Step-by-step Virtualization configuration on an IBM eServer p5 server, part 1: configure VIO Server

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IBM eServer Solutions Enablement

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Abstract

The IBM[®] Virtual I/O Server (VIO Server), announced in July 2004, facilitates the sharing of physical resources between partitions on the IBM eServer[™] p5 family of servers. The innovative VIO Server technology is driven by the IBM POWER5[™] Virtualization Engine[™]. This paper offers a step-by-step (screen-by-screen) explanation of the process for installing a VIO Server on an eServer p5 model 9117-570. This paper serves as a guide for installing a VIO Server on all models of the eServer p5 family of servers.

[NOTE: A step-by-step illustration of the process for configuring a client partition is explained in Part 2 of this set of three white papers. The third paper in this series demonstrates how to configure the Virtual devices.]

Introduction

Virtual I/O Server and Partition Load Manager are part of the Advanced POWER[™] Virtualization Engine hardware feature. Together with Partition Load Manager, the VIO Server provides:

- Micro-Partitioning[™] support for up to 10 logical partitions to share one processor
- Virtual SCSI (VSCSI) disks that allow partitions to share physical storage adapters and devices
- Automated CPU and memory reconfiguration
- Real-time partition configuration and load statistics
- Support for dedicated and shared processor logical partitioning (LPAR) groups
- Support for manual provisioning of resources
- Virtual networking

The VIO Server is a single function appliance that resides in a partition to provide Virtual SCSI target and shared Ethernet adapter Virtual I/O function to client partitions. This partition is not intended to run applications or for general user logins. The VIO Server partition is created using the Hardware Management Console (HMC). The VIO Server installation media ships with eServer p5 servers and is installed via CD. It supports the following operating environments as client partitions: IBM AIX 5L[™] Version 5.3, SUSE Linux[™] Enterprise Server 9 for POWER, and Red Hat Enterprise Linux AS for POWER, Version 3, as VIO clients.

Setup scenario

The sample installation process discussed in this paper involves setting up a VIO Server and three client partitions using the POWER5 Virtualization Engine features that are available on the latest set of IBM POWER-based eServer p5 hardware, running under the AIX 5L operating system. The VIO Server will own a physical SCSI and a physical Ethernet controller. Because the physical SCSI controller on the designated hardware system has three physical hard disks attached to it, this scenario will configure each client partition on a separate physical hard disk.

POWER5 machine type and hardware structure

The eServer p5 server is a model 9117-570. As mentioned, the system has two physical SCSI controllers, one located on slot T14 and the other located on slot T12. Each SCSI controller has three physical disks attached to it. Two physical Ethernet controllers are on slots T6 and C3.

For this scenario, the VIO Server will use the SCSI controller on slot T14 and the Ethernet controller on slot T6. (Figure 1)

| Phy | sical I/O Detailed below are the | physical VO res | ourcillOr the ma | maged system. | | |
|---------|-------------------------------------|-----------------|---|--|--|----------|
| | 100 | Description | VO Pool Id | Owner | Type | Serial |
| ۰ | 📲 🚔 Unit U7879.001.De | QD | | | - | |
| | BUS 1 | PN1100.0 | Unsectored | uineam? linux | | |
| | Tenh Steet T14 | Portono | Unassigned | vioservz_innux | | |
| | | Liniuarsal | Linsesigned | Lingesigned | | |
| ie SCSI | P = Bus 3 | Conversion in | ourse gries | Commentarian and | | |
| oller | Slot C2 | Empty slot | Unassigned | Unassigned | 100 | |
| d on | Slot T15 | Other Mas. | Unassigned | Unassigned | | |
| 14 and | Stot C1 | PCI Fibre | Unassigned | Unassigned | 2 | |
| hernet | Slot T12 | Storage co | Unassigned | vioserv1_aix | 10 A A A A A A A A A A A A A A A A A A A | |
| ller on | 🕈 🚃 Bus 7 | | Contraction of the second s | 2018-11-11-1-12-12-12-12-12-12-12-12-12-12-1 | | |
| | Blot C5 | Empty slot | Unassigned | Unessigned | - | |
| D. | Slot C3 | PCI 10/18 | Unassigned | vioserv1_aix | - | |
| | Slot Cā | Empty slot | Unassigned | Unassigned | (R) | 1 |
| | | | | | | • |
| | | | | | [| Advanced |
| - Meth | ual 100 | | | | | |
| | | | | | | |

Figure 1: Slots T6 and T14 are owned by the VIO Server

Software

The following versions of software were installed on the eServer p5 server used in this scenario:

- VIO Server version 1.1 and latest fix pack 4, which includes IY58231: http://techsupport.services.ibm.com/server/virtualization/vios/download
- HMC version 4 release 2 and PTF MH00138: http://techsupport.services.ibm.com/server/hmc/power5/fixes/v4r2.html
- POWER5 microcode level: http://techsupport.services.ibm.com/server/mdownload/download.html

VIO Server and client partitions configuration

For this scenario, the VIO Server, named vioserv1_linux, were installed on hdisk2. The three client partitions, named svtlnx1, svtlnx2, and svtlnx3, were installed on hdisk2, hdisk1, and hdisk0, respectively.

The svtlnx1 client partition and the VIO Server shared the same hdisk2 physical disk.

The VIO Server, vioserv1_linux, was configured with the following:

- One shared Ethernet adapter, using slot 5 and PVID 3
- Three Virtual SCSI adapters, using slot 10, 11, and 12
- Slot 10 on vioserv1_linux mapped to a logical volume on hdisk2
- Slot 11 mapped to hdisk1
- Slot 12 mapped to hdisk0

Each of the three client partitions were configured with a Virtual Ethernet adapter and a Virtual SCSI adapter. The Virtual Ethernet adapters also use slot 5 and PVID 3. The Virtual SCSI adapters use slot 10 locally, but the remote slot on vioserv1_linux was set as follows:

- svtlnx1 --> slot 10 on vioserv1_linux
- svtlnx2 --> slot 11 on vioserv1_linux
- svtlnx3 --> slot 12 on vioserv1_linux

| PV name | VG name | LV name | Virtual SCSI device | Server slot | Client partition ID | Client slot |
|------------|----------------|------------|------------------------|----------------|------------------------|----------------|
| hdisk0 | rootvg_client1 | svtlnx3_lv | vhost2 | 12 | 9 | 10 |
| hdisk1 | rootvg_client2 | svtlnx2_lv | vhost1 | 11 | 8 | 10 |
| hdisk2 | rootvg | svtlnx1_lv | vhost0 | 10 | 7 | 10 |

You can review the figure below to see how the configuration was set. (Figure 2)



Figure 2: Configuration diagram of the VIO Server and client partitions

Steps to configure the p570 scenario

Now we will discuss the steps necessary to install VIO Server V1.1 and its fix pack, and configure the scenario. These steps are based on the hardware and configuration requirements mentioned above. We will go through each of these steps in detail:

- Part 1: Create VIO Server partition
- Part 2: Create client partitions
 - Modify the VIO Server profile
- Part 3: Configure the virtual devices in the VIO Server
 - Update fix pack
 - Install the operating system on the client partitions

Create VIO Server partition

The following processes create the VIO Server partition with a normal **run** and **install** profile:

- From the Web-based System Manager (WebSM) navigation bar, expand Management Environment. Then, expand the managed system—in our case the managed system was named svthmc1.austin.ibm.com. Then, expand Server and Partition. Lastly, select Server Management.
- 2. Now, from the detail panel on the right (entitled **Server and Partition: Server Management**), expand the managed system. Then, right-click on **Partitions**.
- 3. From the pop-up menu, select **Create > Logical Partition**.

Note: Steps 1, 2, and 3 can be seen in the figure below. (Figure 3)

| Web-based System Manage | r - /home/hscroot/WebSM | .pref: /Management E | nvironment/svthmc1.austin.ib | |
|---|-----------------------------|--|------------------------------|----|
| Co <u>n</u> sole Server <u>M</u> anagement | Selected ⊻iew Window | <u>H</u> elp | | 막다 |
| (= = E • •) / « | ■ % 🖸 🕯 🜬 | | | |
| Navigation Area | Server and Partition: Serve | er Management | | |
| Management Environment | Name | State | Operator Panel Value | |
| South Characteristics and Partition Server and Partition Server Management Information Center and S Licensed Internal Code I HMC Management Service Applications Iocalhost.localdomain hmcdfw.dfw.ibm.com | Add <u>M</u> anaged Syste | Logical Partiti em(s) System Frent Profile | ion S | |
| Ready 3 Objects | shown O Hidden. 1 | Object selected. | hscroot - sythmc1 | |

Figure 3: Configuration steps A1, A2, and A3 are illustrated on this screen capture

4. From the **Create Logical Partition Wizard** panel, type vioserv1_linux as the **Partition name** and check **Virtual I/O Server**. Then click **Next**. (Figure 4)

| Create Logical Partition Wizard | | _ 🗆 🔀 |
|---|--|-------------------------------------|
| This wizard helps you create a new logical part use the partition properties or profile properties this wizard. Ensure you have your logical partition planning You may also find it helpful to be familiar with lo more information. To create a partition, complete the following inf | ition and a default profile for it. Yo to make changes after you comp Information before you use this w gical partition concepts. Click He ormation: | u can ilete rizard. Ip for |
| System name : P5_eServer Partition ID : 10 Partition name : vioserv1_linux | | |
| Partition environment ○ <u>A</u> IX or Linux ○ <u>O</u> S/400 ● <u>V</u> irtual I/O server | | |
| | | |
| Help | < Back Next > | Finish Cancel |

Figure 4: Configuration step A4 is illustrated on this screen capture

5. From the **Workload Management Groups** panel, check **No**. Then click **Next**. (Figure 5)

| Create Logical Partition Workload Mana | gement Groups | |
|---|---|---|
| tyou are planning on installing a w this partition in a workload manage management group. | orkload management application on your se ment domain. You do that by including this p | rver, you can include artition in a workload |
| Will this partition be included in a w | orkload management group? | |
| | | |
| \bigcirc Yes, this partition is in a worklos | d management group. | |
| Workload group number | | |
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| Help ? | < Back Next > ₽ | mian Cancel |

Figure 5: Configuration step A5 is illustrated on this screen capture

6. From the **Create Logical Partition Profile** panel, type in the **Profile name** (for example: Run_VIO_Server_profile). Then click **Next**. (Figure 6)

| Create Logical Partition Profile | | | | |
|---|---|--|----------------------|--------|
| A profile specifies how many processors, how and slots are to be allocated to the partition. Every partition needs a default profile. To crea following information : | much memory, te the default pro | and which l# ofile, specify | D devices the | |
| System name: P5_eServer | | | | |
| Partition name: vioserv1_linux | | | | |
| Partition ID: 10 | _ | | | |
| Profile name: Run_VIO_Server_pro | ofile | | | |
| This profile can assign specific resources to t partition. Click Next if you want to specify the the option below and then click Next if you wa resources in the system. | he partition or al resources used nt the partition to | ll resources in the partiti have all the | to the on. Select | |
| □ <u>U</u> se all the resources in the system. | | | | |
| | | | | |
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| | | | | |
| | | | | |
| Help ? | < Back | Next > | Finish | Cancel |

Figure 6: Configuration step A6 is illustrated on this screen capture

7. From the **Memory** panel, set the minimum, desired, and maximum memory allocations (for example: 128 MB, 512 MB, and 1 GB, respectively). Then, click **Next**. (Figure 7)

| | te ana megabyte netab be | elow. | |
|--------------------------|----------------------------|----------------|--|
| Installed memory (MB): | | 16384 | |
| Current memory available | e for partition usage (MB) | : 15616 | |
| Minimum memory | Desired memory | Maximum memory | |
| □ 🗧 GB | □ 🛨 GB | 1 GB | |
| 128 MB | 512 🛟 MB | □ ÷ MB | |
| <u> </u> | | | |
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Figure 7: Configuration step A7 is illustrated on this screen capture

8. From the **Processors** panel, check **Shared**. Then click **Next**. (Figure 8)

| Create Logical Partition Profile - Processors | | |
|--|--|---------------|
| You can assign entire processors to your pa can assign partial processor units from the one of the processing modes below. | ntition for dedicated use, or yo shared processor pool. Choos | u e |
| • Shared | | |
| Assign partial processor units from the s example, .50 or 1.25 processor units can | shared processor pool. For 1 be assigned to the partition. | |
| ⊖ <u>D</u> edicated | | |
| Assign entire processors that can only b | e used by the partition. | |
| | | |
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| | | |
| Help ? | < Back Next > | Finish Cancel |

Figure 8: Configuration step A8 is illustrated on this screen capture

9. From the **Processing Settings** panel, set the desired, minimum, and maximum processing units (for example: 0.5, 0.1, and 0.8, respectively). Then click **Next**. (Figure 9)

| Create Log | gical Partition Profile - Processing Se | ttings | |
|------------|--|--|--------------|
| | Specify the desired, minimum, and max | imum processing settings in the fields | below. |
| | Total usable processing units: Desired processing units: Minimum processing units Maximum processing units: | 4.00 0.5 0.1 0.8 | |
| | | | |
| | | | |
| | | | |
| Help 7 |] | < Back Next > | Inish Cancel |

Figure 9: Configuration step A9 is illustrated on this screen capture

10. From the **I/O** panel, select an Ethernet and a SCSI controller and add them as required. For example, add **Slot T6** as the Ethernet controller, and add **Slot T14** as the Storage controller. Then click **Next**. (Figure 10 and 11)

| | | Descriptio | n | Location Code | 6 | Add as required |
|------|-----------------------|------------|-------------|------------------|-------------|-----------------|
| 9 G | - Unit U7879.001.DQDI | 01J | | | \ | Dua ao regainer |
| (| 🖓 🚃 Bus 1 | | | U7879.001.DQD0 | 01J6-P1 | Add as desired |
| | Slot T14 | Storage c | ontroller | U7879.001.DQD0 | 01J6-P1-T14 | Aga as desired |
| | Slot T4 | Universal | Serial Bus | U7879.001.DQD0 | 01J6-P1-T4 | |
| | Bus 2 | PCI 10/100 | J/1000Mpps. | . 07879.001.DQDI | 11.16.01 | |
| | • 🚃 Bus 3 | | | U7879.001.DQD0 |)1J6-P1 | |
| | | | | | E | |
| | | | | | l | (Properties) |
| | | | | | | |
| O de | evices in the profile | | | | | |
| | | Required | I/O Pool | Description | Location Co | <u>R</u> emove |
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Figure 10: Configuration step A1 is illustrated on this screen capture

| ♥ Unit U7879.001.DQD01J U7879.001.DQD01.Add selected adapter as required U7879.001.DQD01.6-P1-144 ♥ ➡ Bus 1 Universal Serial Bus U7879.001.DQD01.6-P1-144 ■ Slot T14 Universal Serial Bus U7879.001.DQD01.6-P1-144 ■ Slot T6 PCI 10/100/1000Mbps U7879.001.DQD01.6-P1-176 ● ➡ Bus 2 U7879.001.DQD01.6-P1 U7879.001.DQD01.6-P1 ● ➡ Bus 3 U7879.001.DQD01.6-P1 (Properties) O devices in the profile U7879.001 Centor C ● ➡ Bus 1 I/O Pool Description Location C ● ➡ Bus 1 I/O Pool Description Location C ● ➡ Bus 1 I/O Pool Description U7879.001. ● ➡ Bus 1 I/O Pool Description Location C ● ➡ Bus 1 I/O Pool Description U7879.001 ● ➡ Bus 1 I/O Pool U7879.001 U7879.001 ● ➡ Bus 1 I/O Pool I/O Pool U7879. | ♥ Unit U7879.001.DQD01J U7879.001.DQD01 Add selected adapter as required u7879.001.DQD01 Add selected adapter adapter adapter add selected adapter add selected adapt | ♥ Unit U7879.001.DQD01J U7879.001.DQD01 Add selected adapter as required as the selected adapter as required ato selected adapter as required as the selected adapt |
|---|---|---|
| Construction Construction <t< th=""><th>devices in the profile</th><th>(December)</th></t<> | devices in the profile | (December) |
| Required I/O Pool Description Location Ct Remove ♥ Unit U7879.001.DQD01.I U7879.001. U7879.001. U7879.001. ♥ Bus 1 I U7879.001. U7879.001. ♥ Stor T6 I PCI 10/100/1000Mbps U7879.001. |) devices in the profile | (Proper |
| Required I/O Pool Description Location Cc Remove | | O devices in the profile |
| ♥ Unit U7879.001 DQD01.II U7879.004. ♥ Bos 1 I Storage controller U7879.001. Stor T6 I PCI 10/100/1000Mbps U7879.001. | Required I/O Pool Description Location Co | Required I/O Pool Description Location C(Rem |
| P Bus 1 I/I U7879.001. ● Stor T14 ✓ Stor age controller U7879.001. ● Stor T6 ✓ PCI 10/100/1000Mbps U7879.001. | > | Image: Construction of the second s |
| Stor age controller U/8/9.001. ■ Slot T6 ☑ PCI 10/100/1000Mbps U7879.001. | | |
| | Ŷ → Bus1 V U7879.064. | Storage controller 170701014 |
| | P Buts 1 U7879:004 ■ Stot T1 4 ☑ Storage controller U7879:001. ■ Stot T1 0 ☑ Del del tot (2000/0001. U7879:001. | |
| | P Bus 1 U7879:004 Slot T14 Storage controller U7879:001 Slot T6 PCI 10/100/Mbps U7879:001 | Stot T6 P Stot age controller 07879.001. ■ Slot T6 P PCI 10/100/1000Mbps U7879.001. |
| | P Bus 1 U U7879:004 Slot T14 Image: Slot T14 Image: Slot T26 U7879:001 Slot T6 Image: PCI 10/100/1000Mbps U7879:001 | Storage controller 07879.001. ■ Slot T6 ■ PCI 10/100/1000Mbps U7879.001. |
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| | P Bds 1 U U7879.004. Slot T14 Storage controller U7879.001. Slot T6 PCI 10/100/1000Mbps U7879.001. | Slot T6 PCI 10/100/1000Mbps U7879.001 |
| | P Bus 1 U7879.004. Slot T1 4 Storage controller U7879.001. Slot T6 PCI 10/100/1000Mbps U7879.001. | Slot T6 PCI 10/100/1000Mbps U7879.001. |
| | P Bus 1 U7879:084 Image: Stor T14 Image: Stor T14 U7879:001. | Storage controller 07079.001. |
| | P Bds1 U7879.004. Slot T14 Storage controller U7879.001. Slot T6 PCI 10/100/1000Mbps U7879.001. | Slot T6 ■ Slot T6 ■ PCI 10/100/1000Mbps U7879.001 |
| | Slot T14 V U7879.004. Slot T6 PCI 10/100/1000Mbps U7879.001. | Slot T6 PCI 10/100/1000Mbps U7879.001. |
| | P BdS 1 U U7879.004. Stot T14 Image: Stot T6 PCI 10/1000Mbps U7879.001. Stot T6 PCI 10/100/1000Mbps U7879.001. | Slot T6 ■ PCI 10/100/1000Mbps U7879.001 |
| | P Bus 1 U U7879:001 Slot T14 Storage controller U7879.001 Slot T6 PCI 10/100/1000Mbps U7879.001 | Slot T6 PCI 10/100/1000Mbps U7879.001 PCI 10/100/1000Mbps |
| | P Bds1 U7879.004. Slot T14 Storage controller U7879.001. Slot T6 PCI 10/100/1000Mbps U7879.001. | Stor age controller Dra79.001. Stor T6 ₽ PCI 10/100/1000Mbps U7879.001. |
| | P Bds1 U7879.004. Slot T14 Storage controller U7879.001. Slot T6 PCI 10/100/1000Mbps U7879.001. | Slot T6 ■ PCI 10/100/1000Mbps U7879.001 |
| | P Bus 1 U U7879:004. Slot T1 4 Image: Slot T1 4 Image: Slot T2 6 Image: Slot T2 6 Image: U7879.001. Slot T6 Image: PCI 10/100/1000Mbps U7879.001. U7879.001. | Stot T6 Image conduction 07879.001. ■ Slot T6 ■ PCI 10/100/1000Mbps 07879.001. |
| | P Bus 1 I/7879.004. Slot T14 Image: Slot T6 Image: Slot T6 Slot T6 Image: PCi 10/100/1000Mbps U7879.001. | Slot T6 PCI 10/100/1000Mbps U7879.001 |
| | Bust U7879.004. Slot T14 Storage controller U7879.001. Slot T6 PCI 10/100/1000Mbps U7879.001. | Stot TF Image Controller 07879.001. ■ Stot T6 PCI 10/100/1000Mbps U7879.001. |
| | Bus1 U U7879.004. Stot T14 ✓ Storage controller U7879.001. Stot T5 ✓ PCI 10/100/000Mbrs U7879.001. | |
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| Slot T6 PCI 10/100/1000Mbps U7879.001. | | P Bigs1 I/I U7879.684 Starzen controllor U7879.001 U7879.001 |
| Stor age controller U7879.001. Stor T6 PCI 10/100/1000Mbps U7879.001. | - Unit U7879.001.DQD01.J | |

Figure 11: A continuation of configuration step A10 is illustrated on this screen capture

11. From the I/O Pools panel, click Next. (Figure 12)

| Number of I/O pools all | owed: 1024 | |
|-------------------------|------------|-----|
| I/O gools : | | Add |
| Partition I/O Pools | | |
| | | |
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Figure 12: Configuration step A11 is illustrated on this screen capture

12. From the Virtual I/O Adapters panel, check No. Then click Next. (Figure 13)



Figure 13: Configuration step A12 is illustrated on this screen capture

13. From the **Power Controlling Partitions** click **Next**. (Figure 14)

| Create Logical Partition Profile - Power Co | ontrolling Partitions | | | _ 🗆 🖂 |
|--|-------------------------------|------------|----------------|--------|
| You may specify power controlling using the fields below. | partitions for this partition | on profile | | |
| Power controlling partitions | | | | |
| Number of power controlling partitions: Power controlling partition to add: | 1 svtaix25 AIX53(1) | | Add | |
| Partition ID Partition name | | | <u>R</u> emove | |
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| | | | | |
| Help ? | < Back | Next > | Finish | Cancel |

Figure 14: Configuration step A13 is illustrated on this screen capture

14. From the **Optional Settings** panel, in **Boot modes** check **Normal**. Then, click **Next**. (Figure 15)



Figure 15: Configuration step A14 is illustrated on this screen capture

15. From the **Profile Summary** panel, confirm the settings. Then, click **Finish**. If the partition is created successfully, it will add vioserv1_linux into the **Partition** with profile name Run_VIO_Server_profile. (Figure 16)

| 🖵 Create Logical Partition Profile - Profile Summ | ary 💷 🖂 🖂 🖂 |
|---|---|
| This is a summary of the partition and profile. of your choices, click Back. You can see the d | Click Finish to create the partition and profile. To change any letails of the physical I/O devices you chose by clicking Details. |
| You can modify the profile or partition by using complete this wizard. | the partition properties or profile properties after you |
| System name: | P5_eServer |
| Partition ID: | |
| Partition name: | vioserv1_linux |
| Partition environment: | Virtual I/O Server |
| Profile name: | Run_VIO_Server_profile |
| Desired memory: | 0.0 GB 512.0 MB |
| Desired processing units: | 0.5 |
| Physical I/O devices: Confirm these | 2 (Details) |
| Boot mode: settings. | NORMAL |
| Virtual I/O adapters: | 0 Ethernet |
| | 0 SCSI |
| | 2 Serial |
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| Help ? | < Back Next Finish Cancel |

Figure 16: Configuration step A15 is illustrated on this screen capture

16. Right-click **Run_VIO_Server_profile** under **vioserv1_linux**. Then select **Copy** from the pop-up menu. (Figure 17)



Figure 17: Configuration step A16 is illustrated on this screen capture

17. From the Copy Profile panel, type the install profile name (for example, Install_VIO_Server_profile) in the New profile name field. If successful, Install_VIO_server_profile will be refreshed under vioserver1_linux. (Figure 18)

| Co <u>n</u> sole Server <u>M</u> anagement <u>S</u> elect | ed <u>V</u> iew <u>W</u> indow <u>H</u> elp | | с ^к (| | | | |
|---|---|---|--|--|--|--|--|
| ⇔⇒ ≤ ● ♀ ҂ È | % 📑 🖆 🖾 🖬 🖼 | | | | | | |
| Navigation Area | Server and Partition: Server Management | | | | | | |
| Management Environment System 1 austin.ibm.com | Name A P5_eServer | State Operating | Operator Panel Value | | | | |
| Server and Partition Server Management Server Management Licensed Internal Code M Service and Sangement Service and Islands | | Not Activated Running Running Running Running | 00000000 | | | | |
| ⊕ 🚰 Service Applications ⊕ 🔋 tocalhost localdomain | stybinx1_redrat3 stybinx2_redHat33 svtp5inx3_redHat33 vioserv1_aix vioserv1_aix instail_v10_Server_profile lostail_v10_Server_profile | Running Running Running Not Activated | 2.4.21-20.EL 2.4.21-20.EL 00000000 | | | | |
| | vioserv2_linux | Running | | | | | |
| | | | | | | | |

Figure 18: Configuration step A17 is illustrated on this screen capture

 Right-click Install_VIO_Server_profile and select Properties to modify the install profile. After the Properties panel comes up, select the Physical I/O tab and add the CD/DVD controller to the desired list. For example: add Slot T15, Other Mass Storage Controller, as desired. (Figure 19 and 20)



Figure 19: Configuration step A18 is illustrated on this screen capture

| | urtition rio | file Properti | les: Install_ | _VIO_Server_pr | ofile @ | P5_eServer | |
|-----------------------------|------------------------------|--|---------------|----------------------|------------------|---|--|
| General | Memory / | Processors | Physical I/ | O Virtual I/O | Power | Controlling Settings | |
| Deta | ailed below ar | e the I/O devi | ces specifie | ed for this partitio | n profil | e. | |
| _ | | | | •••••• | | | |
| anaged sy | ystem I/O dev | ices | | | | | |
| Managed s | system I/O d | Description | | | Locat | on Code | Add as required |
| 👌 🥅 Unit | t U7879.001.D |)i | | | | | Add an desired |
| • 🔤 ! | Bus 1 | | | | U7879 | 9.001.DQD01J6-P1 | A <u>u</u> u as uesireu |
| • | Bus 2 | | | | U7879 | 9.001.DQD01J6-P1 | |
| Ψ 👄 | Bus 3 | | | | 07879 | J.UU1.DQDU1J6-P1 | (Properties) |
| _ | | Storage controller Other Mass Storage Controller PCI Fibre Channel Disk Controller | | | 0/8/9 | J.UU1.DQDU1J6-P1-T12 | |
| | Slot 115 | Other Mass | Storage Co | ntroller | 117070 | 004 DOD04 16 D4 C4 | |
| | SIDE CT | Permire en | anner Disk (| controller | 07879 | 001.DQD0136-P1-C1 | |
| | alot C2 | Empty slot | | | 0/0/3 | 0.001.DQD0138-P1-C2 | |
| rofile I/O | devices t U7879.001.C | Required I | I/O Pool D | Description | L | ocation Code | Remove |
| | | 1.2 | | | 623 | | |
| o 🗢 🚟 I | Bus 1 | | | | L | 7879.001.DQD01J6-P1 | (Proportion) |
| • 🐺 | Bus 1 Bus 3 | | | | U U | 17879.001.DQD01J6-P1 17879.001.DQD01J6-P1 | (Properties) |
| • == == == == | Bus 1 Bus 3 I Slot T15 | | C | Other Mass Stora | և Մ ge Մ | 17879.001.DQD01J6-P1 17879.001.DQD01J6-P1 17879.001.DQD01J6-P1-T15 | (Properties) |
| • ₩ • ₩ | Bus 1 Bus 3 Biot T15 | N N | C | Other Mass Stora | և Մ ge և | 7879.001.DQD01J6-P1 7879.001.DQD01J6-P1 7879.001.DQD01J6-P1-T15 | (Properties) (Advanced) |
| ● ₩ | Bus 1 Bus 3 Slot T15 | | C | Other Mass Stora | ւ Մ ge Մ | 17879.001.DQD01J6-P1 17879.001.DQD01J6-P1 17879.001.DQD01J6-P1-T15 | (Properties) (Advanced) |
| 0- ₩ 9 ₩ | Bus 1 Bus 3 | KK | C | Other Mass Stora | ս Մ ge Մ | 17879.001.DQD01.J6-P1 17879.001.DQD01.J6-P1 17879.001.DQD01.J6-P1-T15 | (P <u>r</u> operties) (Adva <u>n</u> ced) |
| 0- 9 ₩ | Bus 1 Bus 3 Biot T15 | N N | C | Other Mass Stora | և Մ ge և | 17879.001.DQD01J6-P1 17879.001.DQD01J6-P1 17879.001.DQD01J6-P1-T15 | (Properties) (Adva <u>n</u> ced) |
| | Bus 1 Bus 3 Biot T15 | | C | Other Mass Stora | ս Մ | 17879.001.DQD01J6-P1 17879.001.DQD01J6-P1 17879.001.DQD01J6-P1-T15 | (Properties) (Advanced) |
| ∳ 0 | Bus 1 Bus 3 Slot T15 | N N N | C | Other Mass Stora | և Ա ge Ա | 17879.001.DQD01.J6-P1 17879.001.DQD01.J6-P1 17879.001.DQD01.J6-P1-T15 | (Properties) (Adva <u>n</u> ced) |
| • • | Bus 1 Bus 3 Slot T15 | | C | Other Mass Stora | և Ա ge Մ | 17879.001.DQD01.J6-P1 17879.001.DQD01.J6-P1 17879.001.DQD01.J6-P1-T15 | (P <u>r</u> operties) (Adva <u>n</u> ced) |
| • • • | Bus 1 Bus 3 Slot T15 | N N N | C | Other Mass Stora | L L ge L | 17879.001.DQD01.J6-P1 17879.001.DQD01.J6-P1 17879.001.DQD01.J6-P1-T15 | (P <u>r</u> operties) (Adva <u>n</u> ced) |
| 9 9 | Bus 1 Bus 3 Slot T15 | N N | C | Other Mass Stora | և Ա | 17879.001.DQD01J6-P1 17879.001.DQD01J6-P1 17879.001.DQD01J6-P1-T15 | (P <u>r</u> operties) (Adva <u>n</u> ced) |
| • • | Bus 3 | × | 6 | Other Mass Stora | u ge u | 17879.001.DQD01.J6-P1 17879.001.DQD01.J6-P1 17879.001.DQD01.J6-P1-T15 | (Properties) (Advanced) |

Figure 20: Continuation of configuration step A18 is illustrated on this screen capture

19. Select the **Settings** tab, check **System Management Services (SMS)** for the **Boot Modes**. Then click **OK**. (Figure 21)

| Logical | Partition P | rofile Propert | ies: Install_VI | O_Server_profile @ F | 95_eServer | | | | |
|---------|-------------|--------------------|-------------------|----------------------|-------------|----------|-----------|------|---|
| General | Memory | Processors | Physical I/O | Virtual I/O Power C | Controlling | Settings | \supset | | |
| Determ | | | | | | | | | |
| Below | are the opt | lional settings f | or this partition | prome. | | | | | |
| | Enable cor | nnection monito | ring | | | | | | |
| | Automatica | ally start when th | e managed sys | tem is powered on | | | | | |
| | | | | | | | | | |
| - BC | oot Modes - | | | | | | | | |
| | System Ma | inagement Serv | ices (SMS) | | | | | | |
| | Diagnostic | with default bo | t list (DIAG DE | FAULT | | | | | |
| 0 | Diagnostic | with stored boo | t list (DIAG_STO | DRED) | | | | | |
| 0 | Open Firm | ware OK promp | t (OPEN_FIRMV | VARE) | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | 1 | - |
| | | | | | | ĸ | Cancel | Help | |

Figure 21: Configuration step A19 is illustrated on this screen capture

Now, the VIO Server partition with two profiles, run and install, are created successfully.

Conclusion

The IBM Virtual VO Server facilitates the sharing of physical resources between partitions on an IBM eServer p5 server. This capability is available as the result of leading technology delivered with the POWER5 processor. The VIO Server offers many attractive features:

- Allows for the creation of partitions without requiring additional physical I/O resources.
- Enables the creation of more partitions than there are actual I/O slots or physical devices. Partitions may enjoy dedicated I/O, Virtual I/O, or both.
- Provides Virtual SCSI and shared Ethernet adapter function to client partitions.
- Helps maximize utilization of physical resources.

For these and many other reasons, more and more enterprises which run their aggressive IT missions on the eServer p5 family of servers are moving to virtual partitioning.

Through a screen-by-screen approach, this paper has provided the reader with a sense of the relative simplicity and speed with which a VIO Server can be implemented, along with a demonstration of setting up a number of client partitions to interact with it.

With the sophistication of the mainframe-like partitioning technology that is now available with POWER5, there is no reason to postpone embarking on the "virtual" path—allowing your enterprise to enjoy higher and more efficient use of its many server resources.

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