



Workshop

AIX

Host Anbindung ST6x40/ST25x0

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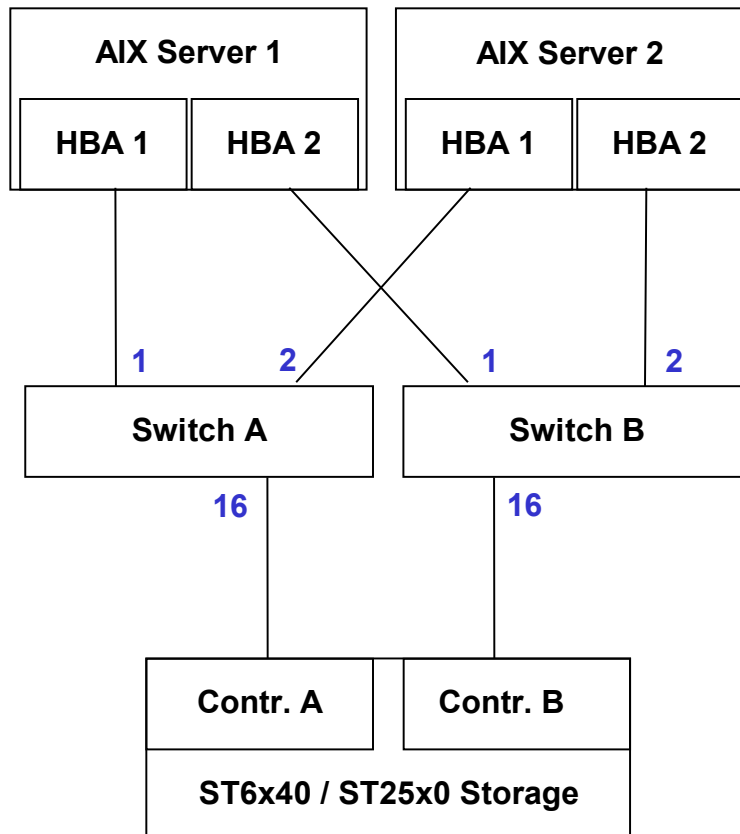
+49 173 6505175

Einführung

- **Die Konfigurationshinweise in dieser Präsentation gelten sowohl für ST6x40 als auch für ST25x0 Systeme**
 - > Die relevanten Eigenschaften sind bei beiden Systemen identisch implementiert
 - > Cache Mirroring, IO-Alignment, Stripe Sets, ...
- **Beschriebene Einstellungen basieren auf Vorgehensweisen und Werte, mit denen gute Erfahrungen gemacht wurde.**
 - > Andere Einstellungen möglich
 - > Abhängig von individueller Gesamtkonfiguration und Anforderungen

Zoning

- **WWPN- oder Port-Zoning**
 - > Switch nicht auf “Durchzug” stellen
 - > Dringend empfohlen: “Single-Initiator-Zoning”



Zonen

Switch A

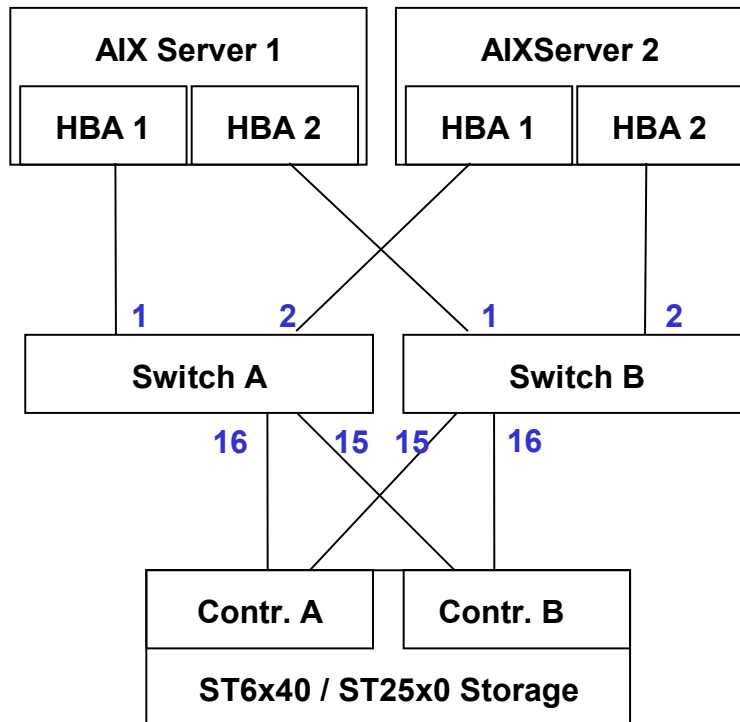
- > Zone 1: Port 1 & Port 16
- > Zone 4: Port 2 & Port 16

Switch B

- > Zone 1: Port 1 & Port 16
- > Zone 4: Port 2 & Port 16

Zoning

- **Optional: Zusätzliche “Kreuzverkabelung” zwischen Switch und Storage**
 - > Jedes Volume eines Servers über alle beide HBA's erreichbar
 - > Round-Robin Load-Balancing über HBA's zu einem Controller (mit MPIO-Treiber)
 - > Kein Volume Transfer auf anderen Controller bei Switch Ausfall (mit MPIO-Treiber)
 - > Kreuzverkabelung bei fcp.disk.array (RDAC) driver verboten



Zonen

Switch A

- > Zone 1: Port 1 & Port 16
- > Zone 2: Port 2 & Port 16
- > Zone 3: Port 1 & Port 15
- > Zone 4: Port 2 & Port 15

Switch B

- > Zone 1: Port 1 & Port 16
- > Zone 2: Port 2 & Port 16
- > Zone 3: Port 1 & Port 15
- > Zone 4: Port 2 & Port 15

Multipathing

devices.fcp.disk.array (aka RDAC)

- **Dual path Failover Treiber**
 - > Failover Treiber für LSI Systeme
 - > “Stateful” Treiber
 - > Failover für genau ZWEI Pfade zu VERSCHIEDENEN Controllern
 - > Failover zwischen Pfaden der beiden Controller
 - > Konzept verfügbar seit AIX 4.3.3 (.77)
 - > Ursprünglich für RAIDiant array (Flute)
 - > Vor der Installation IBM Dokumentation lesen
 - > <http://www.redbooks.ibm.com/redbooks/pdfs/sg246050.pdf>

- Voraussetzungen

- > Zwei FC HBAs

- > Installierte driver

- > HBA driver (lsdev -Cc adapter)

- `lspp -l | grep "FC Adapter Device"`

- `devices.pci.df1000f9.rte 4.3.3.75 COMMITTED 64-bit PCI FC Adapter Device`

- `devices.pci.df1000f7.com 4.3.3.75 COMMITTED Common PCI FC Adapter Device`

- > Common FC drivers

- `devices.common.IBM.fc`

- `devices.fcp.disk`

- `devices.fcp.tape` (if using tape)

- `devices.common.IBM.disk.rte 4.3.3.0 COMMITTED Common IBM Disk Software`

- `devices.fcp.disk.rte 4.3.3.75 COMMITTED FC SCSI CD-ROM, Disk,`

- > IBM RDAC driver package

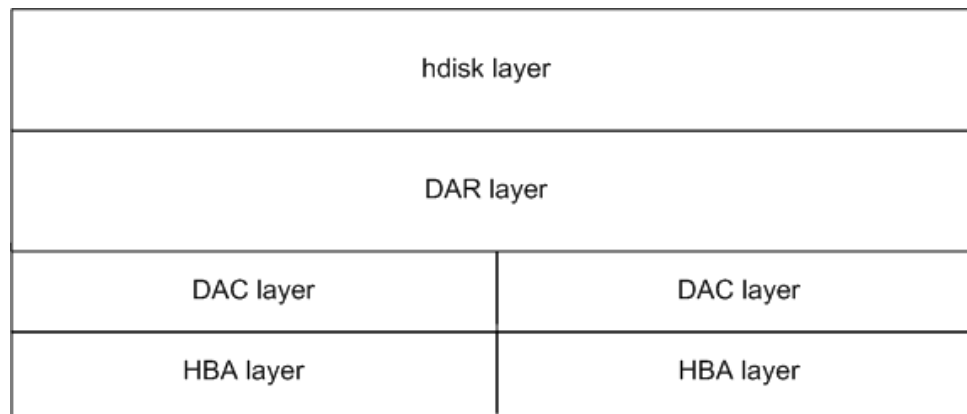
- `devices.fcp.disk.array.rte`

- `lspp -l devices.fcp.disk.array.rte`

- `4.3.3.79 COMMITTED FC SCSI RAIDiant Array Device Support Software`

Failover driver Stack

- Hdisk -> Array Lun
- DAR disk array router
 - > Rdac failover Instanz
- DAC disc array controller
- HBA – Fibre channel adapter



NVRAM SETTINGS

```

show controller[a] hostNVSARAMByte [0x4,0x10]; // WFD      01
show controller[b] hostNVSARAMByte [0x4,0x10]; // WFD      01
show controller[a] hostNVSARAMByte [0x4,0x11]; // IU DT     20
show controller[b] hostNVSARAMByte [0x4,0x11]; // IU DT     20
show controller[a] hostNVSARAMByte [0x4,0x12]; // QIP       01
show controller[b] hostNVSARAMByte [0x4,0x12]; // QIP       01
show controller[a] hostNVSARAMByte [0x4,0x13]; // QIP2      00
show controller[b] hostNVSARAMByte [0x4,0x13]; // QIP2      00
show controller[a] hostNVSARAMByte [0x4,0x14]; // VUUAC     01
show controller[b] hostNVSARAMByte [0x4,0x14]; // VUUAC     01
show controller[a] hostNVSARAMByte [0x4,0x15]; // RDE       00
show controller[b] hostNVSARAMByte [0x4,0x15]; // RDE       00
show controller[a] hostNVSARAMByte [0x4,0x16]; // IU DT     00
show controller[b] hostNVSARAMByte [0x4,0x16]; // IU DT     00
show controller[a] hostNVSARAMByte [0x4,0x17]; // IFUA      00
show controller[b] hostNVSARAMByte [0x4,0x17]; // IFUA      00
show controller[a] hostNVSARAMByte [0x4,0x18]; // IWCD      01
show controller[b] hostNVSARAMByte [0x4,0x18]; // IWCD      01
show controller[a] hostNVSARAMByte [0x4,0x19]; // AROUL     01
show controller[b] hostNVSARAMByte [0x4,0x19]; // AROUL     01

```

mppRDAC Konfiguration

/etc/mpp.conf

- **# fget_config -l dar0**

dac0 ACTIVE dac1 ACTIVE

dac1-hdisk2

dac0-hdisk3

- The host HBA WWN information can be obtained from the lscfg command.

Device Naming DAR AIX 4.3.x

- aixpoc1_boot:/\$>lsattr -El dar0
- act_controller dac0,dac1 Active Controllers False
- all_controller dac0,dac1 Available Controllers False
- held_in_reset none Held-in-reset controller True
- load_balancing no Dynamic Load Balancing True
- autorecovery yes Autorecover after failure is corrected True
- lun_bitmap 0000000000000000000000001010101010 LUN Ownership bitmap True
- hlthchk_freq 10 Health check frequency in seconds True
- aen_freq 10 Polled AEN frequency in seconds True
- balance_freq 10 Dynamic Load Balancing frequency in seconds True
- switch_retries 5 Number of times to retry failed switches True
- fast_write_ok yes Fast Write available False
- cache_size 1024 Cache size for both controllers False
- aixpoc1_boot:/\$>

DAR AIX 5.3

- # lsattr -El dar0
- act_controller dac0,dac1 Active Controllers False
- aen_freq 600 Polled AEN frequency in seconds True
- all_controller dac0,dac1 Available Controllers False
- autorecovery no Autorecover after failure is corrected True
- balance_freq 600 Dynamic Load Balancing frequency in seconds True
- cache_size 128 Cache size for both controllers False
- fast_write_ok yes Fast Write available False
- held_in_reset none Held-in-reset controller True
- hlthchk_freq 600 Health check frequency in seconds True
- load_balancing no Dynamic Load Balancing True
- switch_retries 5 Number of times to retry failed switches True

Device Naming DAC (AIX 4.3.x)

- # lsattr -El dac0
- passive_control no Passive controller False
- alt_held_reset no Alternate held in reset False
- controller_SN 1T03418803 Controller serial number False
- ctrl_type fcparray Controller Type False
- cache_size 88 Cache Size in MBytes False
- scsi_id 0x11600 SCSI ID False
- lun_id 0x0 Logical Unit Number False
- utm_lun_id none Logical Unit Number False
- location Location Label True
- ww_name 0x200500a0b80758b9 World Wide Name False
- GLM_type low GLM type False

Device Naming DAC (AIX 4.3.x)

- `# lsattr -El dac1`
- `passive_control no` `Passive controller` `False`
- `alt_held_reset no` `Alternate held in reset` `False`
- `controller_SN 1T05079041` `Controller serial number` `False`
- `ctrl_type fcparray` `Controller Type` `False`
- `cache_size 88` `Cache Size in MBytes` `False`
- `scsi_id 0x11500` `SCSI ID` `False`
- `lun_id 0x0` `Logical Unit Number` `False`
- `utm_lun_id none` `Logical Unit Number` `False`
- `location` `Location Label` `True`
- `ww_name 0x200400a0b80758b9` `World Wide Name` `False`
- `GLM_type low` `GLM type` `False`

DAC AIX 5.3

- # lsattr -El dac0
- GLM_type low GLM type False
- alt_held_reset no Alternate held in reset False
- cache_size 128 Cache Size in MBytes False
- controller_SN 1T31359683 Controller serial number False
- ctrl_type fcparray Controller Type False
- location Location Label True
- lun_id 0x0 Logical Unit Number False
- node_name 0x200200a0b80f6cd2 FC Node Name False
- passive_control no Passive controller False
- scsi_id 0xc10400 SCSI ID False
- utm_lun_id 0x001f000000000000 Logical Unit Number False
- ww_name 0x200200a0b80f6cd3 World Wide Name False

DAC AIX 5.3

- # lsattr -El dacl
- GLM_type low GLM type False
- alt_held_reset no Alternate held in reset False
- cache_size 128 Cache Size in MBytes False
- controller_SN 1T31153133 Controller serial number False
- ctrl_type fcparray Controller Type False
- location Location Label True
- lun_id 0x0 Logical Unit Number False
- node_name 0x200200a0b80f6cd2 FC Node Name False
- passive_control no Passive controller False
- scsi_id 0x670200 SCSI ID False
- utm_lun_id 0x001f000000000000 Logical Unit Number False
- ww_name 0x200300a0b80f6cd3 World Wide Name False

cfgmgr Command

Purpose

Configures devices and optionally installs device software by running the programs specified in the Configuration Rules object class.

Syntax

```
cfgmgr [ -f | -s | -p Phase ] [ -i Device ] [ -l Name ] [ -v ]
```

Description

The **cfgmgr** command configures devices and optionally installs device software into the system. The configurable devices are controlled by the Configuration Rules object class, which is part of the Device Configuration database.

<http://publib.boulder.ibm.com/infocenter/systems/index.jsp?topic=/com.ibm.aix.cmds/doc/aixcmds1/cfgmgr.htm>

List disk devices

```
# lsdev -Cc disk
hdisk0 Available 1S-08-00-8,0 16 Bit LVD SCSI Disk Drive
hdisk1 Available 1S-08-00-9,0 16 Bit LVD SCSI Disk Drive
hdisk2 Available 1H-08-01      fcparray Disk Array Device
hdisk3 Available 1H-08-01      fcparray Disk Array Device
hdisk4 Available 1H-08-01      fcparray Disk Array Device
hdisk5 Available 1D-08-01      fcparray Disk Array Device
```

rmdev Command

Was ist, wenn es schief geht?

Purpose

Removes a device from the system.

Syntax

```
rmdev { -l | -p } Name [ -d | -S ] [ -f File ] [ -h ] [ -q ] [ -R ]
```

Kann devices -R rekursiv entfernen

You can also use the Devices application in Web-based System Manager, or the System Management Interface Tool (SMIT) **smit rmdev** fast path to run this command.

Dann beginnen Sie von vorne:

- SAN Topologie (Kabel, Zoning)
- Array LUNs, mapping
- cfgmgr

Sun Implementierung

Weitere Instanz des fcp.disk.array.rte drivers

- The SUNdac driver is only compatible with the inquiry strings from the storage arrays below:

STK FLEXLINE 3* (FLX380/6540)

STK OPENstorage* (STK FLX2X0/D2X0, D178, 9176)

STK BladeCtrl* (STK B2X0) X=1,2,4 or 8

SUN CSM* (6140)

Sun generierte odm Einträge

- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "model_map"
 deflt = "1003CSM,0803SUN"
 values = ""
 width = ""
 type = "R"
 generic = ""
 rep = "s"
 nls_index = 0
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "model_map"
 deflt = "100bOPENstorage,0803STK"
 values = ""
 width = ""
 type = "R"
 generic = ""
 rep = "s"
 nls_index = 0
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "model_map"
 deflt = "100aFLEXLINE 3,0803STK"
 values = ""
 width = ""
 type = "R"
 generic = ""
 rep = "s"
 nls_index = 0
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "model_map"
 deflt = "1009BladeCtrl,0803STK"
 values = ""
 width = ""
 type = "R"
 generic = ""
 rep = "s"
 nls_index = 0
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "model_map"
 deflt = "1010Universal Xport ,0803STK"
 values = ""
 width = ""
 type = "R"
 generic = ""
 rep = "s"
 nls_index = 0
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "model_map"
 deflt = "1010Universal Xport ,0803SUN"
 values = ""
 width = ""
 type = "R"
 generic = ""
 rep = "s"
 nls_index = 0
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "maxlun"
 deflt = "0"
 values = ""
 width = ""
 type = "R"
 generic = ""
 rep = "s"
 nls_index = 0
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "passive_control"
 deflt = "no"
 values = "no,yes"
 width = ""
 type = "R"
 generic = "D"
 rep = "sl"
 nls_index = 8

Sun generierte odm Einträge

- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "alt_held_reset"
 deflt = "no"
 values = "no,yes"
 width = ""
 type = "R"
 generic = "D"
 rep = "sl"
 nls_index = 13
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "controller_SN"
 deflt = "none"
 values = ""
 width = ""
 type = "R"
 generic = "D"
 rep = "s"
 nls_index = 7
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "ctrl_type"
 deflt = "210"
 values = "210"
 width = ""
 type = "R"
 generic = "D"
 rep = "sl"
 nls_index = 16
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "cache_size"
 deflt = "0"
 values = "0-99999,1"
 width = ""
 type = "R"
 generic = "D"
 rep = "nr"
 nls_index = 17
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "vpd_map"
 deflt =
 "MF0808C, TM1010C, PN5010c0C, RL2004C, SN040c80C, Z1
 0804clX, Z20804c2X"
 values = ""
 width = ""
 type = "V"
 generic = ""
 rep = "sl"
 nls_index = 0
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "scsi_id"
 deflt = ""
 values = ""
 width = ""
 type = "R"
 generic = "D"
 rep = "s"
 nls_index = 80
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "lun_id"
 deflt = ""
 values = ""
 width = ""
 type = "R"
 generic = "D"
 rep = "s"
 nls_index = 81
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "utm_lun_id"
 deflt = ""
 values = ""
 width = ""
 type = "R"
 generic = "D"
 rep = "s"
 nls_index = 81

- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "location"
 deflt = ""
 values = ""
 width = ""
 type = "R"
 generic = "UD"
 rep = "s"
 nls_index = 82
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "ww_name"
 deflt = ""
 values = ""
 width = ""
 type = "R"
 generic = "D"
 rep = "s"
 nls_index = 83
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "node_name"
 deflt = ""
 values = ""
 width = ""
 type = "R"
 generic = "D"
 rep = "s"
 nls_index = 86
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "GLM_type"
 deflt = "low"
 values = "high,low"
 width = ""
 type = "R"
 generic = "D"
 rep = "sl"
 nls_index = 84
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "ses_attach"
 deflt = "no"
 values = "no,yes"
 width = ""
 type = "R"
 generic = ""
 rep = "sl"
 nls_index = 0
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "message_no"
 deflt = "23"
 values = "23"
 width = ""
 type = "T"
 generic = ""
 rep = "nl"
 nls_index = 0
- PdAt:
 uniquetype = "array/fcp/ibm-dac-SUN"
 attribute = "link_meth"
 deflt = ""
 values = ""
 width = ""
 type = "R"
 generic = ""
 rep = ""
 nls_index = 0
 #

Multipathing

Symantec DMP

- **Dynamic MultiPathing Treiber**
 - > Bestandteil der Storage Foundation Suite
 - > “Stateless” Treiber
 - > Benötigt Auto-Volume-Transfer auf den ST6x40 Systemen
 - > NVSRAM Parameter
 - > In Firmware separater Host Typ für AIX mit DMP
 - AVT aktiviert
 - AIX_FO
 - > Benötigt ASL (Array Specific Library) für Speichersystem von Symantec
 - > ASL's in der Storage Foundation enthalten
 - > Symantec Homepage auf aktualisierte Versionen überprüfen
 - > Zur Zeit nicht mit ST2540 Systemen unterstützt
 - > Sun Interop Website überprüfen
 - <https://extranet.stortek.com/interop/interop>

Installation

- `installp -acd SUNdac.5.A.0.VV.bff all`

A = AIX OS version

VV = driver release version

- Install the correct NVSRAM update to the arrays using the supplied SANtricity scripts in the `/usr/lpp/sundac` directory.
- `AIX_SUNdac_STK.script`
 - > For all Sun StorageTek (Engenio) arrays and latest FW on Sun 6140 and 6540 arrays.
 - > This script updates the NVSRAM host region **13** normally used for AIX_FO. It renames this region to AIX_DAC.
- `AIX_SUNdac_SUN.script`
 - > For all Sun StorageTek arrays that do not currently have the AIX_FO host region. This script modifies NVSRAM host region **4**. This changes the host region name to AIX_DAC.

- The SUNdac installp package will create a new directory located at /usr/lpp/sundac and contains these additional utilities.

```
AIX_SUNdac_STK.script lsSUNdar rmSUNdac  
AIX_SUNdac_SUN.script lsSdacVG setSUNdac  
README lsdacall SunHACMP  
getinfo lsfreeVG totalLV  
lsSUNdac rem_sunHACMP
```

NOTE: With the exception of “lsfreeVG” and “totalLV”, these utilities will only work with the SUNdac driver.

List devices

thishost# lsdev -Cc disk

hdisk0 Defined 1S-08-00-5,0 16 Bit LVD SCSI Disk Drive
hdisk1 Available 1S-08-00-8,0 16 Bit LVD SCSI Disk Drive
hdisk12 Available 1H-08-01 fcparray Disk Array Device
hdisk13 Available 1H-08-01 fcparray Disk Array Device
hdisk14 Available 1Z-08-01 fcparray Disk Array Device
hdisk15 Available 1Z-08-01 fcparray Disk Array Device
hdisk16 Available 1H-08-01 fcparray Disk Array Device
hdisk17 Available 1Z-08-01 fcparray Disk Array Device
hdisk20 Available 1n-09-01 fcparray Disk Array Device
hdisk21 Available 1n-08-01 fcparray Disk Array Device
hdisk22 Available 1n-09-01 fcparray Disk Array Device
hdisk23 Available 1n-08-01 fcparray Disk Array Device

thishost# lsdev -Cc array

dac0 Available 1H-08-01 [Sun StorageTek](#) Disk Array Controller
dac1 Available 1H-08-01 Sun StorageTek Disk Array Controller
dac2 Available 1Z-08-01 Sun StorageTek Disk Array Controller
dac3 Available 1Z-08-01 Sun StorageTek Disk Array Controller

AIX_SUNdac_STK.script

SANtricity script to correctly set the NVSRAM in the array(s) for use with the SUNdac driver. For use with all Sun StorageTek 61XX/65XX and FLX series arrays with the AIX_FO host region. This script renames the array NVSRAM host region 13 to AIX_DAC.

AIX_SUNdac_SUN.script

SANtricity script to correctly set the NVSRAM in the array(s) for use with the SUNdac driver. For use with all Sun 61XX arrays without the AIX_FO host region. This script renames the array NVSRAM host region 4 to AIX_DAC.

README

Latest README for the driver package.

getinfo

Support utility collection script.

lsSUNdac

Utility from Sun that displays information about the array and volumes from AIX. Also used by getinfo.

lsSUNdar

Utility from SUN that displays detailed information about the dac, dar, and hdisk drivers relating the Sun disk devices.

lsSdacVG

Utility from Sun that displays detailed information about the AIX volume groups and logical volumes relating to the Sun disk devices.

lsdacallU

Utility from Sun that is used by getinfo for collection of data from the system.

LsfreeVG

Utility from Sun that displays unused volume group

space.rmSUNdac

Utility from Sun to remove all dac, dar and hdisk drivers relating to Sun StorageTek disk arrays. The file systems must be unmounted and AIX volume groups be varied offline to use this utility.

setSUNdac

Utility from Sun that will correctly set the dar and hdisk drivers for Sun StorageTek disk arrays. This utility changes the default AIX queue depth from 10 to 32 per lun.

SunHACMP

Utility from Sun that will automatically install required entries in to the /etc/cluster/lunreset.lst file to allow HACMP to break SCSI reserves in the event of a server takeover. The lunreset.lst file enables HACMP to support OEM disk with the added inquiry strings.

rem_sunHACMP

This utility will automatically remove the Sun StorageTek entries in to the /etc/cluster/lunreset.lst file that were placed there by the sunHACMP utility.

totalLV Utility from Sun that displays AIX logical volume information

Linux Disks

Partitionen

- **Default: Linux legt Start Partitions auf zweiten Track (Track 1)**
 - > Track 1 kann bei Sektor 32 oder 63 beginnen
 - > Startsektor abhängig von Größe des Tracks
 - > Größe des Tracks abhängig von Größe des Volumes
 - > Dies kann zu Mis-alignment mit der Segment Size der ST6x40 LUN führen
 - > Sektor für den Start der Partition muss ggf. angepasst werden
 - > Partition sollte mindestens an einem Segment der LUN beginnen
 - > Besser noch, die Partition beginnt an einem Stripe Set
 - > Ideal für Full Stripe Writes
 - > Gut für große Blöcke
 - > Gute für Oracle ASM

High Bandwidth configuration

IO-Alignment

- **Partition muss an einem Segment oder Stripe Set beginnen**
- **Tabelle gibt Startsektoren für verschiedene Raid-5 Konfigurationen an**
 - > Startsektor für Segment alignment
 - > = Segment Size * 2
 - > Startsektor für Stripe Set alignment
 - > = Segment Size in kB * 2 * (Anzahl Disks je Vdisk - 1)

Anzahl Disks je Vdisk	RAID-Level	ST6x40 LUN Segment Size	Startsektor Segment aligned	Startsektor Stripe Set aligned
5	5	16kB	32	128
5	5	32kB	64	256
5	5	64kB	128	512
5	5	128kB	256	1024
5	5	256kB	512	2048
5	5	512kB	1024	4096
9	5	16kB	32	256
9	5	32kB	64	512
9	5	64kB	128	1024
9	5	128kB	256	2048
9	5	256kB	512	4096
9	5	512kB	1024	8192

Linux Disks

Partition anlegen

fdisk /dev/sdc

Command (m for help): **u**

Changing display/entry units to sectors

Command (m for help): **p**

Disk /dev/sdc: 143.4 GB, 143457779712 bytes

255 heads, 63 sectors/track, 17441 cylinders, total 280190976 sectors

Units = sectors of 1 * 512 = 512 bytes

Device	Boot	Start	End	Blocks	Id	System
--------	------	-------	-----	--------	----	--------

Command (m for help): **n**

Command action

e extended

p primary partition (1-4) **p**

Partition number (1-4): **1**

First sector (63-280190975, default 63) **8192**

Last sector or +size or +sizeM or +sizeK (32768-280190975, default 280190975):

Using default value 280190975

Command (m for help): **w**

Startsektor auf 4 MB gesetzt (8192 * 512 Byte).
Denn Wert ggf. entsprechend der vorherigen Folie anpassen.

Linux Disks

Beispiel: Partitionierung mit IO-Alignment

fdisk /dev/sdc

Command (m for help): **u**

Changing display/entry units to sectors

Command (m for help): **p**

Disk /dev/sdc: 143.4 GB, 143457779712 bytes

255 heads, 63 sectors/track, 17441 cylinders, total 280190976 sectors

Units = sectors of 1 * 512 = 512 bytes

Device	Boot	Start	End	Blocks	Id	System
/dev/sdc1		8192	280190975	140091392	83	Linux

Command (m for help): **w**

The partition table has been altered!

Calling ioctl() to re-read partition table.

Syncing disks.



Q & A

Danke!



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