Site decommission

StorageGRID

NetApp
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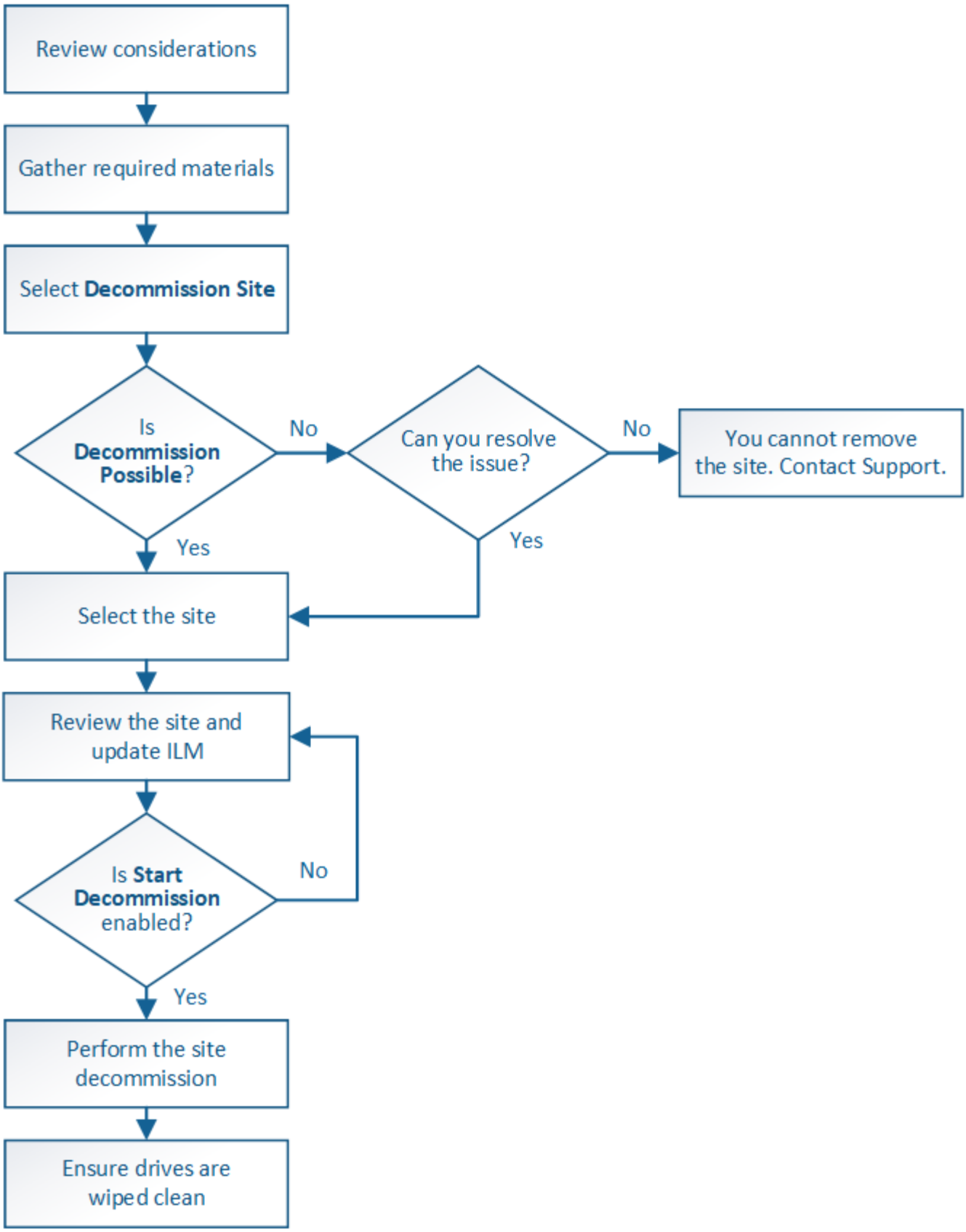
Site decommission

You might need to remove a data center site from the StorageGRID system. To remove a site, you must decommission it.

The flowchart shows the high-level steps for decommissioning a site.



Considerations for removing a site

Before using the site decommission procedure to remove a site, you must review the

considerations.

What happens when you decommission a site

When you decommission a site, StorageGRID permanently removes all nodes at the site and the site itself from the StorageGRID system.

When the site decommission procedure is complete:

- You can no longer use StorageGRID to view or access the site or any of the nodes at the site.
- You can no longer use any storage pools or Erasure Coding profiles that referred to the site. When StorageGRID decommissions a site, it automatically removes these storage pools and deactivates these Erasure Coding profiles.

Differences between connected site and disconnected site decommission procedures

You can use the site decommission procedure to remove a site in which all nodes are connected to StorageGRID (referred to as a connected site decommission) or to remove a site in which all nodes are disconnected from StorageGRID (referred to as a disconnected site decommission). Before you begin, you must understand the differences between these procedures.

> If a site contains a mixture of connected ( ) and disconnected nodes (or), you must bring all offline nodes back online.

- A connected site decommission allows you to remove an operational site from the StorageGRID system. For example, you can perform a connected site decommission to remove a site that is functional but no longer needed.
- When StorageGRID removes a connected site, it uses ILM to manage the object data at the site. Before you can start a connected site decommission, you must remove the site from all ILM rules and activate a new ILM policy. The ILM processes to migrate object data and the internal processes to remove a site can occur at the same time, but the best practice is to allow the ILM steps to complete before you start the actual decommission procedure.
- A disconnected site decommission allows you to remove a failed site from the StorageGRID system. For example, you can perform a disconnected site decommission to remove a site that has been destroyed by a fire or flood.

  When StorageGRID removes a disconnected site, it considers all nodes to be unrecoverable and makes no attempt to preserve data. However, before you can start a disconnected site decommission, you must remove the site from all ILM rules and activate a new ILM policy.

> Before performing a disconnected site decommission procedure, you must contact your NetApp account representative. NetApp will review your requirements before enabling all steps in the Decommission Site wizard. You should not attempt a disconnected site decommission if you believe it might be possible to recover the site or to recover object data from the site.

General requirements for removing a connected or a disconnected site

Before removing a connected or disconnected site, you must be aware of the following requirements:

- You cannot decommission a site that includes the primary Admin Node.
- You cannot decommission a site that includes an Archive Node.
- You cannot decommission a site if any of the nodes have an interface that belongs to a high availability (HA) group. You must either edit the HA group to remove the node's interface or remove the entire HA group.
- You cannot decommission a site if it contains a mixture of connected ( ) and disconnected (or) nodes.
- You cannot decommission a site if any node at any other site is disconnected (or).
- You cannot start the site decommission procedure if an ec-node-repair operation is in progress. See Check data repair jobs to track repairs of erasure-coded data.
- While the site decommission procedure is running:
  - You cannot create ILM rules that refer to the site being decommissioned. You also cannot edit an existing ILM rule to refer to the site.
  - You cannot perform other maintenance procedures, such as expansion or upgrade.

    If you need to perform another maintenance procedure during a connected site decommission, you can pause the procedure while the Storage Nodes are being removed. The **Pause** button is enabled only when the ILM evaluation or erasure-coded data decommissioning stages are reached; however, ILM evaluation (data migration) will continue to run in the background. After the second maintenance procedure is complete, you can resume decommissioning.

  - If you need to recover any node after starting the site decommission procedure, you must contact support.
- You cannot decommission more than one site at a time.
- If the site includes one or more Admin Nodes and single sign-on (SSO) is enabled for your StorageGRID system, you must remove all relying party trusts for the site from Active Directory Federation Services (AD FS).

Requirements for information lifecycle management (ILM)

As part of removing a site, you must update your ILM configuration. The Decommission Site wizard guides you through a number of prerequisite steps to ensure the following:

- The site is not referred to by the active ILM policy. If it is, you must create and activate a new ILM policy with new ILM rules.
- No proposed ILM policy exists. If you have a proposed policy, you must delete it.
- No ILM rules refer to the site, even if those rules are not used in the active or proposed policy. You must delete or edit all rules that refer to the site.

When StorageGRID decommissions the site, it will automatically deactivate any unused Erasure Coding profiles that refer to the site, and it will automatically delete any unused storage pools that refer to the site. The system-default All Storage Nodes storage pool is removed because it uses all sites.

Before you can remove a site, you might be required to create new ILM rules and activate a new ILM policy. These instructions assume that you have a good understanding of how ILM works and that you are familiar with creating storage pools, Erasure Coding profiles, ILM rules, and simulating and activating an ILM policy. See the instructions for managing objects with information lifecycle management.

Manage objects with ILM

Considerations for the object data at a connected site

If you are performing a connected site decommission, you must decide what to do with existing object data at the site when you create new ILM rules and a new ILM policy. You can do either or both of the following:

- Move object data from the selected site to one or more other sites in your grid.

  Example for moving data: Suppose you want to decommission a site in Raleigh because you added a new site in Sunnyvale. In this example, you want to move all object data from the old site to the new site. Before updating your ILM rules and ILM policy, you must review the capacity at both sites. You must ensure that the Sunnyvale site has enough capacity to accommodate the object data from the Raleigh site and that adequate capacity will remain in Sunnyvale for future growth.

  To ensure that adequate capacity is available, you might need to add storage volumes or Storage Nodes to an existing site or add a new site before you perform this procedure. See the instructions for expanding a StorageGRID system.

- Delete object copies from the selected site.

  Example for deleting data: Suppose you currently use a 3-copy ILM rule to replicate object data across three sites. Before decommissioning a site, you can create an equivalent 2-copy ILM rule to store data at only two sites. When you activate a new ILM policy that uses the 2-copy rule, StorageGRID deletes the copies from the third site because they no longer satisfy ILM requirements. However, the object data will still be protected and the capacity of the two remaining sites will stay the same.

  Never create a single-copy ILM rule to accommodate the removal of a site. An ILM rule that creates only one replicated copy for any time period puts data at risk of permanent loss. If only one replicated copy of an object exists, that object is lost if a Storage Node fails or has a significant error. You also temporarily lose access to the object during maintenance procedures such as upgrades.

Additional requirements for a connected site decommission

Before StorageGRID can remove a connected site, you must ensure the following:

- All nodes in your StorageGRID system must have a Connection State of **Connected** (); however, the nodes can have active alerts.

  You can complete Steps 1-4 of the Decommission Site wizard if one or more nodes are disconnected. However, you cannot complete Step 5 of the wizard, which starts the decommission process, unless all nodes are connected.

- If the site you plan to remove contains a Gateway Node or an Admin Node that is used for load balancing,

you might need to perform an expansion procedure to add an equivalent new node at another site. Be sure clients can connect to the replacement node before starting the site decommission procedure.

- If the site you plan to remove contains any Gateway Node or Admin Nodes that are in an high availability (HA) group, you can complete Steps 1-4 of the Decommission Site wizard. However, you cannot complete Step 5 of the wizard, which starts the decommission process, until you remove these nodes from all HA groups. If existing clients connect to an HA group that includes nodes from the site, you must ensure they can continue to connect to StorageGRID after the site is removed.
- If clients connect directly to Storage Nodes at the site you are planning to remove, you must ensure that they can connect to Storage Nodes at other sites before starting the site decommission procedure.
- You must provide sufficient space on the remaining sites to accommodate any object data that will be moved because of changes to the active ILM policy. In some cases, you might need to expand your StorageGRID system by adding Storage Nodes, storage volumes, or new sites before you can complete a connected site decommission.
- You must allow adequate time for the decommission procedure to complete. StorageGRID ILM processes might take days, weeks, or even months to move or delete object data from the site before the site can be decommissioned.

> Moving or deleting object data from a site might take days, weeks, or even months, depending on the amount of data at the site, the load on your system, network latencies, and the nature of the required ILM changes.

- Whenever possible, you should complete Steps 1-4 of the Decommission Site wizard as early as you can. The decommission procedure will complete more quickly and with fewer disruptions and performance impacts if you allow data to be moved from the site before starting the actual decommission procedure (by selecting **Start Decommission** in Step 5 of the wizard).

Additional requirements for a disconnected site decommission

Before StorageGRID can remove a disconnected site, you must ensure the following:

- You have contacted your NetApp account representative. NetApp will review your requirements before enabling all steps in the Decommission Site wizard.

> You should not attempt a disconnected site decommission if you believe it might be possible to recover the site or to recover any object data from the site.

- All nodes at the site must have a Connection State of one of the following:
  - **Unknown** ( ): The node is not connected to the grid for an unknown reason. For example, the network connection between nodes has been lost or the power is down.
  - **Administratively Down** ( ): The node is not connected to the grid for an expected reason. For example, the node or services on the node have been gracefully shut down.
- All nodes at all other sites must have a Connection State of **Connected** ( ); however, these other nodes can have active alerts.
- You must understand that you will no longer be able to use StorageGRID to view or retrieve any object data that was stored at the site. When StorageGRID performs this procedure, it makes no attempt to preserve any data from the disconnected site.

If your ILM rules and policy were designed to protect against the loss of a single site, copies of your objects still exist on the remaining sites.

- You must understand that if the site contained the only copy of an object, the object is lost and cannot be retrieved.

Considerations for consistency controls when you remove a site

The consistency level for an S3 bucket or Swift container determines whether StorageGRID fully replicates object metadata to all nodes and sites before telling a client that object ingest was successful. The consistency level makes a trade-off between the availability of the objects and the consistency of those objects across different Storage Nodes and sites.

When StorageGRID removes a site, it needs to ensure that no data is written to the site being removed. As a result, it temporarily overrides the consistency level for each bucket or container. After you start the site decommission process, StorageGRID temporarily uses strong-site consistency to prevent object metadata from being written to the site being removed.

As a result of this temporary override, be aware that any client write, update, and delete operations that occur during a site decommission can fail if multiple nodes become unavailable at the remaining sites.

Related information

How site recovery is performed by technical support

Manage objects with ILM

Expand your grid

Gather required materials

Before you decommission a site, you must obtain the following materials.

Item	Notes
Recovery Package `.zip` file	You must download the most recent Recovery Package `.zip` file (`sgws-recovery-package-id-revision.zip`). You can use the Recovery Package file to restore the system if a failure occurs.
`Passwords.txt` file	This file contains the passwords required to access grid nodes on the command line and is included in the Recovery Package.
Provisioning passphrase	The passphrase is created and documented when the StorageGRID system is first installed. The provisioning passphrase is not in the `Passwords.txt` file.
Description of StorageGRID system's topology before decommissioning	If available, obtain any documentation that describes the system's current topology.

Related information

Web browser requirements

Download the Recovery Package

Step 1: Select Site

To determine if a site can be decommissioned, start by accessing the Decommission Site wizard.

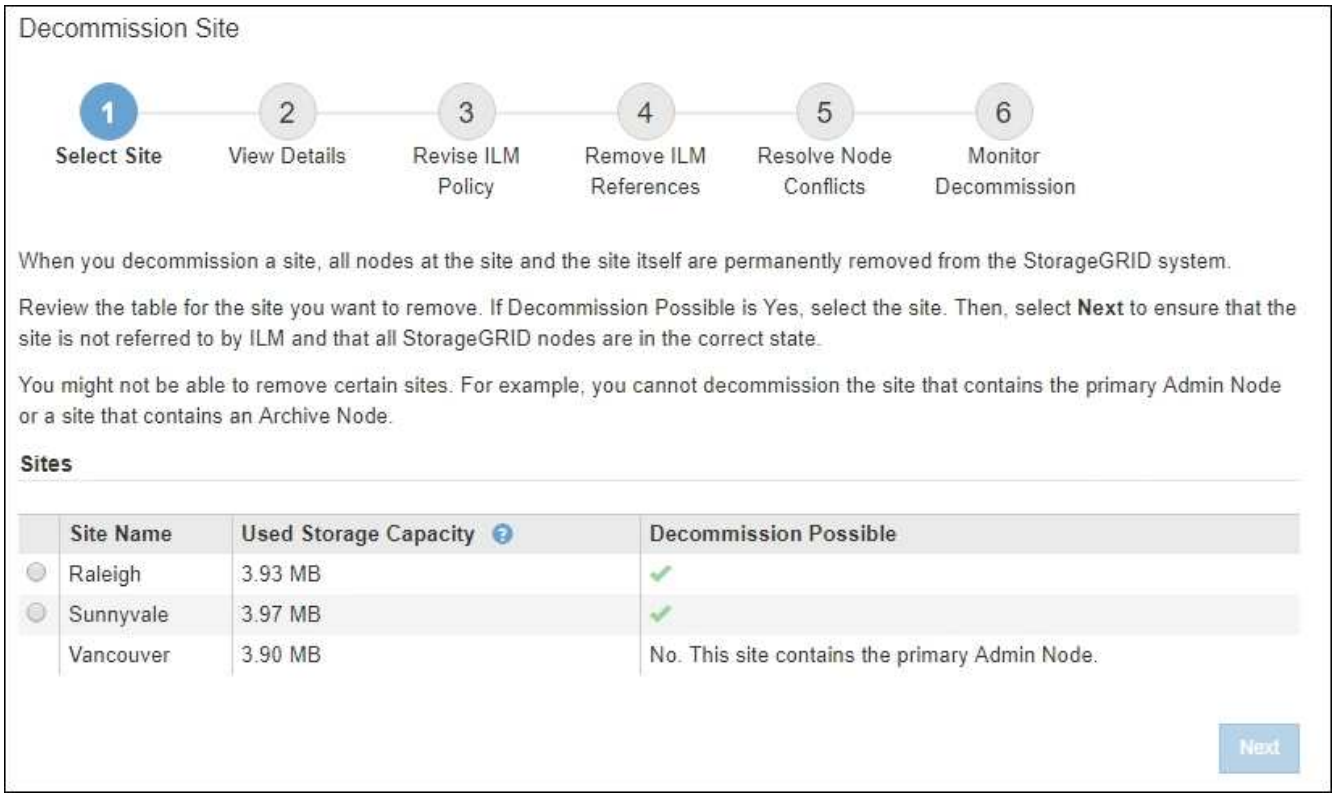
What you'll need

- You must have obtained all required materials.
- You must have reviewed the considerations for removing a site.
- You must be signed in to the Grid Manager using a supported web browser.
- You must have the Root Access permission, or the Maintenance and ILM permissions.

Steps

1. Select **MAINTENANCE** > **Tasks** > **Decommission**.
2. Select **Decommission Site**.

   Step 1 (Select Site) of the Decommission Site wizard appears. This step includes an alphabetic list of the sites in your StorageGRID system.



3. View the values in the **Used Storage Capacity** column to determine how much storage is currently being used for object data at each site.

   The Used Storage Capacity is an estimate. If nodes are offline, the Used Storage Capacity is the last

known value for the site.

- For a connected site decommission, this value represents how much object data will need to be moved to other sites or deleted by ILM before you can safely decommission this site.
- For a disconnected site decommission, this value represents how much of your system's data storage will become inaccessible when you decommission this site.

> If your ILM policy was designed to protect against the loss of a single site, copies of your object data should still exist on the remaining sites.

4. Review the reasons in the **Decommission Possible** column to determine which sites can be decommissioned currently.

> If there is more than one reason a site cannot be decommissioned, the most critical reason is shown.

Decommission Possible reason	Description	Next step
Green checkmark ( )	You can decommission this site.	Go to the next step.
No. This site contains the primary Admin Node.	You cannot decommission a site containing the primary Admin Node.	None. You cannot perform this procedure.
No. This site contains one or more Archive Nodes.	You cannot decommission a site containing an Archive Node.	None. You cannot perform this procedure.
No. All nodes at this site are disconnected. Contact your NetApp account representative.	You cannot perform a connected site decommission unless every node in the site is connected ( ).	If you want to perform a disconnected site decommission, you must contact your NetApp account representative, who will review your requirements and enable the rest of the Decommission Site wizard. **IMPORTANT**: Never take online nodes offline so that you can remove a site. You will lose data.

The example shows a StorageGRID system with three sites. The green checkmark ( ) for the Raleigh and Sunnyvale sites indicates that you can decommission those sites. However, you cannot decommission the Vancouver site because it contains the primary Admin Node.

5. If decommission is possible, select the radio button for the site.

   The **Next** button is enabled.

6. Select **Next**.

   Step 2 (View Details) appears.

Step 2: View Details

From Step 2 (View Details) of the Decommission Site wizard, you can review which nodes are included at the site, see how much space has been used on each Storage Node, and assess how much free space is available at the other sites in your grid.

What you'll need

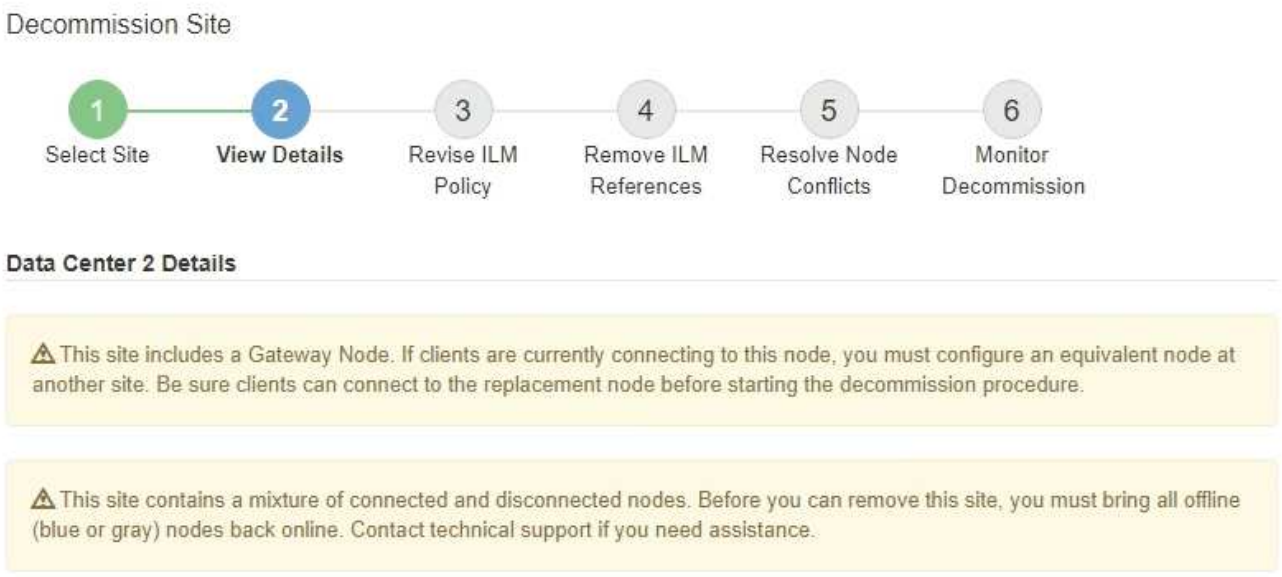
Before decommissioning a site, you must review how much object data exists at the site.

- If you are performing a connected site decommission, you must understand how much object data currently exists at the site before updating ILM. Based on site capacities and your data protection needs, you can create new ILM rules to move data to other sites or to delete object data from the site.
- Perform any required Storage Node expansions before starting the decommission procedure if possible.
- If you are performing a disconnected site decommission, you must understand how much object data will become permanently inaccessible when you remove the site.

If you are performing a disconnected site decommission, ILM cannot move or delete object data. Any data that remains at the site will be lost. However, if your ILM policy was designed to protect against the loss of a single site, copies of your object data still exist on the remaining sites.

Steps

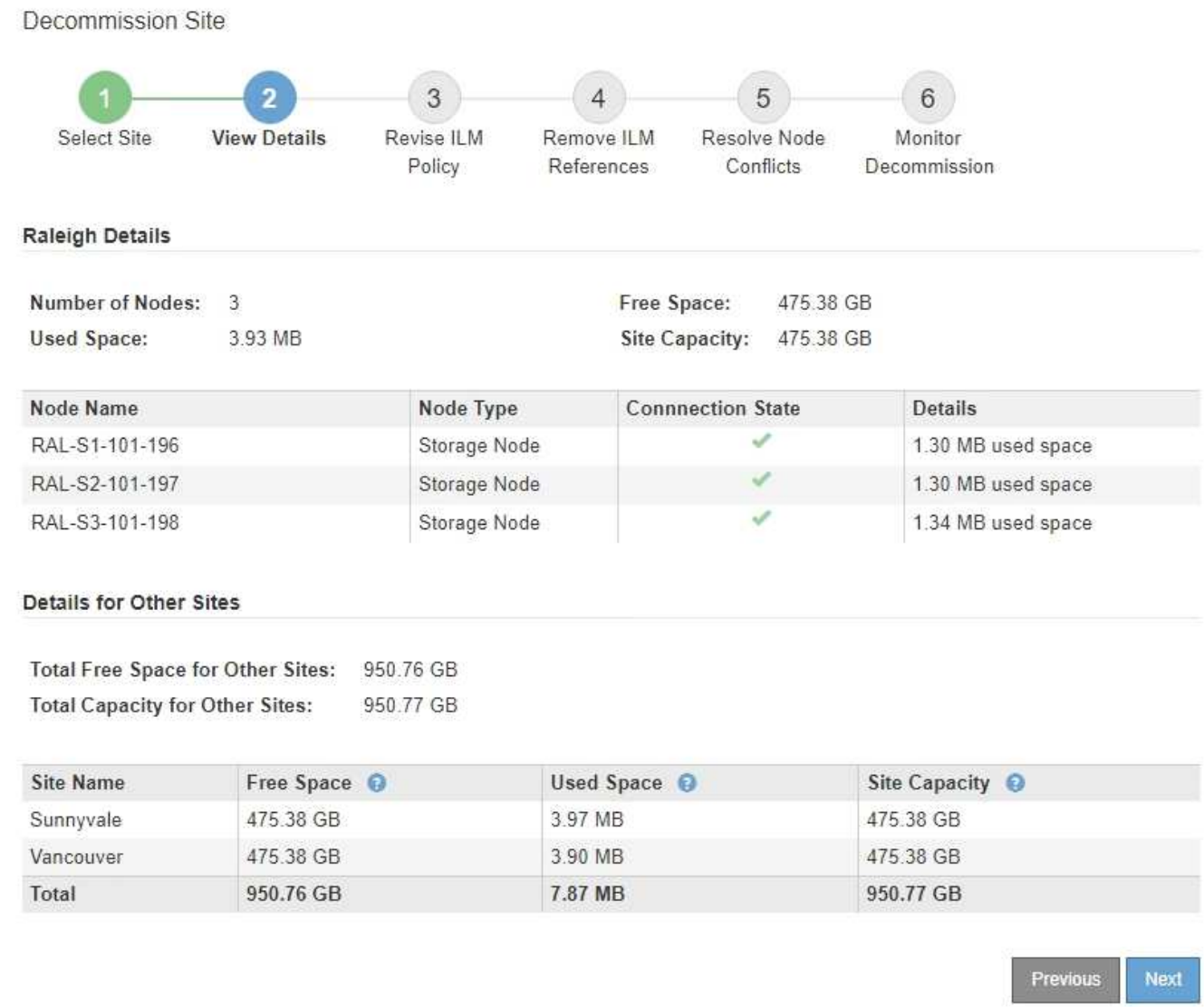
1. From Step 2 (View Details), review any warnings related to the site you selected to remove.



   A warning appears in these cases:

   - The site includes a Gateway Node. If S3 and Swift clients are currently connecting to this node, you must configure an equivalent node at another site. Be sure clients can connect to the replacement node before continuing with the decommission procedure.
   - The site contains a mixture of connected ( ) and disconnected nodes (or). Before you can remove this site, you must bring all offline nodes back online.

2. Review details about the site you selected to remove.



The following information is included for the selected site:

- Number of nodes
- The total used space, free space, and capacity of all Storage Nodes in the site.
  - For a connected site decommission, the **Used Space** value represents how much object data must be moved to other sites or deleted with ILM.
  - For a disconnected site decommission, the **Used Space** value indicates how much object data will become inaccessible when you remove the site.
- Node names, types, and connection states:
  - (Connected)
  - (Administratively Down)
  - (Unknown)
- Details about each node:
  - For each Storage Node, the amount of space that has been used for object data.

- For Admin Nodes and Gateway Nodes, whether the node is currently used in a high availability (HA) group. You cannot decommission an Admin Node or a Gateway Node that is used in a HA group. Before you start the decommission, you must edit HA groups to remove all nodes at the site. Or, you can remove the HA group if it only includes nodes from this site.

  Administer StorageGRID

3. In the Details for Other Sites section of the page, assess how much space is available at the other sites in your grid.

Details for Other Sites

Total Free Space for Other Sites:	950.76 GB
Total Capacity for Other Sites:	950.77 GB

Site Name	Free Space	Used Space	Site Capacity
Sunnyvale	475.38 GB	3.97 MB	475.38 GB
Vancouver	475.38 GB	3.90 MB	475.38 GB
Total	950.76 GB	7.87 MB	950.77 GB

If you are performing a connected site decommission and you plan to use ILM to move object data from the selected site (instead of just deleting it), you must ensure that the other sites have enough capacity to accommodate the moved data and that adequate capacity remains for future growth.

A warning appears if the **Used Space** for the site you want to remove is greater than the **Total Free Space for Other Sites**. To ensure that adequate storage capacity is available after the site is removed, you might need to perform an expansion before performing this procedure.

4. Select **Next**.

   Step 3 (Revise ILM Policy) appears.

Related information

Manage objects with ILM

Step 3: Revise ILM Policy

From Step 3 (Revise ILM Policy) of the Decommission Site wizard, you can determine if the site is referred to by the active ILM policy.

What you'll need

You have a good understanding of how ILM works and you are familiar with creating storage pools, Erasure Coding profiles, ILM rules, and simulating and activating an ILM policy.

Manage objects with ILM

About this task

StorageGRID cannot decommission a site if that site is referred to by any ILM rule in the active ILM policy.

If your current ILM policy refers to the site you want to remove, you must activate a new ILM policy that meets certain requirements. Specifically, the new ILM policy:

- Cannot use a storage pool that refers to the site.
- Cannot use an Erasure Coding profile that refers to the site.
- Cannot use the default **All Storage Nodes** storage pool or the default **All Sites** site.
- Cannot use the stock **Make 2 Copies** rule.
- Must be designed to fully protect all object data.

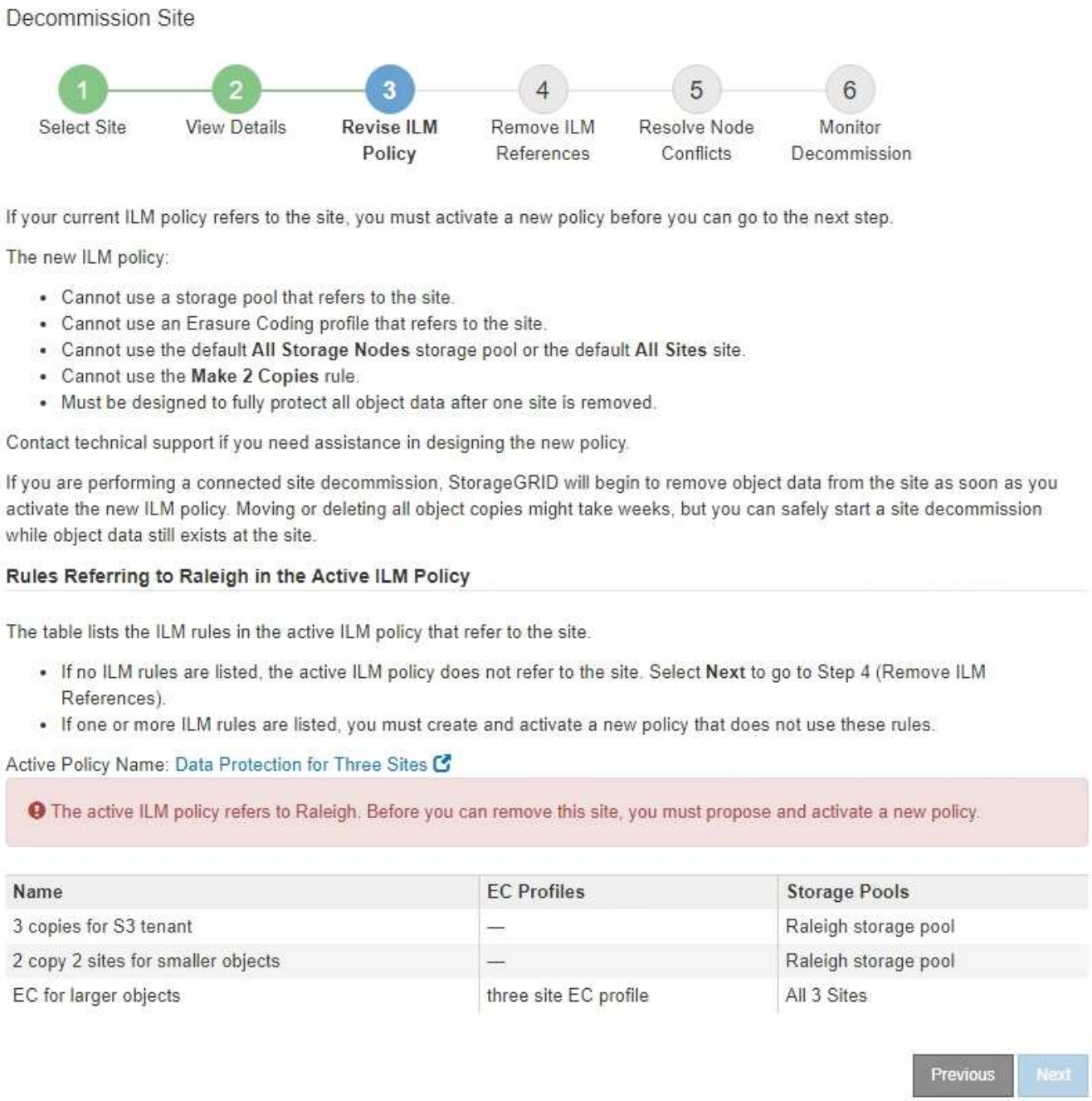
> Never create a single-copy ILM rule to accommodate the removal of a site. An ILM rule that creates only one replicated copy for any time period puts data at risk of permanent loss. If only one replicated copy of an object exists, that object is lost if a Storage Node fails or has a significant error. You also temporarily lose access to the object during maintenance procedures such as upgrades.

If you are performing a *connected site decommission*, you must consider how StorageGRID should manage the object data currently at the site you want to remove. Depending on your data protection requirements, the new rules can move existing object data to different sites or they can delete any extra object copies that are no longer needed.

Contact technical support if you need assistance designing the new policy.

Steps

1. From Step 3 (Revise ILM Policy), determine if any ILM rules in the active ILM policy refer to the site you selected to remove.



2. If no rules are listed, select **Next** to go to Step 4 (Remove ILM References)

   Step 4: Remove ILM References

3. If one or more ILM rules are listed in the table, select the link next to **Active Policy Name**.

   The ILM Policies page appears in a new browser tab. Use this tab to update ILM. The Decommission Site page will remain open on the other tab.

   a. If necessary, select **ILM** > **Storage pools** to create one or more storage pools that do not refer to the site.

      For details, see the instructions for managing objects with information lifecycle management.

b. If you plan to use erasure coding, select **ILM** > **Erasure coding** to create one or more Erasure Coding profiles.

   You must select storage pools that do not refer to the site.

   > Do not use the **All Storage Nodes** storage pool in the Erasure Coding profiles.

4. Select **ILM** > **Rules** and clone each of the rules listed in the table for Step 3 (Revise ILM Policy).

   > For details, see the instructions for managing objects with information lifecycle management.

   a. Use names that will make it easy to select these rules in a new policy.

   b. Update the placement instructions.

      Remove any storage pools or Erasure Coding profiles that refer to the site and replace them with new storage pools or Erasure Coding profiles.

      > Do not use the **All Storage Nodes** storage pool in the new rules.

5. Select **ILM** > **Policies** and create a new policy that uses the new rules.

   > For details, see the instructions for managing objects with information lifecycle management.

   a. Select the active policy, and select **Clone**.

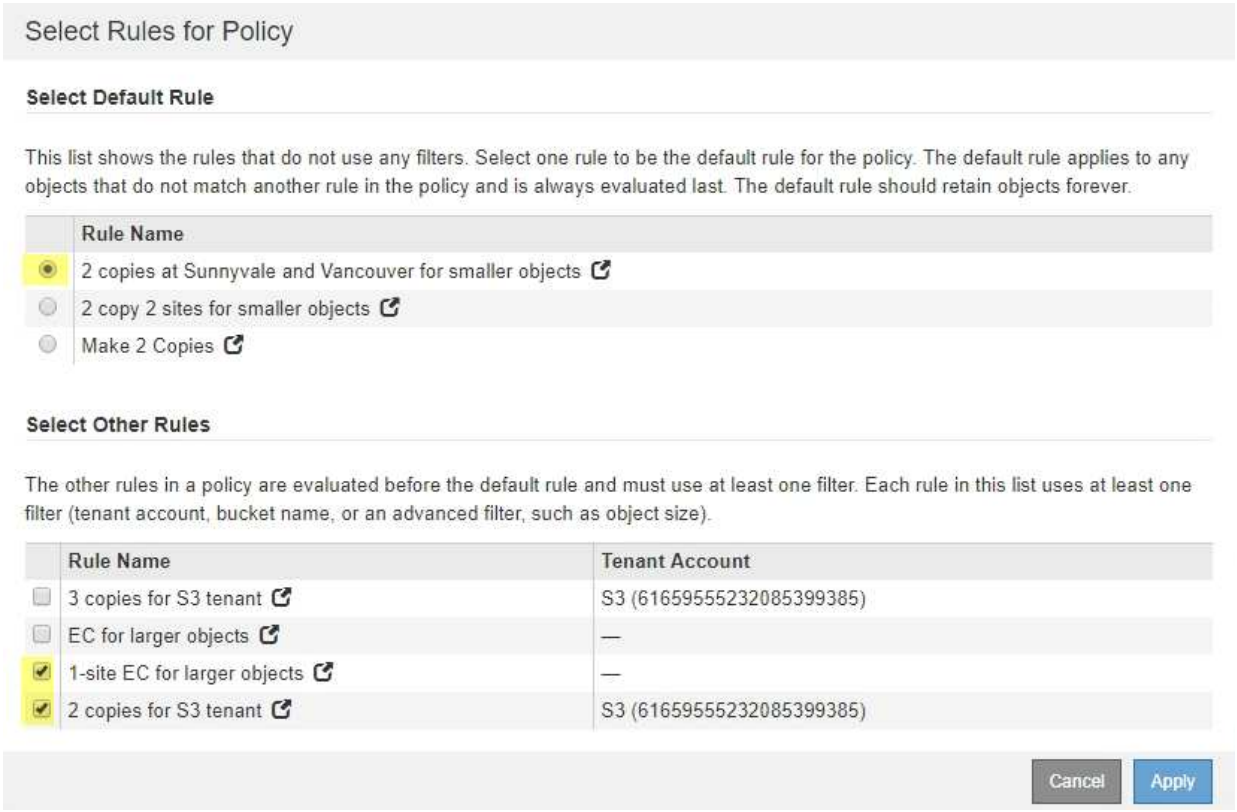
   b. Specify a policy name and a reason for change.

   c. Select rules for the cloned policy.

      - Unselect all rules listed for Step 3 (Revise ILM Policy) of the Decommission Site page.
      - Select a default rule that does not refer to the site.

        > Do not select the **Make 2 Copies** rule because that rule uses the **All Storage Nodes** storage pool, which is not allowed.

      - Select the other replacement rules you created. These rules should not refer to the site.



d. Select **Apply**.

e. Drag and drop the rows to reorder the rules in the policy.

You cannot move the default rule.

> You must confirm that the ILM rules are in the correct order. When the policy is activated, new and existing objects are evaluated by the rules in the order listed, starting at the top.

f. Save the proposed policy.

6. Ingest test objects, and simulate the proposed policy to ensure that the correct rules are applied.

> Errors in an ILM policy can cause unrecoverable data loss. Carefully review and simulate the policy before activating it to confirm that it will work as intended.

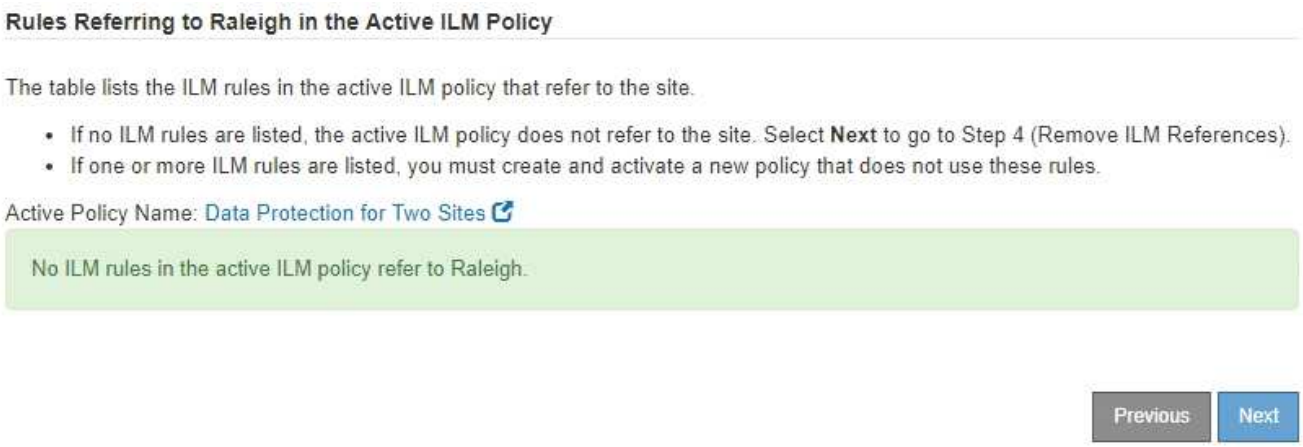
> When you activate a new ILM policy, StorageGRID uses it to manage all objects, including existing objects and newly ingested objects. Before activating a new ILM policy, review any changes to the placement of existing replicated and erasure-coded objects. Changing an existing object's location might result in temporary resource issues when the new placements are evaluated and implemented.

7. Activate the new policy.

If you are performing a connected site decommission, StorageGRID begins to remove object data from the selected site as soon as you activate the new ILM policy. Moving or deleting all object copies might take weeks. Although you can safely start a site decommission while object data still exists at the site, the decommission procedure will complete more quickly and with fewer disruptions and performance impacts if you allow data to be moved from the site before starting the actual decommission procedure (by selecting

Start Decommission in Step 5 of the wizard).

8. Return to **Step 3 (Revise ILM Policy)** to ensure that no ILM rules in the new active policy refer to the site and the **Next** button is enabled.



> If any rules are listed, you must create and activate a new ILM policy before you can continue.

9. If no rules are listed, select **Next**.

   Step 4 (Remove ILM References) appears.

Step 4: Remove ILM References

From Step 4 (Remove ILM References) of the Decommission Site wizard, you can remove the proposed policy if one exists and delete or edit any unused ILM rules that still refer to the site.

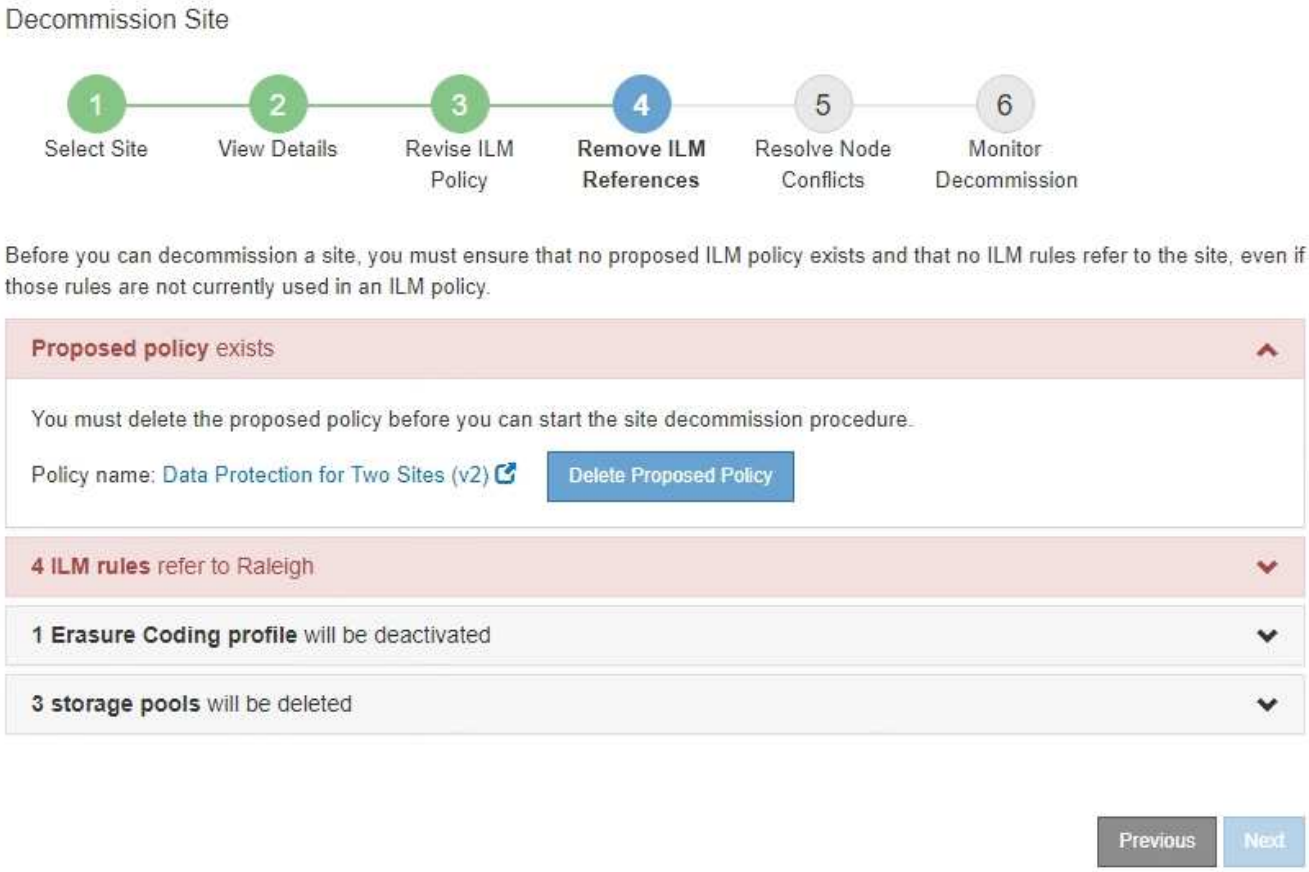
About this task

You are prevented from starting the site decommission procedure in these cases:

- A proposed ILM policy exists. If you have a proposed policy, you must delete it.
- Any ILM rule refers to the site, even if that rule is not used in any ILM policy. You must delete or edit all rules that refer to the site.

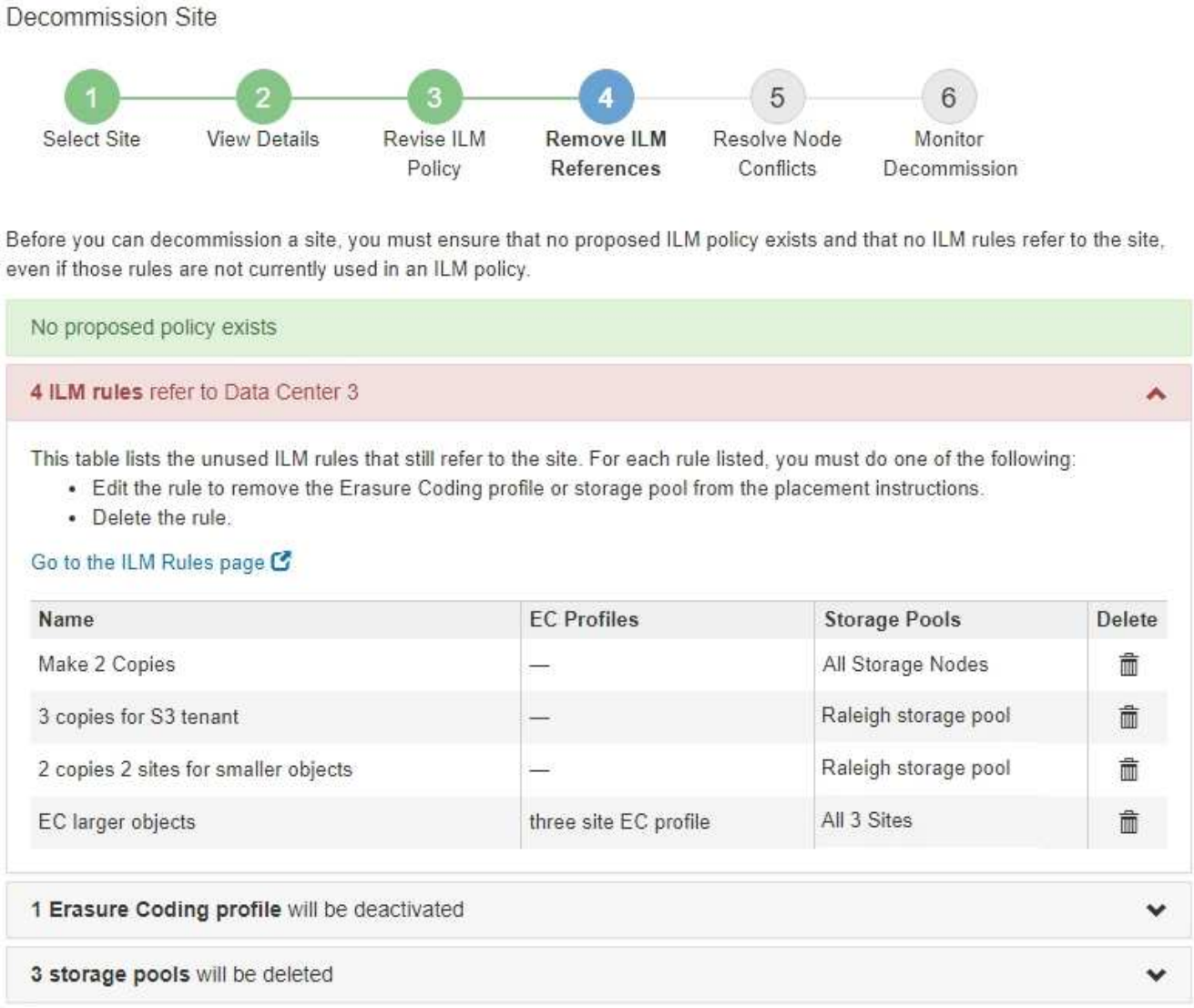
Steps

1. If a proposed policy is listed, remove it.



a. Select **Delete Proposed Policy**.
b. Select **OK** in the confirmation dialog box.

2. Determine whether any unused ILM rules refer to the site.



Any ILM rules that are listed still refer to the site but are not used in any policy. In the example:

- The stock **Make 2 Copies** rule uses the system-default **All Storage Nodes** storage pool, which uses the All Sites site.
- The unused **3 copies for S3 tenant** rule refers to the **Raleigh** storage pool.
- The unused **2 copy 2 sites for smaller objects** rule refers to the **Raleigh** storage pool.
- The unused **EC larger objects** rules uses the Raleigh site in the **All 3 Sites** Erasure Coding profile.
- If no ILM rules are listed, select **Next** to go to **Step 5 (Resolve Node Conflicts)**.

  Step 5: Resolve Node Conflicts (and start decommission)

  When StorageGRID decommissions the site, it will automatically deactivate any unused Erasure Coding profiles that refer to the site, and it will automatically delete any unused storage pools that refer to the site. The system-default All Storage Nodes storage pool is removed because it uses the All Sites site.

- If one or more ILM rules are listed, go to the next step.

3. Edit or delete each unused rule:

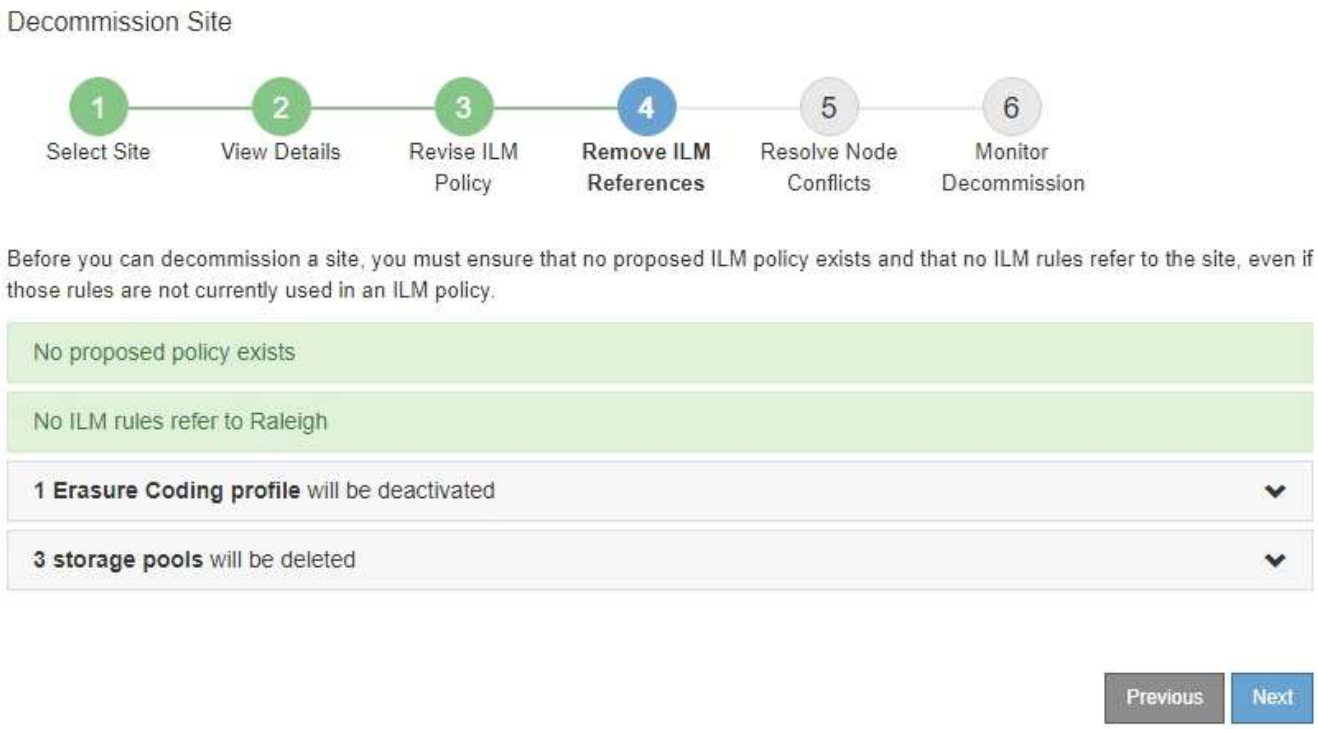
- To edit a rule, go the ILM Rules page and update all placements that use an Erasure Coding profile or storage pool that refers to the site. Then, return to **Step 4 (Remove ILM References)**.

  For details, see the instructions for managing objects with information lifecycle management.

- To delete a rule, select the trash can icon and select **OK**.

  You must delete the stock **Make 2 Copies** rule before you can decommission a site.

4. Confirm that no proposed ILM policy exists, no unused ILM rules refer to the site, and the **Next** button is enabled.



5. Select **Next**.

   Any remaining storage pools and Erasure Coding profiles that refer to the site will become invalid when the site is removed. When StorageGRID decommissions the site, it will automatically deactivate any unused Erasure Coding profiles that refer to the site, and it will automatically delete any unused storage pools that refer to the site. The system-default All Storage Nodes storage pool is removed because it uses the All Sites site.

   Step 5 (Resolve Node Conflicts) appears.

Step 5: Resolve Node Conflicts (and start decommission)

From Step 5 (Resolve Node Conflicts) of the Decommission Site wizard, you can determine if any nodes in your StorageGRID system are disconnected or if any nodes at the selected site belong to a high availability (HA) group. After any node conflicts are resolved, you start the decommission procedure from this page.

You must ensure that all nodes in your StorageGRID system are in the correct state, as follows:

- All nodes in your StorageGRID system must be connected ( ).

> If you are performing a disconnected site decommission, all nodes at the site you are removing must be disconnected, and all nodes at all other sites must be connected.

- No node at the site you are removing can have an interface that belongs to a high availability (HA) group.

If any node is listed for Step 5 (Resolve Node Conflicts), you must correct the issue before you can start the decommission.

Before starting the site decommission procedure from this page, review the following considerations:

- You must allow adequate time for the decommission procedure to complete.

> Moving or deleting object data from a site might take days, weeks, or even months, depending on the amount of data at the site, the load on your system, network latencies, and the nature of the required ILM changes.

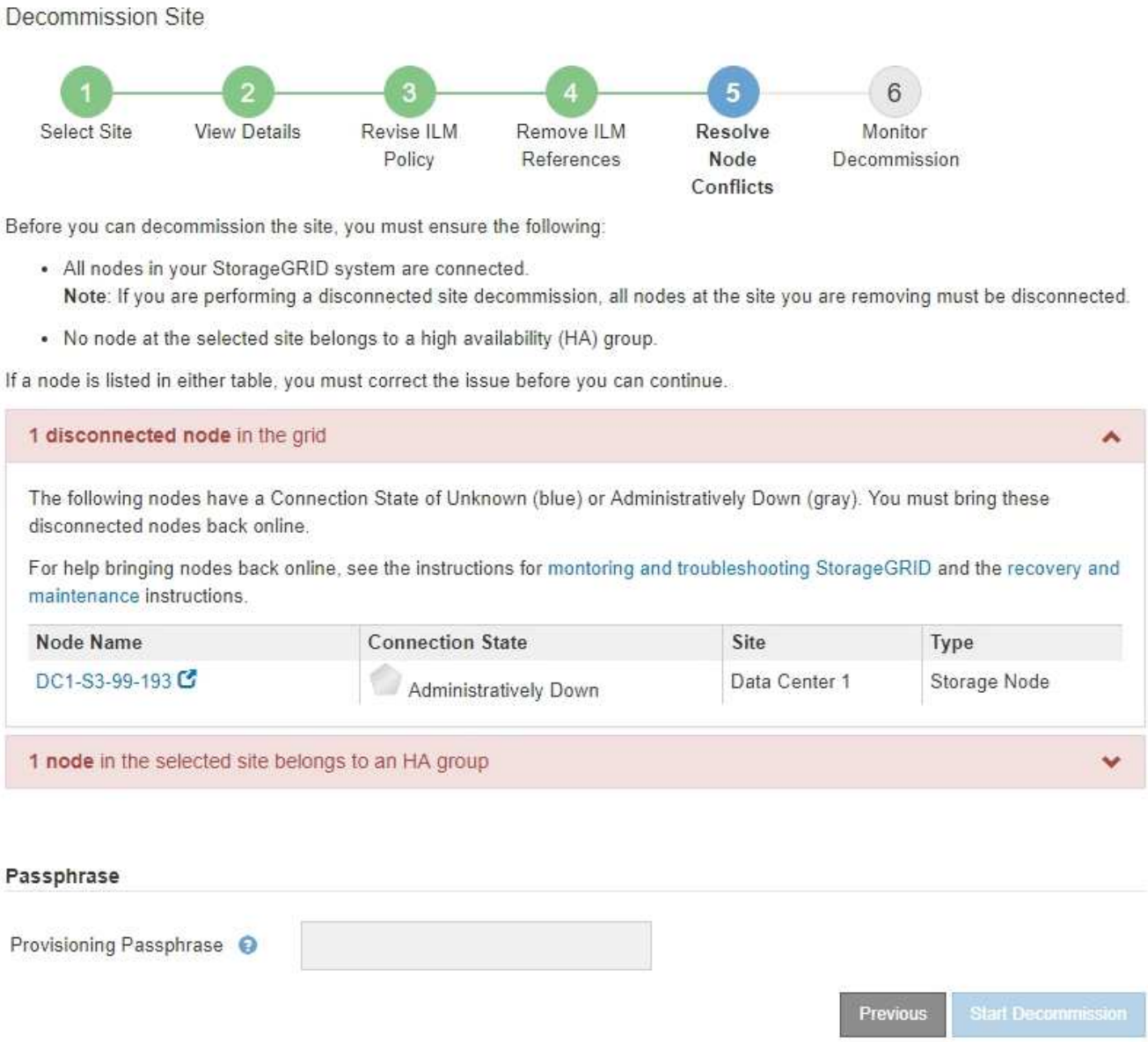
- While the site decommission procedure is running:
  - You cannot create ILM rules that refer to the site being decommissioned. You also cannot edit an existing ILM rule to refer to the site.
  - You cannot perform other maintenance procedures, such as expansion or upgrade.

> If you need to perform another maintenance procedure during a connected site decommission, you can pause the procedure while the Storage Nodes are being removed. The **Pause** button is enabled during the “Decommissioning Replicated and Erasure Coded Data” stage.

  - If you need to recover any node after starting the site decommission procedure, you must contact support.

Steps

1. Review the disconnected nodes section of Step 5 (Resolve Node Conflicts) to determine if any nodes in your StorageGRID system have a Connection State of Unknown ( ) or Administratively Down ( ).

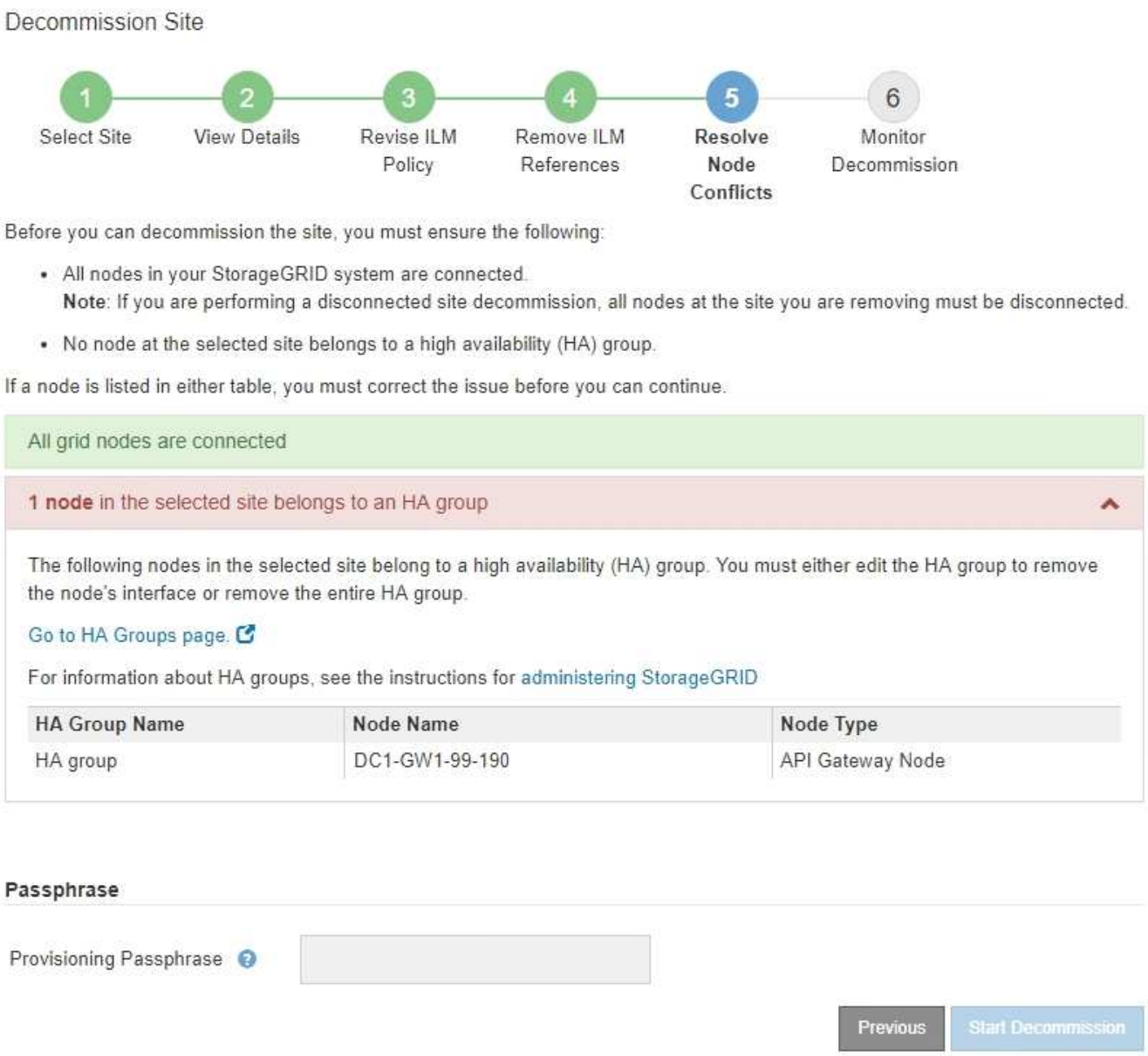


2. If any nodes are disconnected, bring them back online.

   See the instructions for monitoring and troubleshooting StorageGRID and the grid node procedures. Contact technical support if you need assistance.

3. When all disconnected nodes have been brought back online, review the HA groups section of Step 5 (Resolve Node Conflicts).

   This table lists any nodes at the selected site that belong to a high availability (HA) group.

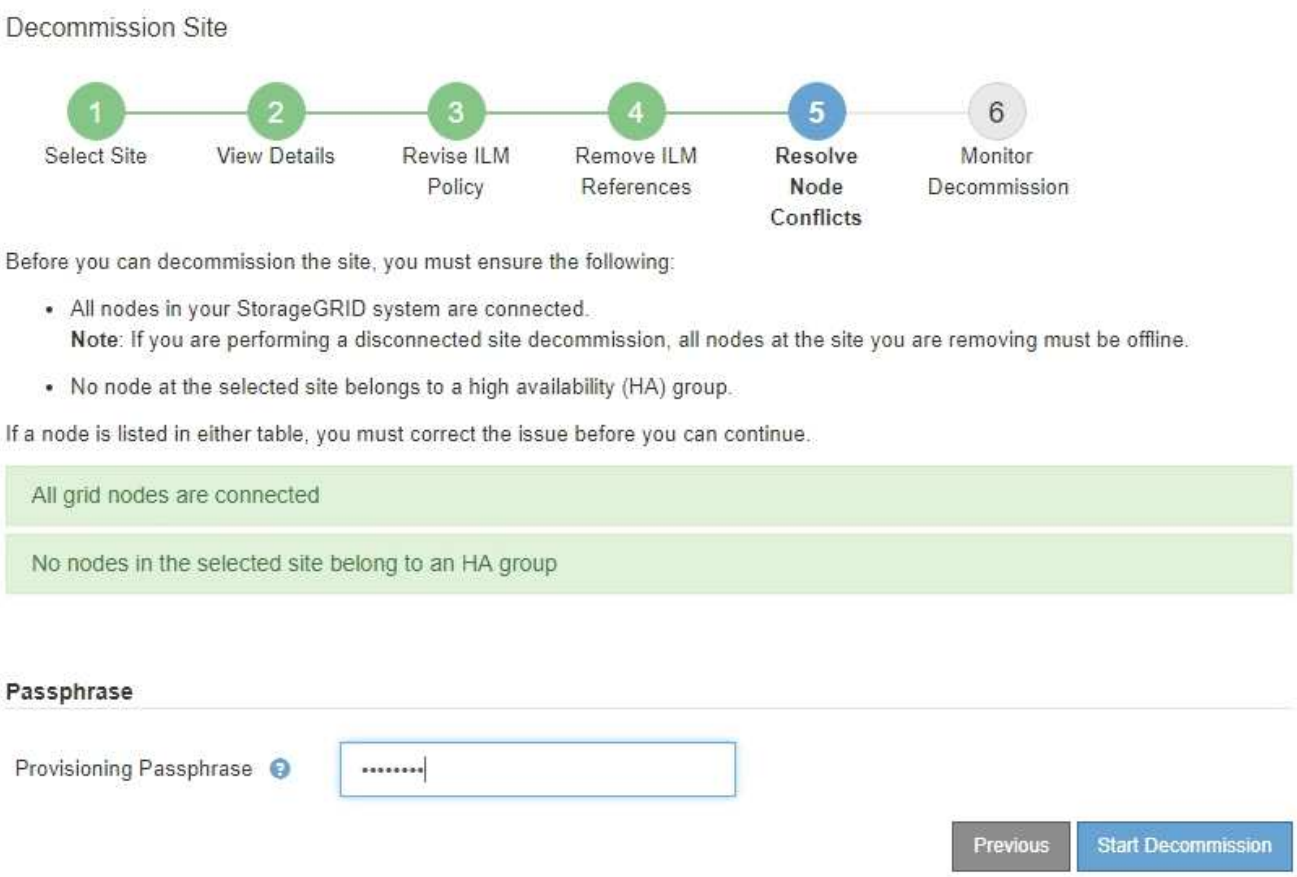


4. If any nodes are listed, do either of the following:
   - Edit each affected HA group to remove the node interface.
   - Remove an HA group that only includes nodes from this site. See the instructions for administering StorageGRID.

   If all nodes are connected and no nodes in the selected site are used in an HA group, the **Provisioning Passphrase** field is enabled.

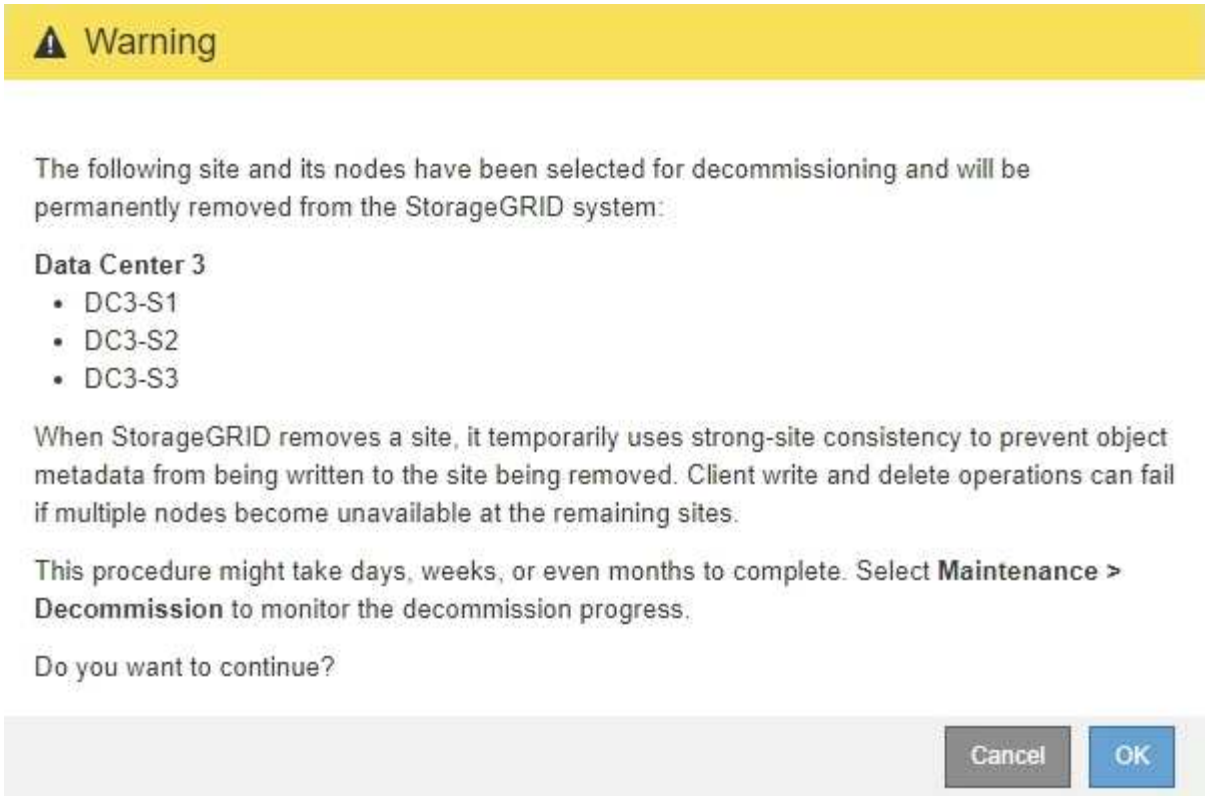
5. Enter the provisioning passphrase.

   The **Start Decommission** button becomes enabled.



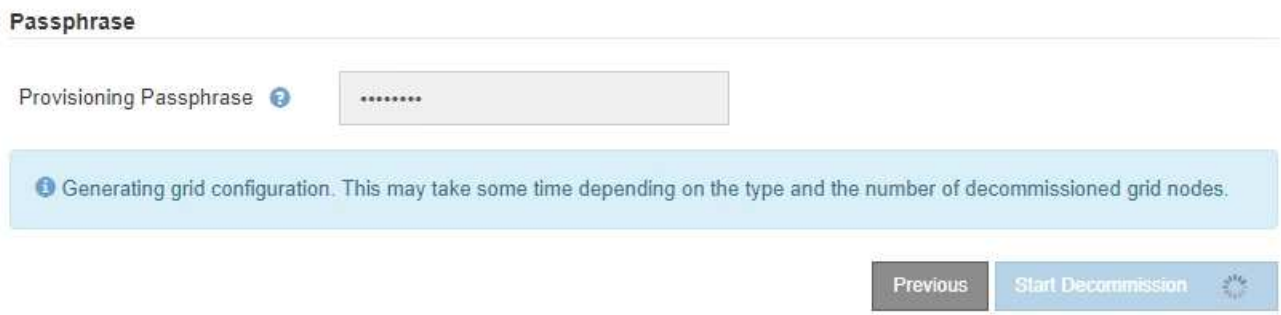
6. If you are ready to start the site decommission procedure, select **Start Decommission**.

   A warning lists the site and nodes that will be removed. You are reminded that it might take days, weeks, or even months to completely remove the site.



7. Review the warning. If you are ready to begin, select **OK**.

   A message appears as the new grid configuration is generated. This process might take some time, depending on the type and number of decommissioned grid nodes.



   When the new grid configuration has been generated, Step 6 (Monitor Decommission) appears.

   The **Previous** button remains disabled until the decommission is complete.

Related information

Monitor and troubleshoot

Grid node procedures

Administer StorageGRID

Step 6: Monitor Decommission

From Step 6 (Monitor Decommission) of the Decommission Site page wizard, you can monitor the progress as the site is removed.

About this task

When StorageGRID removes a connected site, it removes nodes in this order:

1. Gateway Nodes
2. Admin Nodes
3. Storage Nodes

When StorageGRID removes a disconnected site, it removes nodes in this order:

1. Gateway Nodes
2. Storage Nodes
3. Admin Nodes

Each Gateway Node or Admin Node might only require a few minutes or an hour to remove; however, Storage Nodes might take days or weeks.

Steps

1. As soon as a new Recovery Package has been generated, download the file.

> Download the Recovery Package as soon as possible to ensure you can recover your grid if something goes wrong during the decommission procedure.

   a. Select the link in the message, or select **MAINTENANCE** > **System** > **Recovery package**.

   b. Download the `.zip` file.

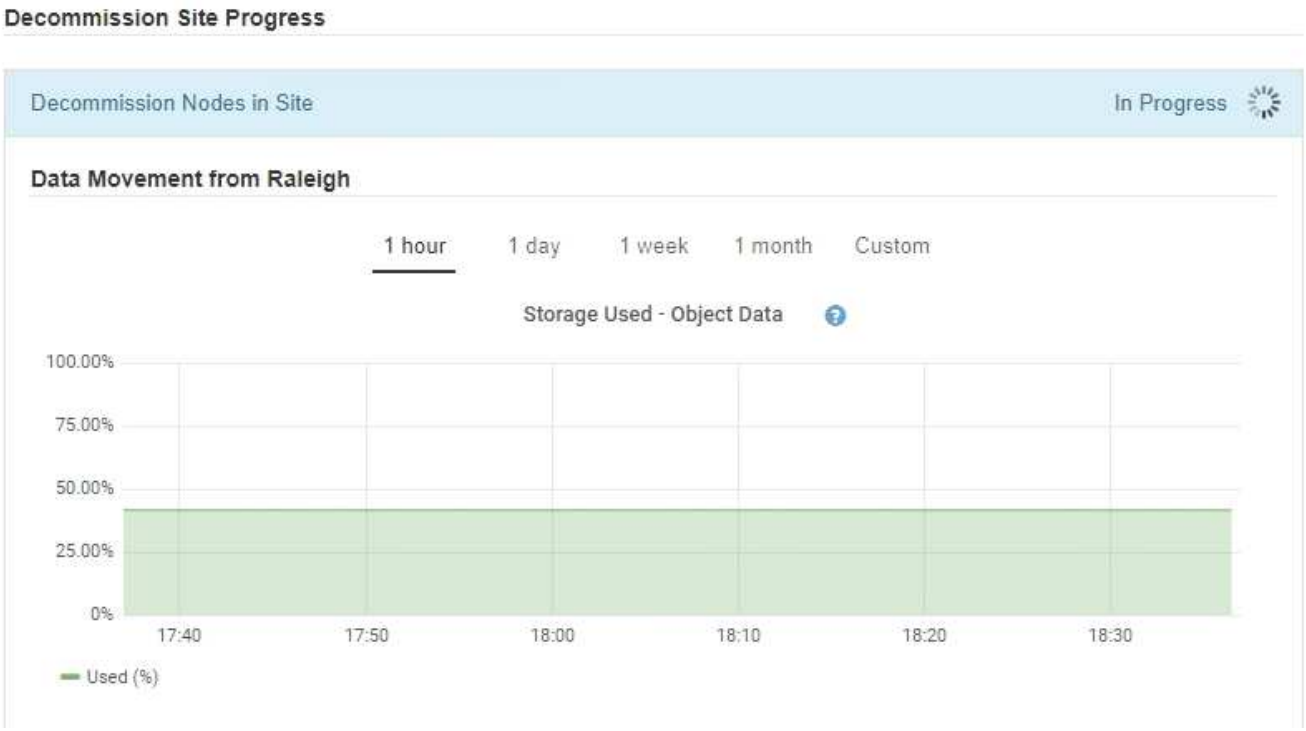
   See the instructions for downloading the Recovery Package.

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

2. Using the Data Movement chart, monitor the movement of object data from this site to other sites.

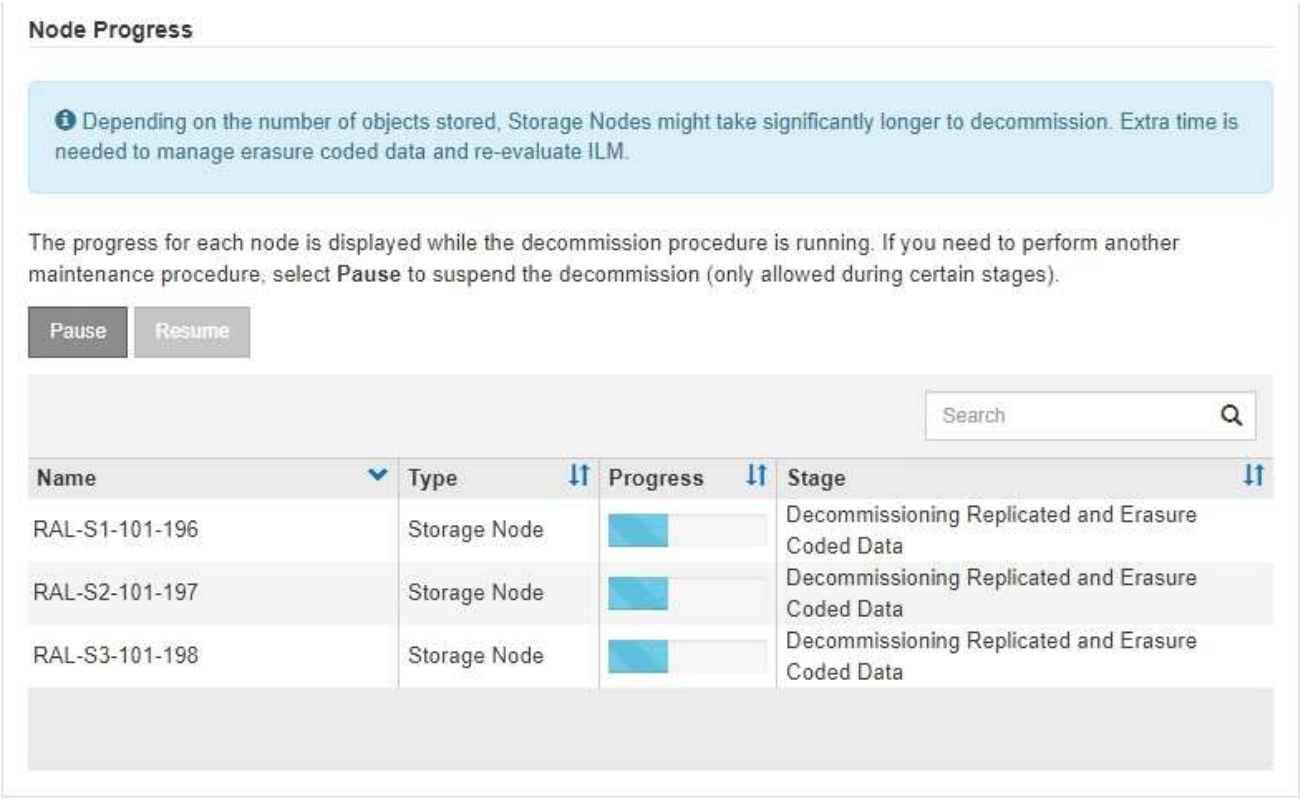
   Data movement started when you activated the new ILM policy in Step 3 (Revise ILM Policy). Data

movement will occur throughout the decommission procedure.



3. In the Node Progress section of the page, monitor the progress of the decommission procedure as nodes are removed.

   When a Storage Node is removed, each node goes through a series of stages. Although most of these stages occur quickly or even imperceptibly, you might need to wait days or even weeks for other stages to complete, based on how much data needs to moved. Additional time is required to manage erasure-coded data and re-evaluate ILM.



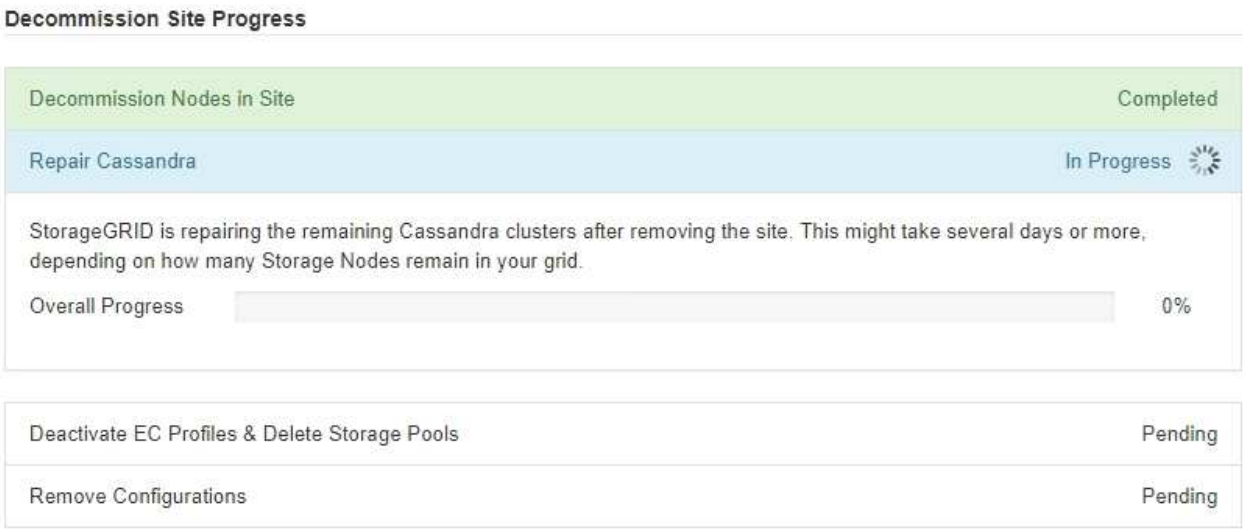
If you are monitoring the progress of a connected site decommission, refer to this table to understand the decommission stages for a Storage Node:

Stage	Estimated duration
Pending	Minute or less
Wait for Locks	Minutes
Prepare Task	Minute or less
Marking LDR Decommissioned	Minutes
Decommissioning Replicated and Erasure Coded Data	Hours, days, or weeks based on the amount of data **Note**: If you need to perform other maintenance activities, you can pause the site decommission during this stage.
LDR Set State	Minutes
Flush Audit Queues	Minutes to hours, based on the number of messages and network latency.
Complete	Minutes

If you are monitoring the progress of a disconnected site decommission, refer to this table to understand the decommission stages for a Storage Node:

Stage	Estimated duration
Pending	Minute or less
Wait for Locks	Minutes
Prepare Task	Minute or less
Disable External Services	Minutes
Certificate Revocation	Minutes
Node Unregister	Minutes
Storage Grade Unregister	Minutes
Storage Group Removal	Minutes
Entity Removal	Minutes
Complete	Minutes

4. After all nodes have reached the Complete stage, wait for the remaining site decommission operations to complete.
   - During the **Repair Cassandra** step, StorageGRID makes any necessary repairs to the Cassandra clusters that remain in your grid. These repairs might take several days or more, depending on how many Storage Nodes remain in your grid.

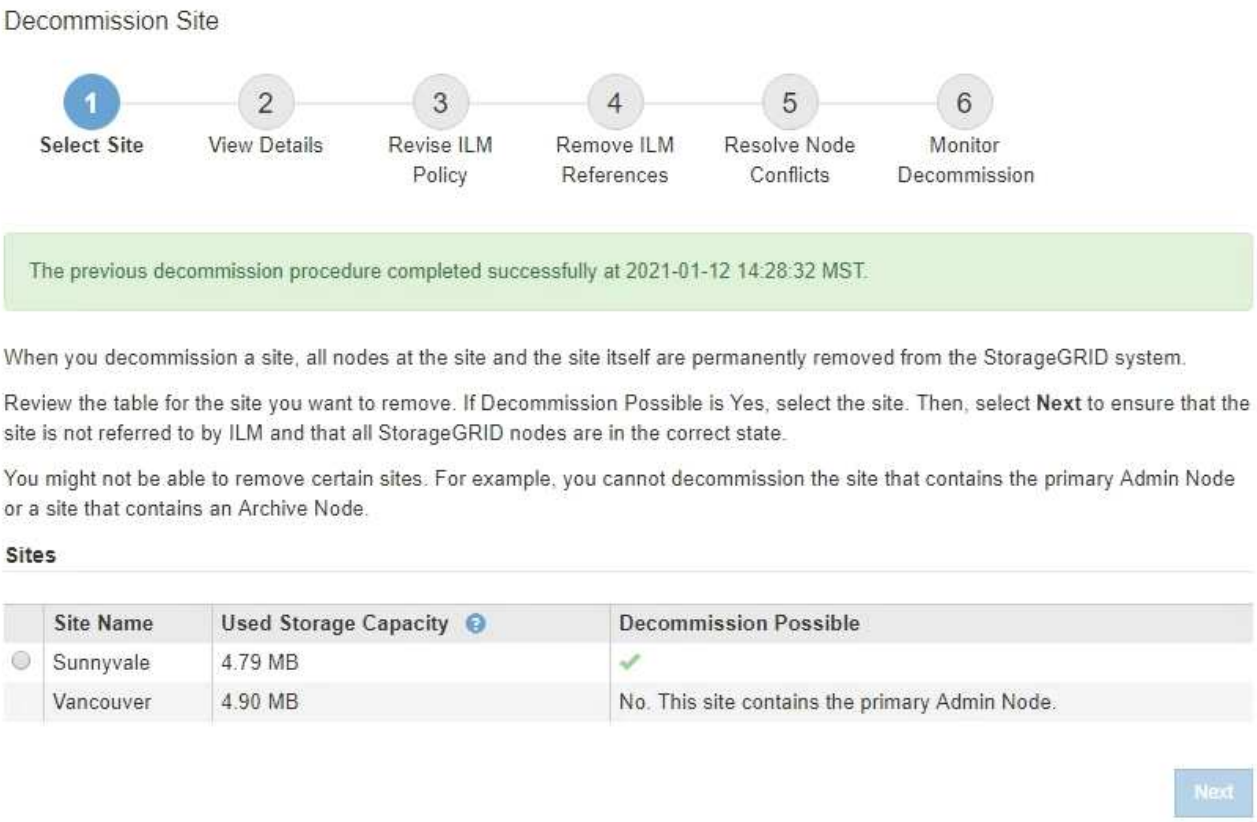


   - During the **Deactivate EC Profiles & Delete Storage Pools** step, the following ILM changes are made:
     - Any Erasure Coding profiles that referred to the site are deactivated.
     - Any Storage Pools that referred to the site are deleted.

The system-default All Storage Nodes storage pool is also removed because it uses the All Sites site.

- Finally, during the **Remove Configuration** step, any remaining references to the site and its nodes are removed from the rest of the grid.

5. When the decommission procedure has completed, the Decommission Site page shows a success message, and the removed site is no longer shown.



After you finish

Complete these tasks after you complete the site decommission procedure:

- Ensure that the drives of all Storage Nodes in the decommissioned site are wiped clean. Use a commercially available data wiping tool or service to permanently and securely remove data from the

drives.

- If the site included one or more Admin Nodes and single sign-on (SSO) is enabled for your StorageGRID system, remove all relying party trusts for the site from Active Directory Federation Services (AD FS).
- After the nodes have been gracefully powered off automatically as part of the connected site decommission procedure, remove the associated virtual machines.