

# Resolve Secure Web Appliance Full Disk Error

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## Introduction

This document describes the steps to resolve Full Disk Space Error in Secure Web Appliance (SWA).

## Prerequisites

### Requirements

Cisco recommends that you have knowledge of these topics:

- Access to CLI of SWA
- Administrative access to the SWA
- FTP access to SWA

### Components Used

This document is not restricted to specific software and hardware versions.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

## Errors Related to Full Disk

There are different errors and warnings in SWA that indicate the disk is full or the disk space is nearly full. Here is the list of errors and warnings. These logs are different in each software version and due to the delivery methods, such as alerts, system logs, or the output of the `displayalerts` command from the CLI.

```
Processing of collected reporting data has been disabled due to lack of logging disk space. Disk usage i
User admin Disk space for /data has exceeded threshold value 90% with current capacity of 99 %
```

The reporting/logging disk is full on a WSA  
This appliance has disk usage that is higher than expected.  
WARNING: Data partition utilization on appliance is high and can cause issues

# Monitor Disk Usage

You can monitor and view disk usage from both the GUI and CLI.

## View Disk Usage in GUI

After you log in to the SWA GUI, in My-Dashboard Page, you can see **Reporting / logging Disk** usage from the **System Overview** section.

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**Note:** In SWA reports and logs are stored in a single partition, known as the **DATA** Partition.

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Also in the GUI, under the **Reporting** menu, navigate to **System Status**. Alternately, you can view disk usage from the **Overview** section, under the **Reporting** menu.

## View Disk Usage in CLI

- From the output of `status` or `status detail`, you can see the **Reporting / logging Disk** usage

```
SWA.CLI> status
```

Enter "status detail" for more information.

```
Status as of:          Sun Feb 19 19:55:13 2023 CET
Up since:            Sat Feb 11 14:00:56 2023 CET (8d 5h 54m 17s)
System Resource Utilization:
CPU                  25.9%
RAM                  13.6%
Reporting/Logging Disk 58.1%
```

- From the output of `ipcheck`, you can see the allocated disk space to each partition and the percentage of used space per partition.

```
SWA.CLI> ipcheck
```

```
...
Disk 0                200GB VMware Virtual disk 1.0 at mpt0 bus 0 scbus2 target 0 lun 0
Disk Total            200GB
=== Skipped ===
Root                  4GB 65%
Nextroot              4GB 1%
Var                   400MB 29%
Log                   130GB 8%
DB                    2GB 0%
Swap                  8GB
Proxy Cache          50GB
=== Skipped ===
```

- In **SHD Logs**, the **Reporting / logging Disk** utilization for every minute is shown as `DskUtil`. To access **SHD Logs**, use these steps:

1. Type `grep` or `tail` in the CLI.
2. Find `shd_logs`. Type: SHD Logs Retrieval: FTP Poll, from the list and type the associated number.
3. In Enter the regular expression to `grep`, you can type a regular expression to search inside the logs. For example, you can type date and time.
4. Do you want this search to be case insensitive? [Y]>, you can leave this as the default, unless you need to search for case sensitivity, which in SHD logs, you do not need this option.
5. Do you want to search for non-matching lines? [N]>, you can set this line as default, unless you need to search for everything except your `grep` regular expression.
6. Do you want to tail the logs? [N]>. This option is only available in the output of the `grep`, if you let this as default (N), it shows the SHD Logs from the first line of current file.
7. Do you want to paginate the output? [N]>. If you select Y, the output is the same as the output of the `less` command. You can navigate between lines and pages. Also, you can search inside the logs (Type /then the keyword and press Enter). To exit the log, type q.

In this example 52.2% of Reporting / logging Disk is consumed.

```
Mon Feb 20 23:46:14 2023 Info: Status: CPUld 66.4 DskUtil 52.2 RAMUtil 11.3 Reqs 0 Band 0 Latency 0 Cach
```

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## Disk Structure and Troubleshoot Full Partition

As mentioned before from the output of `ipcheck`, there are seven partitions in the SWA:

Partition Name	Description
Root	Keeps internal Operation system files
Nextroot	This Partition is used for Upgrade
Var	Keeps internal Operation system files
Log	Holds logs and Reporting file
DB	Configuration and internal Databases
Swap	SWAP memory
Proxy Cache	Keeps Cached data

### Root Partition is Full

If the root partition (known as **rootfs** or /) is full or more than 100%, which is sometimes expected, and the SWA removes unnecessary files.

If you see some system performance drop, first try to reboot the appliance, then again check the disk capacity of the root partition. If the issue still persists, please contact Cisco Customer Service, to open a TAC case.

## Next Root Partition is Full

If your upgrade fails, make sure, your Next Root Partition is free or has enough free space for the upgrade,

Initially, virtual SWA, Email Security Appliance (ESA) and virtual Security Management Appliance) SMA images were built with a Nextroot partition size of less than 500MB. Over the years, and with newer AsyncOS releases that include additional features, upgrades have had to use more and more of this partition throughout the upgrade process. Some times when you try to upgrade from older versions, upgrades fail because of this partition size.

From upgrade logs in the CLI, you can see these errors:

```
Finding partitions... done.
Setting next boot partition to current partition as a precaution... done.
Erasing new boot partition... done.
Extracting eapp done.
Extracting scannerroot done.
Extracting splunkroot done.
Extracting savroot done.
Extracting ipasroot done.
Extracting ecroot done.
Removing unwanted files in nextroot done.
Extracting distroot
/nextroot: write failed, filesystem is full
./usr/share/misc/termcap: Write failed
./usr/share/misc/pci_vendors: Write to restore size failed
./usr/libexec/getty: Write to restore size failed
./usr/libexec/ld-elf.so.1: Write to restore size failed
./usr/lib/libBlocksRuntime.so: Write to restore size failed
./usr/lib/libBlocksRuntime.so.0: Write to restore size failed
./usr/lib/libalias.so: Write to restore size failed
./usr/lib/libarchive.so: Write to restore size failed
```

For a virtual SWA, download a new image file per this document : [Cisco Secure Email and Web Virtual Appliance Installation Guide](#)

Then try to import the configuration backup from the older version to the newly installed SWA. If you see the **Configuration Import Error**, please open a Service Request Case.

For SMA and ESA, you can find the workaround for this issue from this link: [How to Apply the Workaround for Cisco vESA/vSMA Upgrade Fail Due to Small Partition Size - Cisco](#)

## Var Partition is Full

If the var partition is full, you get these errors when you log in to CLI or from the Displayalerts command in CLI:

```
/var: write failed, filesystem is full
The temporary data partition is at 99% capacity
```

To resolve this issue, first restart the appliance. If the capacity of /var partition is still more than 100%, contact Cisco TAC support.

## Reporting/logging Partition is Full

If the Reporting / Logging partition is full, the errors can be:

```
Processing of collected reporting data has been disabled due to lack of logging disk space. Disk usage i
User admin Disk space for /data has exceeded threshold value 90% with current capacity of 99 %
```

```
The reporting/logging disk is full on a WSA
```

```
WARNING: Data partition utilization on appliance is high and can cause issues
```

The root cause of these errors can be categorized as:

1. Log files occupy too much disk space.
2. There are some core files generated on the device that leads to full disk usage.
3. Reporting occupies too much disk space.
4. Web Tracking occupies too much disk space.
5. Some internal logs occupy too much disk space.

### Log Files Occupy too much Disk Space

To view log files, you can connect to the SWA by FTP to the management interface.

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**Note:** FTP by default is disabled.

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To enable FTP from the GUI, use these steps:

- Step 1. Log in to the GUI.
- Step 2. Click **Interfaces** under the **Network** menu.
- Step 3. Click **Edit Settings**.
- Step 4. Select **FTP** from the **Appliance Management Services** section.
- Step 5. **(Optional)** you can change the default FTP Port.
- Step 6. Click **Submit**.
- Step 7. **Commit Changes**.

After the FTP connection, you can view the logs, the creation date, and size of each log file. If you need to archive the logs, you can download them from FTP. Or to free up disk space, you can remove old logs.

Use these steps to resolve this issue:

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**Tip:** If you see the log files did not occupy much disk space, most likely the issue is related to reports or core files.

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## Core Files on the Device

To view if SWA has core files, from CLI use these steps:

Step 1. Log in to CLI.

Step 2. Execute the command: **diagnostic** (it is a hidden command and cannot be auto filled with TAB).

Step 3. Type **PROXY**.

Step 4. Type **LIST**.

The output shows if there are any core files. To remove the core files, contact Cisco Support Service, a TAC Engineer needs to investigate the cause of core files, then they can remove the files.

## Reporting Occupies too much Disk Space

There are two types of reports in SWA: Reporting and WebTracking. WebTracking occupies most of the disk space.

To check the history of WebTracking, navigate to WebTracking from the GUI. Under the **Reporting** menu, from the **Time Range** section, select **Custom Range**, The highlighted dates show the WebTracking report history.

To take a back-up from WebTracking, you can export the report to CSV from the **Printable Download** link in the report.

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**Tip:** Avoid the generation of WebTracking reports for long time periods, which depends on the normal daily web traffic. The reports for longer durations, can cause the SWA to become unresponsive.

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At the time this article is written, there is no feature to manually delete older reports. (Cisco bug ID [CSCun82094](#))

In order to delete some of your reports, you need to contact TAC Support, or you can delete all of the reports from the CLI with these steps:

Step 1. Log in to CLI.

Step 2. Execute the **diagnostic** command. (It is a hidden command and cannot be auto completed with TAB.)

Step 3. Type **REPORTING** and press **Enter**.

Step 4. Type **DELETEDB** and press **Enter**.

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**Caution:** This command deletes all reports data. It cannot be aborted.

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## Internal Logs Occupy Disk

If your device has the conditions of the defect: Cisco bug ID [CSCvy69039](#), you need to open a TAC case to check the internal logs from the back end and remove the large log files manually.

This is a temporary workaround, but on the affected version, the log file is auto created after deletion and file size repeatedly grows from 0 again.

## **Related Information**

- [WSA AsyncOS Release Notes](#)
- [Technical Support & Documentation - Cisco Systems](#)