# Setting new device attributes with chdef

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While building a new LPAR recently I stumbled across the chdef command. This command modifies the default value of a predefined attribute of the specified device type in the ODM (PdDv). For devices that are already configured and of the same class, subclass, and type, this command does not change the active devices attributes, instead it modifies the ODM attributes so these will be changed the next time you reboot the LPAR or rmdev and cfgmgr the device. The chdef command is a bit like using the chdev -P flag, except it changes the predefined values and the values currently configured for every device that matches the same class, subclass and type.

Let us take a look at the settings on a newly built LPAR and then make some changes with chdef.

## Checking the default build settings for vscsi1.

Isattr -El vscsi1

rw\_timeout 0 Virtual SCSI Read/Write Command Timeout True

vscsi\_err\_recov delayed\_fail N/A True

vscsi\_path\_to 0 Virtual SCSI Path Timeout True

# Checking the default build settings for vscsi2.

Isattr -EI vscsi2

rw\_timeout 0 Virtual SCSI Read/Write Command Timeout True

vscsi\_err\_recov delayed\_fail N/A True

vscsi\_path\_to 0 Virtual SCSI Path Timeout True

## Check the defaut build settings for hdisk0 (rootvg).

lsattr -El hdisk0

PCM PCM/friend/vscsi Path Control Module False

algorithm fail\_over Algorithm True

hcheck\_cmd test\_unit\_rdy Health Check Command True+

hcheck\_interval 0 Health Check Interval True+

hcheck\_mode nonactive Health Check Mode True+

max\_transfer 0x40000 Maximum TRANSFER Size True

pvid 00123456789000000000000000 Physical volume identifier False

queue\_depth 3 Queue DEPTH True

reserve\_policy no\_reserve Reserve Policy True+

## Find the Class, Subclass and Type values for vscsi adapters.

Isdev -H -F "name class subclass type" | grep -e ^name -e vscsi

name class subclass type

hdisk0 disk vscsi vdisk

vscsi1 adapter vdevice IBM,v-scsi

vscsi2 adapter vdevice IBM,v-scsi

## Find the Class, Subclass and Type values for hdisks.

Isdev -H -F "name class subclass type" | grep -e ^name -e hdisk

name class subclass type

hdisk0 disk vscsi vdisk

## Change the ODM settings for the vSCSI adapters.

Set the rw\_timeout, vscsi\_err\_recov and vscsi\_path\_to options.

chdef -a rw\_timeout=120 -c adapter -s vdevice -t IBM,v-scsi

chdef -a vscsi\_err\_recov=fast\_fail -c adapter -s vdevice -t IBM,v-scsi

chdef -a vscsi\_path\_to=30 -c adapter -s vdevice -t IBM,v-scsi

#### Verify the settings have changed in the ODM.

Isattr -EI vscsi1

rw\_timeout 120 Virtual SCSI Read/Write Command Timeout True

vscsi\_err\_recov fast\_fail N/A True

vscsi\_path\_to 30 Virtual SCSI Path Timeout True

## Isattr -EI vscsi2

rw\_timeout 120 Virtual SCSI Read/Write Command Timeout True

vscsi\_err\_recov fast\_fail N/A True

vscsi\_path\_to 30 Virtual SCSI Path Timeout True

## Verify the running adapter has not changed.

Isattr -PI vscsi1

rw\_timeout 0 Virtual SCSI Read/Write Command Timeout True

vscsi\_err\_recov delayed\_fail N/A True

vscsi\_path\_to 0 Virtual SCSI Path Timeout True

## Isattr -EI vscsi2

rw\_timeout 0 Virtual SCSI Read/Write Command Timeout True

vscsi\_err\_recov delayed\_fail N/A True

vscsi\_path\_to 0 Virtual SCSI Path Timeout True

## Change the ODM settings for the vSCSI disks.

chdef -a hcheck\_interval=120 -c disk -s vscsi -t vdisk

chdef -a hcheck\_mode=nonactive -c disk -s vscsi -t vdisk

chdef -a queue\_depth=16 -c disk -s vscsi -t vdisk

#### Verify the settings have changed in the ODM.

lsattr -El hdisk0

PCM PCM/friend/vscsi Path Control Module False

algorithm fail\_over Algorithm True

hcheck\_cmd test\_unit\_rdy Health Check Command True+

hcheck\_interval 120 Health Check Interval True+

hcheck\_mode nonactive Health Check Mode True+

max\_transfer 0x40000 Maximum TRANSFER Size True

pvid 00123456789000000000000000 Physical volume identifier False

queue\_depth 16 Queue DEPTH True

reserve\_policy no\_reserve Reserve Policy True+

## Verify the running hdisk has not changed.

lsattr -PI hdisk0

PCM PCM/friend/vscsi Path Control Module False

algorithm fail\_over Algorithm True

hcheck\_cmd test\_unit\_rdy Health Check Command True+

hcheck\_interval 0 Health Check Interval True+

hcheck\_mode nonactive Health Check Mode True+

max\_transfer 0x40000 Maximum TRANSFER Size True

pvid 00123456789000000000000000 Physical volume identifier False

queue\_depth 3 Queue DEPTH True

reserve\_policy no\_reserve Reserve Policy True+

## To list all the default settings that have been changed with chdef.

I added the header line in for clarity.

chdef

Attribute New Default AIX Default Device Type

dyntrk yes yes driver/vionpiv/efscsi

fc\_err\_recov fast\_fail fast\_fail driver/vionpiv/efscsi

hcheck\_cmd inquiry test\_unit\_rdy PCM/friend/vscsi

hcheck\_interval 120 0 PCM/friend/vscsi

hcheck\_mode nonactive nonactive PCM/friend/vscsi

rw\_timeout 120 0 adapter/vdevice/IBM,v-scsi

vscsi\_err\_recov fast\_fail delayed\_fail adapter/vdevice/IBM,v-scsi

vscsi\_path\_to 30 0 adapter/vdevice/IBM,v-scsi

## Adding a New vSCSI Device

Before the adding of the new device.

Isdev -Cc adapter | grep vscsi

vscsi1 Available Virtual SCSI Client Adapter

vscsi2 Available Virtual SCSI Client Adapter

## From the HMC, I used DLPAR to add another vSCSI device.

cfgmgr

Isdev -Cc adapter | grep vscsi

vscsi0 Available Virtual SCSI Client Adapter

vscsi1 Available Virtual SCSI Client Adapter

vscsi2 Available Virtual SCSI Client Adapter

## Confirm the new device has the updated settings in the ODM.

Isattr -EI vscsi0

rw\_timeout 120 Virtual SCSI Read/Write Command Timeout True

vscsi\_err\_recov fast\_fail N/A True

vscsi\_path\_to 30 Virtual SCSI Path Timeout True

## Confirm the new device has the updated settings for the running device.

Isattr -PI vscsi0

rw\_timeout 120 Virtual SCSI Read/Write Command Timeout True

vscsi\_err\_recov fast\_fail N/A True

vscsi\_path\_to 30 Virtual SCSI Path Timeout True

There are a couple of options to implement the changes on the running devices.

Option 1 - To schedule an LPAR reboot.

Option 2 - Follow my blog post here, How to make changes to vscsi adapters without a reboot.

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