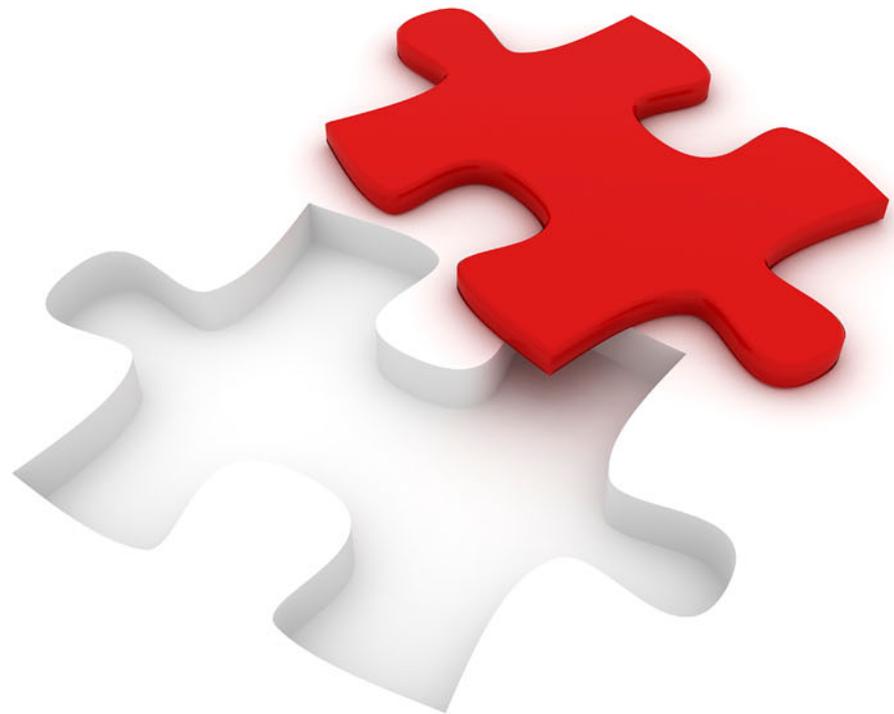


# Creating Data Reduction Pools with IBM FlashSystem 9200 and 9100

Frank Enders

Sergey Kubin





## Creating Data Reduction Pools

When you are using IBM® FlashCore Modules with IBM FlashSystem® 9200 and 9100, for most use cases the best practice is to use Data Reduction Pools with fully allocated volumes. This sheet guides you through the process to create these volumes. Other specific cases might benefit from another set of options, and these are described at the following website:

[IBM FlashSystem 9200 and 9100 Best Practices and Performance Guidelines](#)

To create volumes, complete the following steps:

1. Create a storage pool by selecting **Pools** → **Pools**, as shown in Figure 1.

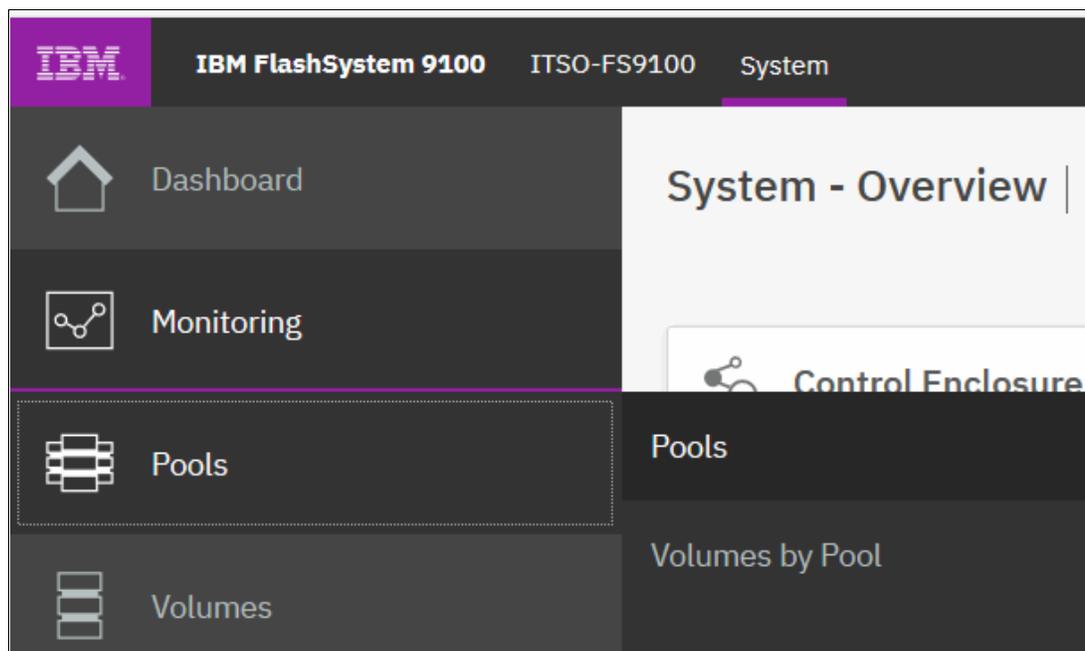


Figure 1 Create storage pool

2. Click **Create** to open the Create Pool wizard, as shown in Figure 2 on page 4. We provide the name `DRP-pool`.
3. Select the **Data reduction** checkbox to create the Data Reduction Pool. Leaving it clear creates a standard storage pool. If an encryption license is installed and enabled, you can additionally select whether the storage pool is encrypted.

Figure 2 shows the Create Pool wizard.

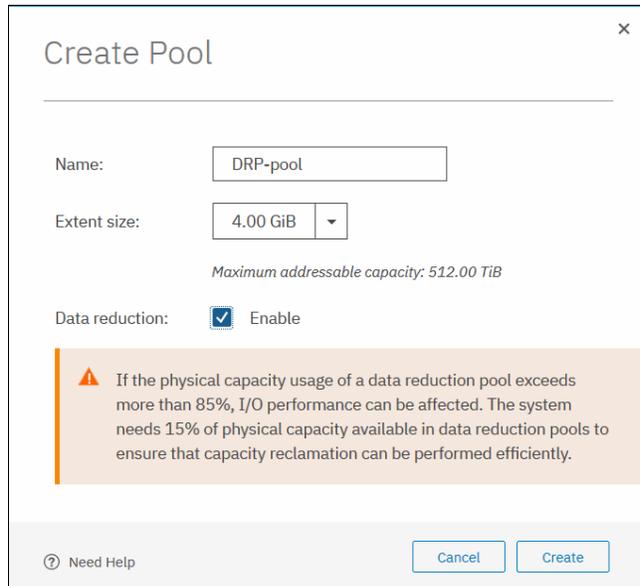


Figure 2 Create Pool wizard

- Click **Create** to create the new data reduction pool. Figure 3 shows the storage Pools view with the newly created data reduction pool.

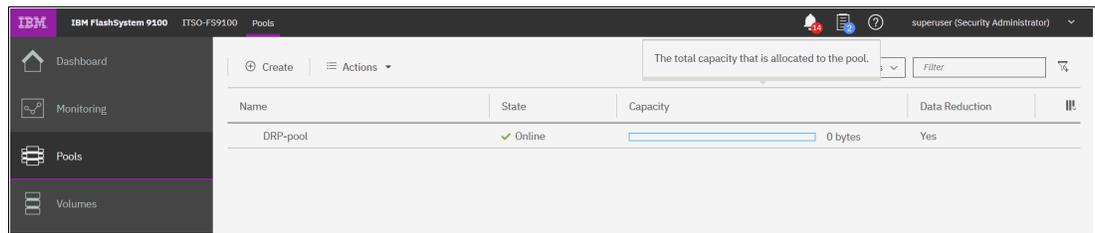


Figure 3 Storage Pools view including a data reduction pool

- Initiate the Assign Storage wizard. You either right-click the storage pool or click **Actions** → **Add Storage**, as shown in Figure 4.

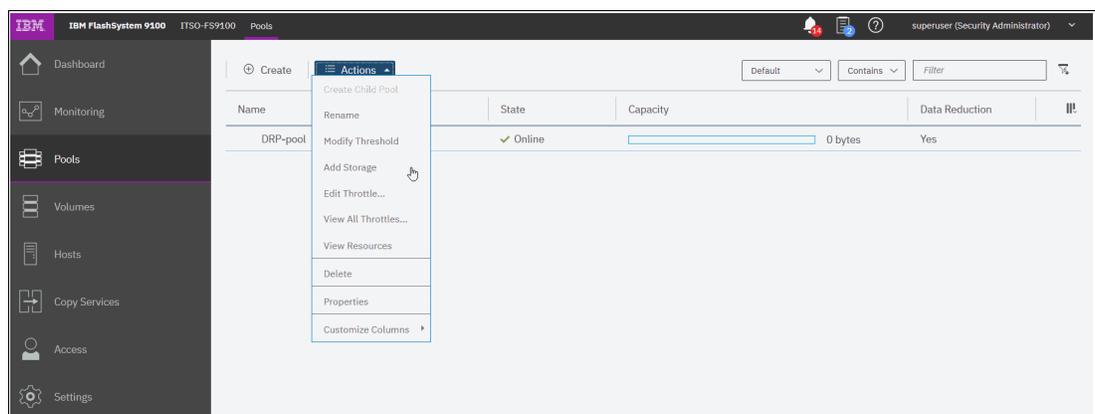


Figure 4 Initiate assign storage

- Figure 5 shows the Assign Storage to pool window. Click **Internal Custom** and **Assign** in the Advanced section.

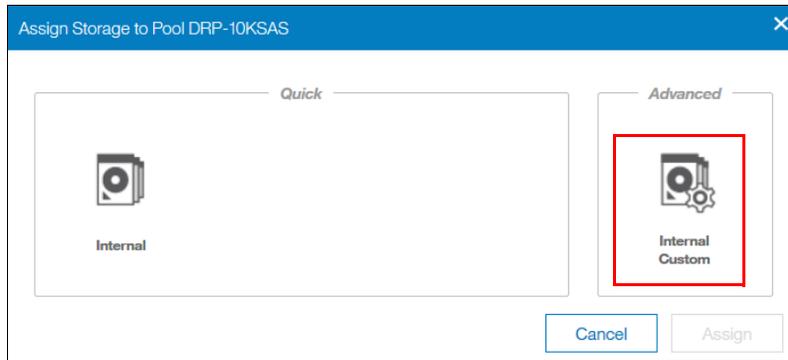


Figure 5 Assign storage

7. Select Drive Class, number of drives, and DRAID-6, and shown in Figure 6.

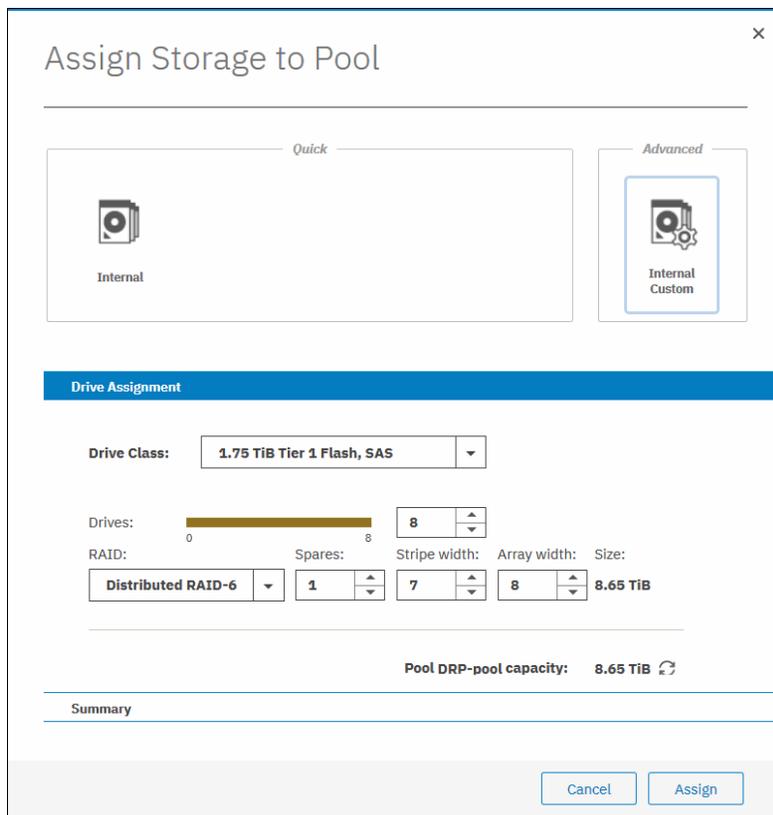


Figure 6 Drive assignment

8. Click **Assign** to create the new MDisk. You will see the Pools window after adding the array, as shown in Figure 7.

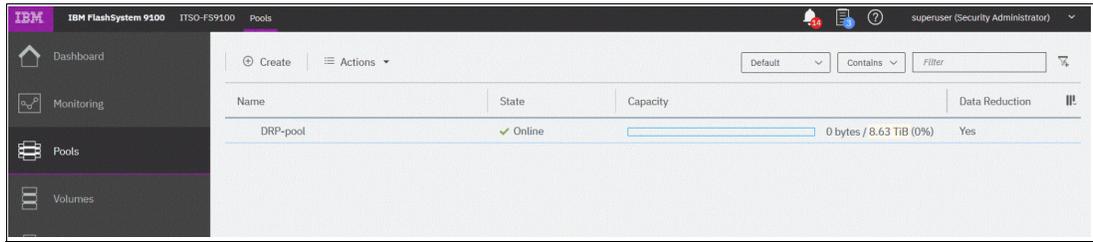


Figure 7 Capacity added

## Creating volumes in Data Reduction Pools

To create the volumes in pools, complete the following steps:

1. Go to **Volumes** → **Volumes**. Figure 8 shows the view before adding volumes into Data Reduction Pools.

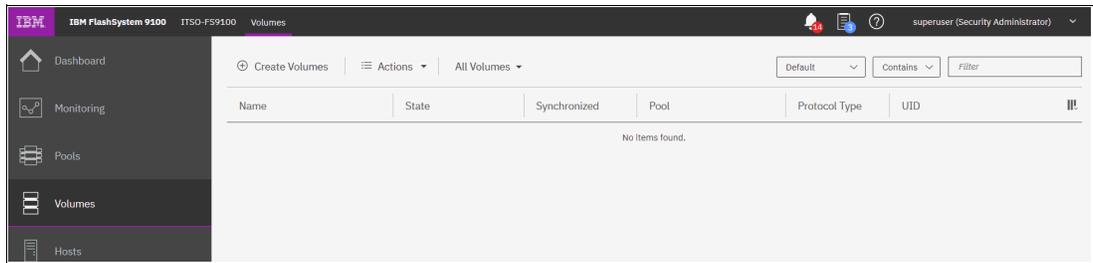


Figure 8 Volumes view

2. Figure 9 on page 7 shows the Create Volume wizard. Select your Quantity, Capacity, and Name.
3. Under the menu Capacity Savings we select **None** and leave Deduplicated cleared. If you are trying to take advantage of other capacity savings, see the following Redbooks publication:

[IBM FlashSystem 9200 and 9100 Best Practices and Performance Guidelines](#)

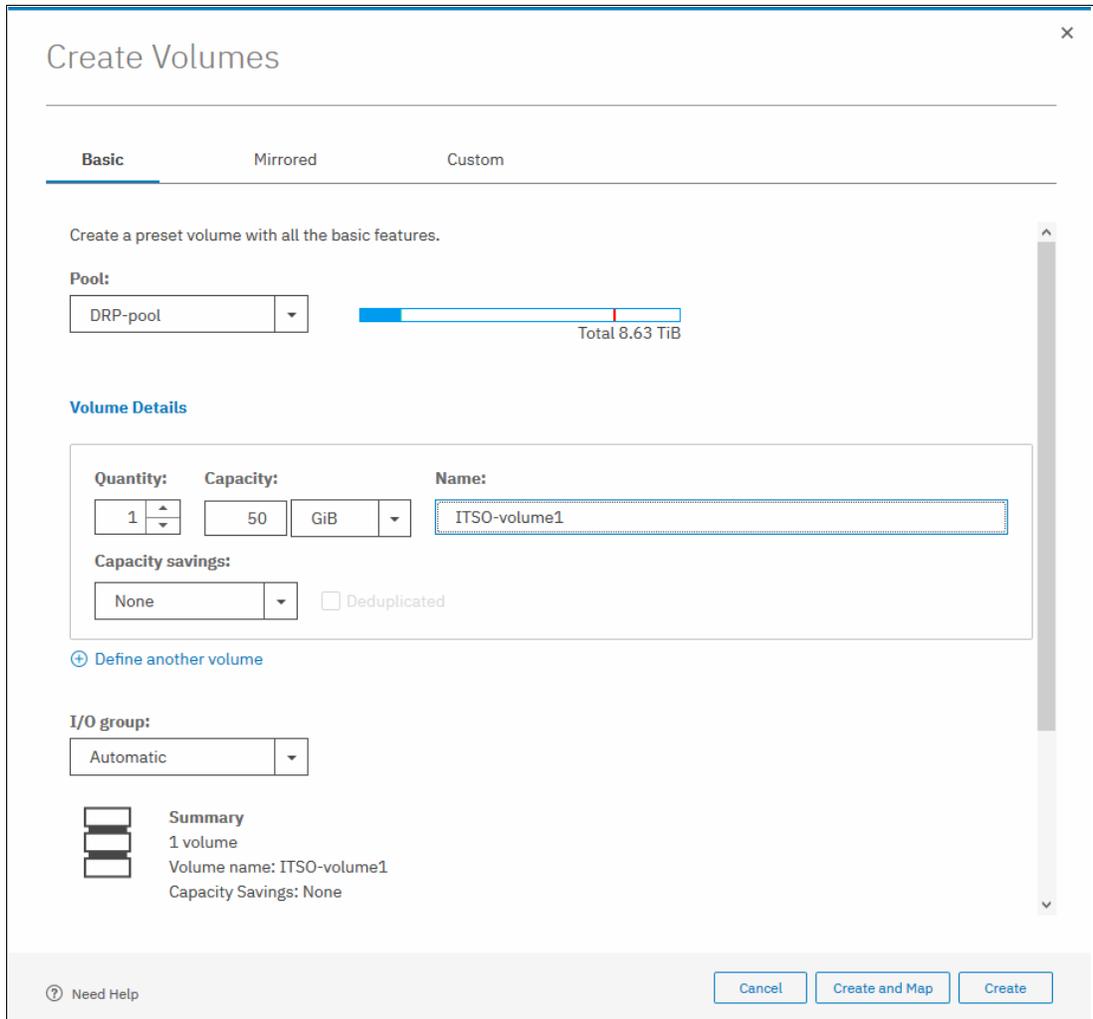


Figure 9 Create volume

Figure 10 shows the Volumes window.

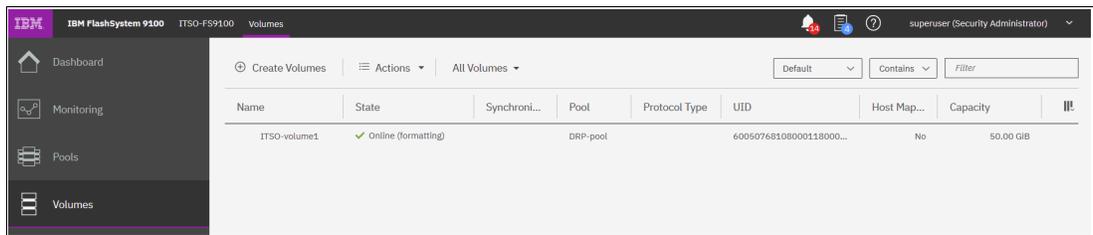


Figure 10 Volumes window

# Creating hosts

To create a host, complete the following steps:

1. Open the host configuration window by clicking **Hosts** (Figure 11 on page 8).

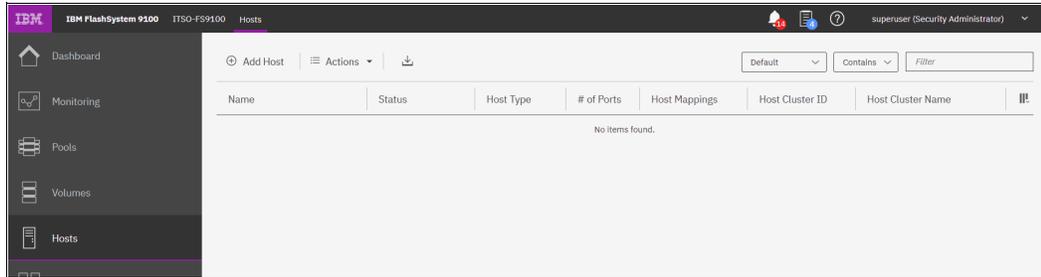


Figure 11 host window

2. To create a host, click **Add Host**.
3. Select **Fibre Channel**. The Fibre Channel host configuration window opens (Figure 12).

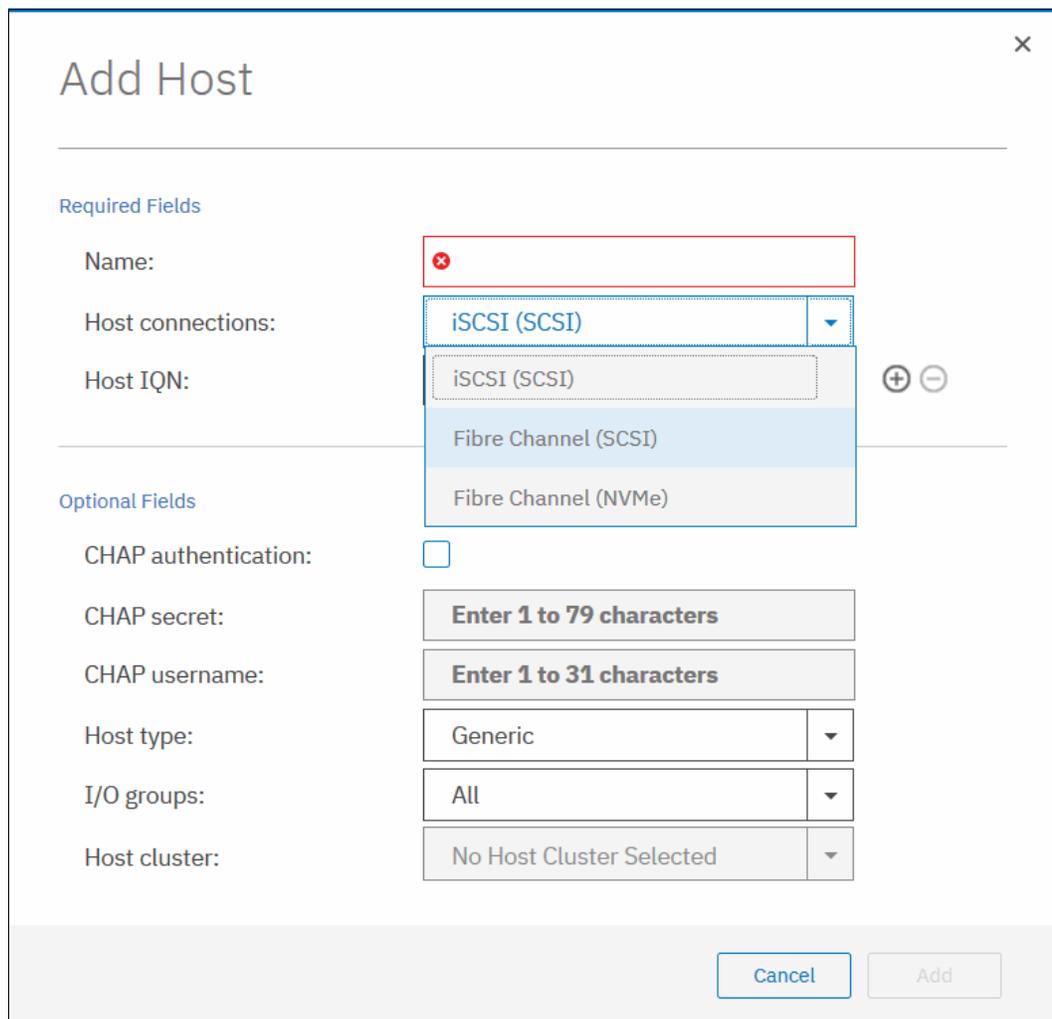


Figure 12 Fibre Channel host configuration

4. Enter a name for your host and click the **Host Port (WWPN)** menu to get a list of all discovered WWPNs (Figure 13).

The screenshot shows a dialog box titled "Add Host" with a close button (X) in the top right corner. The dialog is divided into "Required Fields" and "Optional Fields".

**Required Fields:**

- Name:** Win2012srv1
- Host connections:** Fibre Channel (SCSI)
- Host port (WWPN):** A dropdown menu is open, showing a list of WWPNs: 10000090FAB386A2, 10000090FAB386A3, 10000090FAB386E6, 10000090FAB386E7, and 2100001B32157539. The first item is selected. There is a red 'X' icon in the top left of the dropdown, a refresh icon, and '+' and '-' icons on the right.

**Optional Fields:**

- Host type:**
- I/O groups:**
- Host cluster:**

At the bottom right, there are "Cancel" and "Add" buttons.

Figure 13 Available WWPNs

5. Select one or more WWPNs for your host. IBM Spectrum® Virtualize should have the host port WWPNs available if the host is prepared, as described in IBM Knowledge Center for Host Attachment. If they do not display in the list, scan for new disks as required on the respective operating system and click the **Rescan** icon in the WWPN box. If they still do not display, check the SAN zoning and repeat the scanning.

- If you want to add more ports to your Host, click the Plus sign (+) to add all ports that belong to the specific host, as shown in Figure 14.

**Add Host**

**Required Fields**

Name: Win2012srv1

Host connections: Fibre Channel (SCSI)

Host port (WWPN): 10000090FAB386A2

10000090FAB386A3

**Optional Fields**

Host type: Generic

I/O groups: Generic

Host cluster:

Generic

HP/UX

OpenVMS

TPGS

VVOL

Add

Figure 14 Host type selection

- Click **Add** to create the host object.
- Click **Close** to return to the host window. Repeat these steps for all of your Fibre Channel hosts. Figure 15 shows the Add Host window after creating a host.

Name	Status	Host Type	# of Ports	Host Mappings	Host Cluster ID	Host Cluster Name	Protocol Type
Win2012srv1	Online	Generic	2	No			SCSI

Figure 15 Hosts view after creating a host

# Mapping a volume to a host

To make a volume available to a host or cluster of hosts, it has to be mapped.

To map a volume to a host or cluster, complete the following steps:

1. In the **Volumes** view (Figure 16) select the volume for which you want to create a mapping, and then select **Actions** from the menu bar.

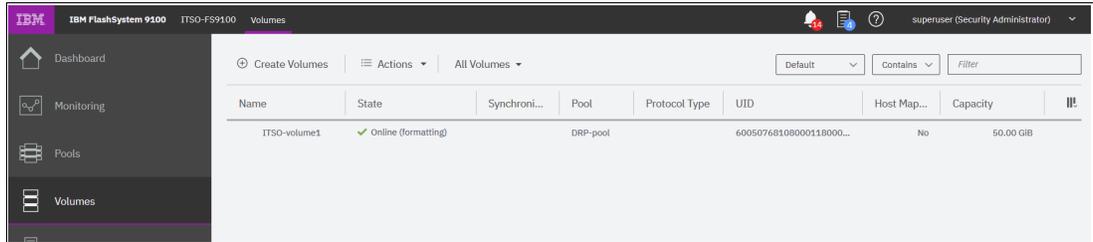


Figure 16 Volume list

2. From the **Actions** menu, select the **Map to Host or Host Cluster** option as shown in Figure 17.

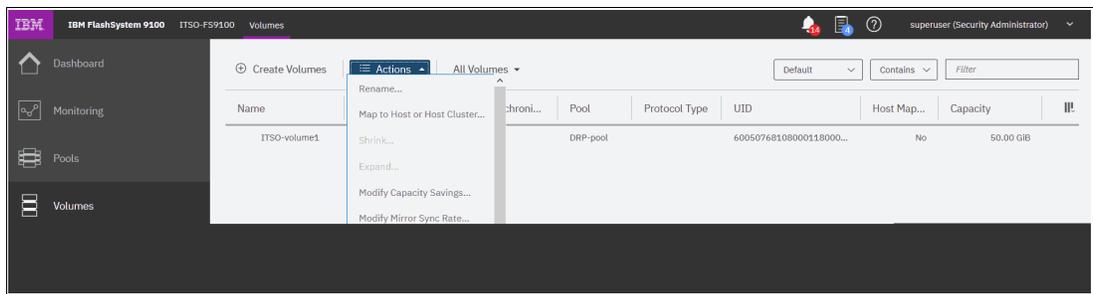


Figure 17 Map to Host or Host Cluster

3. This action opens a Create Mapping window. In the example shown in Figure 18, a single volume is mapped to a host, and the system assigns the SCSI LUN IDs.

Create Mapping

Create Mappings to:

Hosts

Host Clusters

Select hosts to map to ITS0-volume1

Default Contains Filter

Name	Status	Host Type	Host Mappings	Protocol
Win2012srv1	Online	Generic	No	SCSI

Showing 1 host | Selecting 1 host

Would you like the system to assign SCSI LUN IDs or manually assign these IDs?

System Assign

Self Assign

Cancel Back Next

Figure 18 Mapping a volume to a host

- A summary window shows the volume to be mapped along with existing volumes already mapped to the host or host cluster, as shown in Figure 19. Click **Map Volumes**.

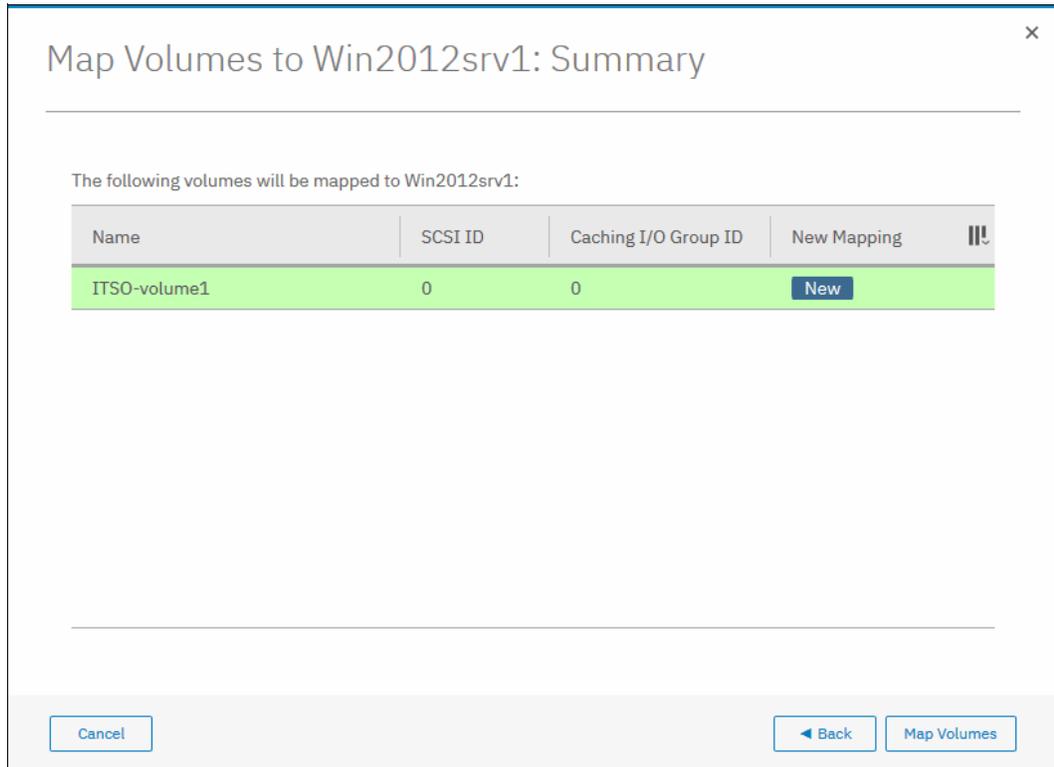


Figure 19 Map volume to host cluster summary

- The confirmation window shows the result of the volume mapping task, as shown in Figure 20.

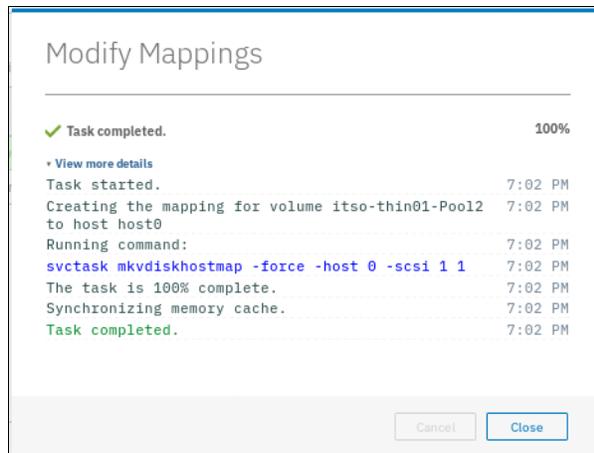


Figure 20 Confirmation of volume to host mapping

6. After the task completes, the wizard returns to the Volumes window. You can list volumes mapped to the given host by navigating to **Hosts** → **Mappings**, as shown in Figure 21.



Figure 21 Accessing the Hosts Mapping menu

The host is now able to access the mapped volume.

## Authors

This paper was produced by a team of specialists from around the world working at IBM Redbooks, International Technical Support Organization (ITSO) San Jose Center.

**Frank Enders** is a subject-matter expert (SME) for IBM Spectrum Virtualize. He has worked for the last 13 years for EMEA IBM Storwize® Level 2 support in Germany, and his duties include pre-sales and post-sales support. Frank has been with IBM for 25 years, and has written many Redbooks publications about Storwize family products. He is an IBM ITSO Redbooks Platinum level author.

**Sergey Kubin** is a subject matter expert (SME) for IBM Storage and SAN technical support. He holds an Electronics Engineer degree from Ural Federal University in Russia, and has more than 15 years of experience in IT. In IBM, he works for IBM Technology Support Services, providing support and guidance on the IBM Spectrum Virtualize family systems for customers in Europe, the Middle East, and Russia. His expertise also includes SAN, IBM block-level DS family storage, and file-level storage systems. He is an IBM Certified Specialist for Storwize Family Technical Solutions.

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Matt Smith  
**IBM Systems, UK**

This project was managed by:

Jon Tate  
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