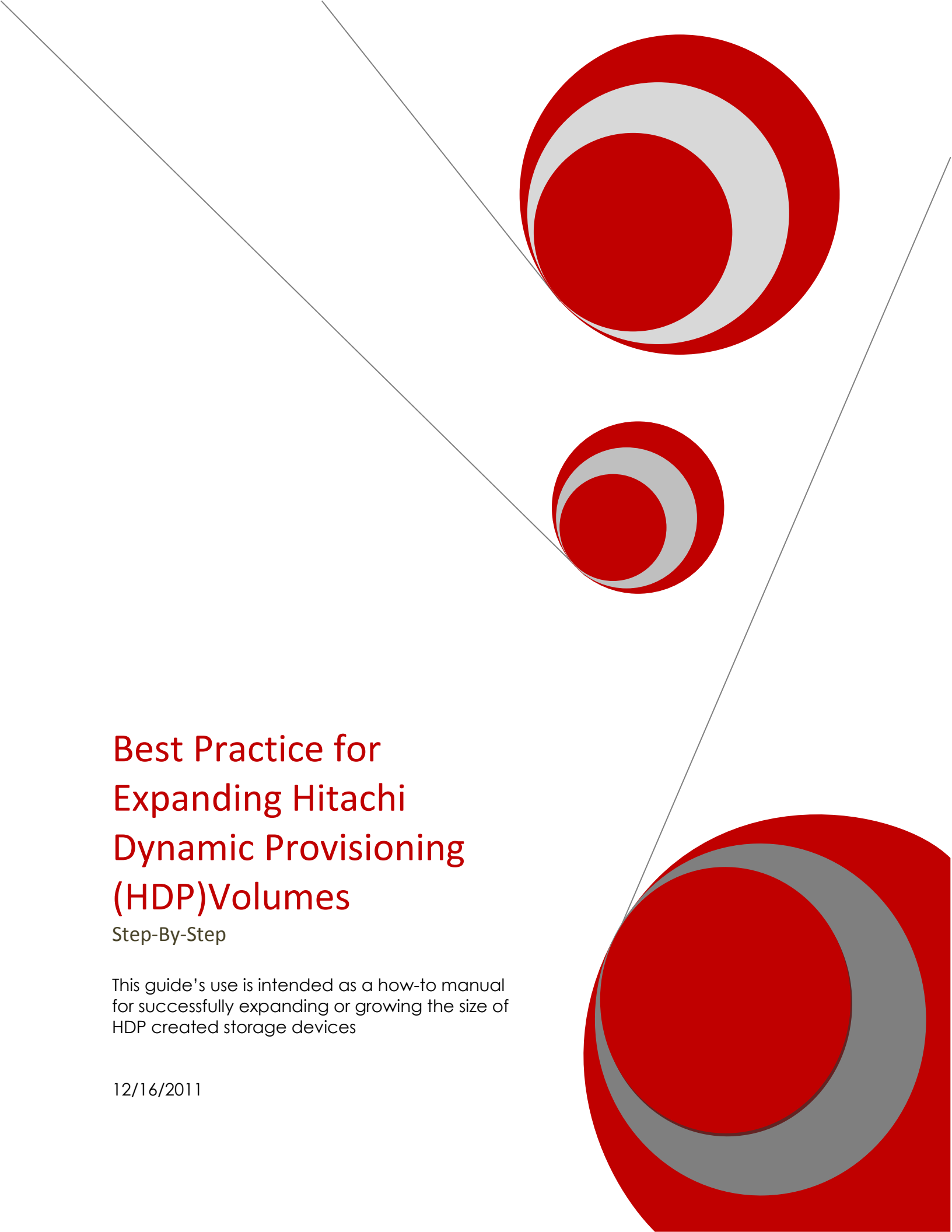

Best Practice for Expanding Hitachi Dynamic Provisioning (HDP)Volumes

Step-By-Step

This guide's use is intended as a how-to manual for successfully expanding or growing the size of HDP created storage devices

12/16/2011

Contents

Overview

Objective

The intent of this manual is to enable the administrator to successfully grow or expand the size of an LDEV (Logical Device) that was created in an environment employing HDP.

Disclaimer

This document is based mostly on an example incorporating a Windows 2003 server and the LAB (USP-V) storage subsystem. Some of the contents may not be relevant to the task(s) you will be performing. It is therefore important to note that this should be used as a guideline only.

Command Control Interface (CCI)

CCI allows you to configure, perform, and manage operations for data management features for the subsystem from a server that has the CCI software installed. This document describes and provides instructions for using the Command Control Interface (CCI) software to expand the size of LUN devices.

Before You Begin

Good communication between the system administrator of the server(s) having their storage expanded and the storage engineer performing the steps that follow in this document will improve the likelihood of this process completing successfully. Familiarizing yourself with the CCI utility will assist you greatly when performing many of the storage management tasks described in this guide.

Checklist of Items Required to Complete This Process

- ☑ Administrative level userid and password to the server that the CCI utility is installed
- ☑ The datacenter location as well as the server-name of the storage to be expanded
- ☑ The detailed device names from the OS side, (drive letters if applicable) to be expanded
- ☑ The corresponding HDS logical device number to be expanded
- ☑ The size in Gigabytes to grow the storage to

Command Control Interface (CCI) Setup

CCI Software Installation for Windows Systems

Installation

1. Connect to the server that the CCI software will be installed on
2. Run the **setup.exe** from the installation source location

Verify the Installation

1. From the command prompt, specify the location of the raidqry command; and key the following.

   For example:

   ```
   C:\HORCM\etc> raidqry -h
   ```

   This should return something similar to:

   ```
   Model: RAID-Manager/Windows2003
   Ver&Rev: 01-22-03/06
   Usage: raidqry [options]
   ```

Add the HORCM Service Information

1. In C:\WINDOWS\system32\drivers\etc\services set service information -

   Like this:

   ```
   horcm0          11000/udp
   horcm1          11001/udp
   ...
   "blank line"
   ```

Adjust the HORCM Settings

Modify the HORCM Text File

1. Copy C:\HORCM\ETC\horcm.conf to c:\WINDOWS
2. Rename c:\WINDOWS\horcm.conf c:\WINDOWS\horcm0.conf
3. Edit c:\WINDOWS\horcm0.conf
4. Modify the 1 HORCM_MON, 2 HORCM_CMD, 3 HORCM_LDEV & 4 HORCM_INST entries with the specifics from the environment you are working in. On the LAB subsystem, the entries would be stated as follows:

   1 HORCM_MON

   ip_address = 114.132.194.197
   service = horcm0
   poll & timeout = (default settings)

   2 HORCM_CMD

   dev_name = \\.\CMD-**45009**-**128**
   Contains subsystem **serial number** and **reserved LUN** used as the command device

   3 HORCM_LDEV

   dev_group = VG01 (can be any name you wish)
   dev_name = HDPDISK1 (can be any name you wish)
   Serial# = subsystem serial number
   CU:LDEV(LDEV#) = 00:00:01 (LDEV number to expand)

   4 HORCM_INST

   dev_group = VG01 (name assigned as HORCM_LDEV above)
   ip_address = 113.132.194.197
   service = horcm1

   Once updated the horcm0.conf file should appear similar to the following:

```
HORCM_MON
#ip_address        service         poll(10ms)     timeout(10ms)
113.132.194.197    horcm0          1000              3000

HORCM_CMD
#dev_name                dev_name                dev_name
\\.\CMD-45003-128

#/********************** For HORCM_LDEV **********************/

HORCM_LDEV
#dev_group        dev_name        Serial#    CU:LDEV(LDEV#)    MU#
VG01              HDPDISK1        45003      00:01             0

HORCM_INST
# dev_group        ip_address        service
VG01               113.132.194.197   horcm1
```

Note: Be certain to leave at least one blank line after each section, including a blank line at the end of the file

HORCM Startup and HDP Volume Expansion

Startup, Shutdown and Validation of the HORCM Instance

Startup and Shutdown of the HORCM Instance

1. To startup the HORCM instance, at command prompt, specify the location of the startup command; and key the following.

   For example:

   ```
   c:\horcm\etc\horcmstart 0
   ```

2. To shutdown the HORCM instance, type the following.

   ```
   c:\horcm\etc\horcmshutdown 0
   ```

Validate the Data Entered in the HORCM.conf

1. To verify the entries made in the HORCM.conf, at the command prompt, specify the location of the startup command; and key the following.

   For example:

   ```
   C:\HORCM\etc>raidvchkdsp  -g VG01 -d hdpdisk1  -v aoub  -fx  -IM0
   ```

   The output should look similar to:

   ```
   Group    PairVol    Port#  TID  LU  Seq# LDEV#  Used(MB) LU_CAP(BLK) U(%) T(%) PID

   VG01     HDPDISK1 CL1-A-51  1    1 45003     1         0     2097152   17   95   1
   ```

Expand the Volume

Grow the LUN and Verify New Size

1. To expand the device, key the following - *example* command to increase it by 1 GB.

   For example:

   ```
   C:\HORCM\etc>raidvchkset -g VG01 -d HDPDISK1 -vext 1G -IM0
   ```

2. To verify the new size, type the following.

   ```
   C:\HORCM\etc>raidvchkdsp  -g VG01 -d hdpdisk1  -v aoub  -fx  -IM0
   ```

   The output should look similar to:

   ```
   Group    PairVol    Port#  TID  LU  Seq# LDEV#  Used(MB) LU_CAP(BLK) U(%) T(%) PID

   VG01     HDPDISK1 CL1-A-51  1    1 45003     1         0     4194304   17   95   1
   ```

Last Steps

1. Refresh the subsystem.
2. Have the SA run their storage rediscovery procedure from their server to enable the new size.