StorageGRID® Webscale 11.1

Upgrade Guide

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Contents

About StorageGRID Webscale 11.1

This section lists the features and enhancements for the StorageGRID Webscale 11.1 release. Before starting an upgrade, you should review the new features, determine which features have been deprecated or removed, and find out about changes to StorageGRID Webscale APIs.

What's New in StorageGRID Webscale 11.1

Details for two releases are included in this section.

- StorageGRID Webscale 11.1 includes new Nodes and Support menu options, compliance support for S3 buckets, new procedures for performing software upgrades and applying hotfixes, and other enhancements and new features.

- The StorageGRID Webscale 11.1.1 patch release includes additional changes to support the SG6000 appliance.

SG6000 appliance: Requires 11.1.1 or higher

To use the StorageGRID Webscale SG6000 appliance, you must install or upgrade to StorageGRID Webscale 11.1.1 or later.

SG6000 appliance installation and maintenance

Nodes option shows attributes for appliances: Requires 11.1.1 or higher

The **Nodes** option in the 11.1.1 version of the Grid Manager now lists attributes for StorageGRID Webscale appliances, such as hardware, networking, and storage information.

> **Note:** For version 11.1.0, continue to access this information by selecting **Support > Grid Toplogy >** *appliance Storage Node* **> SSM > Resources**.

Instructions added for estimating time to complete an upgrade

To provide guidance on the time to allow for an upgrade, the topic, "Estimating the time to complete an upgrade" has been added.

Upgrading StorageGRID Webscale > "Estimating the time to complete an upgrade"

User interface changes

Several enhancements have been made to the StorageGRID Webscale user interface, which you will notice when you first sign in to version 11.1:

- A new **Nodes** option has been added to the Grid Manager main menu. You can select the tabs on the new Nodes page to view charts and tables that summarize how your system is performing and to see information about each node, including unacknowledged alarms, CPU utilization, networking summary, storage, and events. Object and ILM information is provided for Storage Nodes.

  All of the detailed service and attribute information previously available from the **Grid** page continues to be available from a new **Support > Grid Topology** page. The new **Support** menu also includes the **Logs** and **AutoSupport** options.

- The Grid Management Interface has been renamed as the Grid Manager.

- The Tenant Management Interface has been renamed as the Tenant Manager.

Administering StorageGRID Webscale

Compliance support for S3 buckets

StorageGRID Webscale 11.1 adds support to help S3 tenant account users comply with the record keeping requirements of governmental agencies such as the U.S. Securities and Exchange Commission (SEC) and the U.S. Commodity Futures Trading Commission (CFTC). The new compliance feature allows S3 tenants to comply with regulations that require object data to be preserved for a specified amount of time.

Grid administrators must first enable this functionality for the entire StorageGRID Webscale system by enabling the global **Compliance** setting. Then, S3 bucket owners can create compliant buckets using the S3 API, the Tenant Manager, or the Tenant Management API. Settings for compliant buckets allow users to specify the retention period for objects in the bucket, place a bucket under a legal hold, remove a legal hold, and determine whether objects are automatically deleted when their retention periods expire.

Objects in compliant buckets are evaluated by compliant rules in the active ILM policy: these rules ensure that at least two replicated copies or an erasure-coded copy of each object is maintained on Storage Nodes for the length of the retention period.

Administering StorageGRID Webscale

Using tenant accounts

Implementing S3 client applications

Improvements to software upgrade procedure

Improvements have been made to the software upgrade procedure in StorageGRID Webscale 11.1 to make upgrading to a new release faster and easier. Update packages are distributed to grid nodes in parallel, and you can upgrade one grid node of each type in parallel. In addition, the upgrade progress is reported for each node, so you can more readily discern where issues might be occurring.

The upgrade changes go into effect after you upgrade the primary Admin Node to StorageGRID Webscale 11.1.

Upgrading StorageGRID Webscale > "Performing the upgrade"

New hotfix procedure

After upgrading to StorageGRID Webscale 11.1, you can apply StorageGRID Webscale hotfixes with an easy-to-use interface on the Grid Manager. Select **Maintenance > Apply Hotfix**.

Recovery and maintenance

Changes to metadata space and alarms

Changes have been made to how StorageGRID Webscale manages and reports on the available space for object metadata.

- For new installations, the value for Metadata Reserved Space (CAWM) on storage volume 0 has been increased from 2 TB to 3 TB. This increase helps to ensure that each Storage Node has adequate space available for essential database operations, such as compaction.

  Note: After you upgrade to StorageGRID Webscale 11.1, you should increase the value manually to 3 TB if sufficient space exists on all Storage Nodes.

  Upgrading StorageGRID Webscale > "Increasing the Metadata Reserved Space watermark"

- The calculations for the Metadata Used Space (Percent) (CDLP) alarm have been modified, so you will know sooner if you need to add new Storage Nodes. The CDLP alarm is now triggered

when the portion of Metadata Reserved Space that is available for object metadata reaches 70% full (minor alarm), 90% full (major alarm), and 100% full (critical alarm).

- When the Metadata Used Space (Percent) alarm reaches the 90% threshold, a warning appears on the Dashboard, making it more obvious when you need to add new Storage Nodes.

Administering StorageGRID Webscale

Expanding a StorageGRID Webscale grid

Enhancements to S3 and Swift REST API support

The following changes have been made:

- **S3 and Swift:** A new grid-wide option, **HTTP**, allows you to use HTTP instead of HTTPS for communications between Storage Nodes and API Gateway Nodes. For example, you might prefer to use HTTP during testing. If the HTTP option has been enabled for the grid, you must use different ports for HTTP communications than for HTTPS communications.

- **S3 only**: You can now issue cross-origin resource sharing (CORS) requests for S3 buckets. To manage CORS, you can use the S3 REST API, the Tenant Manager, or the Tenant Management API.

Implementing S3 client applications

Implementing Swift client applications

Using tenant accounts

Platform services improvements

S3 requests requiring CloudMirror replication, event notifications, or the search integration service are now automatically throttled to match the rate outgoing to the endpoint. This allows up to 100 active tenants to use platform services. You can now also configure an HTTP proxy for platform services to reach the internet. In addition, you no longer need to contact your NetApp representative before using platform services.

Administering StorageGRID Webscale

Using tenant accounts

Support for decommissioning disconnected nodes

Previously, if a StorageGRID Webscale system included any grid nodes with a status of Unknown or Administratively Down, you could not decommission any of the connected grid nodes. With the release of StorageGRID Webscale 11.1, you can now decommission grid nodes while they are disconnected.

Recovery and maintenance

SGA Maintenance Mode for StorageGRID Appliance Installer

You can now place the compute controller in a StorageGRID Webscale appliance into maintenance mode, instead of shutting it down. Maintenance mode makes performing maintenance procedures, including firmware upgrades, on the storage controller less disruptive because you no longer need to access the appliance hardware to reapply power.

SG5600 appliance installation and maintenance

SG5700 appliance installation and maintenance

Removed or deprecated features

Certain features have been removed or deprecated in StorageGRID Webscale 11.1. You must review these items to understand whether you need to update client applications or modify your configuration before you upgrade.

Changes to Transport Layer Security (TLS) support

The following changes to TLS support have been made in StorageGRID Webscale 11.1:

- All support for Transport Layer Security (TLS) 1.0 has been removed.

- TLS 1.1 is deprecated in StorageGRID Webscale 11.1. Support for TLS 1.1 will be removed in a future StorageGRID Webscale release.

OpenStack disk files and scripts are no longer provided

NetApp-provided virtual machine disk files and scripts for OpenStack are no longer supported for StorageGRID Webscale installation, expansion, or recovery operations. If you need to recover a node running in an OpenStack deployment, download the StorageGRID Webscale 11.1 files for your Linux operating system. Then, follow the recovery and maintenance instructions for replacing a Linux node.

Legacy ILM rules must be recreated and deleted before upgrading

ILM rules that were created before StorageGRID Webscale 10.3 were deprecated in version 10.4, and are not supported in StorageGRID Webscale 11.1. Before upgrading, you must recreate any legacy rules you still want to use and then delete all of them. See "Managing legacy ILM rules" for instructions.

S3 bucket names must now be DNS compatible

Starting with StorageGRID Webscale 11.1, all buckets created with the S3 REST API, the Tenant Manager or the Tenant Management API must have DNS-compatible names. Specifically, bucket names must comply with these rules:

- Must be unique across each StorageGRID Webscale system (not just unique within the tenant account).

- Must be DNS compliant.

- Must contain between 3 and 63 characters.

- Can be a series of one or more labels, with adjacent labels separated by a period. Each label must start and end with a lowercase letter or a number and can only use lowercase letters, numbers, and hyphens.

- Must not look like a text-formatted IP address.

- Should not use periods in virtual hosted-style requests because periods will cause problems with server wildcard certificate verification.

Consistency levels: "default" has been renamed as "read-after-new-write"

The consistency level used by default for new S3 buckets or Swift containers has been renamed. The previous name was "default." The new name is "read-after-new-write."

The "read-after-new-write" consistency level provides read-after-write consistency for new objects and eventual consistency for object updates. It offers high availability and data protection guarantees and matches AWS S3 consistency guarantees.

Because of this change, you might need to update your applications before upgrading to StorageGRID Webscale 11.1. To understand what you need to change, refer to the table, which compares how StorageGRID Webscale behaved in version 11.0 to how it behaves in version 11.1 for each type of request that you can use to specify consistency level.

Type of request	Behavior in version 11.0	Behavior in version 11.1
PUT `/org/containers/ {containerName}/ consistency` in the Tenant Management API	You could specify "default" for the consistency.	You can continue to specify "default" or you can specify "read-after-new-write" to achieve the same consistency behavior.
GET `/org/containers/ {containerName}/ consistency` in the Tenant Management API	"default" could be returned.	If the bucket used the "default" level in version 11.0 or the "read-after-new-write" level in version 11.1, "default" is returned (for backward compatibility). **Note:** The "default" level is deprecated in version 2 of the Tenant Management API. In version 3 of the API (future release of StorageGRID Webscale), "default" will no longer be returned.
Configure Consistency Level dialog in the Tenant Manager	You could select "Default" as the consistency.	• If you create a new bucket in the Tenant Manager, the "Read-after-new-write" level is selected. • If you update a bucket that was created in a previous release using the "default" consistency, the "Read-after-new-write" consistency will be selected in the Tenant Manager.
• S3 PUT Bucket request • Swift PUT container request	Bucket was created with the "default" consistency control.	Bucket is created with the equivalent "read-after-new-write" consistency control.
• S3 PUT Bucket consistency request • Swift PUT container consistency request	You could specify "default" as the consistency control.	You must specify "read-after-new-write" to achieve the same consistency behavior.

Type of request	Behavior in version 11.0	Behavior in version 11.1
• S3 GET Bucket consistency request • Swift GET container consistency request	"default" could be returned.	"read-after-new-write" is now returned instead of "default."
S3 HEAD Object request	You could specify "default" as the consistency control.	You can specify "read-after-new-write" in the consistency control header to achieve the same consistency behavior, or you can configure the S3 bucket to use the "read-after-new-write" consistency level.

Audit export through CIFS/Samba is deprecated

Audit export through CIFS/Samba is deprecated in StorageGRID Webscale 11.1, and will be removed in a future StorageGRID Webscale release.

If you previously configured audit clients for CIFS, you should now configure audit clients for NFS instead. See the instructions for administering StorageGRID Webscale.

NAS Bridge attributes have been removed

The `cache_device[cache_device_config_attributes][type]` is no longer needed when creating a cache device using the API.

The `cache_device[cache_device_config_attributes][format]` is no longer needed when creating a cache device using the API. Previously, the `cache_devices` API call required the cache device format to be specified. Now the format is always EXT4.

The `active_directory[primary_dc]` is no longer needed when creating an Active Directory using the API.

Administering NAS Bridge

Related tasks

Managing legacy ILM rules on page 22

Related information

Recovery and maintenance
Amazon Web Services (AWS) Documentation: Bucket Restrictions and Limitations
Using tenant accounts
Implementing S3 client applications
Implementing Swift client applications
Administering StorageGRID Webscale

Changes to the Grid Management API

The following changes have been made to Grid Management API in StorageGRID Webscale 11.1.

New compliance section

You can use the endpoints in the new **compliance** section to configure the global Compliance settings for the StorageGRID Webscale system.

Update to alarms section

The data returned by the `health/topology` endpoint in the **alarms** section now includes a `uniqueName` property. For nodes, this is the hostname.

```
"id": "00000000-0000-0000-0000-000000000000",
"name": "string",
"uniqueName": "string",
"type": "node",
"oid": "string",
"state": "connected",
"severity": "normal",
"children": [
```

Updates to recovery and expansion-node sections

The `networks` data returned by endpoints in the **recovery** and **expansion-nodes** sections now includes the node's interface configuration (static, DHCP, or fixed) for all StorageGRID Webscale networks.

```
"networks": {
  "grid": {
    "mac": "01:23:45:67:89:ab",
    "ip": "172.16.10.100/24",
    "gateway": "172.16.10.1",
    "config": "static"
  },
  "admin": {
    "mac": "01:23:45:67:89:ab",
    "ip": "172.16.10.100/24",
    "gateway": "172.16.10.1",
    "config": "static",
    "subnets": [
      "10.20.30.0/24"
    ]
  },
  "client": {
    "mac": "01:23:45:67:89:ab",
    "ip": "172.16.10.100/24",
    "gateway": "172.16.10.1",
    "config": "static"
  }
},
```

Related information

Administering StorageGRID Webscale

Changes to the Tenant Management API

StorageGRID Webscale 11.1 supports version 2 of the Tenant Management API.

New compliance section

You can use the endpoint in the new **compliance** section to determine how global Compliance is configured for the StorageGRID Webscale system in the Grid Manager or the Grid Management API.

New endpoints for containers section

The **containers** section includes new endpoints to allow you to:

- Create a S3 bucket. If compliance has been enabled for the StorageGRID Webscale system, you can also configure the bucket's compliance settings.

- Get or update the compliance settings for an S3 bucket, if compliance has been enabled.

- Create, update, or delete a bucket's CORS configuration.

Default consistency level deprecated

The "default" consistency level is deprecated in v2 of the Tenant Management API. In v3 of the API (future release of StorageGRID Webscale), "default" will no longer be returned by GET `/org/containers/{containerName}/consistency`. See "Removed or deprecated features" for more information.

Changes to endpoint section

In the StorageGRID Webscale 11.0 release, POST `/org/endpoints` returned a 200 code on success. It now returns a 201 code to match the published schema and similar APIs.

Related concepts

Related information

Using tenant accounts

Upgrade planning and preparation

You must plan the upgrade of your StorageGRID Webscale system to ensure that the system is ready for the upgrade, and that the upgrade can be completed with minimal disruption.

Steps

Estimating the time to complete an upgrade

When planning an upgrade to StorageGRID Webscale 11.1, you must consider when to upgrade, based on how long the upgrade might take. You must also be aware of which operations you can and cannot perform during each stage of the upgrade.

About this task

The time required to complete a StorageGRID Webscale upgrade depends on a variety of factors such as client load and hardware performance.

The table summarizes the main upgrade stages and lists the approximate time required for each stage. The steps after the table provide instructions you can use to estimate the upgrade time for your system.

> **Attention:** When you perform the initial upgrade from StorageGRID Webscale 11.0 to 11.1.x, you might need to allow an extended amount of time to update Cassandra database tables.

Upgrade stage	Description	Approximate time required	During this stage
Pre-upgrade validation	The grid's condition is validated.	3 minutes per grid node, unless validation errors are reported	• Do not change the grid configuration. • Do not update the ILM configuration. • Do not perform other maintenance procedures such as decommissioning, expansion, or recovery. • You cannot access the primary Admin Node while that node is being upgraded.
Primary Admin Node upgrade	The primary Admin Node is stopped, upgraded, and restarted.	30 minutes	
Upgrade of all other grid nodes	The software on all other grid nodes is upgraded, in the order in which you approve the nodes. Every node in your system will be brought down one at a time for several minutes each during the upgrade.	15 to 45 minutes per node, with appliance Storage Nodes requiring the most time **Note:** Storage Nodes wait up to 10 minutes for active HTTP operations to be completed.	
Cassandra database update	Cassandra database tables, which exist on all Storage Nodes, are updated.	• **11.0 to 11.1**: Several days or weeks, based on the amount of metadata in your system • **11.1.x to 11.1.y**: 15 minutes per node	The upgraded grid will operate normally; however, the upgrade will still report "In Progress." • Do not enable or disable any new features. • Do not change the grid configuration. • Do not update the ILM configuration. • Do not perform a decommissioning or expansion procedure. **Note:** Contact support if you need to change the configuration or perform a recovery procedure while the Cassandra database is being updated.
Restart services	Some grid node services are restarted.	15 minutes per node	Affected grid nodes might be shown as Administratively Down.

Upgrade stage	Description	Approximate time required	During this stage
Complete final steps	The upgrade to the new release completes.	5 minutes	When the final upgrade steps complete, you can: • Enable or disable new features. • Change the grid configuration. • Update the ILM configuration. • Perform decommissioning, expansion, and recovery procedures.

Steps

1. Estimate the time required to upgrade all grid nodes (includes all upgrade stages except for the Cassandra database update).

   a. Multiply the number of nodes in your StorageGRID Webscale system by 30 minutes/node (average).

   b. Add 1 hour to this time to account for the time required to download the `.upgrade` file, run precheck validations, and complete the final steps.

2. Estimate the time required to update the Cassandra database:

Upgrading from...	Approximate time required
11.0 to 11.1.x	a. From the Grid Manager, select **Grid**. b. Select the deployment level of the grid topology tree. c. On the Overview: Summary tab, locate the **Used Storage Capacity for Metadata** (**XUDC**) attribute. d. Divide **Used Storage Capacity for Metadata** by 500 GB/day.
11.1.x to 11.1.y	Multiply each Storage Node in your system by 15 minutes/node.

3. Calculate the total estimated time for the upgrade by adding the result of step *1* to the result of step *2*.

Example: Estimating the time to upgrade from 11.0 to 11.1

Suppose your system has 14 grid nodes with 4,000 GB of **Used Storage Capacity for Metadata**.

1. Multiply 14 by 30 minutes/node and add 1 hour. The estimated time to upgrade all nodes is 8 hours.

2. Divide 4,000 by 500 GB/day. The estimated number of days for the Cassandra update is 8 days.

3. Add the two values together. You should allow approximately 8-1/2 days to complete the initial upgrade of your system to StorageGRID Webscale 11.1.

How your system is affected during the upgrade

You must understand how your StorageGRID Webscale system will be affected during the upgrade.

Client applications might experience short-term disruptions

The StorageGRID Webscale system can ingest and retrieve data from client applications throughout the upgrade process except for a short period of time when services are restarting and the client connections to individual API Gateway Nodes or Storage Nodes are disrupted. Connectivity will be restored after the upgrade finishes and services resume on the individual nodes.

Every node in your StorageGRID Webscale system will be brought down one at a time for several minutes each during the upgrade. You might need to schedule downtime for the upgrade if loss of connectivity for a short period is not acceptable.

You must decide when to upgrade API Gateway Nodes based on your grid's configuration. If your StorageGRID Webscale system has multiple API Gateway Nodes, you must sequence the upgrade so that client applications are always directed to an available API Gateway Node. If your StorageGRID Webscale system has only one API Gateway Node, you must plan a downtime for the upgrade because client applications will not be able to access the system while the API Gateway Node is being upgraded.

Alarms might be triggered

Alarms might be triggered when services start and stop and when the StorageGRID Webscale system is operating as a mixed-version environment (some grid nodes running an earlier version, while others have been upgraded to a later version). In general, these alarms will clear when the upgrade completes.

In addition, when you upgrade to StorageGRID Webscale 11.1, Metadata Used Space (Percent) (CDLP) alarms might be triggered. The CDLP alarm uses a new attribute (Metadata Allowed Space (CEMS)), so it can alert you earlier if the space allowed for object metadata is becoming full.

> **Attention:** If you see CDLP alarms after you upgrade, you must add new Storage Nodes as soon as possible. See the instructions for expanding StorageGRID Webscale.

Many emails are generated

When you upgrade grid nodes, email notifications are generated when the node is stopped and restarted. To avoid excessive emails, you can disable email notifications before upgrading the first node and re-enable notifications after the upgrade is completed.

Configuration changes are restricted

While you are upgrading to StorageGRID Webscale 11.1:

- Do not make any grid configuration changes until the upgrade is complete.

- Do not enable or disable any new features until the upgrade is complete.

- Do not update the ILM configuration until the upgrade is complete. Otherwise, you might experience inconsistent and unexpected ILM behavior.

- Tenant users should not change the consistency level for an existing S3 bucket to **Default**. This request will fail during the upgrade from StorageGRID Webscale 11.0.x with the following error: `400 Bad Request`.

Related information

[Expanding a StorageGRID Webscale grid](#)

Impact of an upgrade on groups and user accounts

You must understand the impact of the StorageGRID Webscale upgrade, so that you can update groups and user accounts appropriately after the upgrade is complete.

Changes to permissions for the Grid Manager and the Grid Management API

The following management permissions have been changed in StorageGRID Webscale 11.1.

Permission	Description
Root Access	Required to access the following new item in the **Configuration** menu: - Compliance
Grid Topology Page Configuration	Required to use the **Reset event counts** links on the **Nodes > Events** tabs to return event counts to zero.

Related information

[Administering StorageGRID Webscale](#)

Impact of an upgrade on tenant accounts

Before upgrading to a new version of StorageGRID Webscale, you should understand how tenant accounts might be affected.

Changes to permissions for the Tenant Manager and the Tenant Management API

The following management permissions have been changed for tenant users in StorageGRID Webscale 11.1.

Permission	Description
Manage all containers	S3 tenants: Allows access to the **S3 > Buckets** menu. Starting in StorageGRID Webscale 11.1, this permission allows users to create new S3 buckets in addition to managing bucket settings for all buckets in the tenant account using the Tenant Manager or the Tenant Management API. S3 bucket settings include compliance, consistency level, CORS, last access time, and the settings required to enable each platform service.

Related information

[Administering StorageGRID Webscale](#)
[Using tenant accounts](#)

Verifying the installed version of StorageGRID Webscale

Before starting the upgrade, you must verify which version of the StorageGRID Webscale is currently installed.

Steps

1. Sign in to the Grid Manager using a supported browser.

2. Select **Help > About**.

3. Verify that the **Version** is 11.0.x or 11.1.x.

   Attention: If you have an earlier version of the software, you must upgrade to version 11.0.x before proceeding with these steps. If you have already upgraded to version 11.1, you can use these instructions to upgrade to a later version of 11.1

Related information

Administering StorageGRID Webscale

Obtaining the required materials for a software upgrade

Before you begin the software upgrade, you must obtain all required materials so you can complete the upgrade successfully.

Item	Notes
StorageGRID Webscale upgrade file	You must download the StorageGRID Webscale upgrade file to your service laptop. See "Downloading the StorageGRID Webscale upgrade file" for instructions.
StorageGRID Webscale installation package for Linux	If your StorageGRID Webscale deployment is running on Linux hosts, you must download the StorageGRID Webscale installation archive for your Linux platform. Then, you must install the RPM or DEB packages on all Linux hosts before you start the upgrade. See "Downloading the StorageGRID Webscale upgrade file" for instructions.
Service laptop	The service laptop must have: • Network port • SSH client (for example, PuTTY) • Supported web browser
Recovery Package (.zip) file	You must download the most recent Recovery Package file from the StorageGRID Webscale system. See "Downloading the Recovery Package" for instructions.
Passwords.txt file	This file is included in the SAID package, which is part of the Recovery Package .zip file. You must obtain the latest version of the Recovery Package.

Item	Notes
Provisioning passphrase	The passphrase is created and documented when the StorageGRID Webscale system is first installed. The provisioning passphrase is not listed in the `Passwords.txt` file.
Related documentation	• *Release Notes*. Be sure to read these carefully before starting the upgrade. • Instructions for administering StorageGRID Webscale • If you are upgrading a Linux deployment, the StorageGRID Webscale installation instructions for your Linux platform. • Other StorageGRID Webscale documentation, as required.

Related tasks

Related references

Related information

Administering StorageGRID Webscale
Red Hat Enterprise Linux or CentOS installation
Ubuntu or Debian installation
NetApp Documentation: StorageGRID Webscale

Web browser requirements

You must use a supported web browser.

Web browser	Minimum supported version
Google Chrome	54
Microsoft Internet Explorer	11 (Native Mode)
Mozilla Firefox	50

You should set the browser window to a recommended width.

Browser width	Pixels
Minimum	1024
Optimum	1280

Downloading the StorageGRID Webscale upgrade file

You must download the upgrade file to a service laptop before you upgrade your StorageGRID Webscale system. If your StorageGRID Webscale system is deployed on Linux hosts, you must also download the StorageGRID Webscale installation files.

Steps

1. Go to the Software Download page on the NetApp Support Site.

   NetApp Downloads: Software

2. Sign in using the username and password for your NetApp account.

3. Scroll to **StorageGRID Webscale**, select **All Platforms**, and click **Go**.

   Note: Be sure to select **StorageGRID Webscale**, not **StorageGRID**.

4. Select the StorageGRID Webscale release, and click **View & Download**.

5. From the Software Download section of the page, click **CONTINUE**, and accept the End User License Agreement.

6. Download the appropriate archive.

7. If your StorageGRID Webscale system is deployed on Linux hosts, complete these steps before you start the upgrade.

   a. Download either the `.tgz` file or the `.zip` file for your Linux platform.

      Note: Select the `.zip` file if you are running Windows on the service laptop.

Linux platform	Additional file (choose one)
Red Hat Enterprise Linux or CentOS	• `StorageGRID-Webscale-version-RPM-uniqueID.tgz` • `StorageGRID-Webscale-version-RPM-uniqueID.zip`
Ubuntu or Debian	• `StorageGRID-Webscale-version-DEB-uniqueID.tgz` • `StorageGRID-Webscale-version-DEB-uniqueID.zip`

   b. Extract the RPM or DEB packages from the installation file.

   c. Install the RPM or DEB packages on all Linux hosts as described in "Installing StorageGRID Webscale host services" in the installation instructions for your Linux platform.

   d. For each containerized StorageGRID Webscale node on each Linux host, run the following commands in this order:

      storagegrid node stop <node-name>

      storagegrid node start <node-name>

      Make sure each node boots correctly before taking the next node down.

Related information

Red Hat Enterprise Linux or CentOS installation

Downloading the Recovery Package

You must download an updated copy of the Recovery Package file before and after making grid topology changes to the StorageGRID Webscale system and before and after upgrading the software. The Recovery Package file allows you to restore the system if a failure occurs.

Before you begin

- You must be signed in to the Grid Manager using a supported browser.

- You must have the provisioning passphrase.

- You must have specific access permissions. For details, see information about controlling system access with administration user accounts and groups.

Steps

1. Select **Maintenance > Recovery Package**.

2. Enter the provisioning passphrase, and click **Start Download**.

   The download starts immediately.

3. When the download completes:

   a. Open the `.zip` file.

   b. Confirm it includes a `gpt-backup` directory and an inner `.zip` file.

   c. Extract the inner `.zip` file.

   d. Confirm you can open the `Passwords.txt` file.

4. Copy the downloaded Recovery Package file (`.zip`) to two safe, secure, and separate locations.

   Attention: The Recovery Package file must be secured because it contains encryption keys and passwords that can be used to obtain data from the StorageGRID Webscale system.

Related information

Administering StorageGRID Webscale

Checking the system's condition before upgrading software

Before upgrading a StorageGRID Webscale system, you must verify the system is ready to accommodate the upgrade. You must ensure that the system is running normally and that all grid nodes are operational.

Steps

1. Sign in to the Grid Manager using a supported browser.

2. Check for and resolve any active alarms.

   For information on specific alarms, see troubleshooting instructions.

3. Confirm that no conflicting grid tasks are active or pending.

If you are currently running...	Description
StorageGRID Webscale 11.0.x	Select **Grid**. Then select *Site* > *primary Admin Node* > **CMN** > **Grid Tasks > Configuration**.
StorageGRID Webscale 11.1.x	Select **Support > Grid Topology**. Then, select *Site* > *primary Admin Node* > **CMN > Grid Tasks > Configuration**.

Information lifecycle management evaluation (ILME) tasks are the only grid tasks that can run concurrently with the software upgrade.

If any other grid tasks are active or pending, wait for them to finish or release their lock.

> **Note:** Contact technical support if a task does not finish or release its lock.

4. Select **Maintenance > Decommission**.

If a decommission procedure is paused and either of the following conditions apply, you must click **Resume** and wait for the decommission to complete before you start the upgrade. Otherwise, the 11.1 upgrade prechecks will fail and report an error:

- You started the decommission procedure using version 10.4 and paused it before upgrading to version 11.0.

- You started the decommission procedure using version 11.0 and paused it to perform an expansion.

5. Confirm that the hosts for all non-appliance Storage Nodes have at least 24 GB of memory available.

The Cassandra heap settings have changed in StorageGRID Webscale 11.1. All of the reserved heap memory is now allocated on service start. If a Storage Node is currently running on a host with insufficient memory, it might fail to start Cassandra during the upgrade to 11.1.

> **Note:** Contact technical support for assistance with the upgrade if sufficient memory cannot be allocated before the upgrade.

6. Recreate and then delete any legacy ILM rules.

Legacy ILM rules are rules that you created before version 10.3. The upgrade prechecks for StorageGRID Webscale 11.1 will return an error if any legacy ILM rules are found. Before upgrading, you must recreate any legacy rules you still want to use and then delete all of them. See "Managing legacy ILM rules."

7. Refer to the lists of internal and external ports in the 11.1 version of the installation instructions for your platform, and ensure that all required ports are opened before you upgrade.

The upgrade prechecks for StorageGRID Webscale 11.1 will fail if StorageGRID Webscale cannot communicate on port 9999. You must ensure that this port is not blocked between sites or nodes.

Related tasks

Related information

Troubleshooting StorageGRID Webscale
Administering StorageGRID Webscale
Recovery and maintenance
Red Hat Enterprise Linux or CentOS installation
Ubuntu or Debian installation

Managing legacy ILM rules

ILM rules that were created using StorageGRID Webscale 10.2 or earlier were deprecated in StorageGRID Webscale 10.4 and are not supported in StorageGRID Webscale 11.1. If your StorageGRID Webscale system still includes these legacy ILM rules, you must recreate any that you still want to use. Then, you must delete all legacy rules before upgrading to version 11.1.

Before you begin

- You must be signed in to the Grid Manager using a supported browser.

- You must have specific access permissions. For details, see information about controlling system access with administration user accounts and groups.

- You have the most recent instructions for administering StorageGRID Webscale.

About this task

The following conditions apply to legacy ILM rules (rules created before version 10.3):

- When a legacy rule is displayed, a warning icon ⚠ indicates that it is a legacy rule.

- A policy might contain different versions of a legacy ILM rule (for example, a policy might include both v1.0 and v1.1 of Rule A).

Before upgrading to StorageGRID Webscale 11.1, follow these steps to recreate and delete any legacy rules.

Steps

1. Determine which legacy ILM rules are currently in use, and note all settings for those ILM rules.

2. Use the Create New ILM Rules wizard to create new ILM rules with equivalent settings.

   See instructions for administering StorageGRID Webscale.

   Note: You might need to replace a single legacy rule with multiple new rules. When ILM rules changed in version 10.3, certain rule features also changed. For example, you can no longer have multiple APIs in one ILM rule.

3. If the legacy rules are being used in the active policy, create a new proposed ILM policy.

   See instructions for administering StorageGRID Webscale.

   a. Clone the active policy.

   b. Select the new ILM rules and unselect the original legacy rules.

   c. Save the proposed policy.

   d. Simulate the proposed policy using ingested objects that are appropriate for testing the new ILM rules.

   e. Activate the proposed policy.

4. As required, recreate any unused legacy rules, and then delete the legacy rules.

   You cannot delete active ILM rules or ILM rules currently selected for the proposed ILM policy.

Related information

Administering StorageGRID Webscale

Performing the upgrade

The Software Upgrade page guides you through the process of uploading the required file and upgrading all of the grid nodes in your StorageGRID Webscale system.

Before you begin

You are aware of the following:

- You must upgrade all grid nodes for all data center sites from the primary Admin Node, using the Grid Manager.

- When you start the upgrade, the primary Admin Node is upgraded automatically.

- Shortly after the primary Admin Node has been upgraded, you can select which grid nodes to upgrade next.

- You must upgrade all grid nodes in your StorageGRID Webscale system to complete the upgrade, but you can upgrade individual grid nodes in any order. You can select individual grid nodes, groups of grid nodes, or all grid nodes. You can repeat the process of selecting grid nodes as many times as necessary, until all grid nodes at all sites are upgraded.

- When the upgrade starts on a grid node, the services on that node are stopped. Later, the grid node is rebooted. Do not approve the upgrade for a grid node unless you are sure that node is ready to be stopped and rebooted.

- When all grid nodes have been upgraded, the Cassandra database is upgraded, and the upgrade process completes. Upgrading the database can take an extended amount of time (from days to weeks); however, the upgraded grid will operate normally while the Cassandra upgrade is in progress.
  Estimating the time to complete an upgrade on page 12

- You must complete the upgrade on the same hypervisor platform you started with.

Steps

Related information

Administering StorageGRID Webscale
NAS Bridge installation and setup

Starting the upgrade

The upgrade steps vary slightly depending on whether you are upgrading from StorageGRID Webscale 11.0.x to 11.1 or whether you are upgrading from StorageGRID Webscale 11.1.x to 11.1.y.

Before you begin

You have reviewed all of the considerations and completed all of the steps in "Upgrade planning and preparation."
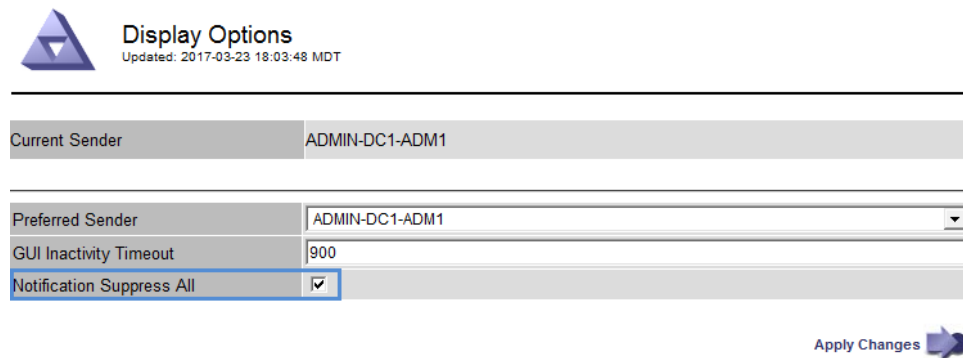
Steps

1. Sign in to the Grid Manager using a supported browser.

2. Optionally, disable email notifications.

   You can disable email notifications during the upgrade to avoid receiving excessive email notifications about node outages and upgrade processes.

   a. Select **Configuration > Display Options**.

   b. Select the **Notification Suppress All** check box.

      All email notifications are suppressed when this check box is selected, including those unrelated to the upgrade, such as event-triggered AutoSupport email notifications.

   c. Click **Apply Changes**.

3. If you have not already done so, follow the instructions in "Verifying the installed version of StorageGRID Webscale" to determine which version of StorageGRID Webscale is currently running.

4. Select the appropriate instructions for your version.

If you have...	Go to...
StorageGRID Webscale 11.0.x	*Starting an upgrade from StorageGRID Webscale 11.0* on page 25
StorageGRID Webscale 11.1.x	*Starting an upgrade from StorageGRID Webscale 11.1* on page 27
Any other StorageGRID Webscale version	Stop here. You cannot use these instructions to upgrade your software.

Related concepts

Starting an upgrade from StorageGRID Webscale 11.0

Follow these steps to upgrade from StorageGRID Webscale 11.0.x to 11.1.x.

Before you begin

You have checked the current software version and confirmed you are running StorageGRID Webscale 11.0.x.

> **Note:** If you are running an earlier version of StorageGRID Webscale, stop here. You must use the upgrade procedures for that version. If you have already upgraded to version 11.1.x, go to *Starting an upgrade from StorageGRID Webscale 11.1* on page 27.

Steps

1. Select **Maintenance > Software Upgrade**.

   The Software Upgrade page appears. StorageGRID Webscale 11.0.x is listed as the current version.

2. Enter the provisioning passphrase in the text box, and click **Verify**.

   If the provisioning password is valid, a green checkmark is displayed.

3. Select the `.upgrade` file you downloaded.

   a. Click **Browse**.

   b. Locate and select the file:
      `NetApp_StorageGRID_version_Software_uniqueID.upgrade`

   c. Click **Open**.

      The file is uploaded and validated. When the validation process is done, the **Start Upgrade** button becomes enabled.

Software Upgrade

Before starting the upgrade process, you must confirm that there are no active alerts and that all grid nodes are online and available. Temporarily disable email notifications during the upgrade to avoid node outage warnings (Configuration > Display Options > Notification Suppress All).

Current Version	StorageGRID® Webscale 11.0.0
Provisioning Passphrase	******** ✔ Verify
Upgrade file	NetApp_StorageGRID_11.1.0_Software_20180226.2138.87d898b.upgrade Browse
Upgrade Version	StorageGRID® Webscale 11.1.0

Start Upgrade

The primary Admin Node might reboot after you start the upgrade.

4. Click **Start Upgrade**.

When the upgrade starts:

a. Pre-upgrade validations are performed, which might take a while to complete.

Note: If any pre-upgrade validation errors are reported, resolve them, and click **Start Upgrade** again.

b. The primary Admin Node is upgraded, which includes stopping services, upgrading the software, and restarting services. This upgrade can take up to 30 minutes.

Note: You will not be able to access the Grid Manager while the primary Admin Node is being upgraded. Audit logs will also be unavailable.

5. While you are waiting for the Grid Manager to become accessible again, go to *Upgrading grid nodes and completing the upgrade* on page 30.

Related tasks

Verifying the installed version of StorageGRID Webscale on page 17

Starting an upgrade from StorageGRID Webscale 11.1

Follow these steps to upgrade from StorageGRID Webscale 11.1.x to 11.1.y.

Before you begin

You have already upgraded to some version of StorageGRID Webscale 11.1 and you need to upgrade to a newer StorageGRID Webscale 11.1.x version. For example, you need to install a service pack.

Note: If you have not yet upgraded to version 11.1.x, go to *Starting an upgrade from StorageGRID Webscale 11.0* on page 25.

Steps

1. Select **Maintenance > Software Upgrade**.

The Software Upgrade page appears. The date and time that the most recent upgrade completed are displayed, unless the primary Admin Node has been rebooted or the management API restarted since that upgrade was performed.

Software Upgrade

Before starting the upgrade process, you must confirm that there are no active alerts and that all grid nodes are online and available. Temporarily disable email notifications during the upgrade to avoid node outage warnings (Configuration > Display Options > Notification Suppress All).

After uploading the upgrade file, click the Run Prechecks button to detect problems that will prevent upgrade from starting. These prechecks also run when you start the upgrade.

Software upgrade completed at 2018-02-26 18:05:25 MST.

Upgrade file

Upgrade file   Browse

Upgrade Version   No software upgrade file selected

Passphrase

Provisioning Passphrase

Run Prechecks   Start Upgrade

2. Select the `.upgrade` file you downloaded.

    a. Click **Browse**.

    b. Locate and select the file:
       `NetApp_StorageGRID_version_Software_uniqueID.upgrade`

    c. Click **Open**.

       The file is uploaded and validated. When the validation process is done, a green checkmark appears next to the upgrade file name.

Upgrade file

Upgrade file   Browse   ✓
                                NetApp_StorageGRID_11.1.0_Software_20180306.1806.8d69ee1.upgrade

Upgrade Version   StorageGRID® Webscale 11.1.0

Passphrase

Provisioning Passphrase

Run Prechecks   Start Upgrade

3. Enter the provisioning passphrase in the text box.

The **Run Prechecks** and **Start Upgrade** buttons become enabled.

Upgrade file

Upgrade file	Browse	✓ NetApp_StorageGRID_11.1.0_Software_20180306.1806.8d69ee1.upgrade
Upgrade Version	StorageGRID® Webscale 11.1.0	

Passphrase

Provisioning Passphrase	●●●●●●	

Run Prechecks   Start Upgrade

4. If you want to perform the pre-upgrade validations before you start the actual upgrade, click **Run Prechecks**. Then, resolve any errors are reported.

   Note: The same prechecks will be performed when you click **Start Upgrade**. Clicking **Run Prechecks** allows you to detect and resolve issues before starting the upgrade.

5. When you are ready to perform the upgrade, click **Start Upgrade**.

   A warning box appears to remind you that your browser's connection will be lost when the primary Admin Node is rebooted. When the primary Admin Node is available again, you will need to clear your web browser's cache and reload the Software Upgrade page.

   ⚠ **Connection Will Be Temporarily Lost**

   During the upgrade, your browser's connection to StorageGRID Webscale will be lost temporarily when the primary Admin Node is rebooted.

   Attention: You must clear your cache and reload the page before starting to use the new version. Otherwise, StorageGRID Webscale might not respond as expected.

   Are you sure you want to start the upgrade process?

   Cancel   OK

6. Click **OK** to acknowledge the warning and start the upgrade process.

   When the upgrade starts:

   a. The pre-upgrade validations are run.

      Note: If any errors are reported, resolve them and click **Start Upgrade** again.

   b. The primary Admin Node is upgraded, which includes stopping services, upgrading the software, and restarting services. You will not be able to access the Grid Manager while the primary Admin Node is being upgraded. Audit logs will also be unavailable. This upgrade can take up to 30 minutes.

7. While you are waiting for the Grid Manager to become accessible again, go to *Upgrading grid nodes and completing the upgrade* on page 30.

Related tasks

Verifying the installed version of StorageGRID Webscale on page 17

Upgrading grid nodes and completing the upgrade

After the primary Admin Node has been upgraded, you must upgrade all other grid nodes in your StorageGRID Webscale system. You can customize the upgrade sequence by selecting to upgrade individual grid nodes, groups of grid nodes, or all grid nodes.

Steps

1. When the primary Admin Node has been upgraded and the Grid Manager is available again, clear your web browser's cache, sign back in, and reload the Software Upgrade page.

    For instructions, see the documentation for your web browser.

    > **Attention:** You must clear the web browser's cache to remove outdated resources used by the previous version of the software.

2. Review the Upgrade Progress section on the Software Upgrade page, which provides information about each major upgrade task.

    a. Start Upgrade Service is the first upgrade task. During this task, the software file is distributed to the grid nodes, and the upgrade service is started.

    b. When the Start Upgrade Service task is Completed, the Upgrade Grid Nodes task starts. The Grid Node Status table appears when Upgrade Grid Nodes is in progress, and it lists the upgrade stage for all grid nodes in your system.

3. After the grid nodes appear in the Grid Node Status section and before approving any grid nodes, download a new copy of the Recovery Package.

    > **Attention:** You must download a new copy of the Recovery Package file after you upgrade the software version on the primary Admin Node. The Recovery Package file allows you to restore the system if a failure occurs.

4. Review the information in the Grid Node Status table. Grid nodes are arranged by type.

Upgrade Progress

Start Upgrade Service	Completed
Upgrade Grid Nodes	In Progress

Grid Node Status

You must approve all grid nodes to complete an upgrade, but you can update grid nodes in any order.

During the upgrade of a node, the services on that node are stopped. Later, the node is rebooted. Do not click Approve for a node unless you are sure the node is ready to be stopped and rebooted.

When you are ready to add grid nodes to the upgrade queue, click one or more Approve buttons to add individual nodes to the queue, click the Approve All button at the top of the nodes table to add all nodes of the same type, or click the top-level Approve All button to add all nodes in the grid.

If necessary, you can remove nodes from the upgrade queue before node services are stopped by clicking Remove or Remove All.

[Approve All] [Remove All]

∧ Admin Nodes

Search 🔍

Site	Name	Progress	Stage	Error	Action
Data Center 1	DC1-ADM1		Done		

◄ ►

∧ Storage Nodes   [Approve All] [Remove All]

Search 🔍

Site	Name	Progress	Stage	Error	Action
Data Center 1	DC1-S1		Waiting for you to approve		Approve
Data Center 1	DC1-S2		Waiting for you to approve		Approve
Data Center 1	DC1-S3		Waiting for you to approve		Approve

◄ ►

A grid node can have one of these stages when this page first appears:

- Done (primary Admin Node only)

- Preparing upgrade

- Software download queued

- Downloading

- Waiting for you to approve

5. Optionally, sort the lists of nodes in ascending or descending order by **Site**, **Name**, **Progress**, **Stage**, or **Error**. Or, enter a term in the **Search** box to search for specific nodes.

6. Approve the grid nodes you are ready to add to the upgrade queue.

   Attention: When the upgrade starts on a grid node, the services on that node are stopped. Later, the grid node is rebooted. Do not approve the upgrade for a node unless you are sure that node is ready to be stopped and rebooted.

- Click one or more **Approve** buttons to add one or more individual nodes to the upgrade queue.

- Click the **Approve All** button within each section to add all nodes of the same type to the upgrade queue.

    Note: Nodes of the same type are upgraded one at a time.

- Click the top-level **Approve All** button to add all nodes in the grid to the upgrade queue.

7. If you need to remove a node or all nodes from the upgrade queue, click **Remove** or **Remove All**.

As shown in the example, when the Stage reaches "Stopping services," the **Remove** button is hidden and you can no longer remove the node.

8. Wait for each node to proceed through the upgrade stages, which include applying the upgrade, stopping services, upgrading the base operating system, rebooting, and starting services.

When all grid nodes have been upgraded, the Upgrade Grid Nodes task is shown as Completed, and the Upgrade Cassandra tasks starts.

9. Periodically monitor the progress of the Upgrade Cassandra task.

10. While waiting for the database upgrade to complete, verify that grid operations have returned to normal:

    a. Check that the services are operating normally and that there are no new alarms.

    b. Review all custom alarms to verify that they are still required and usable.

    c. Confirm that client connections to the StorageGRID Webscale system are operating as expected.

11. While waiting for the database upgrade to complete, re-enable email notifications if you suppressed them for the upgrade.

    The upgrade processes that would have triggered excessive alarms have now completed.

    a. Select **Configuration > Display Options**.

    b. Unselect the **Notification Suppress All** check box.

    c. Click **Apply Changes**.

12. When the Upgrade Cassandra upgrade task has completed, wait a few minutes for the Final Upgrade Steps task to complete.

    Upgrade Progress

Start Upgrade Service	Completed
Upgrade Grid Nodes	Completed
Upgrade Cassandra	Completed
Final Upgrade Steps	In Progress

    When the Final Upgrade Steps task has completed, the upgrade is done.

    Related tasks

Verifying the completion of your upgrade

You must verify that the upgrade completed successfully and make any required configuration changes to ensure that your grid is operating optimally.

About this task

This procedure asks you to re-verify some items that you checked while the database upgrade was still in progress. You must ensure that the last stages of the upgrade completed successfully.

Steps

1. Sign in to the Grid Manager using a supported browser.

2. Confirm that the upgrade completed successfully.

    a. Click **Help > About**, and confirm that the displayed version is what you would expect.

    b. Select **Maintenance > Software Upgrade**.

   c. Confirm that the green banner shows that the software upgrade was completed on the date and time you expected.

Software Upgrade

Before starting the upgrade process, you must confirm that there are no active alerts and that all grid nodes are online and available. Temporarily disable email notifications during the upgrade to avoid node outage warnings (Configuration > Display Options > Notification Suppress All).

After uploading the upgrade file, click the Run Prechecks button to detect problems that will prevent upgrade from starting. These prechecks also run when you start the upgrade.

> Software upgrade completed at 2018-02-26 18:05:25 MST.

Upgrade file

    Upgrade file   [Browse]

    Upgrade Version   No software upgrade file selected

Passphrase

    Provisioning Passphrase   [_____]

    [Run Prechecks]   [Start Upgrade]

3. Check that the services are operating normally and that there are no alarms.

4. Review all custom alarms to verify that they are still required and usable.

5. Confirm that client connections to the StorageGRID Webscale system are operating as expected.

Increasing the Metadata Reserved Space

After upgrading to StorageGRID Webscale 11.1, you should increase the value for Metadata Reserved Space (CAWM) from 2 TB to 3 TB, if possible, to ensure that each Storage Node has adequate space available for essential database operations, such as compaction. Increasing the Metadata Reserved Space by 1 TB reduces the space available for object storage on storage volume 0 by 1 TB.

Before you begin

- You must be signed in to the Grid Manager using a supported browser.

- You must have specific access permissions. For details, see information about controlling system access with administration user accounts and groups.

Steps

1. Sign in to the Grid Manager using a supported browser.

2. Ensure you have at least 1 TB of available space on storage volume 0 of each Storage Node.

   a. Select **Nodes**.

   b. Select the first Storage Node in your grid.

   c. Select the Storage tab.

    d. In the Volumes section, ensure that **rangebd/0** has at least 1 TB (1,000 GB) of Available space.

    e. Repeat these steps for all Storage Nodes.

- If one or more Storage Nodes does not have enough available space, the Metadata Reserved Space value cannot be increased. Do not proceed further with this procedure. The existing Metadata Reserved Space value will continue to be used.

- If all Storage Nodes have at least 1 TB of available space, go to the next step.

3. Select **Configuration > Storage Options**.

4. Select the Configuration tab.

5. In the Storage Watermarks section, select **Metadata Reserved Space**.

6. Change the value to **3000000000000** (3 followed by 12 zeros).

Configure Storage Options
Updated: 2018-04-09 15:57:21 MDT

Object Segmentation

Description	Settings
Segmentation	Enabled
Maximum Segment Size	1000000000

Storage Watermarks

Description	Settings
Storage Volume Read-Write Watermark	30000000000
Storage Volume Soft Read-Only Watermark	10000000000
Storage Volume Hard Read-Only Watermark	5000000000
Metadata Reserved Space	3000000000000

Apply Changes

7. Click **Apply Changes**.

Troubleshooting upgrade issues

If the upgrade does not complete successfully, you might able to resolve the issue yourself. If you cannot resolve an issue, you should gather the required information before contacting technical support.

The following sections describe how to recover from situations where the upgrade has partially failed. Contact technical support if you cannot resolve an upgrade issue.

Cassandra service fails to start

If a non-appliance Storage Node fails to start services after the upgrade, confirm that the host for the node has at least 24 GB of memory available. See "Checking the system's condition before upgrading software."

> **Note:** Contact technical support for assistance with the upgrade if sufficient memory cannot be allocated to the host.

Provisioning failures

If the automatic provisioning process fails, contact technical support.

Grid node crashes or fails to start

If a grid node crashes during the upgrade process or fails to start successfully after the upgrade finishes, contact technical support to investigate and to correct any underlying issues.

Ingest or data retrieval is interrupted

If data ingest or retrieval is unexpectedly interrupted when you are not upgrading a grid node, contact technical support.

Database upgrade errors

If the database upgrade fails with an error, retry the upgrade. If it fails again, contact technical support.

Related tasks

Checking the system's condition before upgrading software on page 20

User interface issues

You might see issues with the Grid Manager or Tenant Manager after upgrade.

Web interface does not respond as expected

The Grid Manager or Tenant Manager might not respond as expected after StorageGRID Webscale software is upgraded. For example, after you use the Grid Manager to acknowledge an alarm and click **Apply Changes**, the change might not be saved.

If you experience issues with the web interface, clear your web browser cache. This removes outdated resources used by the previous version of StorageGRID Webscale software, and permits the user interface to operate correctly again. For instructions, see the documentation for your web browser.

"Docker image availability check" error messages

When attempting to start the upgrade process, you might receive an error message that states "The following issues were identified by the Docker image availability check validation suite." All issues must be resolved before you can complete the upgrade.

Contact technical support if you are unsure of the changes required to resolve the identified issues.

Message	Cause	Solution
Unable to determine upgrade version. Upgrade version info file {`file_path`} did not match the expected format.	The upgrade package is corrupt.	Re-upload the upgrade package, and try again. If the problem persists, contact technical support.
Upgrade version info file {`file_path`} was not found. Unable to determine upgrade version.	The upgrade package is corrupt.	Re-upload the upgrade package, and try again. If the problem persists, contact technical support.
Unable to determine currently installed release version on {`node_name`}.	A critical file on the node is corrupt.	Contact technical support.
Connection error while attempting to list versions on {`node_name`}	The node is offline or the connection was interrupted.	Check to make sure that all nodes are online and reachable from the primary Admin Node, and try again.
The host for node {`node_name`} does not have StorageGRID {`upgrade_version`} image loaded. Images and services must be installed on the host before the upgrade can proceed.	The RPM or DEB packages for the upgrade have not been installed on the host where the node is running, or the images are still in the process of being imported. **Note:** This error only applies to nodes that are running as containers on Linux.	Check to make sure that the RPM or DEB packages have been installed on all Linux hosts where nodes are running. Make sure the version is correct for both the service and the images file. Wait a few minutes, and try again. For more information, see the installation instructions for your Linux platform.
Error while checking node {`node_name`}	An unexpected error occurred.	Wait a few minutes, and try again.
Uncaught error while running prechecks. {`error_string`}	An unexpected error occurred.	Wait a few minutes, and try again.

Related information

[Red Hat Enterprise Linux or CentOS installation](#)

[Ubuntu or Debian installation](#)

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