HPE GreenLake for Block Storage built on HPE Alletra Storage MP: Simplified setup with Data Services Cloud Console

Initializing the HPE Alletra Storage MP array and onboarding to Data Services Cloud Console

Contents

Executive summary

Data Services Cloud Console (DSCC) enables a cloud operating and consumption experience for your storage and streamlines data management across your environment. It allows you to leverage unique features such as intent-based provisioning and intelligent quality-of-service. And it is all managed globally through a cloud portal accessible from anywhere, on any device.

DSCC also allows you to deploy your new data infrastructure in minutes with automated discovery and activation. You cable up the system, power it on, use either the mobile app or the Cloud Connectivity Wizard to enter a minimum amount of networking information, and then use the DSCC Setup Service to complete the deployment. The Setup Service is a cloud-based application that uses wizards to guide you through setting up and initializing a newly installed HPE GreenLake for Block Storage system built on HPE Alletra Storage MP. Its blueprint feature streamlines the initialization process with the use of custom, user-defined templates that can be applied to one or more systems. For example, if you have multiple systems that share the same settings, such as an NTP server and support contact, you could create a blueprint and then apply it to each system so that the Setup Wizard will be pre-populated with the appropriate data. The Setup Service is particularly useful if you are setting up multiple arrays because you can initialize all the systems simultaneously from a single console.

Document purpose

This technical paper is designed for anyone who is deploying a new HPE GreenLake for Block Storage system in their environment. It walks you through all the steps required to get an HPE GreenLake for Block Storage array up and running. This process includes everything from the point when the hardware is installed and cabled, through the connection and onboarding to DSCC, to the initialization of the system using the DSCC Setup Service.

Overview

The software initialization of an HPE GreenLake for Block Storage array built on HPE Alletra Storage MP is done primarily in the cloud in DSCC. Only a short pre-initialization is done on the array by using either the HPE Cloud Connectivity Wizard or the HPE Storage Connectivity mobile application. You need enter only enough networking information into one of the two tools to make the initial secure connection to HPE GreenLake. After that, control quickly transitions to the Setup Service in DSCC where the bulk of the system initialization takes place. The following section provides a brief overview of the process.

Initial connection to the storage array

To make a secure connection to HPE GreenLake, you must first connect to the storage array on-premises and enter some basic networking information.

You have two options for entering this network information:

- The HPE Storage Connectivity mobile application runs on iOS and Android™ devices and can be used to connect to the array via Bluetooth. The app can then be used to enter the networking information.
- A two-step process can be used to make the initial connection to the array with the server-based Windows-based HPE Discovery Tool or any multicast Domain Name Server (mDNS) client on a Linux® or Apple® device. Those tools then return a link that can be used to connect to the storage and run the Cloud Connectivity Wizard from your browser.

Both methods allow you to enter enough networking information to make the initial secure connection to DSCC through an encrypted (mTLS) link using the device certificate that is installed on the array in the factory. The Setup Service is then used to perform the software initialization.

Onboarding to HPE GreenLake and DSCC

A subscription key that allows you to onboard a system to HPE GreenLake and manage it with DSCC is loaded onto every HPE GreenLake for Block Storage system in the factory. The subscription key and the system serial number are used to onboard the device to the instance of DSCC that is physically closest to the data center. If this is your first time accessing HPE GreenLake, you will also be prompted to create a new user ID and workspace for your organization.

You have three options for obtaining the subscription key:

- You will receive an email from Hewlett Packard Enterprise with instructions to log on to the HPE Software Center to obtain the subscription key. If you use this method, you can onboard an HPE GreenLake for Block Storage array at any time, even before the storage arrives on-site.
- The subscription key is provided in the box the system ships in.

- If you use the Cloud Connectivity Wizard to connect to the storage array, the array makes a connection to HPE GreenLake, which finds the array in its database and returns its unique subscription key in the last step of the Wizard. (Note that the subscription key is not provided on-screen in the mobile application.)

Initializing the system in the DSCC Setup Service

The initialization of the storage array is performed through the DSCC Setup Service. With the assistance of the Setup Service Wizard, you will be guided step-by-step to input all the necessary settings for initializing the system.

You have the option to use blueprints that you previously created to facilitate the process. Blueprints are a kind of custom template that reduces the amount of information that must be entered manually each time. This option can be a significant time-saver, especially if you are onboarding multiple arrays at the same time. With a new DSCC service called "Secrets," you also can securely input user IDs and passwords into blueprints.

After an HPE GreenLake for Block array has been onboarded to DSCC, you can apply a blueprint even if the array has not yet been physically installed. You can opt to automatically start the initialization process when the array is powered on and connected to DSCC. Alternatively, you can pause the initialization until it is manually triggered at your convenience.

When the process is complete, the device is successfully initialized. The connection between the storage array and DSCC is finalized, and you are ready to manage the device.

A comprehensive step-by-step description of the initialization and onboarding process is provided in the following sections of this paper. A video of the onboarding and initialization process is also available at youtu.be/U3XuDY9L_eg.

Discovering the HPE Alletra Storage MP

There are two options for discovering the storage array and entering enough networking information to make a connection to DSCC: the HPE Storage Connectivity mobile application that runs on iOS and Android devices and the server-based options.

Option 1: HPE Storage Connectivity Bluetooth mobile application

Every HPE Alletra Storage MP system is configured by default with a Bluetooth dongle that can be connected to a USB-C port on the chassis discovery module (CDM) on the back of the controller nodes. The HPE Storage Connectivity mobile application then allows you to detect the storage device from a phone or tablet and set the networking details.

Figure 1. CDM on the back of an HPE Alletra Storage MP controller node. The Bluetooth dongle can be connected to the USB-C port

You must enter the following information into the HPE Storage Connectivity application:

- **Networking:** The permanent IP address of the array plus the netmask and gateway addresses that will be used for array management
- **DNS server:** The IP address of a DNS server
- **Proxy:** If a proxy server is in use, enter the address of the proxy server and the port the proxy server is using
- **NTP:** The address of an NTP server

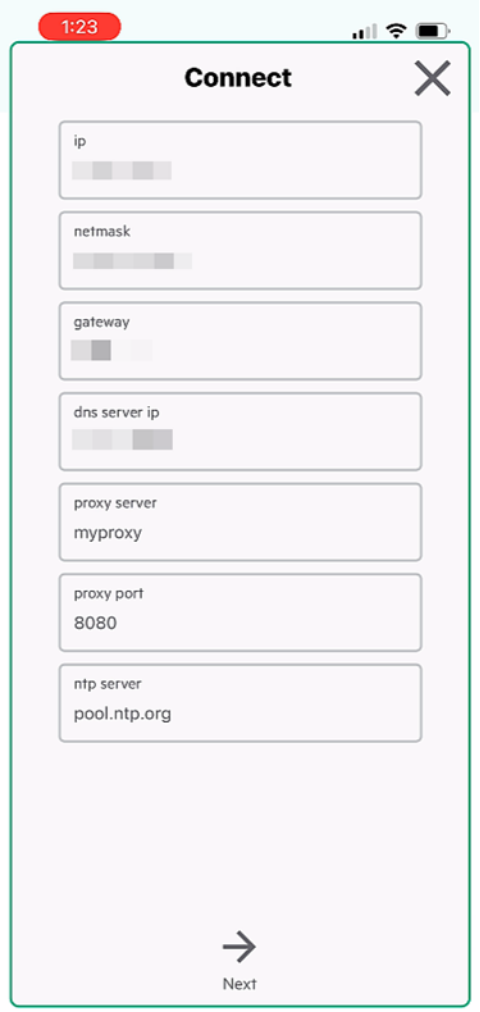

Figure 2. Entering the networking information into the HPE Storage Connectivity application

To run the HPE Storage Connectivity mobile application, complete the following steps:

1. Download the HPE Storage Connectivity Mobile Application from either the Apple App Store or the Google™ Play Store.
2. Start the HPE Storage Connectivity application. Ensure that Bluetooth is connected.
3. When the app first connects to the storage, it pre-populates settings that the array has discovered from the local network. These settings need to be updated with a configuration that will allow the system to connect to the cloud. In the next screen, you will need to enter the settings into the app. Click **Connect** to advance to the next screen.
4. In the Initial Configuration screen, enter the network information, and then click the **right-pointing arrow**.
5. Review the information, and then click **Deploy**. The network information is sent to the array. The array then uses this information to connect to DSCC.

Note
If you are unable to make a Bluetooth connection to the storage array, try turning off Wi-Fi on your mobile device. That frequently resolves any issues.

Option 2: Server options with a physical network connection

If you prefer to use a physical network connection to connect to the storage array, Hewlett Packard Enterprise recommends using the HPE Discovery Tool on Windows to discover the array. However, you can also use an mDNS client on a Linux or macOS system.

HPE Discovery Tool

The Discovery Tool is based on a Windows operating system. This tool discovers the IP address of an uninitialized HPE Alletra Storage MP array and enables you to make the initial connection. After you enter the serial number of the storage array into the dashboard of the tool, the tool calculates the possible link-local IP addresses for this serial number. The Discovery Tool tries to connect to those addresses until it receives a response. The tool does not use mDNS. The following network connectivity requirements apply to the computer you are using to run the Discovery Tool:

- The computer must be on the same subnet as the storage array.
- The computer must be on the same switch; it cannot be routed.
- The computer must have only one active network connection. If it has more than one active network connection, the additional connections must be disabled while the Discovery Tool is running.

You can download the Discovery Tool from the Software page of My HPE Software Center. After you have signed in, use this link to download the Discovery Tool.

To run the Discovery Tool, complete the following steps:

1. Launch the Discovery Tool.
2. Enter the serial number of the storage array and click **Search**. The Discovery Tool locates the IP address of the storage array and provides a URL that you can use to access the HPE Alletra Storage MP array.
3. Select the provided URL and click **Launch**. The Discovery Tool launches a browser, and the Cloud Connectivity Wizard is displayed.

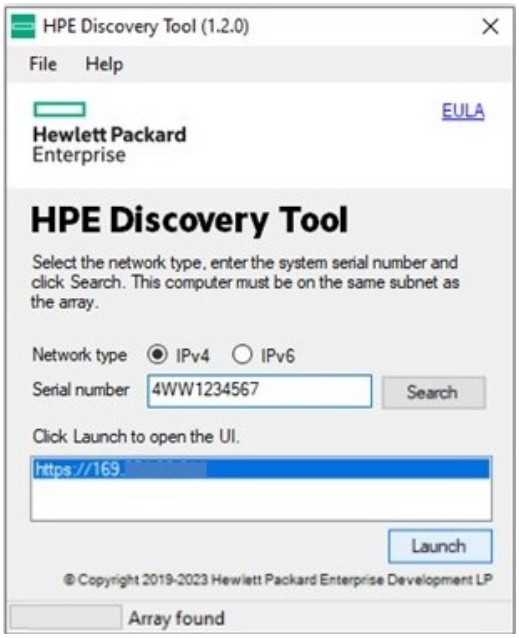

Figure 3. HPE Discovery Tool after the HPE Alletra Storage MP array has been discovered

Linux or macOS system discovery

If you do not have a Windows computer, you can use any mDNS client on your Linux, HP-UX, or macOS computer to discover the array and launch the Cloud Connectivity Wizard. To use an mDNS client, first make sure that port 5353 is open, and then enter the following address into the browser: `alletra-<system-serial-number>.local/`

For example, if the serial number of the array is 4UW1234567, you would enter `alletra-4UW1234567.local/`. This process connects you to the Cloud Connectivity Wizard on the storage array. From that point onward, the process is the same as with the Discovery Tool and a Windows computer.

Running the Cloud Connectivity Wizard

If you used the Discovery Tool or mDNS client to discover the array, the next task would be to run the Cloud Connectivity Wizard. If you used the mobile app, you can omit this step.

The Cloud Connectivity Wizard is launched in a browser and runs on-site on the array. It can best be thought of as a pre-setup process that requires you to enter only the networking information that is needed to allow the array to connect to DSCC through the secure tunnel.

Note

Depending on the configuration of the DHCP server and if a proxy server is not used, the HPE Alletra Storage MP system might be able to connect to the HPE GreenLake Cloud without requiring additional networking information. If this is the case, you can choose to bypass running the Cloud Connectivity Wizard and proceed directly to onboarding the device. This method requires either retrieving the subscription key from the box the storage array was shipped in, or alternately logging on to My HPE Software Center to activate your DSCC subscription and receive the key.

The following information must be entered into the Cloud Connectivity Wizard:

- **Networking:** The permanent IP address of the array plus the netmask and gateway addresses that will be used for array management
- **DNS server:** The IP addresses of at least one and up to three DNS servers

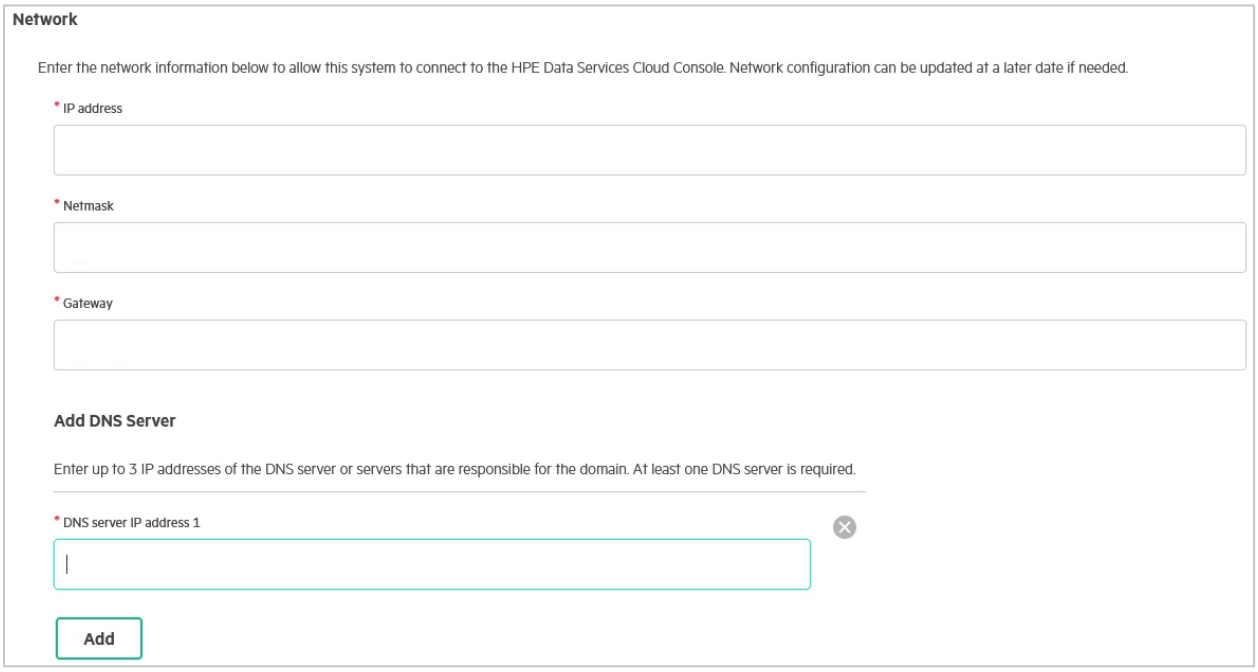

Figure 4. Entering the networking information into the Cloud Connectivity Wizard

- **Proxy:** If a proxy server is in use, check the box to select **Use proxy**. If that option is selected, you must enter the address of the proxy server and the port the proxy server is using. Optionally, you can also enter a proxy server username and password.

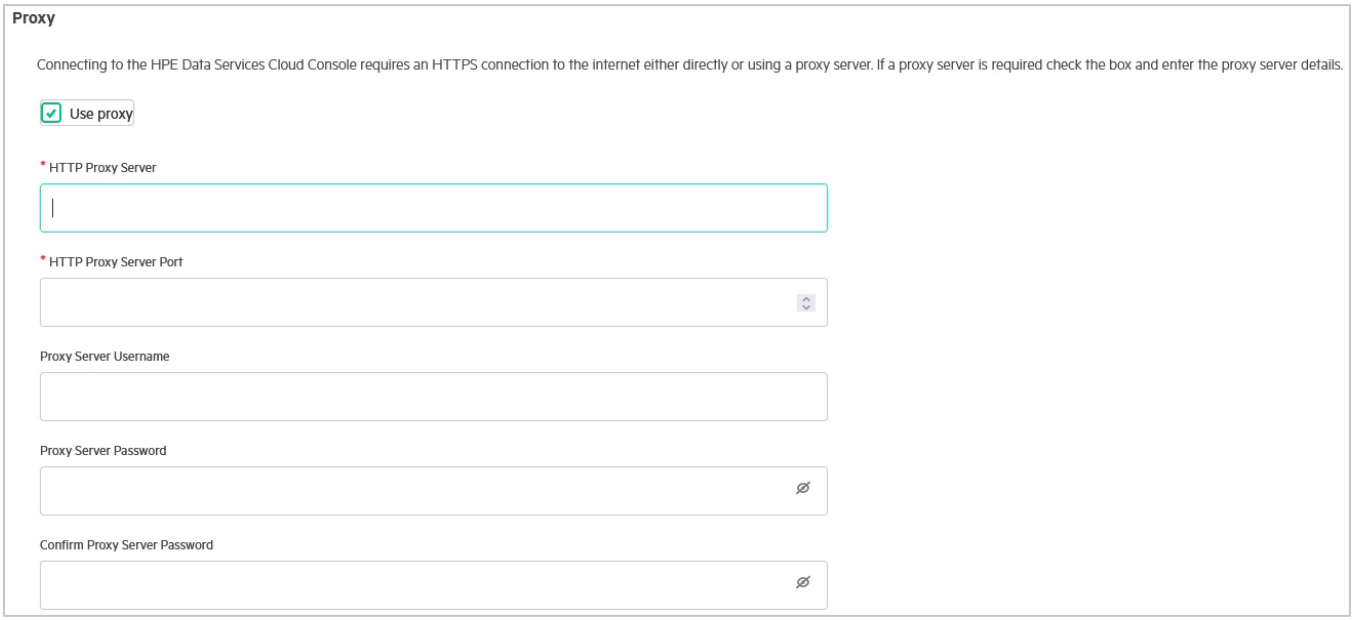

Figure 5. Entering the proxy server information into the Cloud Connectivity Wizard

- **Time:** You have the option of entering either the time or the address of an NTP server. If the time is entered manually, it is very important to verify that it is the correct time. If the time entered is not within two minutes of the actual time, you will experience issues when trying to onboard the storage to the HPE GreenLake Cloud. Hewlett Packard Enterprise highly recommends that you use an NTP server instead of manually entering the time. If you enter the time manually during this step, you must provide the address of an NTP server when you complete the initialization in DSCC.

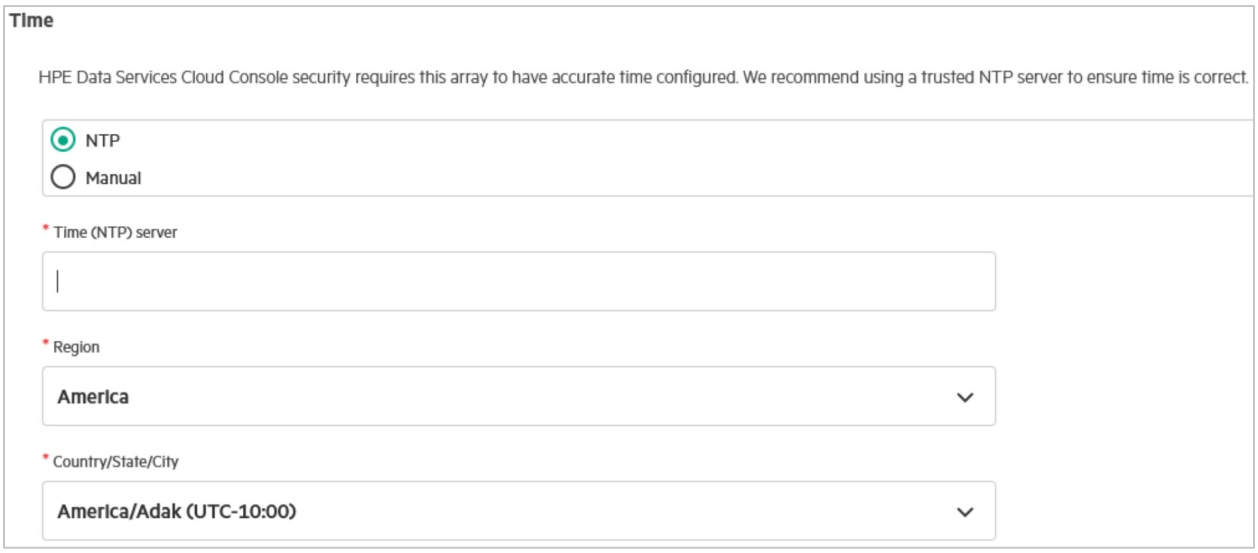

Figure 6. Entering the time information into the Cloud Connectivity Wizard

After all the information has been entered and confirmed, the array takes a few minutes to apply the settings and make an initial connection to the cloud. Each HPE Alletra Storage system ships from the factory with a device certificate installed. The array connects through an mTLS encrypted tunnel to HPE GreenLake. The device and the customer are validated, and HPE GreenLake returns the subscription key that will be used to onboard the array to HPE GreenLake along with the system serial number. If the wizard returns an error because you entered something incorrectly, a Modify button allows you to go back and make any necessary changes. After those changes have been made, the process continues where it left off.

After the Cloud Connectivity Wizard has completed successfully and the system is connected to the HPE GreenLake Cloud, it displays **100% Finished** as shown in Figure 7. The subscription key for the HPE GreenLake for Block Storage array will be visible on the screen.

Make a note of the key because you will need it to onboard your array to DSCC. Click **Launch Data Services Cloud Console** to launch HPE GreenLake and onboard the array to DSCC.

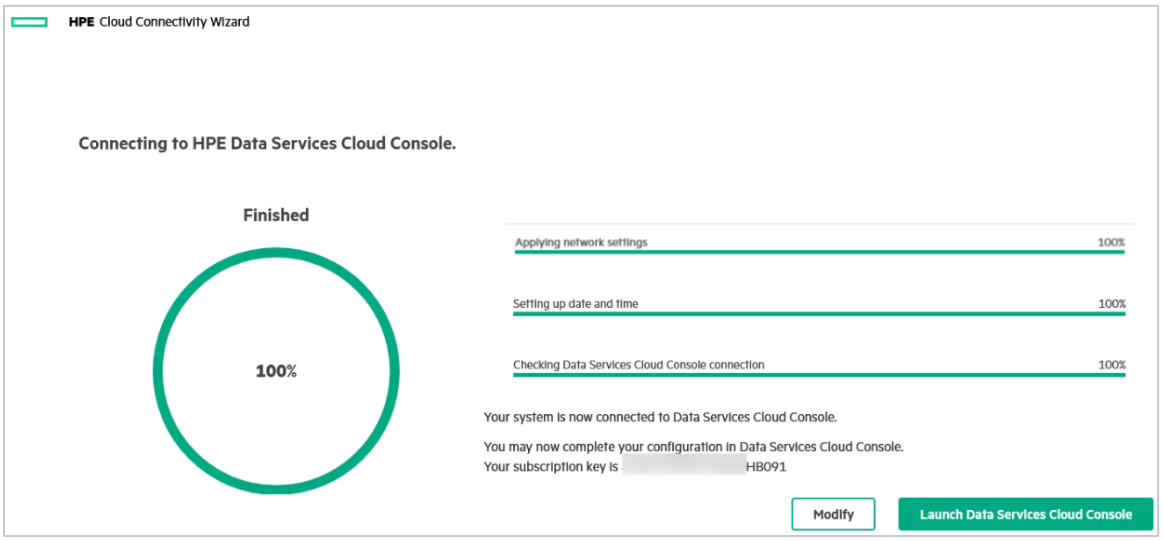

Figure 7. Successful completion of the Cloud Connectivity Wizard showing the subscription key used to onboard the system to DSCC

Logging on to HPE GreenLake

To log on to HPE GreenLake, you can either click **Launch Data Services Cloud Console** in the Cloud Connectivity Wizard or go directly to console.greenlake.hpe.com. If this is the first time you are accessing HPE GreenLake, you must create your user ID and an HPE GreenLake workspace before you can enable management of an HPE GreenLake for Block Storage array. If you already have a user ID and workspace, you can omit this step and go directly to Step 4.

This document includes instructions for creating a workspace and user ID. The process is also covered in detail in the HPE GreenLake Edge to Cloud Platform User Guide, which is available in the Help area of HPE GreenLake.

The following are resources and links to a series of four short videos on the process:

- HPE GreenLake Edge to Cloud Platform User Guide
- HPE GreenLake for Block Storage: Cloud Enablement Quick Start
- Videos:
  - Creating a New Company Account
  - Adding Data Services Cloud Console App
  - Adding Permissions to Access the Application
  - Adding and Assigning a Device

You can also view the videos by selecting **Getting Started** from the list of help options. (You can access HPE GreenLake Help by clicking the **question mark** at the top right-hand side of any page.)

Creating an HPE GreenLake user account

The first time you log on to HPE GreenLake, you are prompted to sign up and create a user account. If you already have an HPE InfoSight or HPE Passport account, you can use those credentials to sign in. To begin, click **Sign up** at the bottom of the Sign In screen as shown in Figure 8. Then follow the steps in the HPE GreenLake Edge to Cloud Platform User Guide.

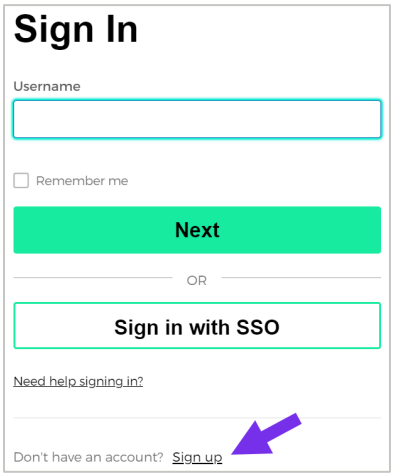

Figure 8. Click **Sign up** to begin the process of creating an HPE GreenLake user account

Creating an HPE GreenLake workspace

An HPE GreenLake workspace is associated with the devices for your company along with any users that are authorized to manage or view those devices. Typically, a company has only a single workspace. However, if you have multiple discrete environments, it is possible to have multiple workspaces. Later, you will have the opportunity to invite other users from your company to the account so that they can view or manage the HPE Alletra Storage array, depending on the permissions that they are given. A device can belong to only one workspace, but a user may be authorized for multiple workspaces.

After creating your user account, you will be prompted to create a new workspace for your company when you first log on to HPE GreenLake.

Follow the steps in the HPE GreenLake Edge to Cloud Platform User Guide to enter the required information and create the workspace.

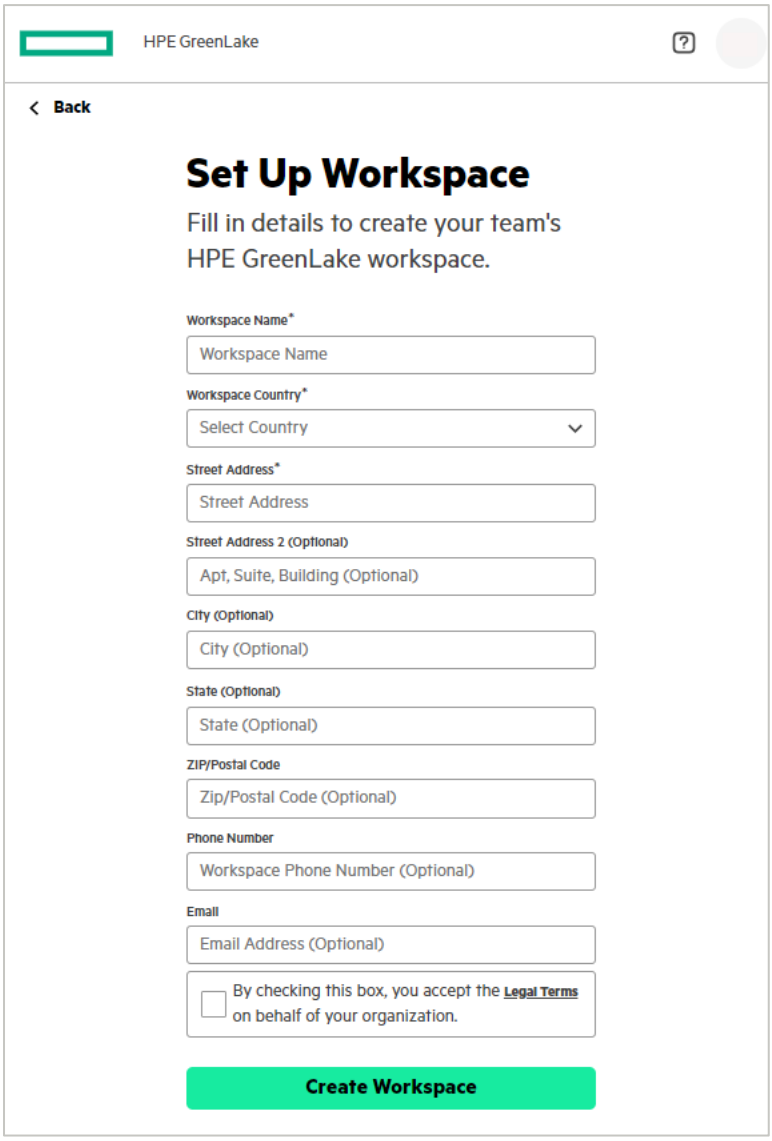

Figure 9. Creating a new HPE GreenLake workspace

Note
HPE GreenLake workspaces were formerly called "company accounts." This was not a functional change but merely a name change that made it easier to distinguish between a user account and a workspace.

Deploying the Data Services Cloud Console application for an HPE GreenLake workspace

Data Services Cloud Console is the application within HPE GreenLake that provides unified data operations and management for an HPE Alletra Storage array. You must select the Data Services Cloud Console application from the Applications Catalog and add it to your workspace. To deploy the DSCC application, use the following procedure.

1. From the main dashboard, select the **Applications** tab.
2. Click **View Available Apps**.

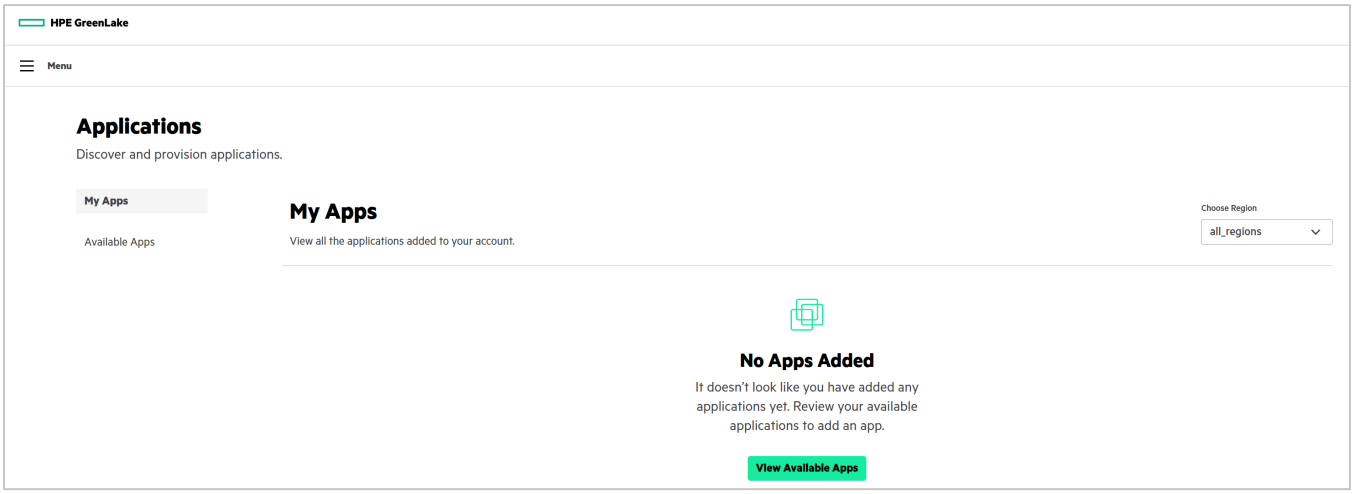

Figure 10. Click **View Available Apps** to add the Data Services Cloud Console application to your company's account

3. Select **Data Services Cloud Console**.
4. DSCC has multiple instances around the world, so you must also select the geographical region or regions that are closest to your company's storage arrays. Select a region to deploy. If you have additional regions, you can come back and deploy those after the first one has been set up.
5. Click **Set up Application**.

If you have only a single geographical region, you may omit Steps 6 through 9 and proceed directly to adding DSCC permissions to your user account. If you do need to deploy additional geographical regions, follow these steps:

6. Select the **Applications** tab at the top of the screen.
7. Select **Data Services Cloud Console**.
8. Click **Add Region**.
9. From the drop-down list, select the region you would like to deploy and click **Deploy**.

Adding DSCC permissions to your user account

Your HPE GreenLake user account must have the correct DSCC role assigned for you to be able to manage the HPE Alletra Storage array. Without the proper role, you cannot access the DSCC Setup Service, which is needed for the next step in the initialization process. If you created your workspace, you will automatically be an account administrator for the HPE GreenLake platform. In this step, you will assign yourself as the DSCC Administrator so that you can also manage the associated storage arrays.

Figure 11 shows a view of DSCC before the necessary role is added to a user account. Only a subset of the apps is available until you add the correct permissions. Adding those permissions to a user account is shown in Figure 12.

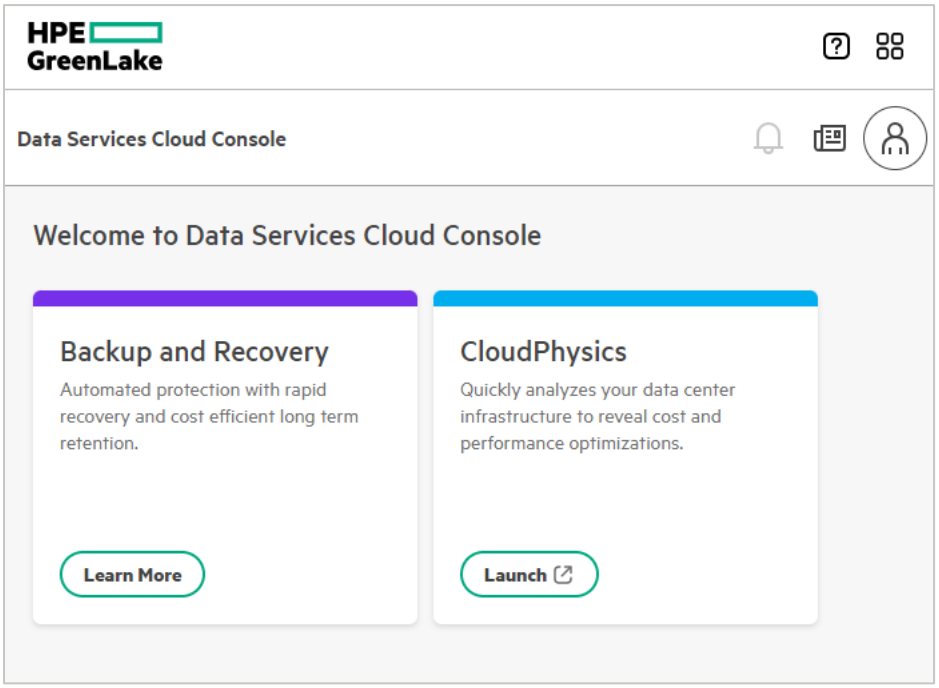

Figure 11. The services you might see in DSCC before the necessary role and scope permissions are added to your user account

Configuring the DSCC Administrator role for the Data Services Cloud Console application

The DSCC Administrator role must be added to the user that will be used to onboard the HPE Alletra Storage array. The HPE GreenLake Edge to Cloud Platform User Guide contains the detailed instructions.

- **Role:** The user who created a workspace is automatically assigned administrator privileges for the HPE GreenLake platform for that organization. The role of DSCC Administrator is not added automatically; it must be added manually to the user account.
- **Additional resource restrictions:** You should not assign any resource restrictions to this user account; the account should retain full permissions for management of a storage array. Accordingly, the toggle to Limit Resource Access should remain off.

Figure 12 shows an example of assigning the DSCC Administrator role to a user account.

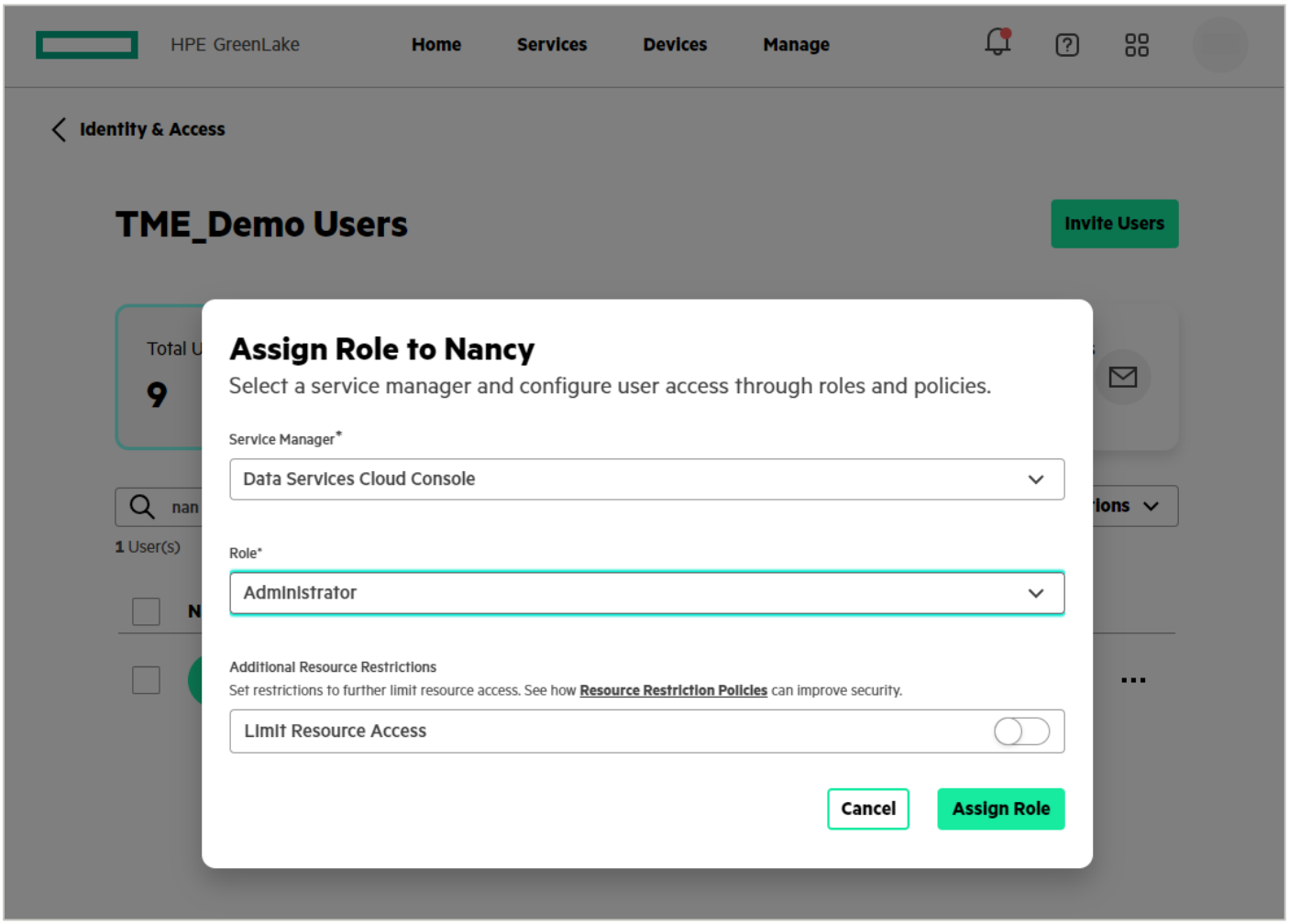

Figure 12. Assigning the role of DSCC Administrator to a user account

Figure 13 shows a view after the role of Administrator has been added to DSCC. The DSCC Setup Service, Data Ops Manager, Block Storage, and Intent-based Provisioning tiles are required to manage an HPE GreenLake for Block Storage array, all these services are now available.

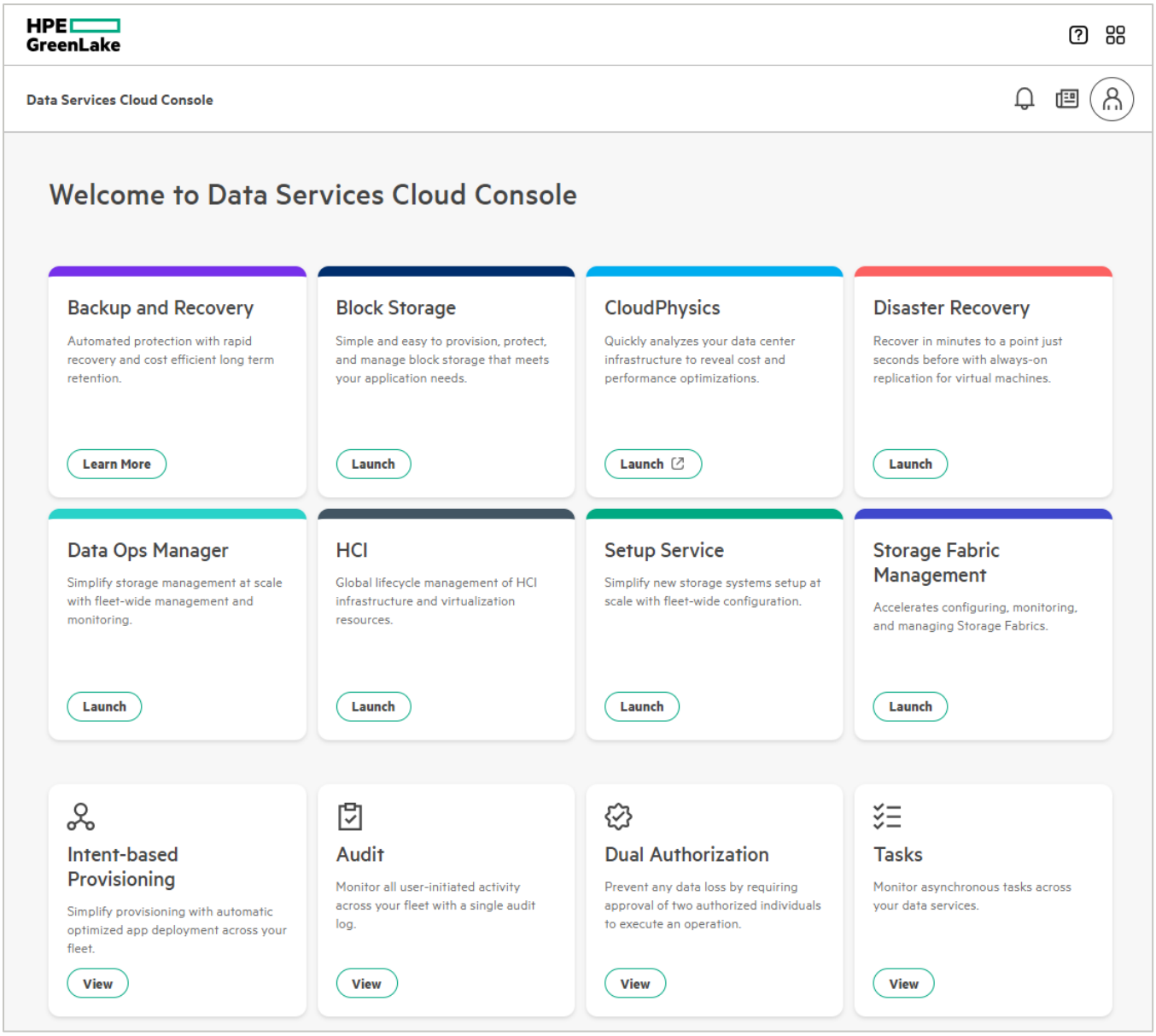

Figure 13. View of available services in DSCC after the role of Administrator has been added

Inviting users to your workspace

You always have the ability to invite others from your company to manage the storage arrays in your HPE GreenLake workspace. You can tailor their permissions to align with the appropriate account privileges by selecting the role that best applies. You also have the option to create a Resource Restriction Policy that will limit their access to specific resources. For more information about adding permissions to a user account, see the Identity and Access section of the HPE GreenLake Edge to Cloud Platform User Guide.

You can invite additional users at any time. Use the following procedure to send an invitation:

1. From your company's main dashboard, select the **Invite Users** box.
2. As shown in Figure 14, enter the email address of the person you want to invite. From the drop-down list, select an HPE GreenLake role. The roles for managing an HPE GreenLake for Block Storage array appear in Table 1.

3. Click **Send Invite**.

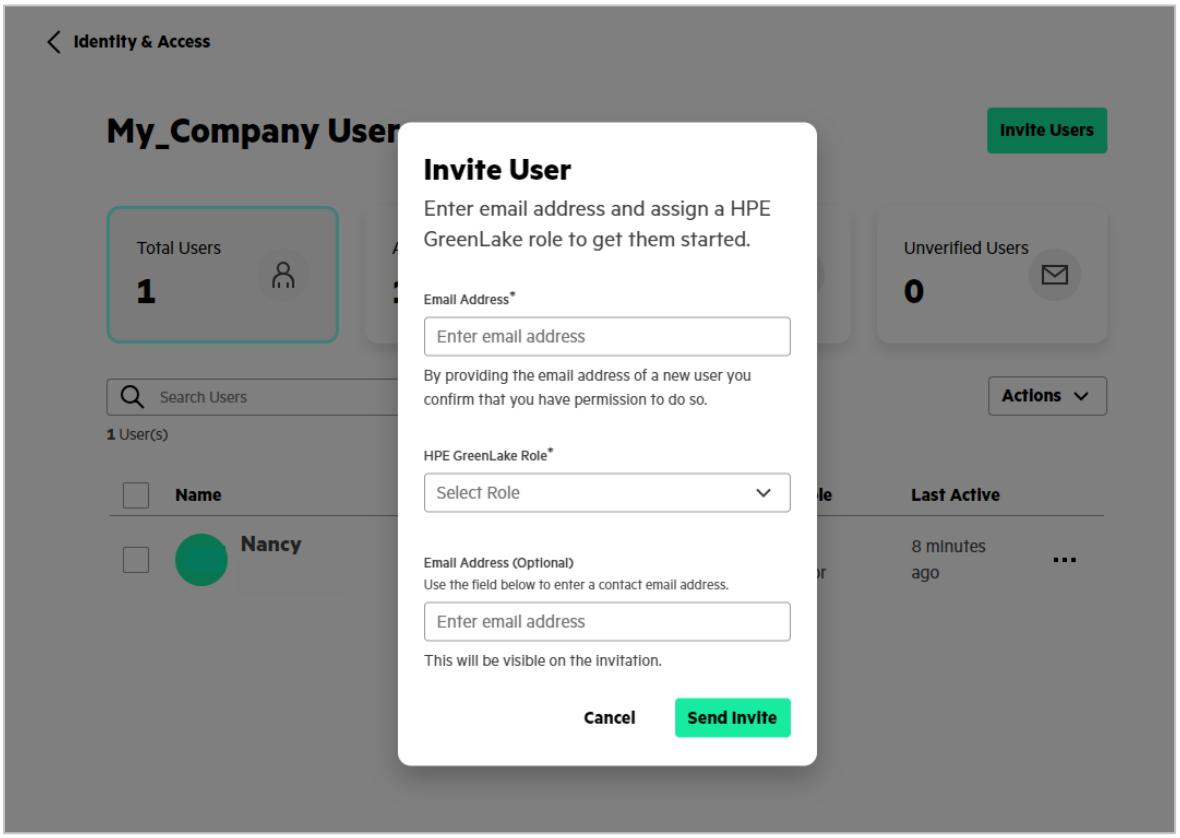

Figure 14. Inviting users to your company's account

4. You will now need to assign the appropriate permissions for the user to access DSCC. From the main dashboard, in the Assign User Access box, click **Assign Roles.**
5. Select the user you just created.
6. Select **Data Services Cloud Console** as the application.
7. Select the appropriate role. The DSCC roles that are available for managing HPE GreenLake for Block Storage arrays are listed in Table 1.

Table 1. Built-in DSCC user roles for managing HPE GreenLake for Block Storage arrays

Role	Notes
Administrator	All available permissions including storage system and application-level actions
Backup and Recovery Administrator	Backup and recovery administration including protection policies
Backup and Recovery Operator	Backup and recovery administration except for application registration and the protection policies Create and Delete
Data Ops Manager Administrator	All Data Ops Manager and block storage permissions
Data Ops Manager Operator	Application-level permissions: Create and Edit functions, but no Delete
Disaster Recovery Admin	All disaster recovery actions including virtual site registration
Read-only	View-only permissions with no ability to effect change

8. If there is no requirement to restrict access for this user to specific resources, do not enable the toggle for **Limit Resource Access.** If you do need to limit access, enable the toggle as shown in Figure 15 and select a previously created Resource Restriction Policy (there are no built-in Resource Restriction Policies.) You can find instructions for creating a Resource Restriction Policy in the Identity and Access section of the HPE GreenLake Edge to Cloud Platform User Guide.

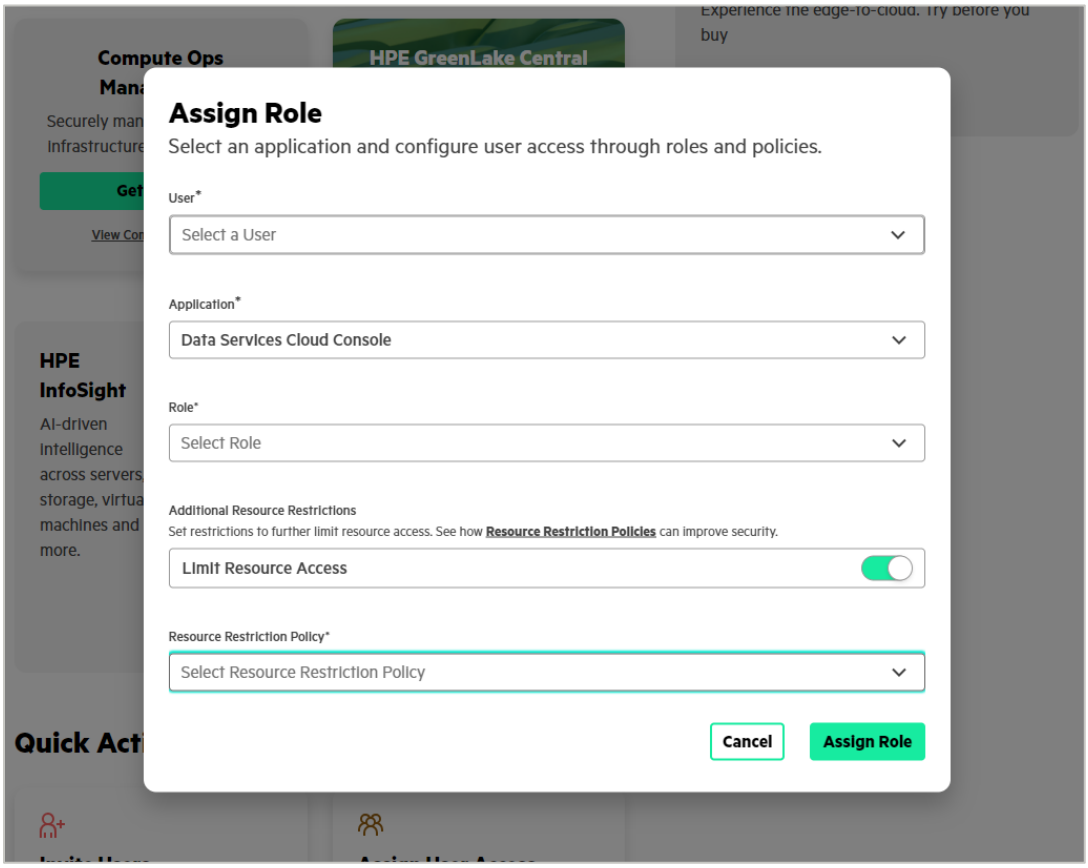

Figure 15. Limiting user access to specific DSCC resources with a Resource Restriction Policy

Device onboarding to Data Services Cloud Console

Before you can run the DSCC Setup Service to launch the HPE GreenLake for Block Storage initialization, you must first onboard the device to an instance of DSCC. The onboarding process uses the array serial number and the array subscription key. The process is slightly different depending on whether the storage array was purchased on an owned or subscribed basis. Both methods are described in the following sections.

Onboarding a device to Data Services Cloud Console

To onboard an HPE GreenLake for Block Storage device to Data Services Cloud Console, complete the following steps:

1. On your company's main dashboard, scroll down to the Quick Actions area.

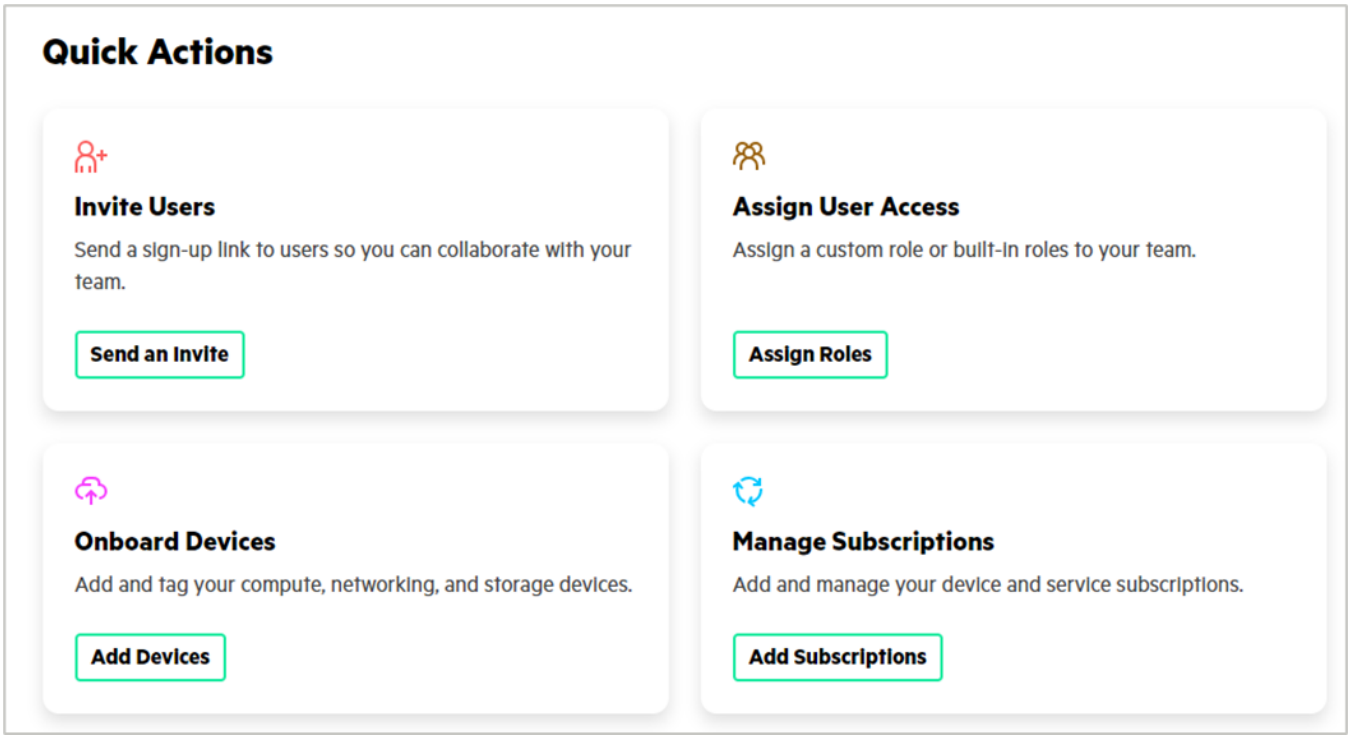

Figure 16. The Quick Actions area of the main HPE GreenLake dashboard

2. At the top right-hand side of the screen, click **Add Devices** to add a new device.

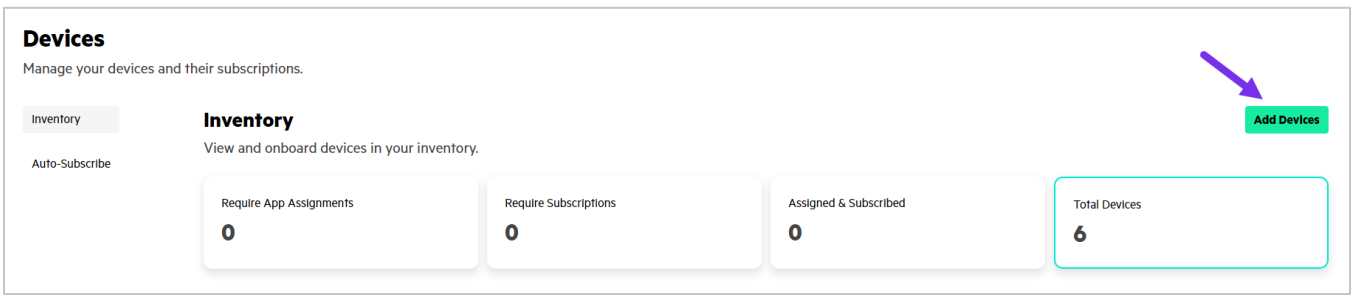

Figure 17. Click **Add Devices** to add a device to HPE GreenLake

3. From the drop-down list, select **Storage Devices** and click **Continue.**
4. For a customer-owned device, select **Purchase or Lease**, enter the serial number and storage subscription key for the HPE GreenLake for Block Storage array, and click **Enter**. If you need to add multiple devices, enter the serial numbers and subscription keys for the additional devices.
5. After you finish adding devices, click **Next**.
6. Follow the remaining prompts in the wizard to add optional tags and an optional service delivery contact.

   It takes only a few minutes for the devices to be added to HPE GreenLake. After they are added, they appear in the list of devices. If your workspace has only a single instance of DSCC associated with it, the device is added to that instance automatically. If that is the case, you can omit Steps 7, 8, and 9 and proceed directly to the HPE GreenLake for Block Storage software initialization section.

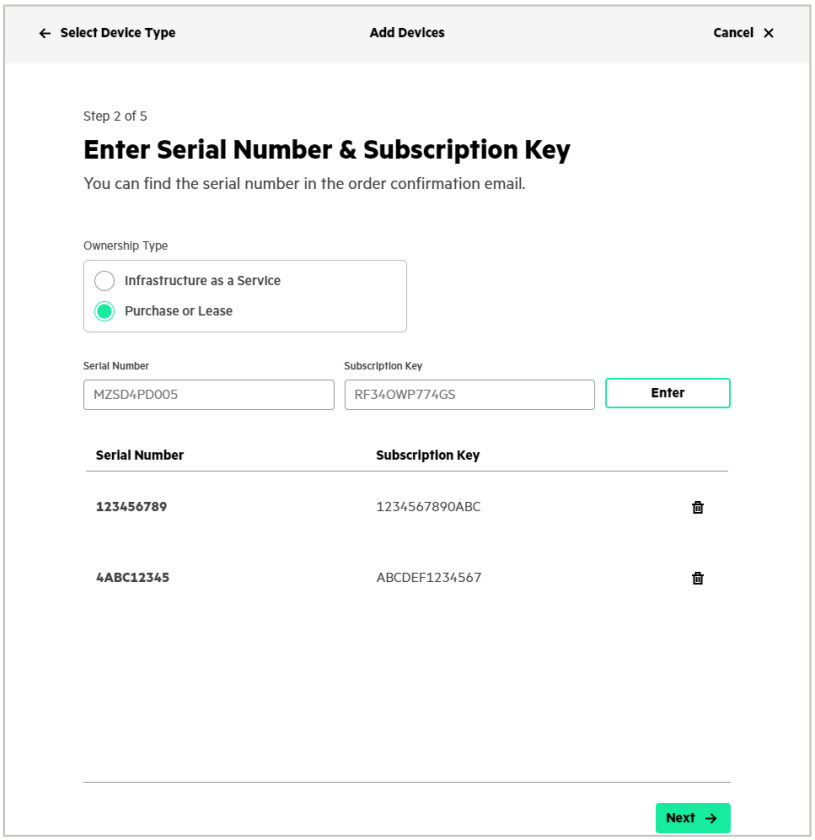

Figure 18. Enter the serial numbers and subscription keys for the devices

7. If you have multiple instances of DSCC, you must assign the devices to the DSCC application. Place a check mark to the left of each device you want to assign. Then, from the Actions menu, select **Assign to Application**.

   You can add multiple devices to DSCC simultaneously. However, note that in this step you are adding the devices to a geographic DSCC instance. Therefore, if you have multiple devices in different locations, you might need to run the Assign to Application process multiple times. For example, if you have one device in the United States and one in Europe, you must perform this step twice in order to assign the devices to different instances of DSCC.

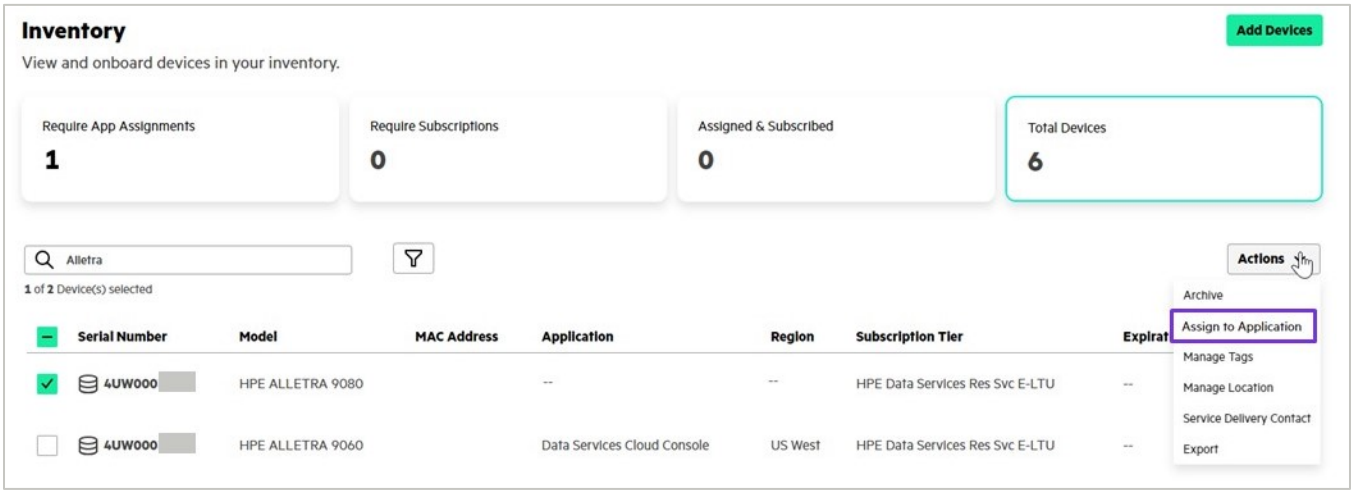

Figure 19. Select the devices and select **Assign to Application** from the Actions menu to assign them to DSCC

8. From the drop-down list on the left, select **Data Services Cloud Console** as the application, and from the drop-down list on the right, select the geographic region that corresponds to the device or devices.

   Only the regions you previously assigned to your workspace are visible in the drop-down list.

9. Click **Finish** when you are done.

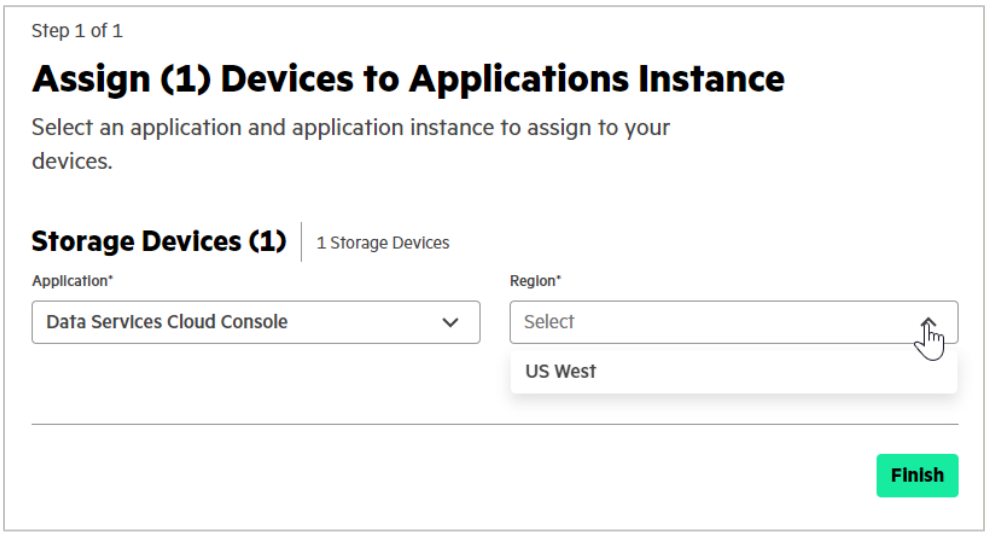

Figure 20. Assign the device to the geographic region that corresponds to its location

Important

If you do not see DSCC in the drop-down list under the Application heading, you must add it to your workspace. Follow the process in the section in this document titled “Deploying the Data Services Cloud Console application for an HPE GreenLake .”

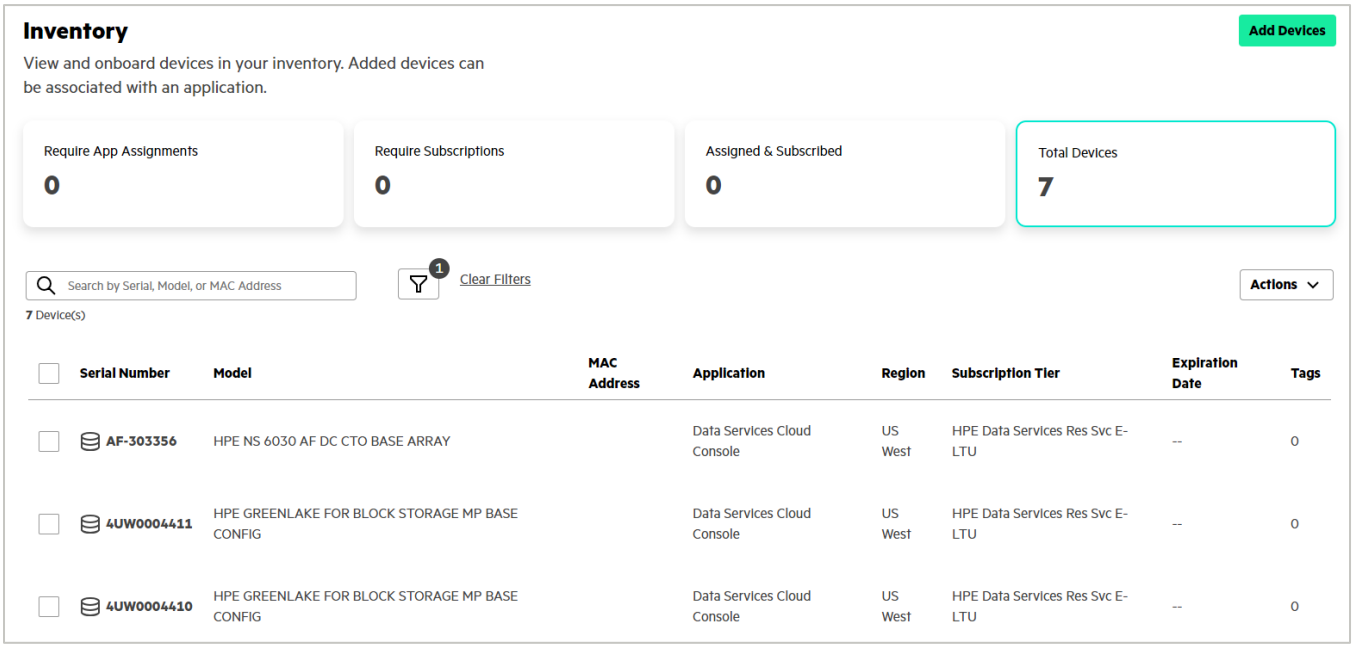

Figure 21. The Device Management page after devices have been added and assigned to DSCC

HPE GreenLake for Block Storage software initialization

The software initialization of HPE Alletra Storage MP is initiated from the Setup Service within DSCC. You can initialize a single storage array or start the initialization of multiple arrays and have them all run in parallel. You also have the option to use the blueprints you created previously to facilitate the process, which can be a significant time-saver, especially if you are onboarding multiple arrays at the same time.

Running the Data Services Cloud Console System Setup Wizard

To run the Data Services Cloud Console System Setup Wizard, complete the following steps:

1. From your company's dashboard, select the **Data Services Cloud Console** box.
2. In the Setup Service box, click **Launch**.

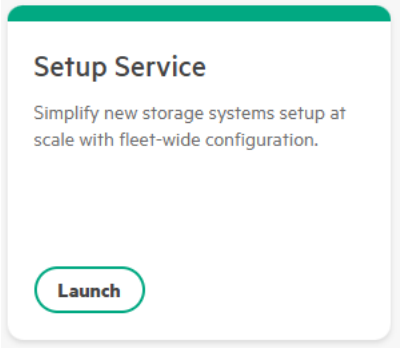

Figure 22. The Setup Service tile in the DSCC application

Important

If you do not see the Setup Service tile in DSCC, it is because you do not have the proper permissions associated with your user account. Follow the instructions in the section of this document titled Adding DSCC permissions to your user account.

3. A list is displayed of the HPE GreenLake for Block Storage systems that either are not set up or were recently set up. Any system that has not yet been set up displays **Not initialized** in the Setup Status column. Place a checkmark next to the system you want to initialize and click **Set Up System**.

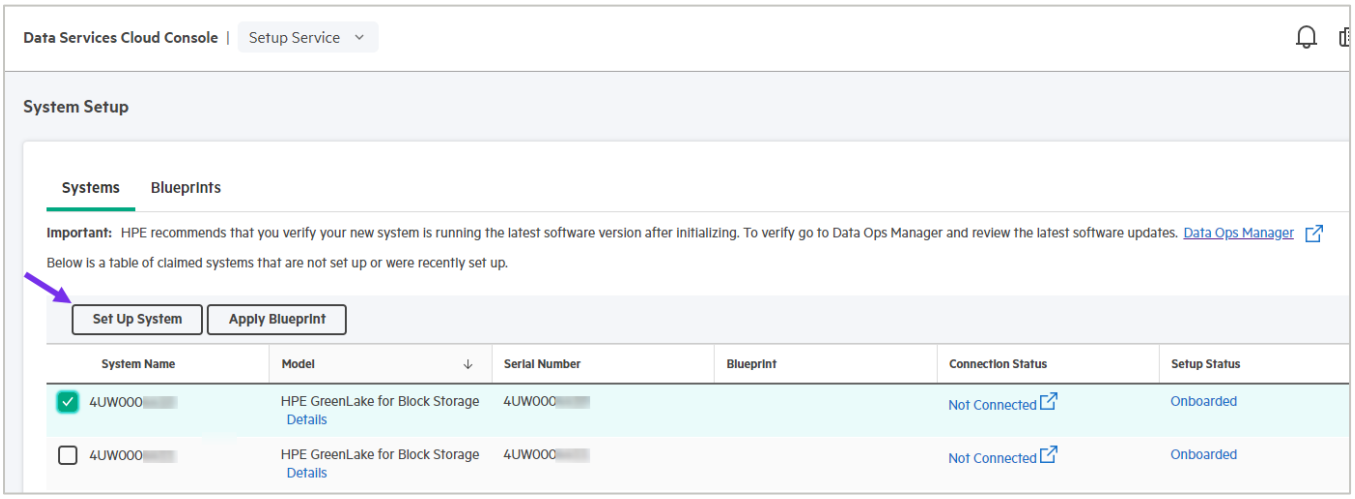

Figure 23. Click **Set Up System** above the list of HPE GreenLake for Block Storage systems in the Setup Service application to launch the System Setup Wizard

4. Click **Get Started** to begin entering data into the HPE Alletra Storage Setup Wizard.

   Any data that was entered previously into the Cloud Connectivity Wizard, such as the DNS or time information, is populated in the Setup Wizard; there is no need to enter it again. However, if you want to change any of the settings that were entered into the Cloud Connectivity Wizard, you may type over any pre-populated ones, and the new settings will be applied.

   Appendix A: DSCC Setup Service Wizard Settings lists the information that must be entered into the Setup Wizard.

5. Review your settings in the Review and Finalize step within the HPE Alletra Storage Setup Wizard. If everything looks right, click **Submit** to start the system initialization.

6. A dialog box appears on the screen to allow you to monitor the steps in the initialization process. If the process experiences an error, you will be notified and the Modify Setup button in the dialog box will become available. You can click **Modify Setup** to return to the wizard and amend any settings you might have entered incorrectly, and the initialization process will continue from where it left off.

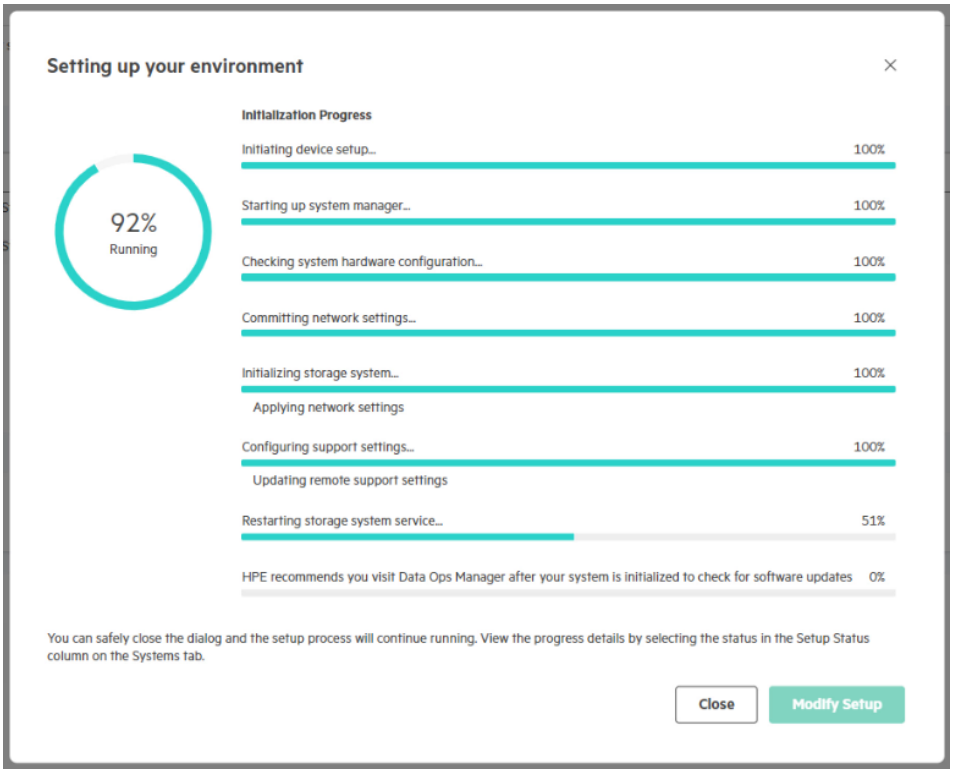

Figure 24. A dialog box allows you to monitor the progress of the system initialization

You can choose to keep the dialog box open, or you can close it while allowing the process to continue running. This enables you to initialize multiple systems at the same time and monitor them in parallel. If you close the dialog box, you can return to it at any time. In the list of systems, any systems that are still in the process of being set up display a status of **Initializing**. Click the word **Initializing** to return to the dialog box.

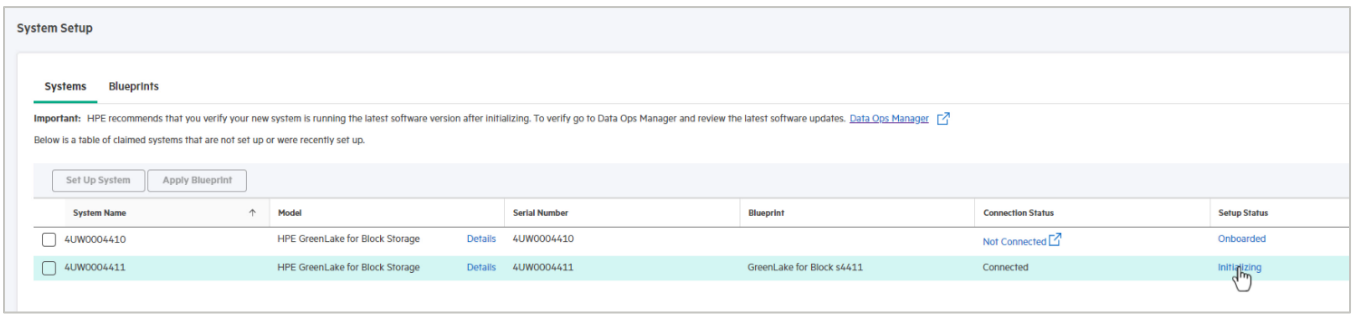

Figure 25. Click **Initializing** in the Setup Status column to return to the dialog box and monitor the progress of system initialization

7. When the initialization of the HPE Alletra Storage system is complete, the dialog box status displays **100% Completed**. In the list of systems in the Systems tab, the Setup Status changes to **Initialized**. The HPE Alletra Storage system remains in the list for seven days.

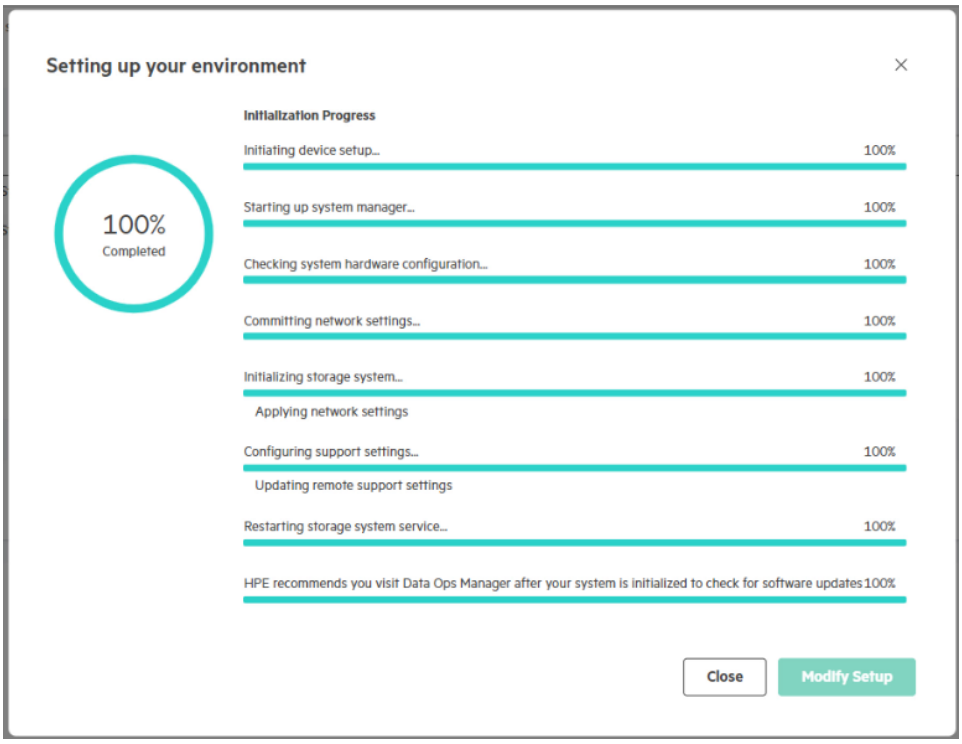

Figure 26. System initialization has been completed

8. Now that the initialization of the system is complete, you can proceed to the Data Ops Manager app in DSCC to begin managing the storage system.

DSCC Setup Service blueprints

Using a DSCC blueprint as a template enables you to enter settings one time and then apply them to each system that you need to initialize. Compared to having to enter all the required settings manually each time, it can be a convenient time-saver — especially if you need to bring multiple systems on board.

A second use for a blueprint is to prepare for the initialization of your storage arrays well ahead of the date when you plan to perform the initialization. If you do not already have an HPE GreenLake user ID and workspace, you can create them at any time and then go to the DSCC Setup Service and add the array settings to a blueprint. When it is time to initialize the array, run the Setup Service using the settings that have been pre-populated in the wizard.

A blueprint contains some or all of the information needed to set up your device. You can pre-fill as many of the fields as you want in the blueprint. Any fields that have not been filled out can be entered during system initialization. When you use a blueprint to set up a system, you have the option to retain or re-enter information in any of the prepopulated fields.

Any fields that require sensitive information can be pre-populated in a blueprint with the use of the DSCC Secrets Service. Those fields are:

- The default system credentials that will be used for the on-premises management tools such as the onboard UI and the CLI
- The HPE Passport credentials that are used to claim the system in HPE InfoSight
- The proxy server credentials if they are required for the environment

Creating a blueprint

There are two ways to create a blueprint. One option is to launch the HPE Alletra Storage Blueprint Wizard from the System Setup dashboard in the DSCC Setup Service. Alternatively, if you use the HPE Alletra Storage Setup Wizard to initialize your system, the Review and Finalize step offers you the opportunity to save your settings as a new blueprint.

Running the HPE Alletra Storage Blueprint Wizard to create a blueprint

To create a blueprint by running the HPE Alletra Storage Blueprint Wizard, complete the following steps:

1. From your company's dashboard, select the **Data Services Cloud Console** box.
2. In the Setup Service box, click **Launch**.
3. Select the **Blueprints** tab.

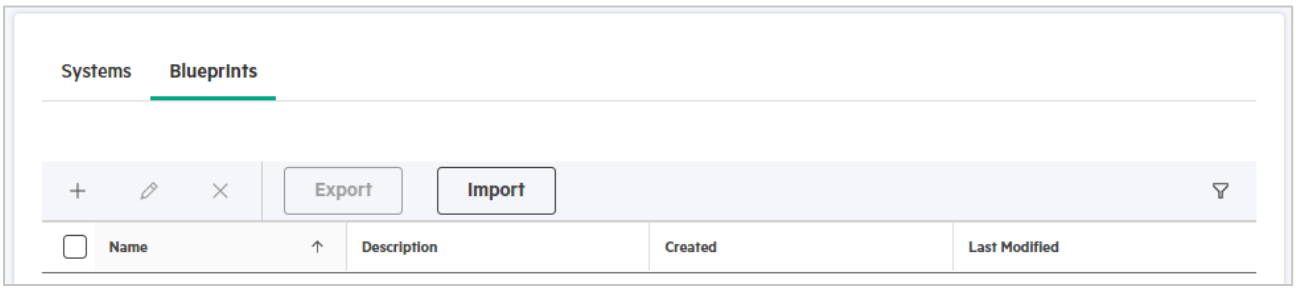

Figure 27. Select the **Blueprints** tab to launch the HPE Alletra Storage Blueprint Wizard

4. Click the **+** sign to launch the wizard.
5. Click **Get Started** to begin entering data into the wizard.

   Appendix A: DSCC Setup Service Wizard Settings lists the information that must be entered into the HPE Alletra Storage Blueprint Wizard.
6. After you have finished entering information into the wizard, name the blueprint, review the settings, and click **Submit**.
7. Your blueprint is now saved and is visible in the list of blueprints. You can return to the Blueprints tab at any time and edit the information saved in a blueprint by placing a checkmark next to the blueprint you want to modify and clicking the pencil icon.

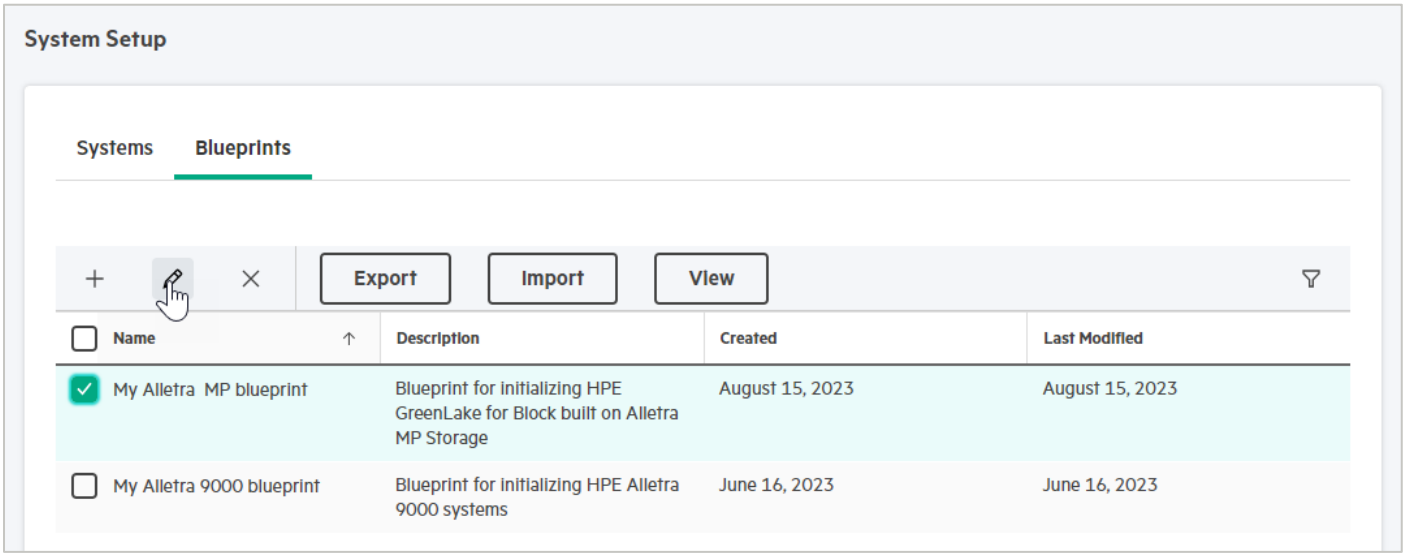

Figure 28. You can edit a saved blueprint by selecting the blueprint from the list and clicking the pencil icon

Setting up a system by using an HPE Alletra Storage blueprint

To use an HPE Alletra Storage blueprint to set up a system, complete the following steps:

1. From your company's dashboard, in the Data Services Cloud Console box, click **App Catalog**.
2. From the Applications page, in the Data Services Cloud Console box, click **Launch**.
3. In the Setup Service box, click **Launch**.

4. On the Systems tab, locate the list of the HPE GreenLake for Block Storage systems that are either not set up or were recently set up. Place a checkmark next to the system you want to initialize and click **Apply Blueprint**.

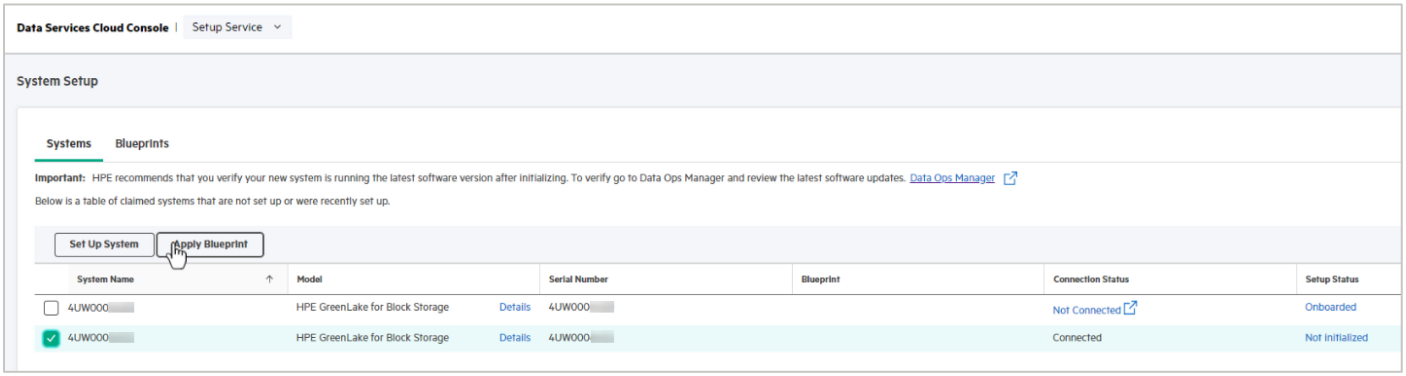

Figure 29. An HPE GreenLake for Block Storage system in the Setup Service application that has been connected to HPE GreenLake but has not been initialized. Click **Apply Blueprint** to launch the System Setup Wizard and apply the blueprint

Note

A blueprint can be applied to a system that has undergone the onboarding process to HPE GreenLake but has not yet established the initial connection using the Cloud Connectivity Wizard. With a system in this scenario, the system Setup Status will be **Onboarded** and the Connection Status will be **Not Connected,** as shown in Figure 30. You have the flexibility to choose between two options for the initialization process: automatically initiating it when the array is powered on and connected to DSCC or pausing the initialization until you manually trigger it at your convenience.

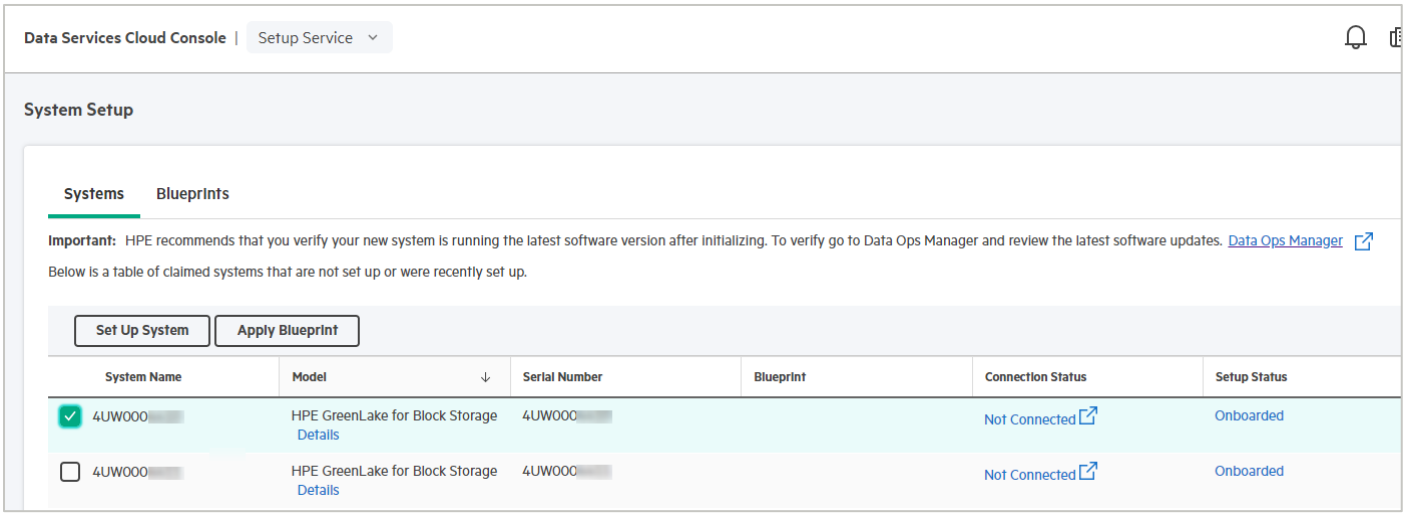

Figure 30. HPE GreenLake for Block Storage systems in the Setup Service that have been onboarded to HPE GreenLake but have not established an initial connection

5. From the list of the available blueprints that is displayed, select the one you want to apply to this HPE Alletra Storage system and click **Apply**.

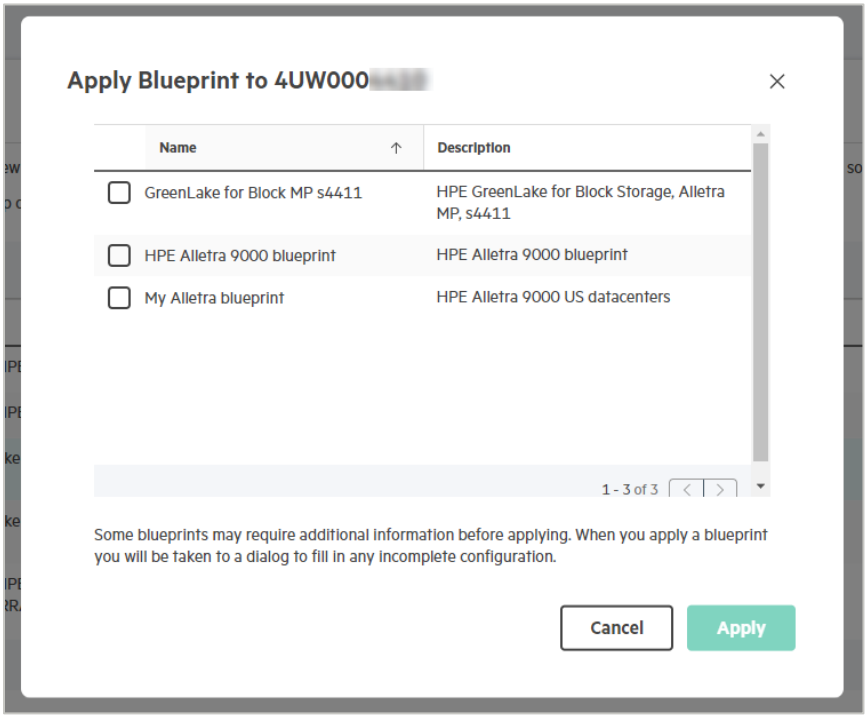

Figure 31. Selecting a blueprint to apply to the initialization of a system

6. The HPE Alletra Storage System Setup Wizard launches. This process follows the same flow described in the Running the Data Services Cloud Console System Setup Wizard section in this document. The only difference is that the fields you entered into the blueprint are pre-populated. You have the option of keeping any of the information in the Setup Wizard or re-entering the information to change the settings to apply to this storage array.
7. Review your settings in the Review and Finalize step within the HPE Alletra Storage Setup Wizard. If everything looks right, click **Submit** to start the system initialization. If your system has already made an initial connection to HPE GreenLake with the Cloud Connectivity Wizard, proceed to Step 11.
8. If your system has not yet established a connection to HPE GreenLake, applying a blueprint triggers a change in the system status to **Initialization Pending**, as shown in Figure 32. After you run the Cloud Connectivity Wizard and establish a connection to HPE GreenLake, the system initialization will start automatically. If that is the action you want, proceed to Step 12. However, if you prefer to pause the initialization and initiate it manually, follow Steps 9 through 11.

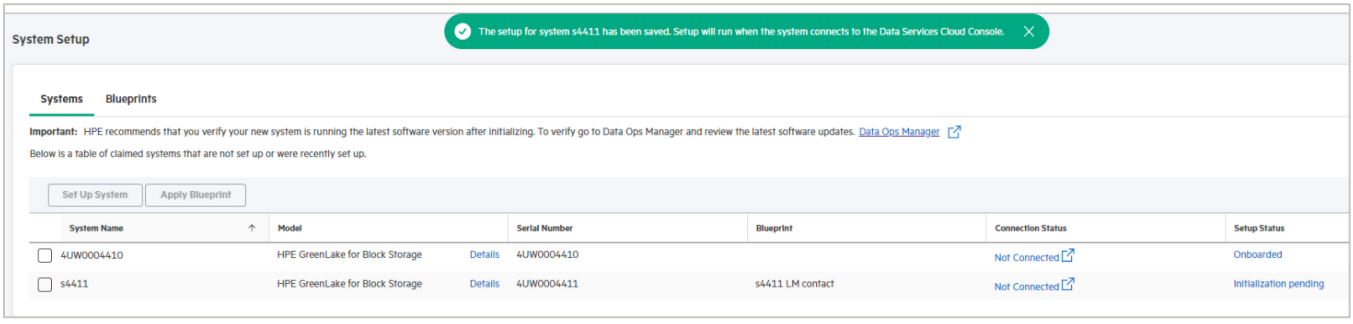

Figure 32. A system that is not yet connected to HPE GreenLake shows **Initialization Pending** when a blueprint is applied

9. If you prefer not to initiate the system initialization automatically upon the completion of the Cloud Connectivity Wizard, locate your system in the list and click **Initialization Pending**. Then click the **Pause** option in the pop-up window.

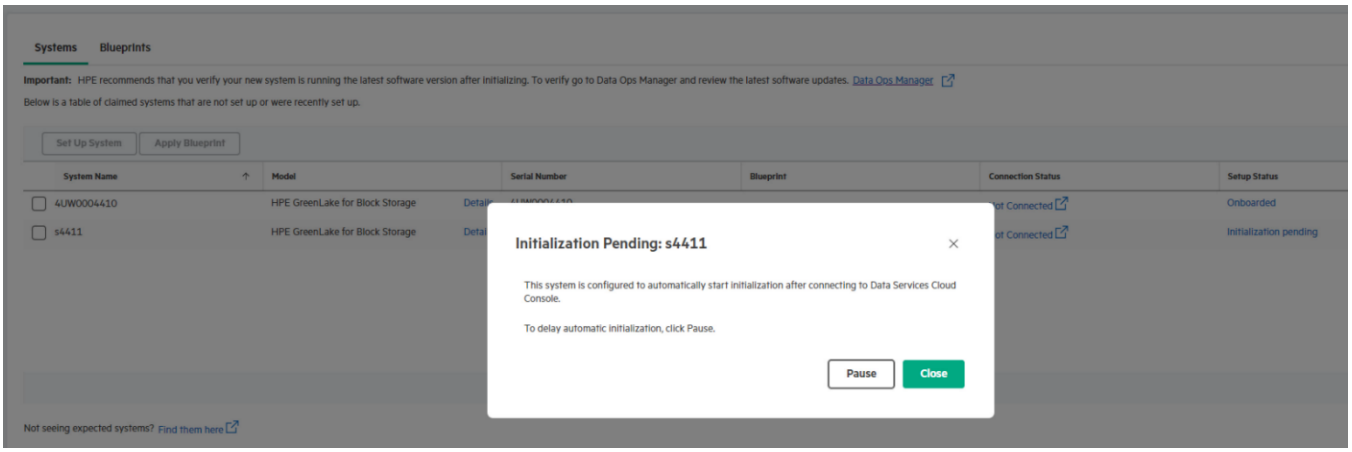

Figure 33. Click **Pause** to delay automatic system initialization

10. A pause icon appears next to the Initialization pending status for the system in the list.

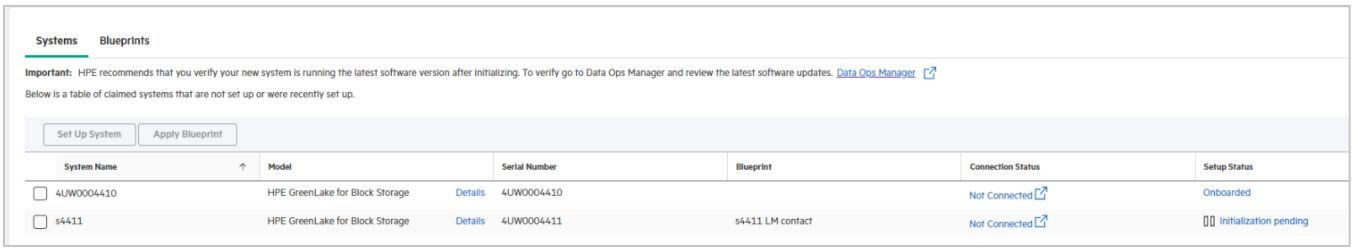

Figure 34. System initialization paused

11. To start the initialization for the system, locate the system in the list and click **Initialization Pending** again. Next, click the **Start** option in the pop-up window.

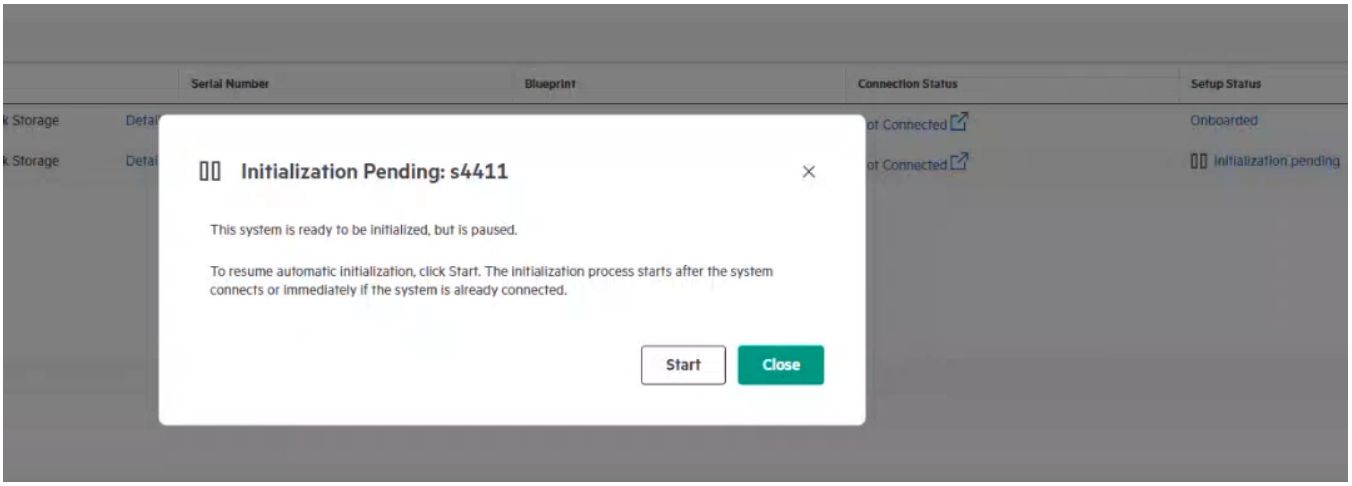

Figure 35. Click **Start** to restart automatic system initialization

12. A dialog box appears on the screen to enable you to monitor the steps in the initialization process. If the initialization process experiences an error, you will be notified and the Modify Setup button in the dialog box will no longer be unavailable. You can click **Modify Setup** to return to the wizard and change any settings you might have entered incorrectly, after which the initialization process continues from where it left off.

    When the initialization of the HPE Alletra Storage system is complete, the dialog box status displays **100% Completed**. In the list of systems in the Systems tab, the setup status changes to **Initialized**. The HPE Alletra Storage system remains in the list for seven days.

Summary

Initialization of an HPE GreenLake for Block Storage array can now be performed in HPE GreenLake by using the Cloud Connectivity Wizard and the DSCC Setup Service. The Cloud Connectivity Wizard provides enough networking information to allow the HPE Alletra Storage system to make an initial connection to HPE GreenLake and retrieve the subscription key that is used to onboard the device to DSCC. After the device is onboarded, the DSCC Setup Service is used to initialize the storage arrays, using blueprints of common information that can be set up in advance and used multiple times for multiple storage arrays.

Appendix A: DSCC Setup Service Wizard Settings

The HPE Alletra Storage System Setup Wizard and the HPE Alletra Storage Blueprint Wizard share a common set of inputs. The only exception is that there are a few fields in a blueprint that require sensitive credentialing information. Those credentials are integrated with the DSCC Secrets Service. In a blueprint, you can select a credential that was previously created, or you can create a new credential. Creating a credential also saves the credential to the DSCC Secrets Service for later use.

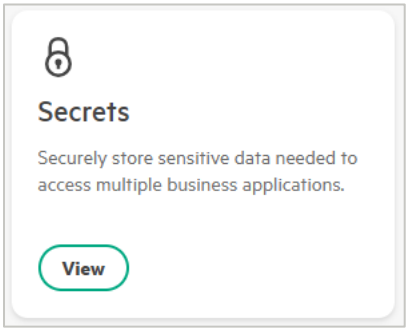

Figure 36. The Secrets tile in DSCC

Table 2 summarizes the information that must be entered into the HPE Alletra Storage System Setup and HPE Alletra Storage Blueprint Wizards.

Table 2. Summary of fields in the HPE Alletra Storage System Setup and HPE Alletra Storage Blueprint Wizards

Field	Required	Can be entered into blueprint	Notes
DNS servers	Yes	Yes	IPv4 or IPv6 addresses of one to three DNS servers.
NTP servers	Yes	Yes	Hostname or IPv4 or IPv6 addresses of one to three NTP servers.
System time zone	Yes	Yes	Pertains to the geographic location where the storage array resides.
HTTP proxy server	No	IP address and port only	Proxy server hostname or IPv4 or IPv6 addresses and port. Proxy server credentials can be added but are optional.
Support contact	Yes	Yes	Name, country, preferred language, company, phone number, and email.
Network information	Yes	Yes	IP address for on-premises management. IPv4 addressing is required; IPv6 addressing is optional.
System credentials	Yes	No	Admin user account for on-premises management.

Details

Additional information and screenshots of the wizards are detailed in this section. Note that the HPE Alletra Storage System Setup Wizard and the HPE Alletra Storage Blueprint Wizard look almost identical. The screenshots used in this appendix are from the System Setup Wizard.

System type

The wizard includes the steps that are common to all HPE Alletra Storage systems. However, Hewlett Packard Enterprise recommends selecting your specific system type in this step. Doing so will simplify the process because you will be presented with only the selections that apply to the HPE GreenLake for Block Storage.

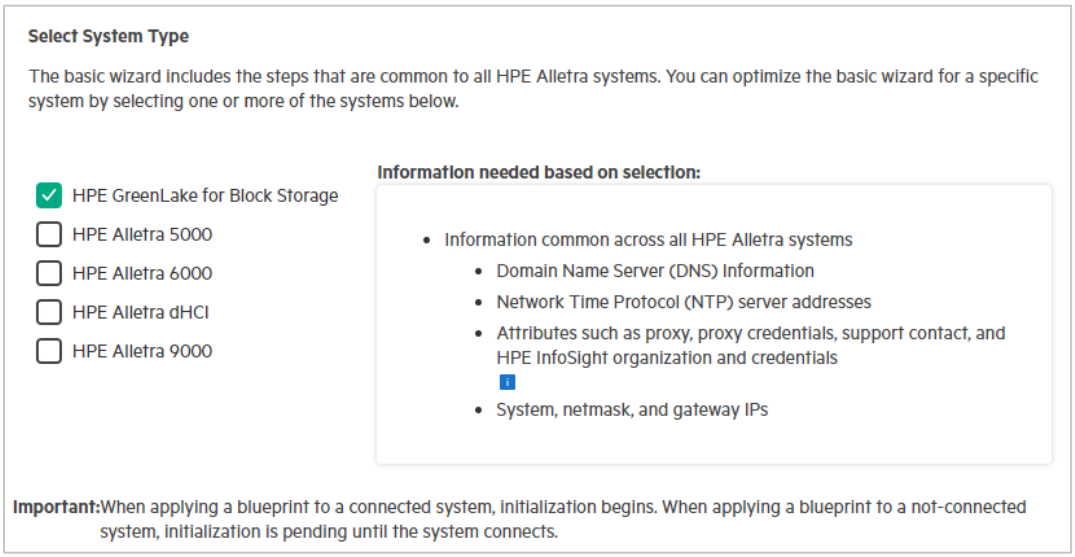

Figure 37. Selecting **HPE GreenLake for Block Storage** as the system type

Domain

DNS servers

You must enter the IP address of between one and three DNS servers. You can use either IPv4 or IPv6 addresses. If you are using an IPv6 address, you must configure the system network settings on the System page to use IPv6.

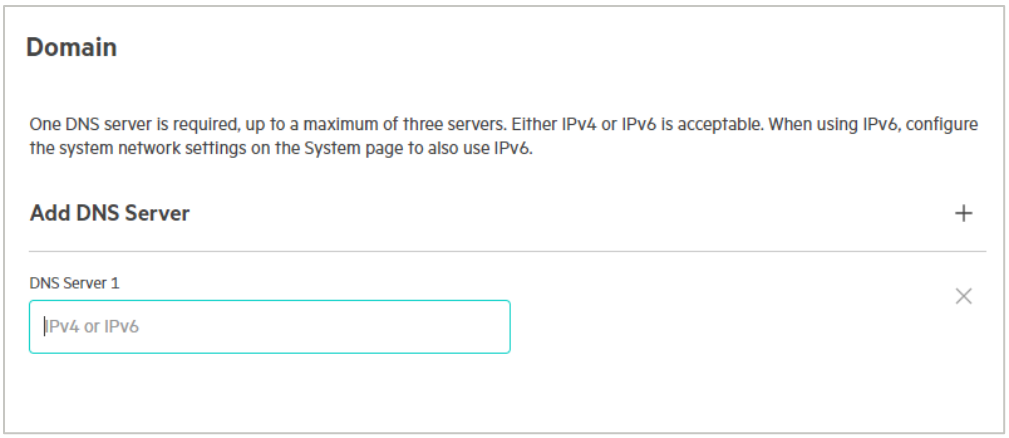

Figure 38. Entering the DNS information into the wizard

Time

NTP servers

You must enter either the hostname or the IP address of up to three NTP servers. You can use either IPv4 or IPv6 addresses. If you are using an IPv6 address, you must configure the system network settings on the System page to use IPv6.

System time zone

You must enter the region and the time zone of the geographic location where the storage array resides.

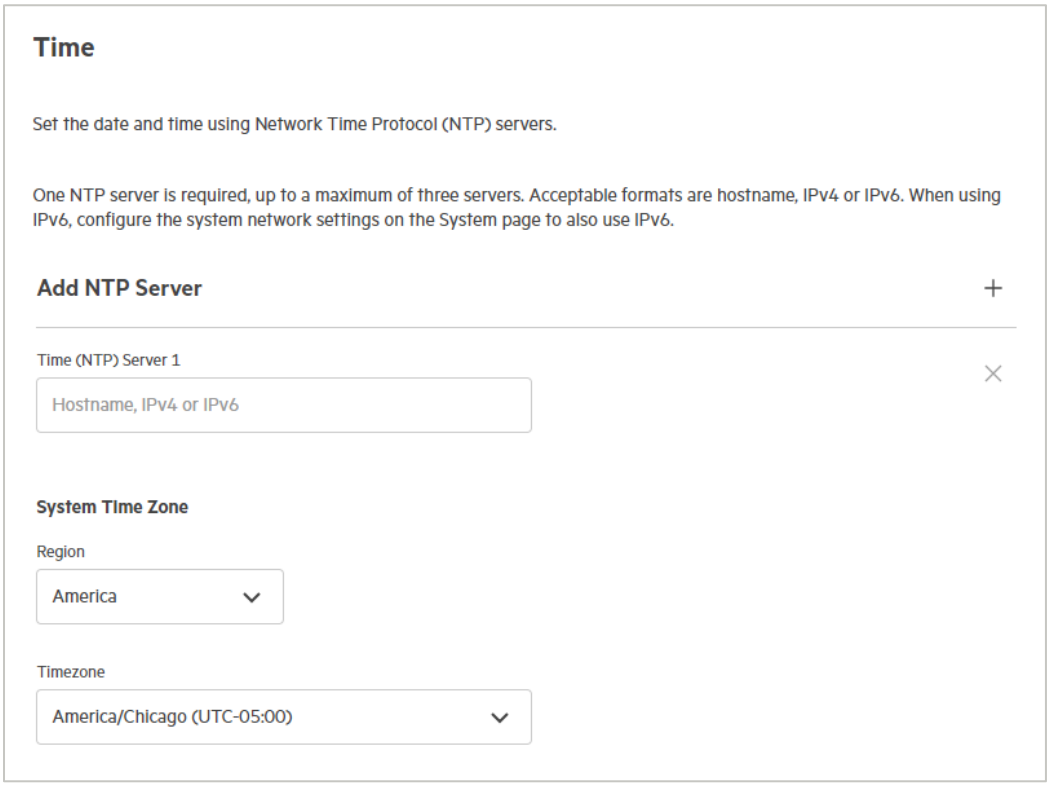

Figure 39. Entering time information into the wizard

Proxy

If your website uses a proxy server, you have the option to input that information.

HTTP proxy server

Enter either the hostname or the IP address of an HTTP proxy server. If a static IP address and related network information are entered into the Cloud Connectivity Wizard during the on-system pre-initialization process, that information will be used when a blueprint is applied. If a DHCP-assigned IP address and related network information are entered into the Cloud Connectivity Wizard, the information from the DSCC blueprint will be used. You can use either an IPv4 or an IPv6 address. If you enter an IPv6 address, you must configure the system network settings on the System page to use IPv6.

You can enter the details of the proxy server on its own or include the proxy credentials if they are necessary for authentication.

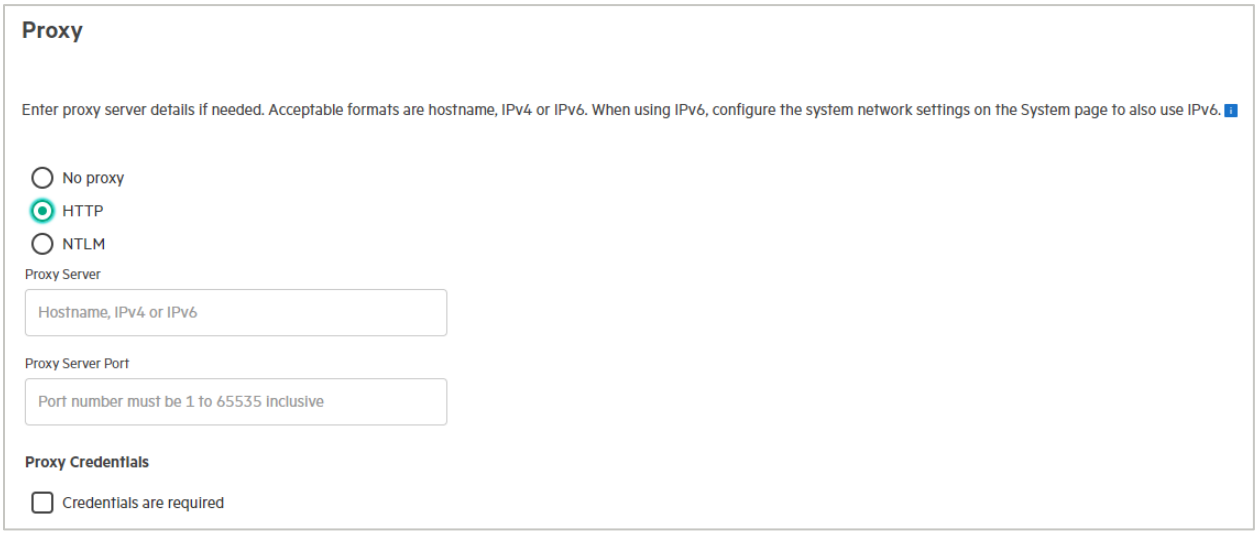

Figure 40. Entering HTTP proxy server information into the wizard

NTLM proxy server and port

Enter either the hostname or the IP address of a Microsoft NTLM proxy server. If a static IP address and related network information are entered into the Cloud Connectivity Wizard during the on-system pre-initialization process, that information will be used when a blueprint is applied. If a DHCP-assigned IP address and related network information are entered into the Cloud Connectivity Wizard, the information from the DSCC blueprint will be used. You can use either an IPv4 or an IPv6 address. If you enter an IPv6 address, you must configure the system network settings on the System page to use IPv6.

Proxy credentials are required for an NTLM proxy server.

Entering NTLM proxy server information into the wizard

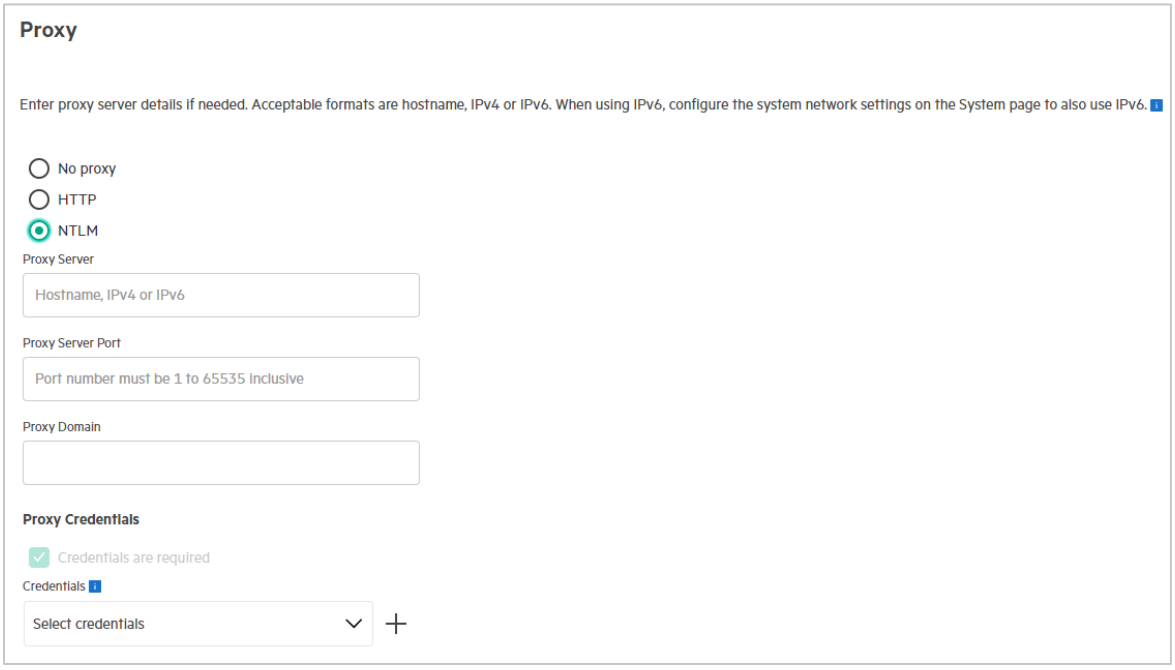

Figure 41. Entering NTLM proxy server information into the wizard

Proxy credentials

If the proxy credentials are necessary for authentication, they can be selected from credentials previously created in the DSCC Secrets Service, or you can use the plus sign next to the drop-down menu to create a new set of credentials and save them as a new Secret.

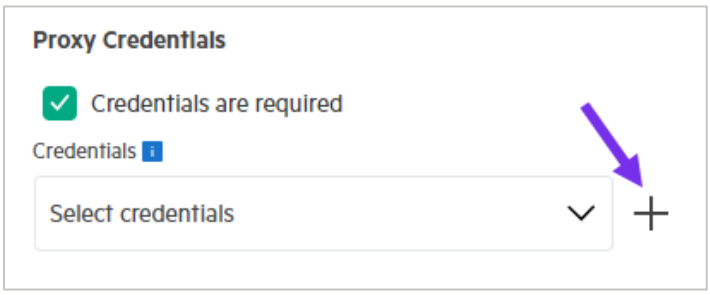

Figure 42. Select the plus sign to create a new set of proxy credentials

Enter a name for the Secret plus the username and password that are required for authentication to the proxy server. Note that in this step you are not creating any credentials; you are merely saving existing proxy server credentials in a DSCC Secret.

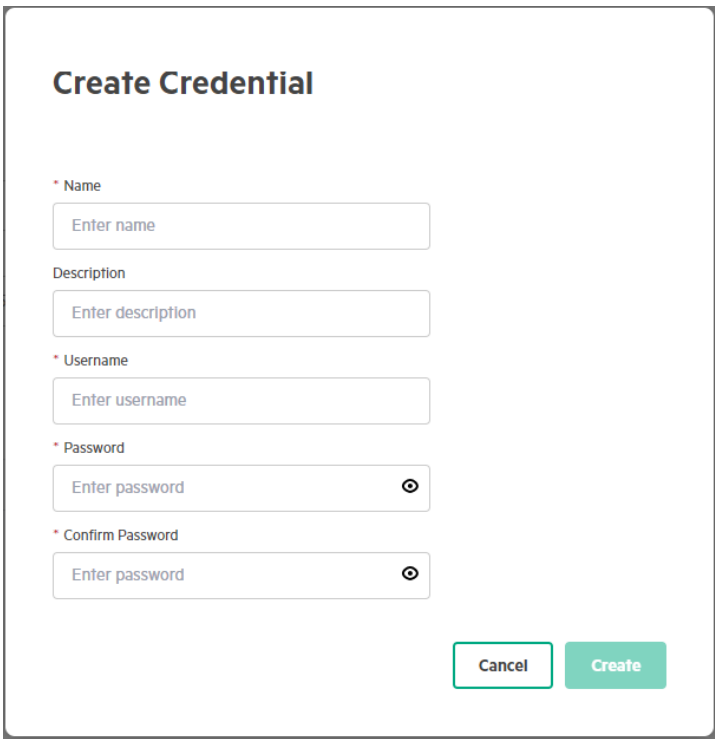

Figure 43. Creating a DSCC Secret for proxy server credentials

Support contact

You must enter the contact information of a person for HPE Support to contact if the system needs attention. All fields must be filled out: First Name, Last Name, Country, Preferred Language, Company, Phone Number, and Contact Email.

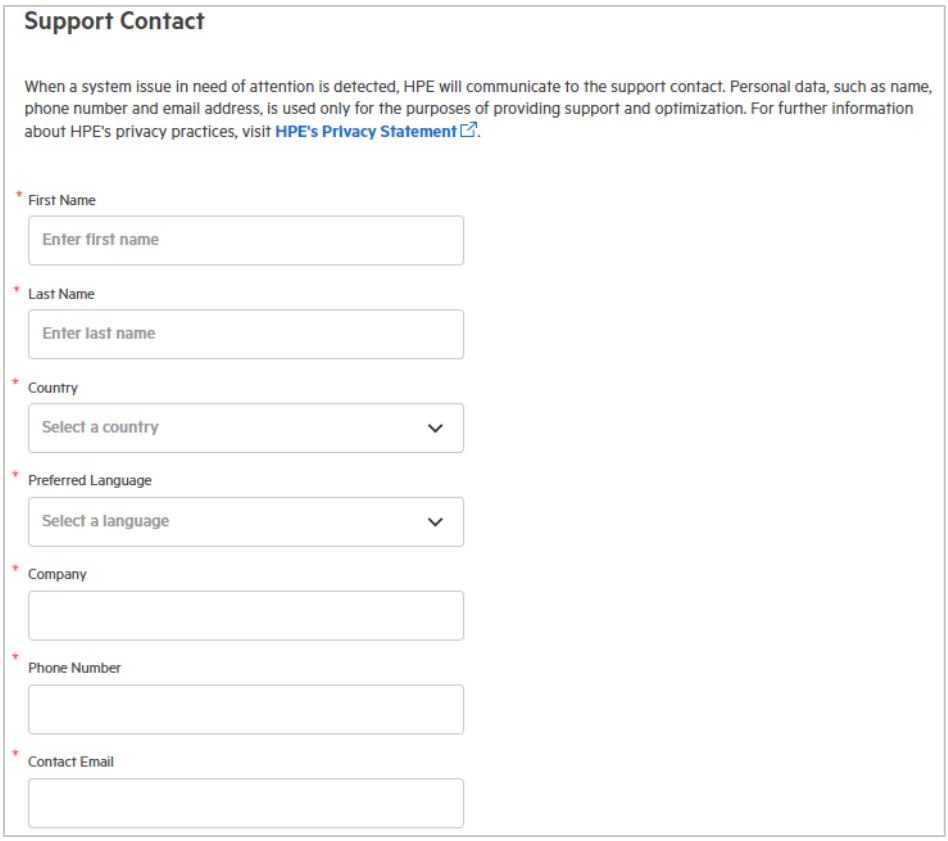

Figure 44. Entering the support contact information into the wizard

Email alerts

Enter the address of an SMTP server if required. Acceptable formats are hostname, IPv4, or IPv6. If you are using IPv6, configure the system network settings on the System page to also use IPv6.

Email alerts will be sent to the support contact's email address. Emailed alerts provide proactive notification of critical issues such as hardware failures. You can enter an email alias if you would like to send alerts to more than one address. The From Email Address is used only when email alerts are sent from the storage system. The address does not need to be a valid email account. Use an address that allows you to easily identify the storage system that is sending the email alert.

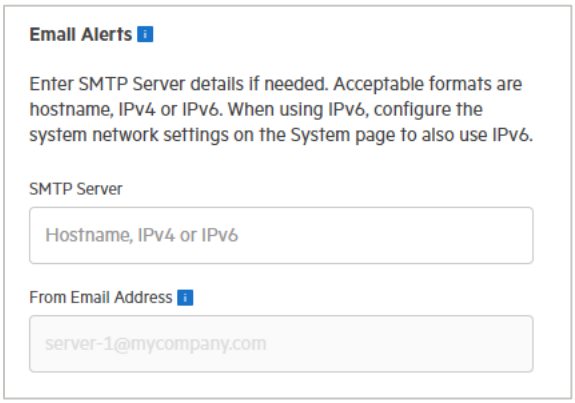

Figure 45. Entering SMTP server details

System

Specify a name for the system and select the country in which it is located.

Network information

Either IPv4 and IPv6 addressing or IPv4 alone can be used. The IPv4 information must include the following values:

- IPv4 management address that will be used for the HPE Alletra Storage MP onboard UI and CLI (The management IP address is not used to log on to DSCC.)
- IPv4 subnet mask
- IPv4 gateway

IPv6 can be used for the system management address, DNS server, HTTP proxy, and NTP server addresses. If you are using an IPv6 address for any of these settings, select the radio button next to **Use IPv4 and IPv6** and enter the following information:

- An optional IPv6 management address
- IPv6 prefix length
- IPv6 gateway

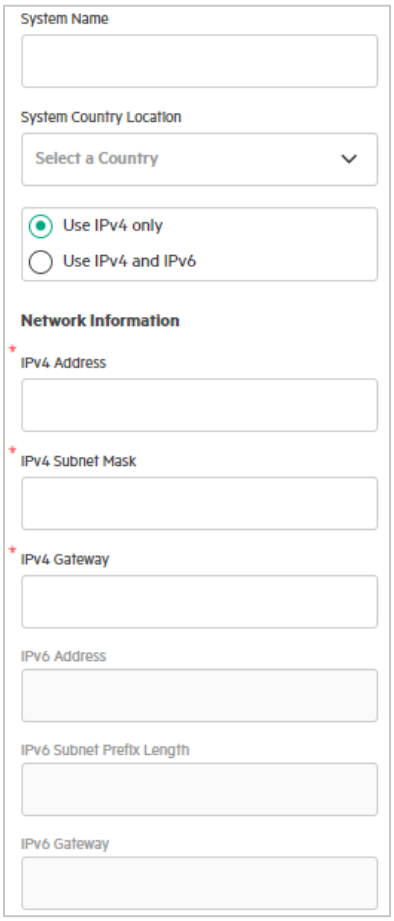

Figure 46. Entering the system name and network information into the wizard

System credentials

Enter the credentials for the admin user that will be used to log on to the HPE Alletra Storage MP onboard UI and CLI. This is separate from the user account that is used to log on to DSCC. The admin credentials can be selected in the drop-down from credentials previously created in the DSCC Secrets Service, or you can use the plus sign next to the drop-down menu to create a new set of credentials and save them as a new Secret.

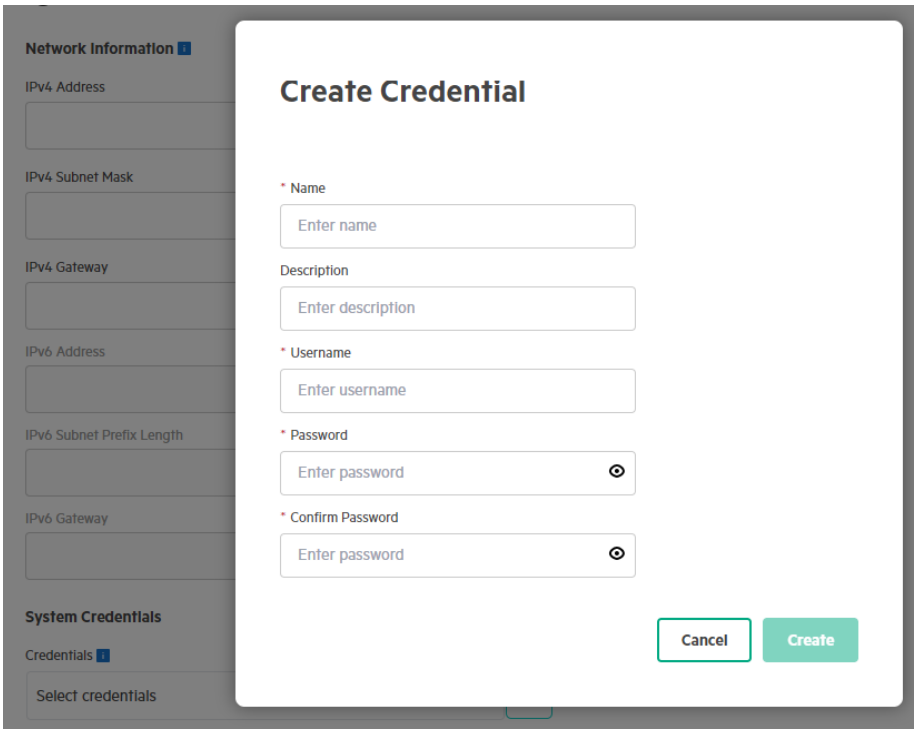

Figure 47. Clicking the plus sign in the **System Credentials** area allows you to enter new credentials and save them as a Secret

Resources

HPE GreenLake for Block Storage UI 2.1 User Guide
https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=sd00002401en_us

HPE GreenLake for Block Storage: Cloud Enablement Quick Start
https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=sd00002403en_us

HPE GreenLake for Block Storage Onboarding and initialization video
https://youtu.be/U3XuDY9L_eg

Learn more at
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