

Virtual I/O Server Version 1.5



Release Notes

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Release Notes

Note

Before using this information and the product it supports, read the information in “Notices,” on page 13.

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Chapter 1. Virtual I/O Server Version 1.5 enhancements

There are a number of enhancements in this release of the Virtual I/O Server (VIOS). Several enhancements have been made in the area of POWER™ Virtualization. The following sections describe the features of each element by product area.

Virtual I/O Server (VIOS)

The following enhancements have been made to VIOS:

- File-backed virtual SCSI devices: Provides additional flexibility for virtual SCSI device provisioning and management. In addition to backing a Virtual SCSI device (disk or optical) by physical storage, a virtual SCSI device can now be backed by a file. All virtual SCSI devices, including file-backed virtual SCSI devices, are accessed as standard SCSI-compliant LUNs.
- Virtual I/O Server Expansion Pack: Virtual I/O Server installation media includes an expansion pack that delivers additional VIOS Security functionality. These include Kerberos (Network Authentication Service for users and Client and Server Applications), LDAP (Lightweight Directory Access Protocol client and server functionality) and SNMP V3 (Simple Network Management Protocol Version 3).
- New storage subsystems: DS3400 IBM® Total Storage device.

Shared Ethernet Adapter (SEA) enhancements

The following are enhancements to the SEA.

VIOS network bandwidth apportioning

The bandwidth apportioning feature for the SEA, also known as VIOS Quality of Service (QoS), allows the VIOS to give a higher priority to some types of packets. In accordance with the IEEE 801.q specification, VIOS administrators can instruct the SEA to inspect bridged VLAN-tagged traffic for the VLAN priority field in the VLAN header. The 3-bit VLAN priority field allows each individual packet to be prioritized with a value from 0 to 7 to distinguish more important traffic from less important traffic. More important traffic is sent faster and uses more VIOS bandwidth than less important traffic.

Note: To use this feature, when the VIOS Trunk Virtual Ethernet Adapter is configured on an HMC, the adapter must be configured with Additional VLAN IDs because only the traffic on these VLAN IDs is delivered to the VIOS with a VLAN tag. Note that untagged traffic is always treated as though it belonged to the default priority class (i.e., as if it had a priority value of 0).

Depending on the VLAN priority values found in the VLAN headers, packets are prioritized as follows:

Table 1. VLAN traffic priority values and relative importance

Priority Value and Importance

- 1 (Most important)
- 2
- 0 (Default)
- 3
- 4
- 5
- 6
- 7 (Least important)

The VIOS administrator can use this feature by setting the SEA qos_mode attribute to either strict or loose mode. The default is disabled mode. The following definitions describe these modes:

disabled mode

This is the default mode. VLAN traffic is not inspected for the priority field.

Example:

```
chdev -dev <SEA_device_name> -attr qos_mode=disabled
```

strict mode

More important traffic is bridged over less important traffic. This mode provides better performance and more bandwidth to more important traffic; however, it can result in substantial delays for less important traffic.

Example:

```
chdev -dev <SEA_device_name> -attr qos_mode=strict
```

loose mode

A cap is placed on each priority level, so that after a number of bytes is sent for each priority level, the following level is serviced. This method ensures that all packets will eventually be sent. More important traffic is given less bandwidth with this mode than with strict mode; however, the caps in loose mode are such that more bytes are sent for the more important traffic, so it still gets more bandwidth than less important traffic.

Example:

```
chdev -dev <SEA_device_name> -attr qos_mode=loose
```

Note: In either mode, because the SEA uses several threads to bridge traffic, it is still possible for less important traffic from one thread to be sent before more important traffic of another thread.

To enable the SEA to prioritize traffic, client partitions must insert a VLAN priority value in their VLAN header. For AIX clients, a VLAN pseudo-device must be created over the Virtual I/O Ethernet Adapter, and the VLAN priority attribute must be set (the default value is 0). Do the following to enable traffic prioritization on an AIX client:

1. In the HMC, create a Virtual I/O Ethernet Adapter with all of the tagged VLANs that are required (specified in the Additional VLAN ID list).

Note: Packets sent over the default VLAN ID (specified in the Adapter ID or Virtual LAN ID field) will not be VLAN-tagged; and therefore, a VLAN priority value cannot be assigned to them.

2. On the VIOS, run the **smitty vlan** command.
3. Select Add a VLAN.
4. Select the name of the Virtual I/O Ethernet Adapter created in step 1.
5. In the VLAN Tag ID attribute, specify one of the tagged VLANs that are configured on the Virtual I/O Ethernet Adapter that you created in step 1.
6. Specify an attribute value (0 to 7) in the VLAN Priority attribute, which corresponds to the importance the VIOS should give to the traffic sent over that VLAN pseudo-device. Refer to Table 1 on page 1 for information about priority values.
7. Configure the interface over the VLAN pseudo-device created in step 6

Traffic sent over the interface created in step 7 will be VLAN-tagged and its VLAN header will have the VLAN Priority value specified in step 6. When this traffic is bridged by a SEA that has been enabled for Bandwidth Apportioning, the VLAN priority value will be used to determine how quickly it should be sent in relation to other packets at different priorities.

Client-specific SEA statistics

To gather network statistics at a per-client level, advanced accounting can be enabled on the SEA to provide more information about its network traffic. To enable per-client statistics, the VIOS administrator can set the SEA accounting attribute to "enabled" (the default value is "disabled", so that no per-client statistics are gathered by default). When advanced accounting is enabled, the SEA keeps track of the

hardware (MAC) addresses of all of the packets it receives from the LPAR clients, and increments packet and byte counts for each client independently. After advanced accounting is enabled on the SEA, the VIOS administrator can generate a report to view per-client statistics by running the **seastat** command.

Note: Advanced accounting must be enabled on the SEA before the **seastat** command can print any statistics

To enable advanced accounting on the SEA, enter the following command:

```
chdev -dev <SEA_device_name> -attr accounting=enabled
```

The following command displays per-client SEA statistics. The optional **-n** flag disables name resolution on IP addresses.

```
seastat -d <SEA_device_name> [-n]
```

The following command clears (zeroes out) all of the per-client SEA statistics that have been gathered:

```
seastat -d <SEA_device_name> -c
```

Tivoli Identity Manager (TIM)

Continuing the collaboration between System p™ and IBM Tivoli®, this tool now supports the VIOS.

- VIOS is enabled for user administration from the TIM.
- TIM provides centralized user management and the ability to apply enterprise specific security policies to VIOS administrators and users. For more information about TIM, see the TIM documentation at the following Web site: <http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliIdentityManager.html>

Partition Mobility

The Partition Mobility support enables System p users to move partitions easily from one POWER6™ server to another.

- Live Partition Mobility:
 - Move a running LPAR and all of its running applications from one server to another server without disrupting operation of the LPAR. The operating system and applications are moved with only a slight network delay or pause (in seconds).
 - Avoid application and partition downtime by moving running AIX® and Linux® partitions to other systems prior to upgrades or maintenance.
 - Balance resource utilization on servers.
 - Limit the impact of planned server outages.
 - Inactive Partition Mobility.
 - Move a powered-off LPAR from one system to another.
 - Move a partition and all virtual devices to the destination server, ready for activation.
- Partition Mobility requirements:
 - POWER6 servers with Advanced POWER Virtualization (APV) enabled.
 - VIOS for virtualizing resources and providing mobility infrastructure on source and destination servers.
 - AIX and Linux partitions with operating system levels supporting Partition Mobility.
 - HMC managing both source servers and destination servers.
 - Integrated Virtualization Manager (IVM)-managed to IVM-managed server migrations supported.
 - Partitions can be diskless and dataless, or can use SAN-attached storage through the VIOS. Any virtual disks must be SAN-attached and accessed through VIOS.
- Partition Mobility minimum requirements:
 - HMC V7R3.2.0 or greater

- Cec FW EM320_XXX or greater
- AIX 5.3 TL7 or greater, 6.x or greater
- VIOS 1.5 or greater
- Red Hat RHEL 5.x or greater
- SUSE SLES 10 SP1

Integrated Virtualization Manager

The IVM adds support for new POWER6 functions and provides significant enhancements to existing functions.

- POWER6 hardware support:
 - IVM is optionally supported on the p550 platforms.
 - APV Starter Edition offered exclusively on the p550.
 - IVM provides the virtualization capabilities for the IBM BladeCenter® JS22. All of the virtualization capabilities available through IVM on non-blade systems are now available in the blade environment.
 - IVM now supports system plan create and deploy on POWER6 hardware and JS22 blades.
- POWER6 feature support:
 - Live Partition Mobility supports IVM for migrating an active partition between two physical IVM-managed systems with no application downtime.
The partition must be using shared SAN storage, or be running in diskless and dataless mode.
 - Integrated Virtual Ethernet (also known as Host Ethernet Adapters), allows multiple partitions to share a single physical Ethernet port without the need for the Shared Ethernet Adapter bridge.
 - Support for Dedicated I/O: IVM now offers support for both shared and dedicated I/O by offering clients a choice when configuring their system.
 - Shared Dedicated Capacity allows for the donation of unused dedicated CPU cycles to the shared processor pool by increasing overall system performance.
 - Partition recovery priorities manages a processor failure, assuring that the partitions with the highest priority will continue running.
 - Processor compatibility mode allows the operating system to run in POWER5™, POWER6, or POWER6 enhanced mode.
- Existing feature enhancements:
 - IVM now supports the assigning of any number of virtual Ethernet adapters to partitions, the assigning of virtual Ethernet IDs, and full support for IEEE 802.1Q adapters.
 - The Virtual optical support is extended to support the loading and unloading of optical media files to a virtual optical device in the partition. Read-only support is provided to enable multiple partitions to access the same ISO image simultaneously. Read-write support is provided to allow partitions to treat the device as a DVD-RAM drive. In addition to the optical support, files can now be used for virtual disk in addition to physical and logical volumes.
 - The terminal or console of a partition can now be accessed through a secure encrypted (SSH) connection directly from the Web browser.

Chapter 2. Installation, Migration, Upgrade, and Configuration Information

The following information applies to Virtual I/O Server.

Note: This software might contain errors that could result in critical business impact. Install the latest available update packages prior to using this software. Update packages can be obtained from the following Web site:

<http://www14.software.ibm.com/webapp/set2/sas/f/vios/download>

To view the most current version of the Virtual I/O Server release notes, go to the online release notes at the following Web site:

<http://publib.boulder.ibm.com/infocenter/pseries/v5r3/index.jsp?topic=/com.ibm.aix.resources/53relnotes.htm>

All users of the Virtual I/O Server should subscribe to the Virtual I/O Server subscription service. Subscribing to this service allows users to stay current on Virtual I/O Server news and critical product updates. To subscribe, go to the following Web site:

<http://www14.software.ibm.com/webapp/set2/subscriptions/pqvcmjd>

and click the **Subscribe/Setup** tab.

Chapter 3. Software License Agreements

There are instances where the software license agreements might not be displayed correctly. In this event, the License Agreements can be viewed in all languages at the following Web site:

<http://www.ibm.com/software/sla/sladb.nsf>

Chapter 4. Online documentation for Virtual I/O Server

For online documentation, see *Using the Virtual I/O Server* at the following Web site:

<http://publib.boulder.ibm.com/infocenter/eserver/v1r3s/topic/iphb1/iphb1kickoff.htm>

For additional documentation, including Redbooks[®], refer to this Web site:

<http://www14.software.ibm.com/webapp/set2/sas/f/vios/documentation/home.html>

Chapter 5. Update to chlang command for Customers in Japanese Locales

Customers in Japanese locales should use the **chlang** command to force messages on the left to appear in English. Without this option, messages during the boot sequence are corrupted.

To change the Virtual I/O Server's locale to Japanese, the user needs to issue the following command:

```
chlang -msg C01ft -lang ja_JP
```

Appendix. Notices

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