



# Storage arrays

## SANtricity 11.8

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# Storage arrays

## Discovery overview

To manage storage resources, you must first discover the storage arrays in the network.

### How do I discover arrays?

Use the Add/Discover page to find and add the storage arrays you want to manage in your organization's network. You can discover multiple arrays or you can discover a single array. To do this, you enter network IP addresses, and then Unified Manager attempts individual connections to each IP address in that range.

Learn more:

- [Considerations for discovering arrays](#)
- [Discover multiple storage arrays](#)
- [Discover single array](#)

### How do I manage arrays?

After you discover arrays, go to the **Manage - All** page. From this page, you can scroll through a list of discovered storage arrays in your network, view their status, and perform operations on a single array or on a group of arrays.

If you want to manage a single array, you can select it and open System Manager.

Learn more:

- [Considerations for accessing System Manager](#)
- [Manage an individual storage array](#)
- [View storage array status](#)

## Concepts

### Considerations for discovering arrays

Before Unified Manager can display and manage storage resources, it must discover the storage arrays you want to manage in your organization's network. You can discover multiple arrays or you can discover a single array.

#### Discovering multiple storage arrays

If you choose to discover multiple arrays, you enter a network IP address range and then Unified Manager attempts individual connections to each IP address in that range. Any storage array successfully reached appears on the Discover page and may be added to your management domain.

#### Discovering a single storage array

If you choose to discover a single array, you enter the single IP address for one of the controllers in the storage

array and then the individual storage array is added.



Unified Manager discovers and displays only the single IP address or IP address within a range assigned to a controller. If there are alternate controllers or IP addresses assigned to these controllers that fall outside of this single IP address or IP address range, then Unified Manager will not discover or display them. However, once you add the storage array, all associated IP addresses will be discovered and displayed in the Manage view.

## User credentials

As part of the discovery process, you must supply the administrator password for each storage array you want to add.

## Web services certificates

As part of the discovery process, Unified Manager verifies that the discovered storage arrays are using certificates by a trusted source. Unified Manager uses two types of certificate-based authentication for all connections that it establishes with the browser:

- **Trusted certificates**

For arrays discovered by Unified Manager, you might need to install additional trusted certificates supplied by the Certificate Authority.

Use the **Import** button to import these certificates. If you have connected to this array before, one or both controller certificates are either expired, revoked, or missing a root certificate or intermediate certificate in its certificate chain. You must replace the expired or revoked certificate or add the missing root certificate or intermediate certificate before managing the storage array.

- **Self-signed certificates**

Self-signed certificates can also be used. If the administrator attempts to discover arrays without importing signed certificates, Unified Manager displays an error dialog box that allows the administrator to accept the self-signed certificate. The storage array's self-signed certificate will be marked as trusted and the storage array will be added to Unified Manager.

If you do not trust the connections to the storage array, select **Cancel** and validate the storage array's security certificate strategy before adding the storage array to Unified Manager.

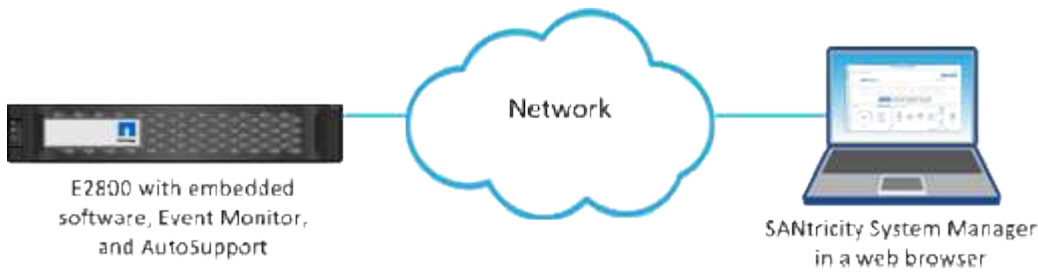
## Considerations for accessing System Manager

You select one or more storage arrays and use the Launch option to open System Manager when you want to configure and manage storage arrays.

System Manager is an embedded application on the controllers, which is connected to the network through an Ethernet management port. It includes all array-based functions.

To access System Manager, you must have:

- One of the array models listed here: [E-Series hardware overview](#)
- An out-of-band connection to a network management client with a web browser.



## Discover arrays

### Discover multiple storage arrays

You discover multiple arrays to detect all storage arrays across the subnet where the management server resides and to automatically add the discovered arrays to your management domain.

#### Before you begin

- You must be logged in with a user profile that includes Security Admin permissions.
- The storage array must be correctly set up and configured.
- Storage array passwords must be set up using System Manager's Access Management tile.
- To resolve untrusted certificates, you must have trusted certificate files from a Certificate Authority (CA), and the certificate files are available on your local system.

Discovering arrays is a multi-step procedure.

#### Step 1: Enter network address

You enter a network address range to search across the local sub-network. Any storage array successfully reached appears on the Discover page and might be added to your management domain.

If you need to stop the discovery operation for any reason, click **Stop Discovery**.

#### Steps

1. From the Manage page, select **Add/Discover**.

The Add/Discover dialog box appears.

2. Select the **Discover all storage arrays within a network range** radio button.
3. Enter the starting network address and ending network address to search across your local sub-network, and then click **Start Discovery**.

The discovery process starts. This discovery process can take several minutes to complete. The table on the Discover page is populated as the storage arrays are discovered.



If no manageable arrays are discovered, verify that the storage arrays are properly connected to your network and their assigned addresses are within range. Click **New Discovery Parameters** to return to the Add/Discover page.

4. Review the list of discovered storage arrays.

5. Select the checkbox next to any storage array that you want to add to your management domain, and then click **Next**.

Unified Manager performs a credential check on each array you are adding to the management domain. You might need to resolve any self-signed certificates and untrusted certificates associated with that array.

6. Click **Next** to proceed to the next step in the wizard.

## Step 2: Resolve self-signed certificates during discovery

As part of the discovery process, the system verifies that the storage arrays are using certificates by a trusted source.

### Steps

1. Do one of the following:
  - If you trust the connections to the discovered storage arrays, continue to the next card in the wizard. The self-signed certificates will be marked as trusted and the storage arrays will be added to Unified Manager.
  - If you do not trust the connections to the storage arrays, select **Cancel** and validate each storage array's security certificate strategy before adding any of them to Unified Manager.
2. Click **Next** to proceed to the next step in the wizard.

## Step 3: Resolve untrusted certificates during discovery

Untrusted certificates occur when a storage array attempts to establish a secure connection to Unified Manager, but the connection fails to confirm as secure. During the array discovery process, you can resolve untrusted certificates by importing a certificate authority (CA) certificate (or CA-signed certificate) that has been issued by a trusted third party.

You may need to install additional trusted CA certificates if any of the following are true:

- You recently added a storage array.
- One or both certificates are expired.
- One or both certificates are revoked.
- One or both certificates are missing a root or intermediate certificate.

### Steps

1. Select the check box next to any storage array that you want to resolve untrusted certificates for, and then select the **Import** button.

A dialog box opens for importing the trusted certificate files.

2. Click **Browse** to select the certificate files for the storage arrays.

The file names display in the dialog box.

3. Click **Import**.

The files are uploaded and validated.



Any storage array with untrusted certificate issues that are unresolved will not be added to Unified Manager.

4. Click **Next** to proceed to the next step in the wizard.

#### Step 4: Provide passwords

You must enter the passwords for the storage arrays that you want to add to your management domain.

##### Steps

1. Enter the password for each storage array you want to add to Unified Manager.
2. **Optional:** Associate storage arrays to a group: From the drop-down list, select the desired group to associate with the selected storage arrays.
3. Click **Finish**.

##### After you finish

The storage arrays are added to your management domain and associated with the selected group (if specified).



It can take several minutes for Unified Manager to connect to the specified storage arrays.

#### Discover single array

Use the Add/Discover Single Storage Array option to manually discover and add a single storage array to your organization's network.

##### Before you begin

- The storage array must be correctly set up and configured.
- Storage array passwords must be set up using System Manager's Access Management tile.

##### Steps

1. From the Manage page, select **Add/Discover**.

The Add/Discover dialog box appears.

2. Select the **Discover a single storage array** radio button.
3. Enter the IP address for one of the controllers in the storage array, and then click **Start Discovery**.

It can take several minutes for Unified Manager to connect to the specified storage array.



The Storage Array Not Accessible message appears when the connection to the IP address of the specified controller is unsuccessful.

4. If prompted, resolve any self-signed certificates.

As part of the discovery process, the system verifies that the discovered storage arrays are using certificates by a trusted source. If it cannot locate a digital certificate for a storage array, it prompts you to resolve the certificate that is not signed by a recognized certificate authority (CA) by adding a security exception.

5. If prompted, resolve any untrusted certificates.

Untrusted certificates occur when a storage array attempts to establish a secure connection to Unified Manager, but the connection fails to confirm as secure. Resolve untrusted certificates by importing a certificate authority (CA) certificate that has been issued by a trusted third party.

6. Click **Next**.

7. **Optional:** Associate the discovered storage array to a group: From the drop-down list, select the desired group to associate with the storage array.

The "All" group is selected by default.

8. Enter the administrator password for the storage array that you want to add to your management domain, and then click **OK**.

### After you finish

The storage array is added to Unified Manager and, if specified, it is also added to the group you selected.

If automatic support data collection is enabled, support data is automatically collected for a storage array that you add.

## Manage arrays

### View storage array status

Unified Manager displays the status of each storage array that has been discovered.

Go to the **Manage - All** page. From this page, you can view the status of the connection between the Web Services Proxy and that storage array.

Status indicators are described in the following table.

Status	Indicates
Optimal	The storage array is in an optimal state. There are no certificate issues and the password is valid.
Invalid Password	An invalid storage array password was provided.
Untrusted Certificate	One or more connections with the storage array is untrusted because the HTTPS certificate is either self-signed and has not been imported, or the certificate is CA-signed and the root and intermediate CA certificates have not been imported.
Needs Attention	There is a problem with the storage array that requires your intervention to correct it.
Lockdown	The storage array is in a locked-down state.



Status	Indicates
Unknown	The storage array has never been contacted. This can happen when the Web Services Proxy is starting up and has not yet made contact with the storage array, or the storage array is offline and has never been contacted since the Web Services Proxy was started.
Offline	The Web Services Proxy had previously contacted the storage array, but now has lost all connection to it.

## Manage an individual storage array

You can use the Launch option to open the browser-based System Manager for one or more storage arrays when you want to perform management operations.

### Steps

1. From the Manage page, select one or more storage arrays that you want to manage.
2. Click **Launch**.

The system opens a new window and displays the System Manager login page.

3. Enter your username and password, and then click **Log in**.

## Change storage array passwords

You can update the passwords used for viewing and accessing storage arrays in Unified Manager.

### Before you begin

- You must be logged in with a user profile that includes Storage admin permissions.
- You must know the current password for the storage array, which is set in System Manager.

### About this task

In this task, you enter the current password for a storage array so you can access it in Unified Manager. This might be necessary if the array password was changed in System Manager and now it must also be changed in Unified Manager.

### Steps

1. From the Manage page, select one or more storage arrays.
2. Select **Uncommon Tasks > Provide Storage Array Passwords**.
3. Enter the password or passwords for each storage array, and then click **Save**.

## Remove storage arrays from SANtricity Unified Manager

You can remove one or more storage arrays if you no longer want to manage it from Unified Manager.

### About this task

You cannot access any of the storage arrays you remove. You can, however, establish a connection to any of the removed storage arrays by pointing a browser directly to its IP address or host name.

Removing a storage array does not affect the storage array or its data in any way. If a storage array is accidentally removed, it can be added again.

### **Steps**

1. Select the **Manage** page.
2. Select one or more storage arrays that you want to remove.
3. Select **Uncommon Tasks** > **Remove storage array**.

The storage array is removed from all the views in SANtricity Unified Manager.

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