

Application Note

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Assigning SnapSAN S3000/S5000 Logical Disks to a RHEL Server



Summary

This application note describes how to bind pools and logical disks, and assign them to a RHEL Server using SnapSAN Manager Server software.

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Required Information, Tools, and Files

Before beginning this procedure, the following information, tools, and files are required.

Prerequisites

- 1. Overland Storage SnapSAN S3000/S5000 Disk Array must be installed and configured. You can get additional technical support on the Internet at http://support.overlandstorage.com, or by contacting Overland Storage using the information found on the Contact Us page on our web site.
- **2.** Verify:
 - Java Runtime Environment (JRE) is installed prior to running the SnapSAN Manager Server application.
 - **SnapSAN Manager Server** Web Management Interface is installed on the management server.

Versions

The test environment used for illustration in this document uses the following versions:

- RHEL 5.4
- Java JRE 7 update 13
- SnapSAN Manager Server 7.4.151
- SnapSAN S3000/S5000 at firmware U14B.007

Binding Pools

- 1. Open your browser and login to the Web Manager Interface.
- **2.** Select product number **\$5000**.
- **3.** Navigate to Configuration > Pool > Pool Bind.
- 4. Click Show Pool List.

Pool Bind > Confirmation >	Completion
RAID type RAID1/10	× 2
4: Specify the number of physica	I disks that configure the pool and their capacity.
Auto disk selection	The number of physical disks (2-3) 2 Physical disk capacity 266CE/10000rpm
C Manual disk selection	Select physical disks
Calculate pool capacity	ha a a a a a a a a a a a a a a a a a a
Total capacity of the pool :	0 CB
5: Select the check box to bind a	virtual capacity pool.
🗖 Bind a virtual capacity p	0001.
	< Back Next > Cancel Help

- 5. Select these two options:
 - Physical Disk Type
 - RAID Type
- **6.** Select **one** of the following:
 - Auto disk selection
 - Manual disk selection
- 7. Click Next.
- Verify the basic settings.
 To modify the default settings, proceed to Advanced Settings.
- 9. Click Set.
- **10.** Click **Yes** to complete the binding.

Advanced Settings

If the default settings need modification:

1. Click Advanced Settings.

Pool Bind Configure the advanced settings Pool name Pool_Test				
Rebuild priority Medium	Expected time whe	n Medium is selec	ted: 7 hour	
Explanation - Rebuild priority Specify pool rebuilding I	/0 priority.			
		OK	Cancel	. <u>H</u> elp

- **2.** Enter both items:
 - Pool name
 - Rebuild Priority
- 3. Click OK.
- 4. Click Yes.
- 5. Click Finish.

Binding a Logical Disk

- **1.** Use **one** of the options:
 - From the Pool Bind Completion screen, click the Bind Logical Disk.
 - From the SnapSAN Manager Monitor screen, navigate to Configuration > Logical Disk > Logical Disk Bind.

WLogical Disk Bind
Logical Disk Bind > Confirmation > Completion
1. Select the pool where a logical disk will be bound.
🔽 Show all pools
- Pool list -
Number [Fool name RAID Physical disk type Free capacity(CB) Capacity(CB) Actual capacity(CB) Actual used capacity(CB)
0000h Pool_test RAID1/10 SAS 103.7 262.0
0002h Pool_CLI_2 RAID1/10 SAS 262.0 262.0
0003h Pool_Testing RAID1/10 SAS 111.7 262.0
Show logical disks of the selected pool
2: Specify the number of logical disks and their capacity.
Number of logical disks (1-103)
Logical disk capacity (1-103) 50 📆 🕞 💌
Logical disk cepacity : 50.0 GB
Capacity logical disks consume : 50.0 GB
Unused capacity of the pool : 103.7 GB
3: Set inniral disk name
Logical disk name Win2k0_LD1
Explanation
Set the name of the logical disk to be bound.
If two or more logical disks are bound, enter the prefix for them.
< Back Next,> Cancel Help

- **2.** Enter:
 - Number of Logical Disks
 - Logical Disk Capacity
 - Logical Disk Name
- 3. Click Next.
- **4.** Verify the basic **settings**.

Advanced Settings

To modify the default settings:

1. Click Advanced Settings.

By Logical Disk Bind	
Configure the advanced settings.	
Compute the downled Schulgs. logical disk type First logical disk number Binding priority Windows CPT (WG) Solaris (CX) - Logical disk type Set the type of logical First Logical disk number. If two or more logical disk number. If two or more logical disks will be assigned to a logical disk. The rest of logical disks will be assigned numbers following this number in sequence. Binding number it	
Specify the formatting priority of logical disk binding.	
	OK Cancel Help

- **2.** Enter:
 - Logical Disk type

- First Logical Disk number
- Binding Priority
- 3. Click OK.
- 4. Click Set.
- 5. Click Yes.
- 6. Click Finish.

Adding Host To The Storage Array

1. From the SnapSAN Manager Monitor screen, navigate to Configuration > Host > Host Operation > Host Information Collection to create the information manually.

Host Information Setting Method > Host Information Registration > Completion Select host information setting method. (© Collect host information automatically. (Windows, Linux or Hyper-V) () Update with host information file. (Platforms where iSRcc_hostinfo can run)	
Select host information setting method. (C Collect host information automatically. (Windows, Linux or Hyper-V) (C Update with host information file. (Platforms where iSNcc_hostinfo can run)	
⑦ [Collect host information automatically. (Windows, Linux or Hyper-V)] ⑦ Update with host information file. (Platforms where iSNcc_hostinfo can run)	
\bigcirc Update with host information file. (Platforms where iSHcc_hostinfo can run)	
\bigcirc Create host information manually. (All platforms)	
FExplanation	
"Storage Manager Agent Utility" or "ControlCommand" has to be installed in a host beforehand to collect automatically or update with host information file.	
Bither of the following conditions must be satisfied to collect the host information automatically.	
- The platform of all the new hosts is either Windows or Linux, and the system consists of new disk arrays and new hosts.	
 The Platform of existing and new hosts is either Windows or Linux, and new hosts are added to an existing system where there is only one disk array. 	
* For Linux hosts, you need to click Mext to enable host recognize volumes, then make the Linux hosts recognize the host recognize volumes, and run the command to collect host information.	
When update with host information file,	
please prepare the host information file made on the host on the client machine.	
< Back Next >	Cancel

- 2. Select one of the Host Information Collection options:
 - Collect Host Information Automatically and continue to Steps 3-6

NOTE: Windows Host Discovery agent must be installed.

- Update with Host Information File and continue to Steps 6-8.
- Use the Create Host Information Manually procedure below to install.
- 3. Click Next.
- 4. Click Next again.
- 5. Click Yes.
- 6. Add file.
- 7. Click Set.
- 8. Click Finish.

Create Host Information Manually

There are two interface options - FC and iSCSI. Follow the appropriate procedure below.

FC Option

Host Information Collection	
Host Information Setting Method > Host Information Registration > Completion	
1: Select the interface of the host.	
C IC C ISCSI C SAS	
2: Input host name.	
Host Mane : se-perf1-3440	
Platform : Vindows(NN)	
3: Specify paths to host.	
- Paths Assignable to Host -	(Used connections : § Number of Assigned Paths : 0)
Path Info Path Mode	
	Add WWPN Add Port Change Delete
	< Eack Sgt Cancel Help

- 1. Click FC.
- **2.** Enter:
 - Host Name
 - Platform
- **3.** Add the **WWPNs**:
 - a. Click Add WWPN.
 - b. Click Refresh History.
 - $\mathbf{c.}~$ Select desired WWPNs and click $\mathbf{OK}.$
 - **d.** After history refresh, if the WWPNs are not displayed, select **Type In**, enter the WWPN, and click **OK**.

NOTE: Repeat this step to manually add all the WWPNs.

Set	Host Information		
Speci	ly the WWPNs to be assigned.		<u> </u>
C	Select from the WEDNs which are recognized by disk array automatically		
	- issimable MUDUs -	(Number of WHENE : 5	Number of selected WMPHs : 0
	TRAN T. C.	(number of owns . o	number of selected withs . o 7
	1000-0000-C921-20PA		
	1000-0000-C971-30BR		
	20FD-0005-1E03-7524		
	2101-00E0-8B3F-4EDC		
	2100-00E0-8B1F-4EDC		
			Refresh History
C	Select from host information		
	Hött 📐		
	- Assignable WWDNs -	(Number of UNPMs : 0	Number of selected UNDNs : 0)
	WWPW Info		
•	Type In		
	2101 - 00X0 - 8B37 - 4EDC		
			<u>×</u>
			OF Cancel Help

4. Click Set.

Fist Nost Information	
Host Information Setting Method > Nost Information Degistration > Completion	
1: Select the interface of the host.	
C IC C Tacai C Sys	
2: Input host name.	
Host Name : rhe1543429	
Žiatfora : Linux(LX)	
3: Specify initiators to host.	
- Initiators Assignable to Host -	(Used connections : 1 Number of Assigned Initiators : 1)
Initiator Node Wame Initiator Alias	
iqn. 1994-05. com. redhat: 53313da39a0a	
	Add Ghange Delste
	Add gkinnge Delete

5. Click Finish.

iSCSI Option

- 1. Click iSCSI.
- 2. Enter Host Name.
- 3. Select Platform.
- 4. Click Add.

Set Host Information	
Host Information Setting Method > Host Information Pegistration > Completion	
1: Select the interface of the host.	
C Xc C Macai C 242	
2. Input host name.	
Host Name : rhe1543429	
2latform : Linux(LX)	
3: Specify initiators to host.	
- Initiators Assignable to Host -	(Used connections : 1 Number of Assigned Initiators : 1)
Initiator Node Name Initiator Alias	
iqn. 1994-05. com. redhat: \$3313da39a8a	
	Add Ehange Delste
	< gack Sgt Cancel Help

5. Click Refresh History.

6. Click **OK** to see the IQN.

Changing LD Set					
Specify the initiators to be assigned.					
@ Select					
- Assignable Initiators -	(Number of	Initiators : 1	Number of sele	cted Initiator	:::1)
Initiator Node Name A	itiator Alias				
1qn.1991-05.com.microsoft:se-perf1-3440.apps.lanfree.com					
		1			
				Re <u>f</u> resh	History
					1
C lype In					
			OR	Cancel	Help

7.~ If the IQN was not discovered, click Type In and provide the IQN in the text field.

Set Host Information		
Specify the initiators to be assigned.		
C Select		
- Assignable Initiators -	(Number of Initiators : 0	Number of selected Initiators : 0)
Initiator Node Name Initiator Alias		
© Type In 1qn.1994-05.com.redhat:53313da39a8a		Rogreen Ristory
		Cancel Help

- To find the **IQN** to enter in the field:
- a. Connect to the Linux host.
- **b.** Run the following **command**:
 - cat /etc/iscsi/initiatorname.iscsi

[root@rhel543429 ~]#
<pre>[root@rhel543429 ~]# cat /etc/iscsi/initiatorname.iscsi</pre>
InitiatorName=iqn.1994-05.com.redhat:53313da39a8a
[root@rhel543429 ~]#
[root@rhel543429 ~]#

- c. Copy and paste name into the Type In field.
- d. Click OK.

The Host Information Registration screen appears.

Set Nost Information	
Host Information Setting Method > Nost Information Degistration > Completion	
1: Select the interface of the host.	
C. Ye C. Facar C. Sya	
2. Input host name.	
Host Name : rhe1543429	
Zlatform : Linux (LX)	
3. Specify initiators to host.	
- Initiators Assignable to Host -	(Used connections : 1 Number of Assigned Initiators : 1)
Initiator Node Name Initiator Alias	
iqn.1994-05.com.redhat:53313da39a0a	
	Add . Ghange Delete
	a part of the of the second of
	- Dack SEC Cancer Devp

- 8. Click Set.
- 9. Click Yes.
- 10. Click Finish.

Assigning Logical Disks To The Host

- **1.** Use **one** of these options:
 - From the 'Host Information Setting Method Completion' screen, click the Assign Logical Disks To The Host link.
 - From the SnapSAN Manager Monitor screen, navigate to the Configuration > Host > Assignment of Logical Disk page.

A STANDARD OF PORTAL DATA	
Select host/logical disk > Confirm > Finish	
1: Select hosts to which logical disks will be assigned.	
- Host List -	(Number of hosts : 1 Number of selected hosts : 1)
Platform Name Interface Unselectable Reason	
Linux(LX) rhe1543429 iSCSI	
	Register information of a host
Select logical disks to be assigned to the hosts.	
🗌 Show all assignable logical <u>d</u> isks	
Select ALL	
- LD List -	(Number of LDs : 1 Number of selected LDs : 1)
- LD List - Number OS Type [Logical Disk Mame Capacity[GB] [Purpose	{ Number of LDs : 1 Number of selected LDs : 1 } Configuration Lock Assignment Unselectable Reason
- LD List - Number OF Type Logical Disk Name Capacity(CD) Purpose 0000h LD_RHELL SO.0	{ Number of LDs : 1 Number of selected LDs : 1 } Configuration lock Assignment Unselectable Reason
- LD List - Number OE Type [Logical Disk Name Capacity[CD] Purpose 0000h LD_RHEL1 50.0	{ Number of LDs : 1 Number of selected LDs : 1 } Configuration lock Assignment Unselectable Feason
- LD List - Number DE Type [Logical Disk Name Capacity[CD] Purpose 0000h LD_RHEL1 50.0	(Number of LDs : 1 Number of selected LDs : 1) Configuration Lock Assignment Unselectable Feason
- LD List - Number OS Type [Legical Disk Name Capacity[GB] [Purpose 00000h LD_PHEL1 50.0	<pre>{ Number of LDs : 1 Number of selected LDs : 1 } Configuration Lock Assignment Unselectable Reason</pre>
- LD List - Number OS Type [Legical Disk Name Capacity[GB] [Purpose 00000h LO_RHELL 50.0	(Number of LDs : 1 Number of selected LDs : 1) Configuration Lock Assignment Unselectable Season
- LD List - Number OS Type Legical Disk Name Capacity[GB] Purpose 0000h LO_RHELL SO.0	(Number of LDs : 1 Number of selected LDs : 1) Configuration Lock Assignment Unselectable Beason
- LD List - Number OS Type Legical Disk Name Capacity[GB] Purpose 0000h LO_RHELL S0.0	(Number of LDs : 1 Number of selected LDs : 1) Configuration Lock Assignment Unselectable Beason
- LD List - Number OS Type Legical Disk Name Capacity[GB] Purpose 0000h LO_RHELL S0.0	(Number of LDs : 1 Number of selected LDs : 1) Configuration Lock Assignment Unselectable Beason
- LD List - Number OF Type Legical Disk Name Capacity[GB] Purpose 0000h LD_PHEL1 50.0 New Setting LD New Setting as 10M - LDN	(Number of LDs : 1 Number of selected LDs : 1) Configuration Lock Assignment Unselectable Teason

- **2.** Select both the **Host** and the **Logical Disk**.
- 3. Click Next.
- 4. Click Set.
- **5.** At the confirmation page, click **Yes**.
- 6. Click Finish.
- 7. Click Yes.
- 8. Click the Make the Assignment of Logical Disks to the Host Enable ${\rm link.}$
- 9. Click Start.

<u>.</u>	[05384] Access Control of Disk Array Subsystem is set to ON.
	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
	x0000000000000000000000000000000000000
	READ THE FOLLOWING BEFORE CONTINUING
	Terminate the accesses to the diskarray by such as a suspending the application servers. Changing access control with accessing the diskarray has the following risks.
	*The connection between logical disks and application servers may be lost, and the business may be stopped immediately.
	*Cache on the application servers that is not flushed to logical disks may cause data inconsistency.
	*Data in existing logical disks may be destroyed.
	100000000000000000000000000000000000000
	Ar No

10. Click Yes.

Additional Steps for iSCSI Connection

- 1. Locate the **iscsi.conf** file located in /etc/.
- 2. Edit the iscsi.conf file and modify the Discovery Address setting.
- **3.** Insert the **IPAddress** of the SnapSAN iSCSI Port into the **DiscoveryAddress=** field. Example: DiscoveryAddress=<ip_address>
- 4. Enter the following command to discover the **new SnapSAN disks**:

```
iscsiadm -m discovery -t sendtargets -p <ip_address>
```

Verifying Logical Disks in RHEL

- 1. Enter the following **command** to list the new devices in RHEL:
 - cat /proc/scsi/scsi

```
[root@se-rhel33231 ~]#
[root@se-rhel33231 ~]# cat /proc/scsi/scsi
Attached devices:
Host: scsi0 Channel: 00 Id: 00 Lun: 00
 Vendor: COMPAQ
                 Model: CD-ROM SN-124
                                           Rev: N104
 Type:
         CD-ROM
                                           ANSI SCSI revision: 05
Host: scsi4 Channel: 00 Id: 00 Lun: 00
  Vendor: OVERLAND Model: SNAPSAN
                                           Rev: 1000
  Type:
         Direct-Access
                                           ANSI SCSI revision: 05
Host: scsi7 Channel: 00 Id: 00 Lun: 00
  Vendor: OVERLAND Model: SNAPSAN
                                          Rev: 1000
         Direct-Access
                                           ANSI SCSI revision: 05
  Type:
Host: scsi5 Channel: 00 Id: 00 Lun: 00
  Vendor: OVERLAND Model: SNAPSAN
                                          Rev: 1000
  Type:
         Direct-Access
                                           ANSI SCSI revision: 05
Host: scsi6 Channel: 00 Id: 00 Lun: 00
  Vendor: OVERLAND Model: SNAPSAN
                                           Rev: 1000
  Type:
        Direct-Access
                                          ANSI SCSI revision: 05
[root@se-rhe133231 ~]#
```

2. Issue the lsscsi command to list the iSCSI SnapSAN targets.

[root@se-rh	el33231 ~]# lsscsi			
[0:0:0:0]	cd/dvd	COMPAQ	CI-ROM SN-124	N104	/dev/sr0
[4:0:0:0]	disk	OVERLAND	SKAPSAN	1000	/dev/sda
[5:0:0:0]	disk	OVERLAND	SKAPSAN	1000	/dev/sdb
[6:0:0:0]	disk	OVERLAND	SNAPSAN	1000	/dev/sdd
[7:0:0:0]	disk	OVERLAND	SNAPSAN	1000	/dev/sdc

3. Partition and format the **disk**.