

# 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.

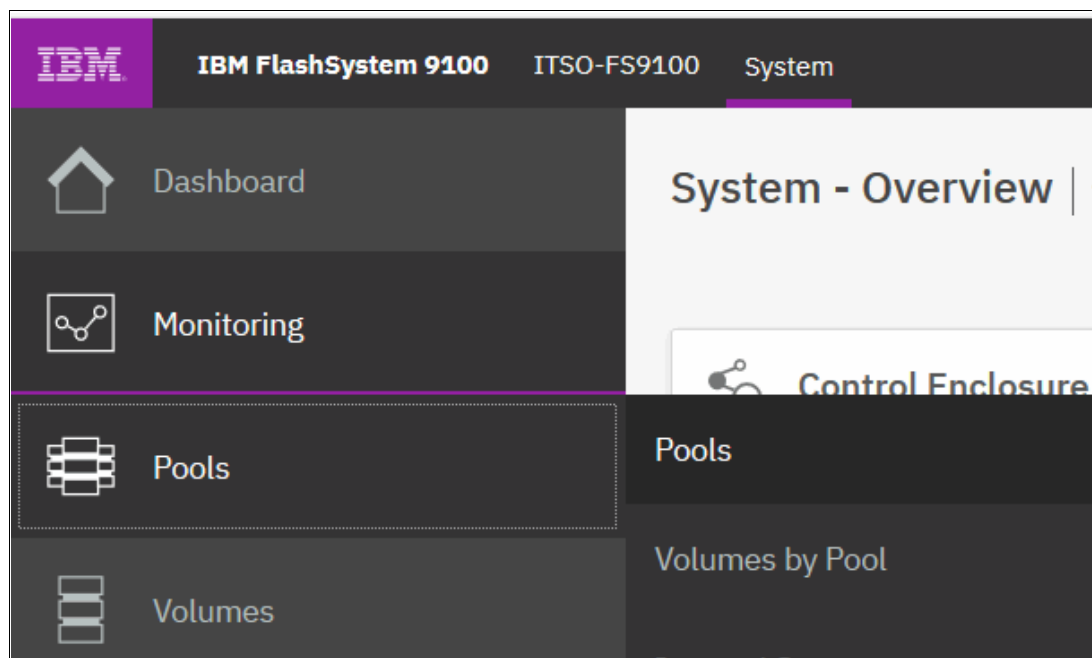
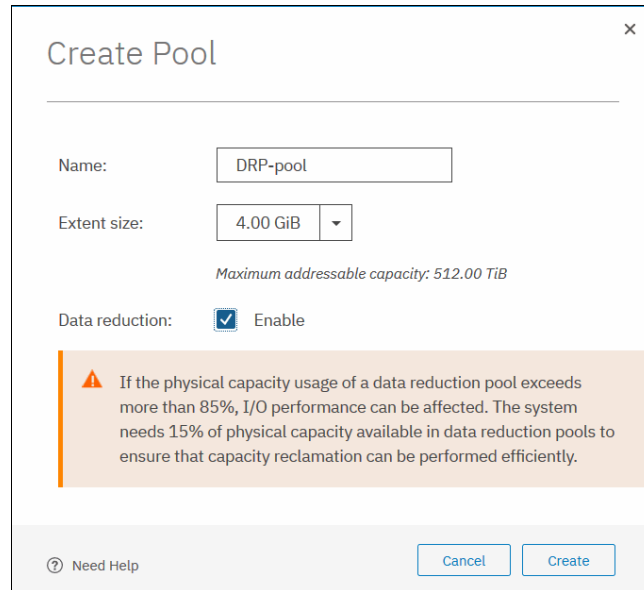


Figure 1 Create storage pool

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.



**Create Pool**

Name:

Extent size:

Maximum addressable capacity: 512.00 TiB

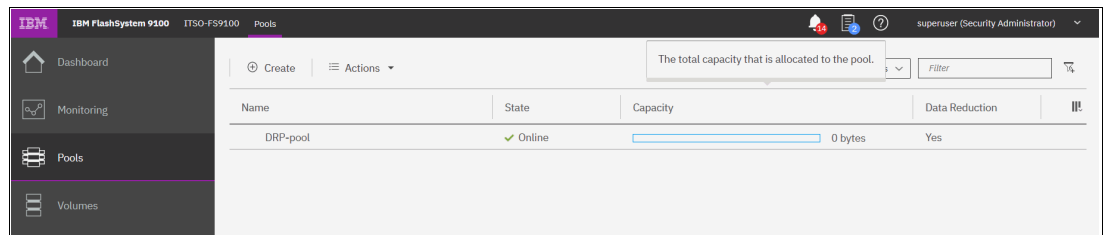
Data reduction: ☒ Enable

**Warning:** If the physical capacity usage of a data reduction pool exceeds more than 85%, I/O performance can be affected. The system needs 15% of physical capacity available in data reduction pools to ensure that capacity reclamation can be performed efficiently.

[Need Help](#) [Cancel](#) [Create](#)

Figure 2 Create Pool wizard

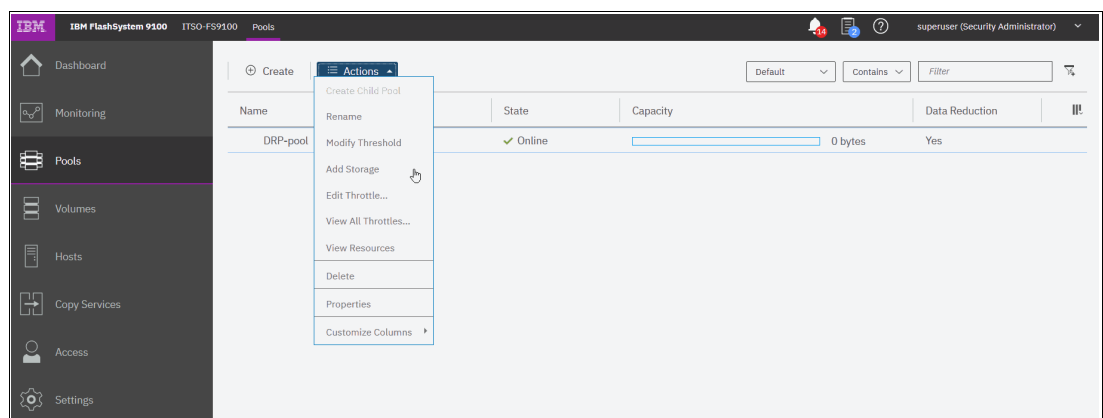
- Click **Create** to create the new data reduction pool. Figure 3 shows the storage Pools view with the newly created data reduction pool.



Name	State	Capacity	Data Reduction
DRP-pool	Online	0 bytes	Yes

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.



Name	State	Capacity	Data Reduction
DRP-pool	Online	0 bytes	Yes

- Create Child Pool
- Rename
- Modify Threshold
- Add Storage
- Edit Throttle...
- View All Throttles...
- View Resources
- Delete
- Properties
- Customize Columns

Figure 4 Initiate assign storage

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

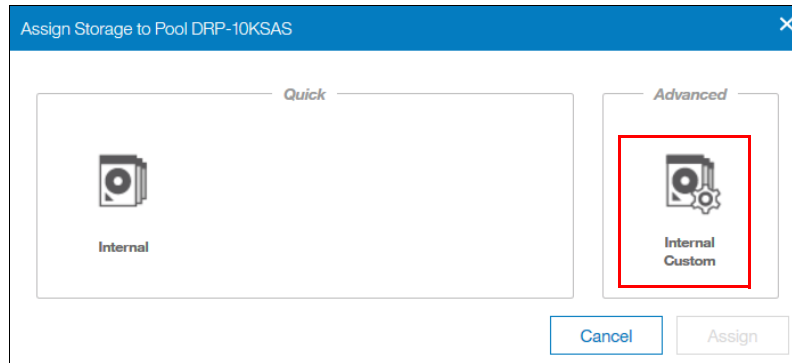


Figure 5 Assign storage

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

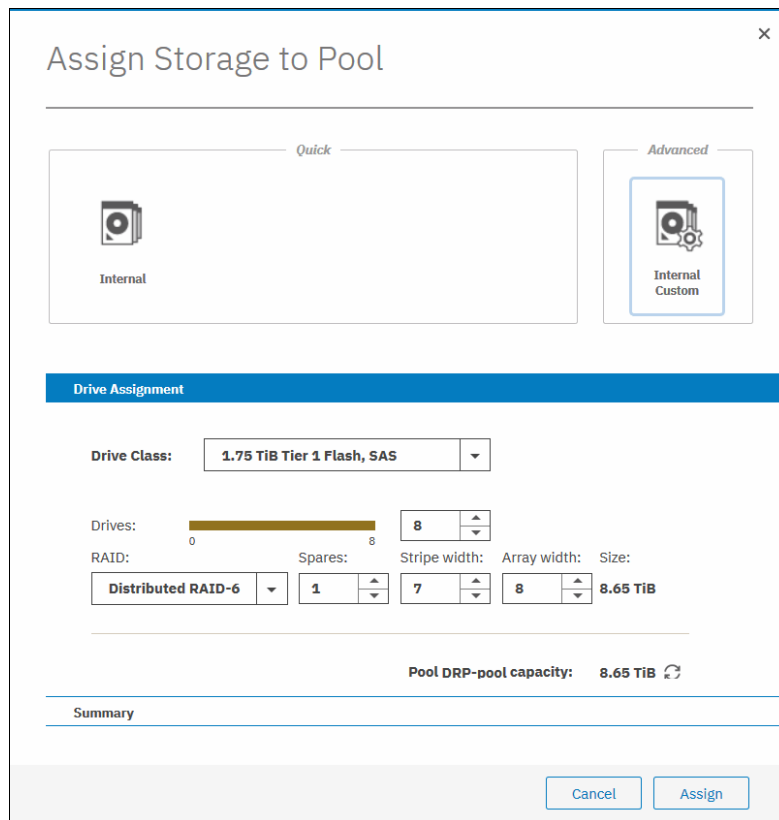


Figure 6 Drive assignment

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

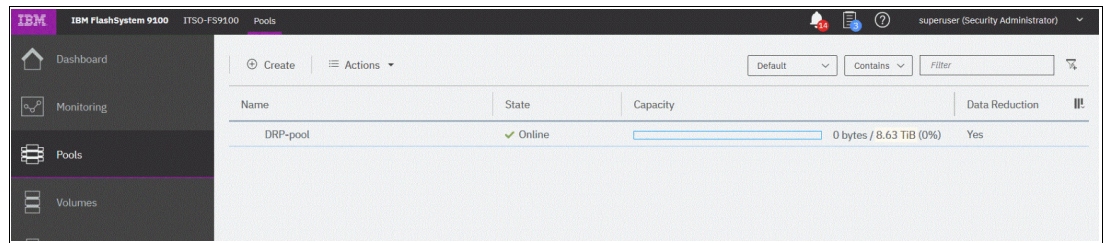


Figure 7 Capacity added

## Creating volumes in Data Reduction Pools

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

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

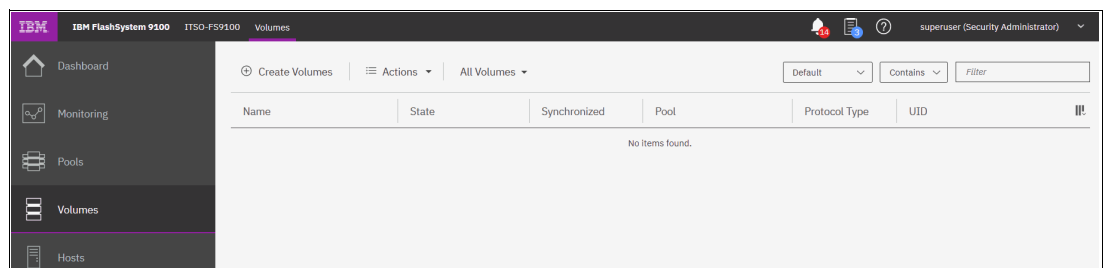


Figure 8 Volumes view

- Figure 9 on page 7 shows the Create Volume wizard. Select your Quantity, Capacity, and Name.
- 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](#)

Create Volumes

Basic

Mirrored

Custom

Create a preset volume with all the basic features.

Pool:

DRP-pool

Total 8.63 TiB

Volume Details

Quantity:

1

Capacity:

50

GiB

Name:

ITSO-volume1

Capacity savings:

None

☐ Deduplicated

⊕ Define another volume

I/O group:

Automatic

Summary

1 volume

Volume name: ITSO-volume1

Capacity Savings: None

Need Help

Cancel

Create and Map

Create

Figure 9 Create volume

Figure 10 shows the Volumes window.

IBM FlashSystem 9100ITSO-FS9100Volumes

Dashboard

Monitoring

Pools

Volumes

Create Volumes

Actions

All Volumes

Default

Contains

Filter

Name	State	Synchroni...	Pool	Protocol Type	UID	Host Map...	Capacity	
ITSO-volume1	Online (formatting)		DRP-pool		60050768108000118000...	No	50.00 GiB	

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).

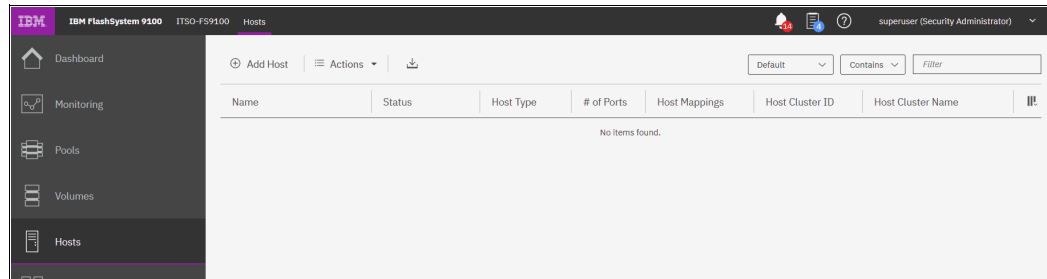


Figure 11 host window

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

The 'Add Host' window is shown with a close button (X) in the top right. It is divided into 'Required Fields' and 'Optional Fields'.  
**Required Fields:**

- Name:** A text input field with a red border and a red 'x' icon, indicating it is required.
- Host connections:** A dropdown menu currently showing 'iSCSI (SCSI)'.
- Host IQN:** A text input field with a dropdown menu showing 'iSCSI (SCSI)'. To the right of this field are '+' and '-' icons.

  
**Optional Fields:**

- CHAP authentication:** An unchecked checkbox.
- CHAP secret:** A text input field with the placeholder text 'Enter 1 to 79 characters'.
- CHAP username:** A text input field with the placeholder text 'Enter 1 to 31 characters'.
- Host type:** A dropdown menu showing 'Generic'.
- I/O groups:** A dropdown menu showing 'All'.
- Host cluster:** A dropdown menu showing 'No Host Cluster Selected'.

  
At the bottom right are 'Cancel' and 'Add' buttons.

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 window titled "Add Host" with a close button (X) in the top right corner. The window is divided into two sections: "Required Fields" and "Optional Fields".

**Required Fields:**

- Name:** A text box containing "Win2012srv1".
- Host connections:** A dropdown menu showing "Fibre Channel (SCSI)".
- Host port (WWPN):** A dropdown menu that is open, showing a list of WWPNs. The list includes:
  - 10000090FAB386A2
  - 10000090FAB386A3
  - 10000090FAB386E6
  - 10000090FAB386E7
  - 2100001B32157539

**Optional Fields:**

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

At the bottom right of the window, there are two buttons: "Cancel" and "Add".

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.

6. 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:

HP/UX

OpenVMS

TPGS

VVOL

Add

Figure 14 Host type selection

7. Click **Add** to create the host object.
8. 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.

Add Host

Actions

Default

Contains

Filter

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.

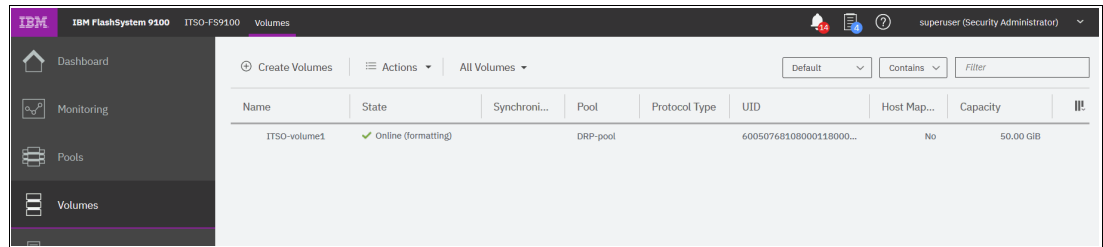


Figure 16 Volume list

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

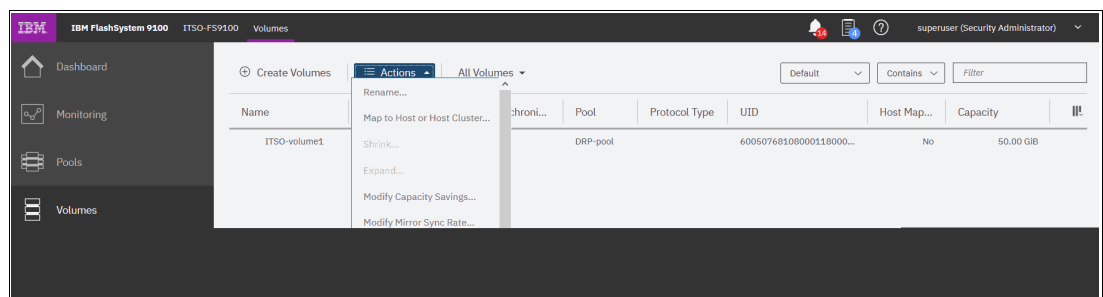


Figure 17 Map to Host or Host Cluster

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

4. 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**.

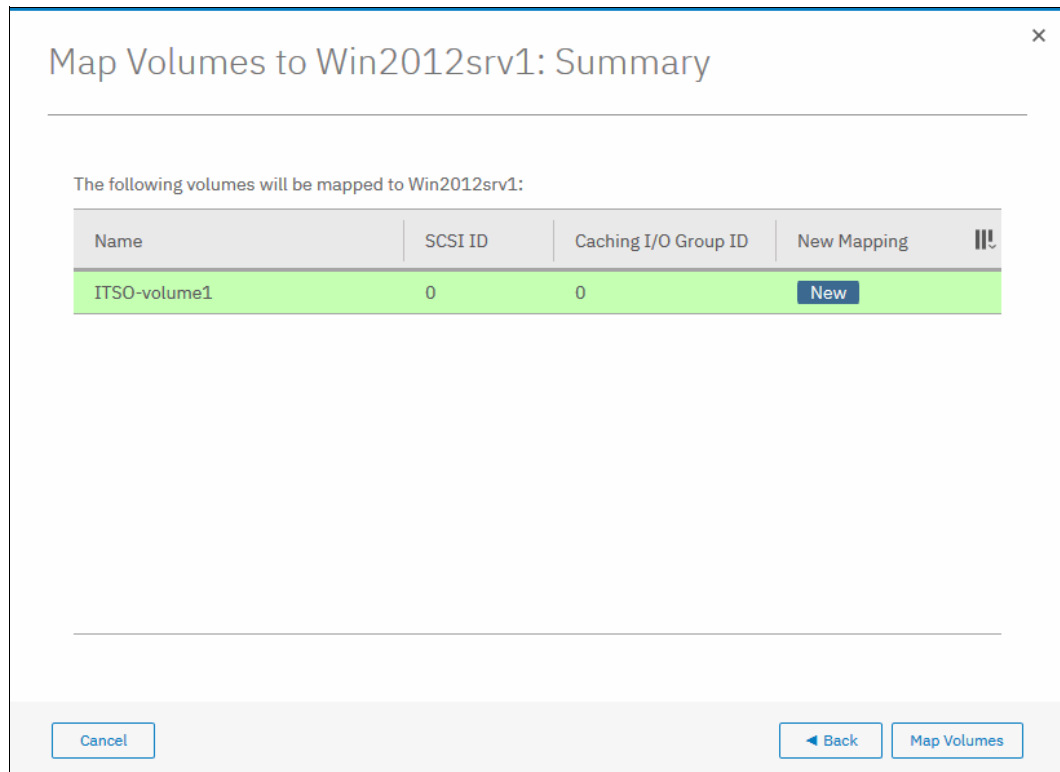


Figure 19 Map volume to host cluster summary

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

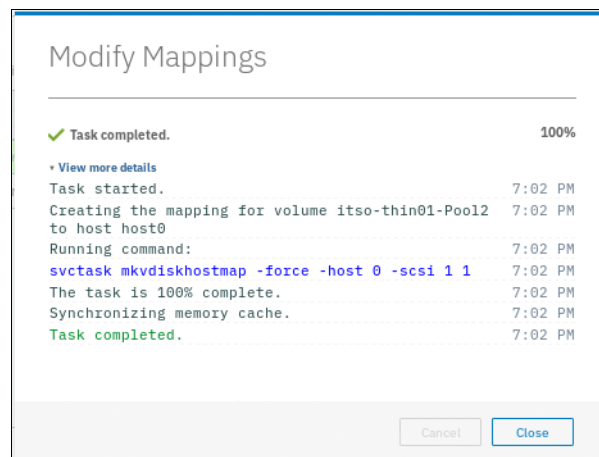


Figure 20 Confirmation of volume to host mapping

- 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.

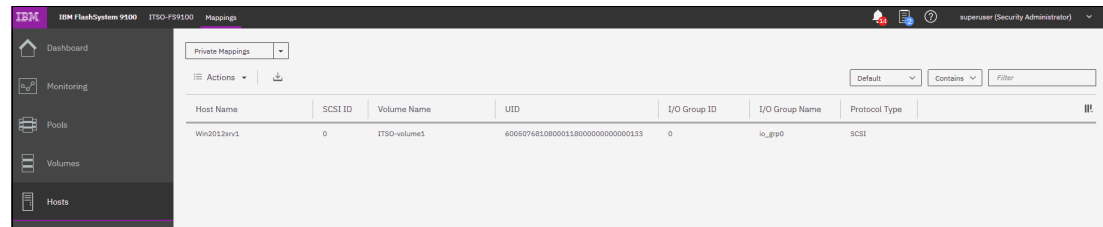


Figure 21 Accessing the Hosts Mapping menu

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**

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Jon Tate  
**IBM Systems, UK**

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