]# dnf install sos
```

Verification steps

- Use the **rpm** utility to verify that the **sos** package is installed.

```
[root@server ~]# rpm -q sos
sos-4.1-3.el8.noarch
```

1.3. GENERATING AN sos REPORT FROM THE COMMAND LINE

Use the **sos report** command to gather an **sos** report from a RHEL server.

Prerequisites

- You have installed the **sos** package.
- You need **root** privileges.

Procedure

1. Run the **sos report** command and follow the on-screen instructions. With version 3.9 and later of the **sos** package, you can add the **--upload** option to transfer the **sos** report to Red Hat immediately after generating it.

```
[user@server1 ~]$ sudo sos report
[sudo] password for user:

sos report (version 4.1)

This command will collect diagnostic and configuration information from
this Red Hat Enterprise Linux system and installed applications.

An archive containing the collected information will be generated in
/var/tmp/sos.qkn_b7by and may be provided to a Red Hat support
representative.

...

Press ENTER to continue, or CTRL-C to quit.
```

2. *(Optional)* If you have already opened a Technical Support case with Red Hat, enter the case number to embed it in the **sos** report file name, and it will be uploaded to that case if you

specified the **--upload** option. If you do not have a case number, leave this field blank. Entering a case number is optional and does not affect the operation of the **sos report** utility.

```
Please enter the case id that you are generating this report for []: <8-digit_case_number>
```

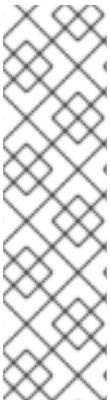
3. Take note of the **sos** report file name displayed at the end of the console output.

```
...
Finished running plugins
Creating compressed archive...

Your sos report has been generated and saved in:
/var/tmp/sosreport-server1-12345678-2020-09-17-qmtnqng.tar.xz

Size    16.51MiB
Owner   root
md5     bba955bbd9a434954e18da0c6778ba9a

Please send this file to your support representative.
```



NOTE

- You can use the **--batch** option to generate an **sos** report without prompting for interactive input.

```
[user@server1 ~]$ sudo sos report --batch --case-id <8-digit_case_number>
```

- You can also use the **--clean** option to obfuscate a just-collected **sos** report.

```
[user@server1 ~]$ sudo sos report --clean
```

Verification steps

- Verify that the **sos report** utility created an archive in **/var/tmp/** matching the description from the command output.

```
[user@server1 ~]$ sudo ls -l /var/tmp/sosreport*
[sudo] password for user:
-rw-------. 1 root root 17310544 Sep 17 19:11 /var/tmp/sosreport-server1-12345678-2020-09-17-qmtnqng.tar.xz
```

Additional resources

- Methods for providing an **sos** report to Red Hat technical support .

1.4. GENERATING AND COLLECTING SOS REPORTS ON MULTIPLE SYSTEMS CONCURRENTLY

You can use the **sos** utility to trigger the **sos report** command on multiple systems. Wait for the report to terminate and collect all generated reports.

Prerequisites

- You know the *cluster* type or list of *nodes* to run on.
- You have installed the **sos** package on all systems.
- You have **ssh** keys for the **root** account on all the systems, or you can provide the root password via the **--password** option.

Procedure

- Run the **sos collect** command and follow the on-screen instructions.

NOTE

By default, **sos collect** tries to identify the type of *cluster* it runs on to automatically identify the *nodes* to collect reports from.

a. You can set the *cluster* or *nodes* types manually with the **--cluster** or **--nodes** options.

b. You can also use the **--master** option to point the **sos** utility at a remote node to determine the *cluster* type and the *node* lists. Thus, you do not have to be logged into one of the *cluster nodes* to collect **sos** reports; you can do it from your workstation.

c. You can add the **--upload** option to transfer the **sos report** to Red Hat immediately after generating it.

d. Any valid **sos report** option can be further supplied and will be passed to all **sos** reports executions, such as the **--batch** and **--clean** options.

```
[root@primary-rhel8 ~]# sos collect --nodes=sos-node1,sos-node2 -o process,apache --log-size=50

sos-collector (version 4.1)

This utility is used to collect sosreports from multiple nodes simultaneously.
It uses OpenSSH's ControlPersist feature to connect to nodes and run commands remotely.
If your system installation of OpenSSH is older than 5.6, please upgrade.

An archive of sosreport tarballs collected from the nodes will be generated in
/var/tmp/sos.o4l55n1s and may be provided to an appropriate support representative.

The generated archive may contain data considered sensitive and its content should be
reviewed by the originating organization before being passed to any third party.

No configuration changes will be made to the system running this utility or remote systems
that it connects to.


Press ENTER to continue, or CTRL-C to quit


Please enter the case id you are collecting reports for: <8-digit_case_number>

sos-collector ASSUMES that SSH keys are installed on all nodes unless the
```

```
--password option is provided.

The following is a list of nodes to collect from:
   primary-rhel8
   sos-node1
   sos-node2


Press ENTER to continue with these nodes, or press CTRL-C to quit


Connecting to nodes...

Beginning collection of sosreports from 3 nodes, collecting a maximum of 4 concurrently

primary-rhel8 : Generating sosreport...
sos-node1  : Generating sosreport...
sos-node2 : Generating sosreport...
primary-rhel8 : Retrieving sosreport...
sos-node1  : Retrieving sosreport...
primary-rhel8  : Successfully collected sosreport
sos-node1 : Successfully collected sosreport
sos-node2 : Retrieving sosreport...
sos-node2 : Successfully collected sosreport

The following archive has been created. Please provide it to your support team.
   /var/tmp/sos-collector-2021-05-15-pafsr.tar.xz

[root@primary-rhel8 ~]#
```

Verification steps

- Verify that the **sos collect** command created an archive in the **/var/tmp/** directory matching the description from the command output.

```
[root@primary-rhel8 ~]# ls -l /var/tmp/sos-collector*
-rw-------. 1 root root 160492 May 15 13:35 /var/tmp/sos-collector-2021-05-15-pafsr.tar.xz
```

Additional resources

- For examples on using the **--batch** and **--clean** options, see Generating an **sos** report from the command line.

1.5. CLEANING AN SOS REPORT

The **sos** utility offers a routine to obfuscate potentially sensitive data, such as user names, host names, IP or MAC addresses, or other user-specified keywords. The original **sos report** or **sos collect** stays unchanged, and a new ***-obfuscated.tar.xz** file is generated and intended to be shared with a third party.

NOTE

You can append the cleaner functionality to the **sos report** or **sos collect** commands with the **--clean** option:

[user@server1 ~]$ sudo sos report --clean

Prerequisites

- You have generated an **sos report** or an **sos collect** tarball.
- *(Optional)* You have a list of specific keywords beyond the user names, host names, and other data you want to obfuscate.

Procedure

- Run the **sos clean** command on either an **sos report** or **sos collect** tarball and follow the on-screen instructions.
  a. You can add the **--keywords** option to additionally clean a given list of keywords.
  b. You can add the **--usernames** option to obfuscate further sensitive user names. The automatic user name cleaning will automatically run for users reported through the **lastlog** file for users with an UID of 1000 and above. This option is used for LDAP users that may not appear as an actual login, but may occur in certain log files.

```
[user@server1 ~]$ sudo sos clean /var/tmp/sos-collector-2021-05-15-pafsr.tar.xz
[sudo] password for user:

sos clean (version 4.1)

This command will attempt to obfuscate information that is generally considered to be
potentially sensitive. Such information includes IP addresses, MAC addresses, domain
names, and any user-provided keywords.

Note that this utility provides a best-effort approach to data obfuscation, but it does not
guarantee that such obfuscation provides complete coverage of all such data in the archive,
or that any obfuscation is provided to data that does not fit the description above.

Users should review any resulting data and/or archives generated or processed by this utility
for remaining sensitive content before being passed to a third party.


Press ENTER to continue, or CTRL-C to quit.

Found 4 total reports to obfuscate, processing up to 4 concurrently

sosreport-primary-rhel8-2021-05-15-nchbdmd :      Extracting...
sosreport-sos-node1-2021-05-15-wmlomgu :      Extracting...
sosreport-sos-node2-2021-05-15-obsudzc :      Extracting...
sos-collector-2021-05-15-pafsr :                  Beginning obfuscation...
sosreport-sos-node1-2021-05-15-wmlomgu :      Beginning obfuscation...
sos-collector-2021-05-15-pafsr :                  Obfuscation completed
sosreport-primary-rhel8-2021-05-15-nchbdmd :      Beginning obfuscation...
sosreport-sos-node2-2021-05-15-obsudzc :      Beginning obfuscation...
sosreport-primary-rhel8-2021-05-15-nchbdmd :      Re-compressing...
```

```
sosreport-sos-node2-2021-05-15-obsudzc :      Re-compressing...
sosreport-sos-node1-2021-05-15-wmlomgu :      Re-compressing...
sosreport-primary-rhel8-2021-05-15-nchbdmd :      Obfuscation completed
sosreport-sos-node2-2021-05-15-obsudzc :      Obfuscation completed
sosreport-sos-node1-2021-05-15-wmlomgu :      Obfuscation completed

Successfully obfuscated 4 report(s)

A mapping of obfuscated elements is available at
   /var/tmp/sos-collector-2021-05-15-pafsr-private_map

The obfuscated archive is available at
   /var/tmp/sos-collector-2021-05-15-pafsr-obfuscated.tar.xz

   Size    157.10KiB
   Owner    root

Please send the obfuscated archive to your support representative and keep the mapping file
private
```

Verification steps

- Verify that the **sos clean** command created an obfuscated archive and an obfuscation mapping in the **/var/tmp/** directory matching the description from the command output.

```
[user@server1 ~]$ sudo ls -l /var/tmp/sos-collector-2021-05-15-pafsr-private_map
/var/tmp/sos-collector-2021-05-15-pafsr-obfuscated.tar.xz
[sudo] password for user:

-rw-------. 1 root root 160868 May 15 16:10 /var/tmp/sos-collector-2021-05-15-pafsr-
obfuscated.tar.xz
-rw-------. 1 root root  96622 May 15 16:10 /var/tmp/sos-collector-2021-05-15-pafsr-
private_map
```

- Check the ***-private_map** file for the obfuscation mapping:

```
[user@server1 ~]$ sudo cat /var/tmp/sos-collector-2021-05-15-pafsr-private_map
[sudo] password for user:

{
   "hostname_map": {
      "pmoravec-rhel8": "host0"
   },
   "ip_map": {
      "10.44.128.0/22": "100.0.0.0/22",
..
   "username_map": {
      "foobaruser": "obfuscateduser0",
      "jsmith": "obfuscateduser1",
      "johndoe": "obfuscateduser2"
   }
}
```

IMPORTANT

Keep both the original unobfuscated archive and the ***private_map** files locally as Red Hat support might refer to the obfuscated terms that you will need to translate to the original values.

1.6. GENERATING AN sos REPORT AND SECURING IT WITH GPG PASSPHRASE ENCRYPTION

This procedure describes how to generate an **sos** report and secure it with symmetric GPG2 encryption based on a passphrase. You might want to secure the contents of an **sos** report with a password if, for example, you need to transfer it over a public network to a third party.

NOTE

Ensure you have sufficient space when creating an encrypted **sos** report, as it temporarily uses double the disk space:

1. The **sos report** utility creates an unencrypted **sos** report.
2. The utility encrypts the **sos** report as a new file.
3. The utility then removes the unencrypted archive.

Prerequisites

- You have installed the **sos** package.
- You need **root** privileges.

Procedure

1. Run the **sos report** command and specify a passphrase with the **--encrypt-pass** option. With version 3.9 and later of the **sos** package, you can add the **--upload** option to transfer the **sos** report to Red Hat immediately after generating it.

```
[user@server1 ~]$ sudo sosreport --encrypt-pass my-passphrase
[sudo] password for user:

sosreport (version 4.1)

This command will collect diagnostic and configuration information from
this Red Hat Enterprise Linux system and installed applications.

An archive containing the collected information will be generated in
/var/tmp/sos.6lck0myd and may be provided to a Red Hat support
representative.

...

Press ENTER to continue, or CTRL-C to quit.
```

2. *(Optional)* If you have already opened a Technical Support case with Red Hat, enter the case number to embed it in the **sos** report file name, and it will be uploaded to that case if you

specified the **--upload** option. If you do not have a case number, leave this field blank. Entering a case number is optional and does not affect the operation of the **sos report** utility.

```
Please enter the case id that you are generating this report for []: <8-digit_case_number>
```

3. Take note of the sos report file name displayed at the end of the console output.

```
...
Finished running plugins
Creating compressed archive...

Your sosreport has been generated and saved in:
/var/tmp/secured-sosreport-server1-12345678-2021-01-24-ueqijfm.tar.xz.gpg

Size    17.53MiB
Owner   root
md5     32e2bdb23a9ce3d35d59e1fc4c91fe54

Please send this file to your support representative.
```

Verification steps

1. Verify that the **sos report** utility created an archive meeting the following requirements:
   - Filename starts with **secured**.
   - Filename ends with a **.gpg** extension.
   - Located in the /**var**/**tmp**/ directory.

```
[user@server1 ~]$ sudo ls -l /var/tmp/sosreport*
[sudo] password for user:
-rw-------. 1 root root 18381537 Jan 24 17:55 /var/tmp/secured-sosreport-server1-12345678-2021-01-24-ueqijfm.tar.xz.gpg
```

2. Verify that you can decrypt the archive with the same passphrase you used to encrypt it.
   a. Use the **gpg** command to decrypt the archive.

```
[user@server1 ~]$ sudo gpg --output decrypted-sosreport.tar.gz --decrypt
/var/tmp/secured-sosreport-server1-12345678-2021-01-24-ueqijfm.tar.xz.gpg
```

   b. When prompted, enter the passphrase you used to encrypt the archive.

```
┌──────────────────────────────────────────────────────┐
│ Enter passphrase                                     │
│                                                      │
│ Passphrase: <passphrase>                             │
│                                                      │
│      <OK>                    <Cancel>                │
└──────────────────────────────────────────────────────┘
```

c. Verify that the **gpg** utility produced an unencrypted archive with a **.tar.gz** file extension.

```
[user@server1 ~]$ sudo ls -l decrypted-sosreport.tar.gz
[sudo] password for user:
-rw-r--r--. 1 root root 18381537 Jan 24 17:59 decrypted-sosreport.tar.gz
```

Additional resources

- Methods for providing an **sos** report to Red Hat technical support .

1.7. GENERATING AN sos REPORT AND SECURING IT WITH GPG ENCRYPTION BASED ON A KEYPAIR

This procedure describes how to generate an **sos** report and secure it with GPG2 encryption based on a keypair from a GPG keyring. You might want to secure the contents of an **sos** report with this type of encryption if, for example, you want to protect an **sos** report stored on a server.

NOTE

Ensure you have sufficient space when creating an encrypted **sos** report, as it temporarily uses double the disk space:

1. The **sos report** utility creates an unencrypted **sos** report.
2. The utility encrypts the **sos** report as a new file.
3. The utility then removes the unencrypted archive.

Prerequisites

- You have installed the **sos** package.
- You need **root** privileges.
- You have created a GPG2 key.

Procedure

1. Run the **sos report** command and specify the user name that owns the GPG keyring with the **--encrypt-key** option. With version 3.9 and later of the **sos** package, you can add the **--upload** option to transfer the **sos** report to Red Hat immediately after generating it.

NOTE

The user running the **sos report** command **must** be the same user that owns the GPG keyring used to encrypt and decrypt the **sos** report. If the user uses **sudo** to run the **sos report** command, the keyring must also be set up using **sudo**, or the user must have direct shell access to that account.

```
[user@server1 ~]$ sudo sosreport --encrypt-key root
[sudo] password for user:

sosreport (version 4.1)
```

```
This command will collect diagnostic and configuration information from
this Red Hat Enterprise Linux system and installed applications.

An archive containing the collected information will be generated in
/var/tmp/sos.6ucjclgf and may be provided to a Red Hat support
representative.

...

Press ENTER to continue, or CTRL-C to quit.
```

2. *(Optional)* If you have already opened a Technical Support case with Red Hat, enter the case number to embed it in the **sos** report file name, and it will be uploaded to that case if you specified the **--upload** option. If you do not have a case number, leave this field blank. Entering a case number is optional and does not affect the operation of the **sos report** utility.

```
Please enter the case id that you are generating this report for []: <8-digit_case_number>
```

3. Take note of the **sos** report file name displayed at the end of the console output.

```
...
Finished running plugins
Creating compressed archive...

Your sosreport has been generated and saved in:
/var/tmp/secured-sosreport-server1-23456789-2021-01-27-zhdqhdi.tar.xz.gpg

Size    15.44MiB
Owner   root
md5     ac62697e33f3271dbda92290583d1242

Please send this file to your support representative.
```

Verification steps

1. Verify that the **sos report** utility created an archive meeting the following requirements:
   - Filename starts with **secured**.
   - Filename ends with a **.gpg** extension.
   - Located in the /**var**/**tmp**/ directory.

```
[user@server1 ~]$ sudo ls -l /var/tmp/sosreport*
[sudo] password for user:
-rw-------. 1 root root 16190013 Jan 24 17:55 /var/tmp/secured-sosreport-server1-
23456789-2021-01-27-zhdqhdi.tar.xz.gpg
```

2. Verify you can decrypt the archive with the same key you used to encrypt it.
   a. Use the **gpg** command to decrypt the archive.

```
[user@server1 ~]$ sudo gpg --output decrypted-sosreport.tar.gz --decrypt
/var/tmp/secured-sosreport-server1-23456789-2021-01-27-zhdqhdi.tar.xz.gpg
```

b. When prompted, enter the passphrase you used when creating the GPG key.

```
┌──────────────────────────────────────────────────────────────────────┐
│ Please enter the passphrase to unlock the OpenPGP secret key:        │
│ "GPG User (first key) <root@example.com>"                            │
│ 2048-bit RSA key, ID BF28FFA302EF4557,                               │
│ created 2020-01-13.                                                  │
│                                                                      │
│                                                                      │
│ Passphrase: <passphrase>                                             │
│                                                                      │
│       <OK>                          <Cancel>                         │
└──────────────────────────────────────────────────────────────────────┘
```

c. Verify that the **gpg** utility produced an unencrypted archive with a **.tar.gz** file extension.

```
[user@server1 ~]$ sudo ll decrypted-sosreport.tar.gz
[sudo] password for user:
-rw-r--r--. 1 root root 16190013 Jan 27 17:47 decrypted-sosreport.tar.gz
```

Additional resources

- Methods for providing an **sos** report to Red Hat technical support .

1.8. CREATING A GPG2 KEY

The following procedure describes how to generate a GPG2 key to use with encryption utilities.

Prerequisites

- You need **root** privileges.

Procedure

1. Install and configure the **pinentry** utility.

```
[root@server ~]# dnf install pinentry
[root@server ~]# mkdir ~/.gnupg -m 700
[root@server ~]# echo "pinentry-program /usr/bin/pinentry-curses" >> ~/.gnupg/gpg-agent.conf
```

2. Create a **key-input** file used for generating a GPG keypair with your preferred details. For example:

```
[root@server ~]# cat >key-input <<EOF
%echo Generating a standard key
Key-Type: RSA
Key-Length: 2048
Name-Real: GPG User
Name-Comment: first key
```

```
Name-Email: root@example.com
Expire-Date: 0
%commit
%echo Finished creating standard key
EOF
```

3. *(Optional)* By default, GPG2 stores its keyring in the ~/**.gnupg** file. To use a custom keyring location, set the **GNUPGHOME** environment variable to a directory that is only accessible by root.

```
[root@server ~]# export GNUPGHOME=/root/backup

[root@server ~]# mkdir -p $GNUPGHOME -m 700
```

4. Generate a new GPG2 key based on the contents of the **key-input** file.

```
[root@server ~]# gpg2 --batch --gen-key key-input
```

5. Enter a passphrase to protect the GPG2 key. You use this passphrase to access the private key for decryption.

```
┌──────────────────────────────────────────────────────┐
│ Please enter the passphrase to                       │
│ protect your new key                                 │
│                                                      │
│ Passphrase: <passphrase>                             │
│                                                      │
│  <OK>                    <Cancel>                    │
└──────────────────────────────────────────────────────┘
```

6. Confirm the correct passphrase by entering it again.

```
┌──────────────────────────────────────────────────────┐
│ Please re-enter this passphrase                      │
│                                                      │
│ Passphrase: <passphrase>                             │
│                                                      │
│  <OK>                    <Cancel>                    │
└──────────────────────────────────────────────────────┘
```

7. Verify that the new GPG2 key was created successfully.

```
gpg: keybox '/root/backup/pubring.kbx' created
gpg: Generating a standard key
gpg: /root/backup/trustdb.gpg: trustdb created
gpg: key BF28FFA302EF4557 marked as ultimately trusted
gpg: directory '/root/backup/openpgp-revocs.d' created
gpg: revocation certificate stored as '/root/backup/openpgp-
revocs.d/8F6FCF10C80359D5A05AED67BF28FFA302EF4557.rev'
gpg: Finished creating standard key
```

Verification Steps

- List the GPG keys on the server.

```
[root@server ~]# gpg2 --list-secret-keys
gpg: checking the trustdb
gpg: marginals needed: 3  completes needed: 1  trust model: pgp
gpg: depth: 0  valid:   1  signed:   0  trust: 0-, 0q, 0n, 0m, 0f, 1u
/root/backup/pubring.kbx
------------------------
sec   rsa2048 2020-01-13 [SCEA]
      8F6FCF10C80359D5A05AED67BF28FFA302EF4557
uid           [ultimate] GPG User (first key) <root@example.com>
```

Additional resources

- GNU Privacy Guard

1.9. GENERATING AN sos REPORT FROM THE RESCUE ENVIRONMENT

If a Red Hat Enterprise Linux (RHEL) host does not boot properly, you can boot the host into a *rescue environment* to gather an **sos** report.

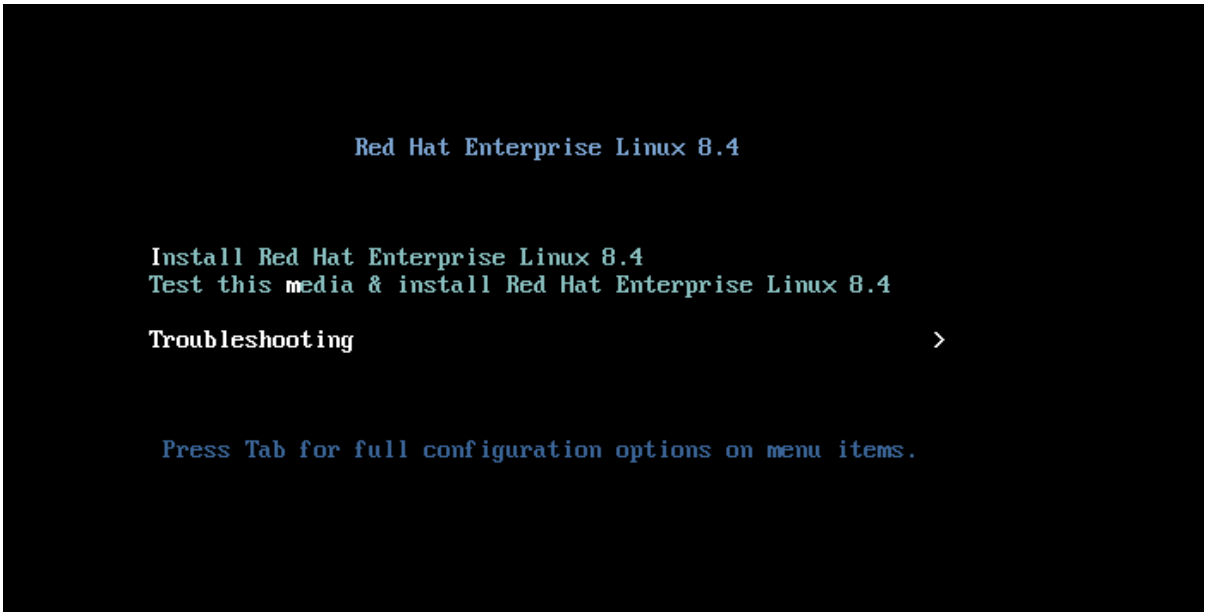
Using the rescue environment, you can mount the target system under **/mnt/sysimage**, access its contents, and run the **sos report** command.

Prerequisites

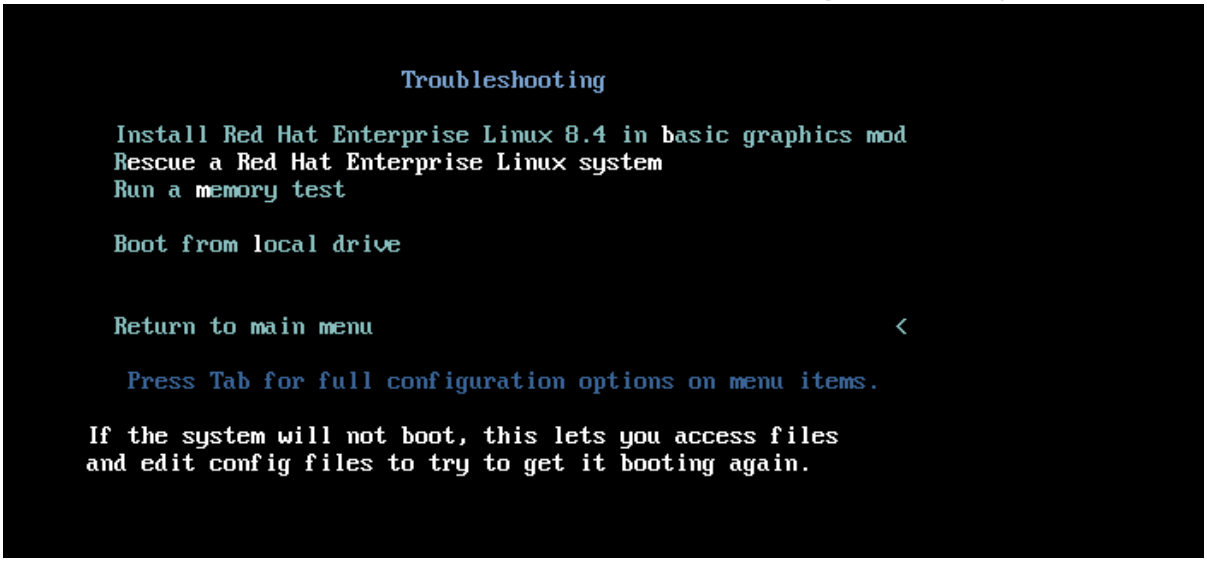
- If the host is a bare metal server, you need physical access to the machine.
- If the host is a virtual machine, you need access to the virtual machine's settings in the hypervisor.
- A RHEL installation source, such as an ISO image file, an installation DVD, a netboot CD, or a Preboot Execution Environment (PXE) configuration providing a RHEL installation tree.

Procedure

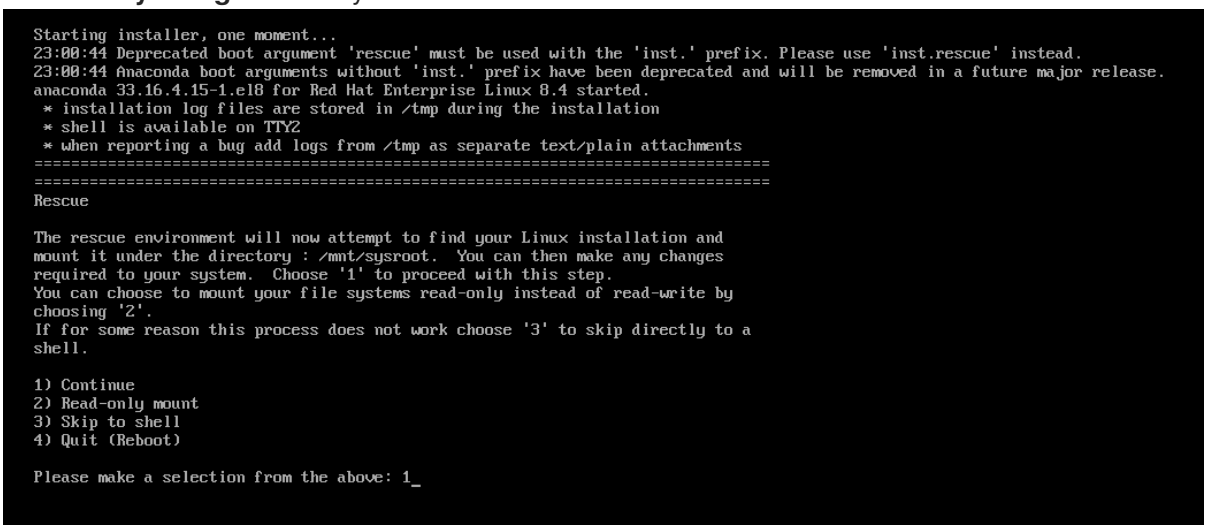
1. Boot the host from an installation source.
2. In the boot menu for the installation media, select the **Troubleshooting** option.



3. In the Troubleshooting menu, select the **Rescue a Red Hat Enterprise Linux system** option.



4. At the Rescue menu, select **1** and press the **Enter** key to continue and mount the system under the /**mnt/sysimage** directory.



5. Press the **Enter** key to obtain a shell when prompted.

```
Please make a selection from the above: 1
================================================================================
================================================================================
Rescue Shell

Your system has been mounted under /mnt/sysimage.

If you would like to make the root of your system the root of the active system,
run the command:

        chroot /mnt/sysimage

When finished, please exit from the shell and your system will reboot.
Please press ENTER to get a shell: _
[anaconda]1:main* 2:shell  3:log  4:storage-log  5:program-log       Switch tab: Alt+Tab | Help: F1
```

6. Use the **chroot** command to change the apparent root directory of the rescue session to the **/mnt/sysimage** directory.

```
================================================================================
================================================================================
Rescue Shell

Your system has been mounted under /mnt/sysimage.

If you would like to make the root of your system the root of the active system,
run the command:

        chroot /mnt/sysimage

When finished, please exit from the shell and your system will reboot.
Please press ENTER to get a shell:
sh-4.4# chroot /mnt/sysimage
bash-4.4#
[anaconda]1:main* 2:shell  3:log  4:storage-log  5:program-log       Switch tab: Alt+Tab | Help: F1
```

7. Run the **sos report** command and follow the on-screen instructions. With version 3.9 and later of the **sos** package, you can add the **--upload** option to transfer the **sos** report to Red Hat immediately after generating it.

```
bash-4.4# sos report

sosreport (version 4.1)

This command will collect diagnostic and configuration information from
this Red Hat Enterprise Linux system and installed applications.

An archive containing the collected information will be generated in
/var/tmp/sos.d5z2riw6 and may be provided to a Red Hat support
representative.

Any information provided to Red Hat will be treated in accordance with
the published support policies at:

  https://access.redhat.com/support/

The generated archive may contain data considered sensitive and its
content should be reviewed by the originating organization before being
passed to any third party.

No changes will be made to system configuration.

Press ENTER to continue, or CTRL-C to quit.

[anaconda]1:main* 2:shell  3:log  4:storage-log  5:program-log       Switch tab: Alt+Tab | Help: F1
```

8. *(Optional)* If you have already opened a Technical Support case with Red Hat, enter the case number to embed it in the **sos** report file name, and it will be uploaded to that case if you specified the **--upload** option and your host is connected to the internet. If you do not have a case number, leave this field blank. Entering a case number is optional and does not affect the operation of the **sos report** utility.

```
Press ENTER to continue, or CTRL-C to quit.

Please enter the case id that you are generating this report for []: 12345678_

[anaconda]1:main* 2:shell  3:log  4:storage-log  5:program-log       Switch tab: Alt+Tab | Help: F1
```

9. Take note of the **sos** report file name displayed at the end of the console output.

```
  Finishing plugins              [Running: yum]
  Finished running plugins
Creating compressed archive...

Your sosreport has been generated and saved in:
  /var/tmp/sosreport-localhost-12345678-2021-08-09-ygyhflo.tar.xz

The checksum is: 022b1ea8693898345b21cf4a7112efd0

Please send this file to your support representative.

bash-4.4#
[anaconda]1:main* 2:shell  3:log  4:storage-log  5:program-log       Switch tab: Alt+Tab | Help: F1
```

10. If your host does not have a connection to the internet, use a file transfer utility such as **scp** to transfer the **sos** report to another host on your network, then upload it to a Red Hat Technical Support case.

Verification steps

- Verify that the **sos report** utility created an archive in the **/var/tmp/** directory.

```
bash-4.4# ls -l /var/tmp/sosreport*
-rw-------. 1 root root 6369404 Aug 09 18:52 /var/tmp/sosreport-localhost-12345678-2021-08-09-ygyhfl
o.tar.xz
-rw-r--r--. 1 root root      33 Aug 09 18:52 /var/tmp/sosreport-localhost-12345678-2021-08-09-ygyhfl
o.tar.xz.md5
bash-4.4#
[anaconda]1:main* 2:shell  3:log  4:storage-log  5:program-log       Switch tab: Alt+Tab | Help: F1
```

Additional resources

- To download an ISO of the RHEL installation DVD, visit the downloads section of the Red Hat Customer Portal. See Product Downloads.
- Methods for providing an **sos** report to Red Hat technical support .

1.10. METHODS FOR PROVIDING AN sos REPORT TO RED HAT TECHNICAL SUPPORT

You can use the following methods to upload your **sos** report to Red Hat Technical Support.

Upload with the sos report command

With version 3.9 or later of the **sos** package, you can use the **--upload** option to transfer the **sos** report to Red Hat immediately after generating it.

- If you provide a case number when prompted, or use the **--case-id** or **--ticket-number** options, the **sosreport** utility uploads the **sos** report to your case after you authenticate with your Red Hat Customer Portal account.

- If you do not provide a case number or you do not authenticate, the utility uploads the **sos** report to the Red Hat public FTP site. Provide Red Hat Technical Support Engineers with the name of the **sos** report archive so they can access it.

```
[user@server1 ~]$ sudo sos report --upload
[sudo] password for user:

sosreport (version 4.1)

This command will collect diagnostic and configuration information from
this Red Hat Enterprise Linux system and installed applications.
...

Please enter the case id that you are generating this report for []: <8-digit_case_number>
Enter your Red Hat Customer Portal username (empty to use public dropbox):
<Red_Hat_Customer_Portal_ID>
Please provide the upload password for <user@domain.com>:
...

Attempting upload to Red Hat Customer Portal
Uploaded archive successfully
```

Upload files via the Red Hat Customer Portal

Using your Red Hat user account, you can log into the **Support Cases** section of the Red Hat Customer Portal website and upload an **sos** report to a technical support case.
To log in, visit Support Cases.

Upload files using the Red Hat Support Tool

With the Red Hat Support Tool, you can upload a file directly from the command line to a Red Hat technical support case. The case number is required.

```
[user@server1 ~]$ redhat-support-tool addattachment -c <8-digit_case_number>
</var/tmp/sosreport_filename>
```

Additional resources

- For additional methods on how to provide Red Hat Technical Support with your **sos** report, such as FTP and **curl**, see the Red Hat Knowledgebase article How to provide files to Red Hat Support (vmcore, rhev logcollector, sosreports, heap dumps, log files, etc.)