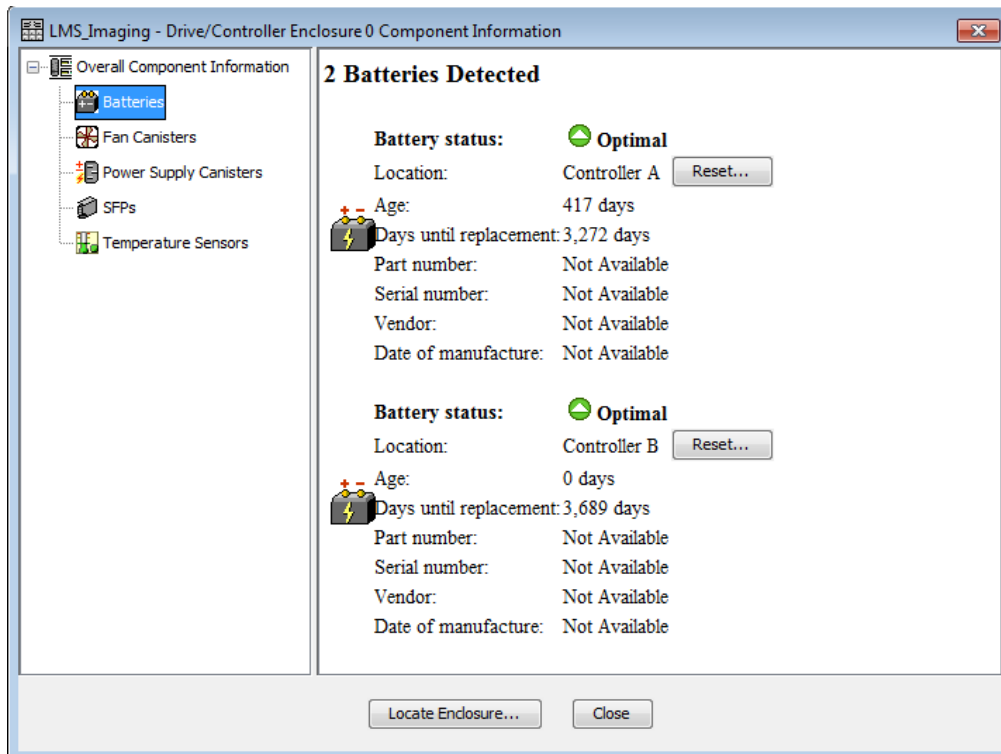


IBM DS4K SAN Storage and Storage Manger

IBM DS Manager V10 Client software needed to be installed and configured to manage IBM DS4300

Controllers:

Products	User ID	PASSWORD	IP Address
SAN Controller A	N/A	passwd	192.168.103.214
SAN Controller B			192.168.103.215



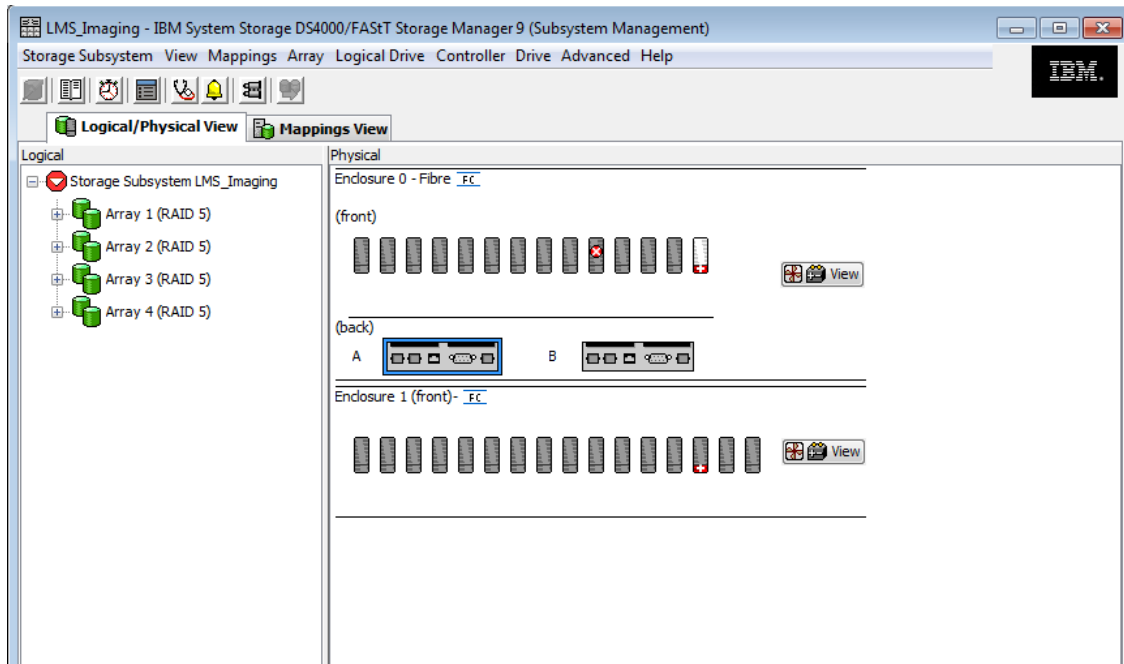
EXP810 in rack Q30; Product ID: 1722-600;

Part number: PN 25R0222

Serial number: SN 13H2145

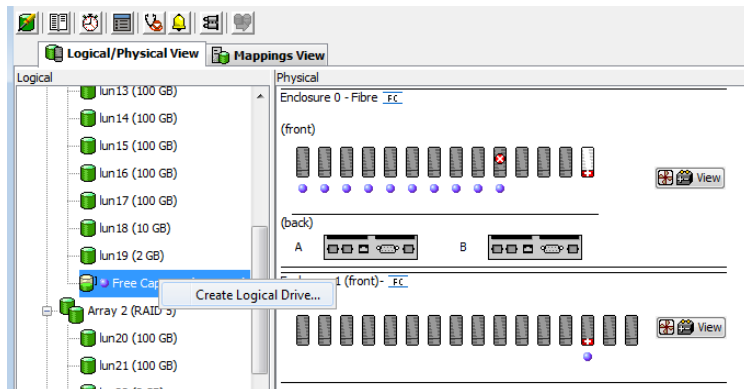
Vendor: VN IBM

Date of manufacture: November 1, 2005




(In this picture, one hard disk failed, and one hot spare disk in-use)

Array: A set of hard disks that the controller logically groups together with Redundrncy level(0,1,10,3,5) to provide logic drives, in our environment, we create RAID-5 Array(1,2,3,4), later, I added additional hard disks to existed arrays,



Create Logic Drive(s) on Free Array Capacity, choose different Preferred Controller(owner of this logic drive) for each Logic Drive for load balance consideration.

A storage partition () is a logical entity consisting of one or more storage subsystem logical drives that can be shared among hosts, which might be part of a **hosts group** or accessed by a **single host**. A storage partition is created when you define a collection of hosts (a hosts group) or a single host and then define a logic-drive-to-lun-mapping. This mapping allows you to define what host group or host will have access to a particular logical drive in your storage subsystem.

TOPOLOGY DEFINITIONS

Host Group	Host	HBA Host Ports	Network address
Adminserv_Imaging	machineA	fcs0	10000000C944AD84
		fcs1	10000000C944B3B5

machineB	fcs0	10000000C944B5EE
	fcs1	10000000C944B467

TIPS: Storage systems know only WWNs of HBAs on OS, know nothing(or don't care about) any WWNs of Switch ports and/or other storage controllers/Tape Library controllers/Tape Drivers

1. Create each logical drive according to the procedures in Creating a Logical Drive. When entering logical drive-to-LUN mapping settings, use the recommended settings or select Map later with Storage Partitioning.
2. Define the Host Group (Adminserv_Imaging) according to the procedures in Defining a Host Group. You must create host groups because multiple hosts must have access to the same logical drives.
3. Define the hosts (machina A and B) under the host groups according to the procedures in Defining a Host.
4. Define the (Machina A fsc0, fsc1 and Machine B fsc0, fsc1) according to the procedures in Defining an HBA Host Port. The host bus adapter (HBA) host ports are the topological entity that enables the hosts to access the logical drives.
5. Assign access for each host group or host according to the procedures in Using the Storage Partitioning Wizard. For example, select Host, and define an exclusive logical drive-to-LUN mapping for Logical Drive. Then, select Host Group, and define logical drive-to-LUN mappings for Logical Drives.

Mapping Views:

Topology

Storage Subsystem LMS_Imaging

Undefined Mappings

Default Group

Host Group Adminserv_Imaging

Host machineA

HBA Host Ports

HBA Host Port machineA-fcs1

HBA Host Port machineA-fcs0

Host machineB

HBA Host Ports

HBA Host Port machineB-fcs1

HBA Host Port machineB-fcs0

Logical Drive Name	Accessible By	LUN	Logical Drive Capacity	Type
lun02	Host Group Adminserv_Imaging	0	0.098 GB	
lun03	Host Group Adminserv_Imaging	1	200 GB	
lun04	Host Group Adminserv_Imaging	2	5 GB	
lun05	Host Group Adminserv_Imaging	3	50 GB	
lun06	Host Group Adminserv_Imaging	4	2 GB	
lun07	Host Group Adminserv_Imaging	5	2 GB	
lun08	Host Group Adminserv_Imaging	6	50 GB	
lun09	Host Group Adminserv_Imaging	7	100 GB	
lun10	Host Group Adminserv_Imaging	8	100 GB	
lun11	Host Group Adminserv_Imaging	9	100 GB	
lun12	Host Group Adminserv_Imaging	10	100 GB	
lun13	Host Group Adminserv_Imaging	11	100 GB	
lun14	Host Group Adminserv_Imaging	12	100 GB	
lun15	Host Group Adminserv_Imaging	13	100 GB	
lun16	Host Group Adminserv_Imaging	14	100 GB	
lun17	Host Group Adminserv_Imaging	15	100 GB	
lun18	Host Group Adminserv_Imaging	16	10 GB	
lun19	Host Group Adminserv_Imaging	17	2 GB	
lun20	Host Group Adminserv_Imaging	18	100 GB	
lun21	Host Group Adminserv_Imaging	19	100 GB	
lun22	Host Group Adminserv_Imaging	20	2 GB	
lun23	Host Group Adminserv_Imaging	21	70.464 GB	
lun24	Host Group Adminserv_Imaging	22	100 GB	
lun25	Host Group Adminserv_Imaging	23	100 GB	
lun26	Host Group Adminserv_Imaging	24	100 GB	
lun27	Host Group Adminserv_Imaging	25	100 GB	
lun28	Host Group Adminserv_Imaging	26	100 GB	
lun29	Host Group Adminserv_Imaging	27	100 GB	
lun30	Host Group Adminserv_Imaging	28	81.16 GB	
lun31	Host Group Adminserv_Imaging	29	100 GB	
lun32	Host Group Adminserv_Imaging	30	100 GB	
lun33	Host Group Adminserv_Imaging	31	100 GB	
lun34	Host Group Adminserv_Imaging	32	100 GB	
lun35	Host Group Adminserv_Imaging	33	100 GB	
lun36	Host Group Adminserv_Imaging	34	100 GB	
lun37	Host Group Adminserv_Imaging	35	100 GB	
lun38	Host Group Adminserv_Imaging	36	100 GB	
lun39	Host Group Adminserv_Imaging	37	17.388 GB	

DEFAULT GROUP

Default type: AIX

HOST GROUP Adminserv_Imaging

```

Host: machineA
  Host Port: 10:00:00:00:c9:44:b3:b5
  Alias: machineA-fcs1
  Type: AIX

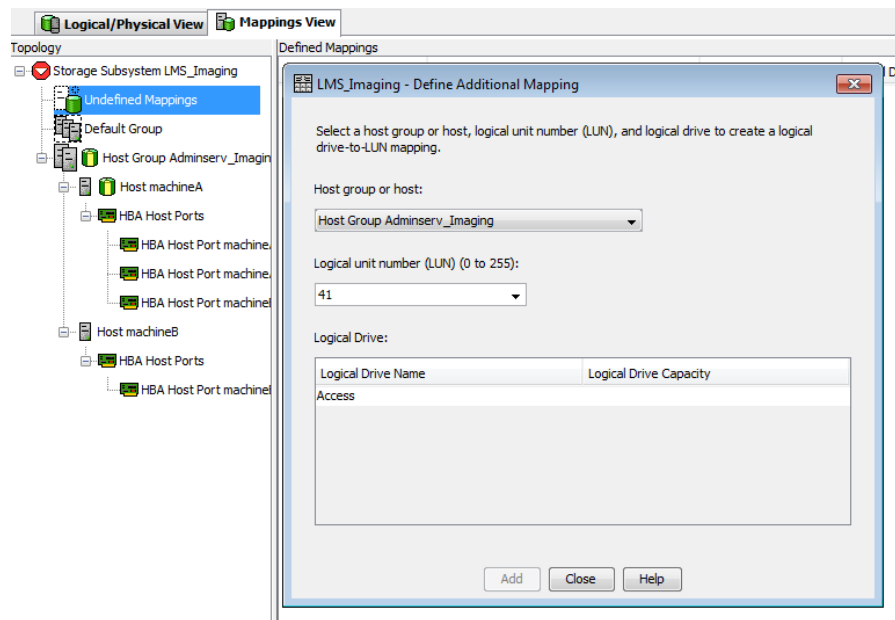
  Host Port: 10:00:00:00:c9:44:ad:84
  Alias: machineA-fcs0
  Type: AIX

Host: machineB
  Host Port: 10:00:00:00:c9:44:b4:67
  Alias: machineB-fcs1
  Type: AIX

  Host Port: 10:00:00:00:c9:44:b5:ee
  Alias: machineB-fcs0
  Type: AIX

```

LUN to Host Group MAPPINGS (Storage Partitioning - Enabled (1 of 8 used))



Define Logic Drive to Host Group or Hosts

1. From the Topology pane of the **Mapping View**, select the Default Group, Undefined Mappings node, an individual undefined mapping, a host group, or a host. Then, select Mappings >> Define >> Additional Mapping.
2. Select a host group Adminserv_Imaging (or host) to which the logical drive is to be mapped from the Host group or host drop-down list.
All defined hosts, host groups, and the Default Group are displayed as options.
Note: If a host or host group is selected that does not have a **Host bus adapter(HBA)** defined, a warning dialog is displayed.
3. Select a single LUN (0 through 254) from the drop-down list.
Note: Only available LUNs are displayed, **Some OS(Solaris,HP-UX) cannot access LUN number larger than 32**
4. Select the logical drive to be mapped to from the Logical Drive table. The table lists the names and capacity of the logical drives that are available for mapping, based on the host group or host selected.
Note: You can include a **Remote Mirror secondary logical drive** in a partition. However, any hosts that are mapped to this logical drive will have read-only access to it until it is promoted to a Remote Mirror primary logic drive or until the mirror relationship is removed.
5. Select Add to save the logical drive-to-LUN mapping, and leave the dialog open.
Note: The Add button remains unavailable until a host group, host, LUN, and logical drive are selected.
6. Repeat steps 2 through 5 to add multiple additional logical drives to the storage partition.
Note: Once a logical drive has been mapped once, it is no longer available in the Logical Drive table.
7. Select Close to exit the dialog.
The logical drive-to-LUN mappings are saved. The Topology and Defined Mappings panes in the Mappings View are updated to reflect the additional mappings.

VOLUME NAME	LUN	CONTROLLER	ACCESSIBLE BY	VOLUME STATUS
lun02	0	A	Host Group Adminserv_Imaging	Optimal
lun03	1	B	Host Group Adminserv_Imaging	Optimal
lun04	2	A	Host Group Adminserv_Imaging	Optimal
lun05	3	B	Host Group Adminserv_Imaging	Optimal
lun06	4	A	Host Group Adminserv_Imaging	Optimal
lun07	5	B	Host Group Adminserv_Imaging	Optimal
lun08	6	A	Host Group Adminserv_Imaging	Optimal
lun09	7	B	Host Group Adminserv_Imaging	Optimal
lun10	8	A	Host Group Adminserv_Imaging	Optimal
lun11	9	B	Host Group Adminserv_Imaging	Optimal
lun12	10	A	Host Group Adminserv_Imaging	Optimal
lun13	11	B	Host Group Adminserv_Imaging	Optimal
lun14	12	A	Host Group Adminserv_Imaging	Optimal
lun15	13	B	Host Group Adminserv_Imaging	Optimal
lun16	14	A	Host Group Adminserv_Imaging	Optimal
lun17	15	B	Host Group Adminserv_Imaging	Optimal
lun18	16	A	Host Group Adminserv_Imaging	Optimal
lun19	17	B	Host Group Adminserv_Imaging	Optimal
lun20	18	A	Host Group Adminserv_Imaging	Optimal
lun21	19	B	Host Group Adminserv_Imaging	Optimal
lun22	20	A	Host Group Adminserv_Imaging	Optimal
lun23	21	B	Host Group Adminserv_Imaging	Optimal
lun24	22	A	Host Group Adminserv_Imaging	Optimal
lun25	23	B	Host Group Adminserv_Imaging	Optimal
lun26	24	A	Host Group Adminserv_Imaging	Optimal
lun27	25	B	Host Group Adminserv_Imaging	Optimal
lun28	26	A	Host Group Adminserv_Imaging	Optimal
lun29	27	B	Host Group Adminserv_Imaging	Optimal
lun30	28	A	Host Group Adminserv_Imaging	Optimal
lun31	29	B	Host Group Adminserv_Imaging	Optimal
lun32	30	A	Host Group Adminserv_Imaging	Optimal
lun33	31	B	Host Group Adminserv_Imaging	Optimal
lun34	32	A	Host Group Adminserv_Imaging	Optimal
lun35	33	B	Host Group Adminserv_Imaging	Optimal
lun36	34	A	Host Group Adminserv_Imaging	Optimal
lun37	35	B	Host Group Adminserv_Imaging	Optimal
lun38	36	A	Host Group Adminserv_Imaging	Optimal
lun39	37	B	Host Group Adminserv_Imaging	Optimal

root@admsrv1:/ # mpio_get_config -Av

Warning: Unable to open message catalog.

Frame id 0:

Storage Subsystem worldwide name: 60ab80019887600004371bb43

Controller count: 2

Partition count: 1

Partition 0:

Storage Subsystem Name = 'LMS_Imaging'

hdisk#	LUN #	Ownership	User Label
hdisk2	0	A (preferred)	lun02
hdisk3	1	B (preferred)	lun03
hdisk4	2	A (preferred)	lun04
hdisk5	3	B (preferred)	lun05
hdisk6	4	A (preferred)	lun06
hdisk7	5	B (preferred)	lun07
hdisk8	6	A (preferred)	lun08
hdisk9	7	B (preferred)	lun09
hdisk10	8	A (preferred)	lun10
hdisk11	9	B (preferred)	lun11
hdisk12	10	A (preferred)	lun12
hdisk13	11	B (preferred)	lun13
hdisk14	12	A (preferred)	lun14
hdisk15	13	B (preferred)	lun15
hdisk16	14	A (preferred)	lun16
hdisk17	15	B (preferred)	lun17
hdisk18	16	A (preferred)	lun18
hdisk19	17	B (preferred)	lun19
hdisk20	18	A (preferred)	lun20
hdisk21	19	B (preferred)	lun21

hdisk22	20	A (preferred)	lun22
hdisk23	21	B (preferred)	lun23
hdisk24	22	A (preferred)	lun24
hdisk25	23	B (preferred)	lun25
hdisk26	24	A (preferred)	lun26
hdisk27	25	B (preferred)	lun27
hdisk28	26	A (preferred)	lun28
hdisk29	27	B (preferred)	lun29
hdisk30	28	A (preferred)	lun30
hdisk31	29	B (preferred)	lun31
hdisk32	30	A (preferred)	lun32
hdisk33	31	B (preferred)	lun33
hdisk34	32	A (preferred)	lun34
hdisk35	33	B (preferred)	lun35
hdisk36	34	A (preferred)	lun36
hdisk37	35	B (preferred)	lun37
hdisk38	36	A (preferred)	lun38
hdisk39	37	B (preferred)	lun39

root@admsrv2# mpio_get_config -Av

Warning: Unable to open message catalog.

Frame id 0:

Storage Subsystem worldwide name: 60ab80019887600004371bb43

Controller count: 2

Partition count: 1

Partition 0:

Storage Subsystem Name = 'LMS Imaging'

hdisk#	LUN #	Ownership	User Label
hdisk2	0	A (preferred)	lun02
hdisk3	1	B (preferred)	lun03
hdisk4	2	A (preferred)	lun04
hdisk5	3	B (preferred)	lun05
hdisk6	4	A (preferred)	lun06
hdisk7	5	B (preferred)	lun07
hdisk8	6	A (preferred)	lun08
hdisk9	7	B (preferred)	lun09
hdisk10	8	A (preferred)	lun10
hdisk11	9	B (preferred)	lun11
hdisk12	10	A (preferred)	lun12
hdisk13	11	B (preferred)	lun13
hdisk14	12	A (preferred)	lun14
hdisk15	13	B (preferred)	lun15
hdisk16	14	A (preferred)	lun16
hdisk17	15	B (preferred)	lun17
hdisk18	16	A (preferred)	lun18
hdisk19	17	B (preferred)	lun19
hdisk20	18	A (preferred)	lun20
hdisk21	19	B (preferred)	lun21
hdisk22	20	A (preferred)	lun22
hdisk23	21	B (preferred)	lun23
hdisk24	22	A (preferred)	lun24
hdisk25	23	B (preferred)	lun25
hdisk26	24	A (preferred)	lun26
hdisk27	25	B (preferred)	lun27
hdisk28	26	A (preferred)	lun28
hdisk29	27	B (preferred)	lun29
hdisk30	28	A (preferred)	lun30
hdisk31	29	B (preferred)	lun31
hdisk32	30	A (preferred)	lun32
hdisk33	31	B (preferred)	lun33
hdisk34	32	A (preferred)	lun34
hdisk35	33	B (preferred)	lun35
hdisk36	34	A (preferred)	lun36
hdisk37	35	B (preferred)	lun37
hdisk38	36	A (preferred)	lun38
hdisk39	37	B (preferred)	lun39

LMS_Imaging - IBM System Storage DS4000/FASTT Storage Manager 9 (Subsystem Management)

Storage Subsystem View Mappings Array Logical Drive Controller Drive Advanced Help

Logical/Physical View Mappings View

Topology

- Storage Subsystem LMS_Imaging
 - Undefined Mappings
 - Default Group
 - Host Group admserv_imaging
 - Host admsrv2
 - Move...

Defined Mappings

Logical Drive Name	Accessible By	LUN	Logical Drive Capacity	Type
lun02	Host Group admserv_imaging	0	0.098 GB	Standard
lun03	Host Group admserv_imaging	1	200 GB	Standard
lun04	Host Group admserv_imaging	2	5 GB	Standard
lun05	Host Group admserv_imaging	3	50 GB	Standard
lun06	Host Group admserv_imaging	4	2 GB	Standard
lun07	Host Group admserv_imaging	5	2 GB	Standard
lun08	Host Group admserv_imaging	6	50 GB	Standard
lun09	Host Group admserv_imaging	7	100 GB	Standard
lun10	Host Group admserv_imaging	8	100 GB	Standard
lun11	Host Group admserv_imaging	9	100 GB	Standard
lun12	Host Group admserv_imaging	10	100 GB	Standard
lun13	Host Group admserv_imaging	11	100 GB	Standard
lun14	Host Group admserv_imaging	12	100 GB	Standard
lun15	Host Group admserv_imaging	13	100 GB	Standard
lun16	Host Group admserv_imaging	14	100 GB	Standard
lun17	Host Group admserv_imaging	15	100 GB	Standard
lun18	Host Group admserv_imaging	16	10 GB	Standard
lun19	Host Group admserv_imaging	17	2 GB	Standard
lun20	Host Group admserv_imaging	18	100 GB	Standard

Logical/Physical View Mappings View

Topology

- Storage Subsystem LMS_Imaging
 - Undefined Mappings
 - Default Group
 - Host Group admserv_imaging
 - Host admsrv2
 - HBA Host Ports
 - HBA Host Port admsrv2-fcs1
 - HBA Host Port admsrv2-fcs0
 - Host admsrv1
 - HBA Host Ports
 - HBA Host Port admsrv1-fcs1
 - HBA Host Port admsrv1-fcs0

Defined Mappings

Logical Drive Name	Accessible By	LUN	Logical Drive Capacity	Type
lun02	Host Group admserv_imaging	0	0.098 GB	Standard
lun03	Host Group admserv_imaging	1	200 GB	Standard
lun04	Host Group admserv_imaging	2	5 GB	Standard
lun05	Host Group admserv_imaging	3	50 GB	Standard
lun06	Host Group admserv_imaging	4	2 GB	Standard
lun07	Host Group admserv_imaging	5	2 GB	Standard
lun08	Host Group admserv_imaging	6	50 GB	Standard
lun09	Host Group admserv_imaging	7	100 GB	Standard
lun10	Host Group admserv_imaging	8	100 GB	Standard
lun11	Host Group admserv_imaging	9	100 GB	Standard
lun12	Host Group admserv_imaging	10	100 GB	Standard
lun13	Host Group admserv_imaging	11	100 GB	Standard
lun14	Host Group admserv_imaging	12	100 GB	Standard
lun15	Host Group admserv_imaging	13	100 GB	Standard
lun16	Host Group admserv_imaging	14	100 GB	Standard
lun17	Host Group admserv_imaging	15	100 GB	Standard
lun18	Host Group admserv_imaging	16	10 GB	Standard
lun19	Host Group admserv_imaging	17	2 GB	Standard

LMS_Imaging - Move Host

Host: admsrv2

Move to following host group

admserv_imaging
None
admserv_imaging

OK Cancel Help