IBM Virtual I/O Server helps maximize physical resources on IBM pSeries POWER5 systems; Partition Load Manager helps maximize CPU/memory on pSeries POWER5 servers that support dynamic logical partitioning

Overview
Virtual I/O Server (VIOS) and Partition Load Manager are part of the Advanced POWER™ Virtualization hardware feature that includes:

- Micro-partitioning support for a single processor being shared by up to ten logical partitions.
- Virtual SCSI (VSCSI) disks that allow partitions to share physical storage adapters and devices; this function will be fully supported for production use with APAR IY58231.
- 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: Virtual Ethernet provides high-speed connections between partitions; Shared Ethernet Adapter provides connectivity between internal and external Virtual LANs (VLANs).

VIOS resides in a pSeries POWER5 partition and is created using the Hardware Management Console (HMC). The VIOS installation media ships with pSeries POWER5 systems and supports network install (NIMOL from HMC) or CD installation. It supports AIX 5L V5.3, SUSE LINUX Enterprise Server 9 for POWER, and Red Hat Enterprise Linux AS for POWER V3 as VIO clients.

Partition Load Manager
Partition Load Manager for AIX 5L helps maximize your CPU and memory resources on pSeries POWER5 servers that support dynamic LPAR. Within the constraints of a user-defined policy, resources are automatically moved to partitions with a high demand, from partitions with a lower demand. Resources that would otherwise go unused can now be more fully utilized.

Partition Load Manager supports management of any dynamic LPAR running AIX 5L V5.2 with the 5200-04 Recommended Maintenance Package or AIX 5L V5.3, or later.

Key prerequisites
Any pSeries POWER5 system with supporting operating system

Planned availability date
August 31, 2004

At a glance
Virtual I/O Server (VIOS) facilitates the sharing of physical resources between partitions on a pSeries POWER5 system

- Allows creation of partitions without requiring additional physical I/O resources
- Enables creation of more partitions than I/O slots or physical devices; partitions may have dedicated I/O, virtual I/O (VIO), or both
- Provides virtual SCSI and Shared Ethernet Adapter function to client partitions
- Helps maximize utilization of physical resources

Partition Load Manager helps to maximize utilization of CPU and memory resources on servers that support dynamic logical partitioning (LPAR)

- Automated CPU and memory reconfiguration
- Real-time partition configuration and load statistics
- GUI (Web-based System Manager)
- Support for:
  - Manual provisioning of resources
  - Dedicated and shared processor LPAR groups

For ordering, contact:
Your IBM representative, an IBM Business Partner, or the Americas Call Centers at 800-IBM-CALL

Reference: RE001
**Description**

**VIOS**

Physical resources are assigned to the I/O Server partition in the same way physical resources are assigned to other partitions. The VIOS provides a scriptable command line user interface (CLI). The VIOS is administered through the CLI, including device management (physical, virtual, LVM), LAN, install, security, user management, OEM software, and maintenance. The creation and deletion of the virtual client and server adapter is managed by the HMC GUI and pSeries POWER5 server firmware. The nexus between the client and server adapters is defined when the virtual adapters are created.

An I/O server can have a shared Ethernet adapter that allows LPARs on the virtual Ethernet (VLAN) to share the access to the physical Ethernet and communicate with systems outside the central electronics complex (CEC). This function enables LPARs on the internal VLAN to share the VLAN with stand-alone servers on the outside VLAN.

Virtual I/O facilitates the sharing of physical resources between partitions on pSeries POWER5 systems. Sharing physical resources enables the creation of more partitions than there are I/O slots or physical devices and allows the creation of partitions without requiring additional physical I/O resources. Partitions may have dedicated I/O resources, virtual I/O resources, or both.

Virtual I/O glossary:
- Virtual I/O — sharing of physical resources between partitions on pSeries POWER5 systems
- Virtual SCSI client — SCSI initiator, client partition’s VSCSI support
- Virtual SCSI server — SCSI target, VIOS’s VSCSI support
- Virtual Ethernet — Memory-based interpartition LAN, communicates between partitions
- Shared Ethernet Adapter — connects internal and external VLAN (level 2 bridge)
- VLAN — method to logically segment a physical network

**Partition Load Manager**

Partition Load Manager for AIX 5L provides automated CPU and memory resource management for AIX 5L logical partitions running pSeries POWER5 systems. It monitors the use of CPU and memory resources by AIX 5L partitions. Partition Load Manager changes the allocation of CPU and memory resources to the partitions based on the demand for resources by the partitions and rules contained in an installation defined policy. Partitions requiring more resources to process their work can be given resources taken from partitions having unused resources. Partition Load Manager can increase the overall resource utilization of the system, which allows customers to more efficiently use the CPU and memory resources contained in their machine.

**Reference information**

Refer to Software Announcement 204-155, dated July 13, 2004, for IBM AIX 5L for POWER V5.3.

Refer to Software Announcement 204-159, dated July 13, 2004, for information and details regarding 24 x 7 Software Maintenance Support Offering.

Refer to Hardware Announcement 104-252, dated July 13, 2004, for information and details regarding 9111-520 Feature 7940.

Refer to Hardware Announcement 104-253, dated July 13, 2004, for information and details regarding 9113-550 Feature 7941.

Refer to Hardware Announcement 104-257, dated July 13, 2004, for information and details regarding 9117-570 Feature 7942.

**Trademarks**

POWER and POWER5 are trademarks of International Business Machines Corporation in the United States or other countries or both. The e-business logo, pSeries, and AIX are registered trademarks of International Business Machines Corporation in the United States or other countries or both. Linux is a trademark of Linus Torvalds in the United States, other Countries or both. Other company, product, and service names may be trademarks or service marks of others.
Resource management

Virtual I/O (VIO) Ethernet technology is supported on pSeries® POWER5™ hardware. This technology enables communication between logical partitions on the same system using a VLAN-capable software switch in pSeries POWER5 systems. A shared Ethernet adapter (SEA) is a bridge between a physical Ethernet adapter or aggregation of physical adapters and one or more VIO Ethernet adapters on the I/O server.

AIX® 5L V.53 supports VIO Ethernet using a VIO switch as a method to perform in-memory communication between partitions in a system. The VIO switch also supports IEEE 802.1Q tagging allowing the VIO Ethernet adapters to belong to different VLANs on the VIO switch. VIO Ethernet adapters are created and configured on partitions using the Hardware Management Console (HMC). Once created, the partition will see the VIO Ethernet adapter in the Open Firmware Tree when it scans for devices. Once detected the VIO Ethernet adapter is configured and then used just like a hardware Ethernet adapter. This function is only supported on future systems with POWER™ Hypervisor function.

A SEA enables VIO Ethernet adapters in LPARs on one system to communicate with stand-alone servers on a physical network and LPARs in other systems. The SEA provides this access by connecting the internal hypervisor VLANs with the VLANs on the external switches. This enables LPARs on pSeries POWER5 systems to share the same network with stand-alone systems and other pSeries POWER5 LPARs to allow for a more flexible network. As the SEA processes packets at layer 2, the original MAC address and VLAN tags of the packet are visible to other systems on the physical network.

Virtual storage facilitates the sharing of physical resources (I/O slots, adapters, and devices) between logical partitions (LPARs). Virtual SCSI (VSCSI) enables partitions to access SCSI disk devices without requiring physical resources to be allocated to the partition.

Partitions maintain a client/server relationship in the VSCSI environment. Partitions that contain VSCSI devices are referred to as client partitions while the partitions that own the physical resources (adapters, devices) are the server partitions. AIX 5L V5.3 supports booting from VSCSI disks.

Language support

VIOS supports the following ISO8859-1 languages:

- de_CH — German (Switzerland)
- de_DE — German
- it_IT — Italian
- pt_BR — Portuguese (Brazil)
- pt_PT — Portuguese
- es_ES — Spanish

Offering information

Product information is available via the Offering Information Web site

http://www.ibm.com/common/ssi

Publications

Documentation for the Virtual I/O Server (VIOS) and Partition Load Manager for AIX is included in the “Partitioning your server” topic of the IBM eServer® Hardware Information Center.

You can find the eServer Hardware Information Center at

http://www.ibm.com/servers/library/infocenter

Select your country, then select “Hardware.” From the Hardware Information Center, in the navigation area, select “Partitioning your server.”

The VIOS and Partition Load Manager documentation includes the following:

- A conceptual overview and description of benefits of virtualization and micro-partitioning
- Planning information
- Installation and configuration information
- A description of management tasks that can be performed with VIOS and Partition Load Manager
- Diagnostic and troubleshooting information
- Reference pages for the VIOS Command Line Interface and Partition Load Manager Interfaces

Technical information

Hardware requirements: VIOS operates on any pSeries POWER5 system. Supported client partition operating systems are AIX 5L V5.3, SUSE LINUX™ Enterprise Server 9 for POWER, or Red Hat Enterprise Linux AS for POWER V3.

For information about supported third-party storage solutions, consult your IBM representative or Business Partner for the latest information and included configurations.

This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: http://www.ibm.com.
Virtual devices exported to client partitions by the VIOS must be attached to the VIOS through one of the following physical adapters:

- PCI-X Dual Channel Ultra320 SCSI RAID Adapter (#5703)
- Dual Channel SCSI RAID Enablement Card (#5709)
- PCI-X Dual Channel Ultra320 SCSI Blind Swap Adapter (#5710)
- PCI-X Dual Channel Ultra320 SCSI RAID Blind Swap Adapter (#5711)
- PCI-X Dual Channel Ultra320 SCSI Adapter (#5712)
- 2 Gigabit Fibre Channel PCI-X Adapter (#5716)
- 2 Gigabit Fibre Channel PCI-X Adapter (#6239)

Partition Load Manager requires HMC V2.6 on an HMC and a pSeries server with dynamic LPAR capability.

**Software requirements:** VIOS requires one of the following operating systems:

- AIX 5L for POWER V5.3
- SUSE LINUX Enterprise Server 9 for POWER
- Red Hat Enterprise Linux AS for POWER V3

Partition Load Manager requires AIX 5L for POWER V5.2 with the 5200-04 Recommended Maintenance package or AIX 5L V5.3, or later.

**Performance considerations:** VIOS requires resources like any other partition (for example, CPU, memory, and so forth). The number of partitions running the VIOS may have an impact on the performance of the system.

**Planning information**

VIOS provides isolation of virtual devices.

**Packaging**

The VIOS V1.1 package contains the following items:

- IBM International Program License Agreement (IPLA) and License Information in multilanguage in electronic copy on the CD-ROM
- One CD-ROM that includes documentation

Your Proof of Entitlement for this program is a copy of a paid sales receipt, purchase order, invoice, or other sales record from IBM or its authorized reseller from whom you acquired the program, provided that it states the license charge unit (the characteristics of intended use of the program — for example, number of processors, number of users) and quantity acquired.

Information about how you may obtain program services will be provided by the party (either IBM or its authorized reseller) from whom you acquired the program.

**Security, auditability, and control**

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

**Ordering information**

VIOS and Partition Load Manager are licensed software components of the Advanced POWER Virtualization hardware feature. They contain one charge unit: per installed processor, including software maintenance. The initial software license charge for VIOS and Partition Load Manager is included in the price of the Advanced POWER Virtualization hardware feature. The related hardware features that include VIOS and Partition Load Manager are:

- 9111-520 Feature 7940
- 9113-550 Feature 7941
- 9117-570 Feature 7942

The price of the software maintenance (SWMA) is associated with a feature number under the SWMA program numbers (5771-VIO and 5773-VIO for VIOS or 5771-PLM and 5773-PLM for Partition Load Manager).

**Important license information**

This program is eligible for sub-capacity pricing, usage, and billing. The following terms apply to its use under the IPLA license:

- You must acquire authorization from IBM for use of the program on each processor for each partitioned environment.
- IBM does not provide credits or refunds for charges already due or paid if a program’s use falls below the authorized entitlement.
- If in the future IBM makes a license management program, an IBM program that records and reports program use information (“Information”) to IBM, available to you for measuring program use, you agree to install and appropriately configure such license management program within 30 days of the date it is made available to you by IBM.
- If IBM makes such license management program available to you with the machine on which you are authorized to execute the program, you agree to install and appropriately configure such license management program within 30 days of the date on which you begin using the program on such authorized machine.
- IBM will provide the license management program to you, together with reporting requirements and an e-mail address for transmitting license management reports to IBM. You agree to transmit this information to IBM for the purpose of monitoring your usage of the program and for billing you for usage of the program, which exceeds your authorized entitlement. You agree that IBM may store and use your information within IBM for any purpose. IBM may also share your information with third parties such as IBM Business Partners, subcontractors, and consultants under contract to IBM for purposes of usage monitoring, problem determination, assisting you with performance and capacity planning, assisting IBM to
enhance IBM products and services, and notifying you of your system status and solutions available to you.

- You agree that upon reasonable written notice IBM has the right to verify your compliance on your premises during normal business hours. IBM may use an independent auditor for this purpose with your prior approval, which you agree not to unreasonably withhold or delay.

Separate billing features are available for an upgrade to 24 x 7 support. The 24 x 7 support features will be added to the registration/renewal feature for those customers who choose this option.

An after-license charge (ALC) applies to customers who have allowed their SWMA agreement to expire.

**New licenses**

<table>
<thead>
<tr>
<th>Description</th>
<th>Processor group</th>
<th>Feature number</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIOS V1.1 (5765-G34)</td>
<td>E5</td>
<td>0001</td>
</tr>
<tr>
<td></td>
<td>F5</td>
<td>0002</td>
</tr>
<tr>
<td>Partition Load Manager V1.1 (5765-G31)</td>
<td>E5</td>
<td>0001</td>
</tr>
<tr>
<td></td>
<td>F5</td>
<td>0002</td>
</tr>
</tbody>
</table>

**SWMA**

For each VIOS V1.1 (5765-G34) license ordered, an order for either the one-year (5773-VIO) or three-year (5777-VIO) SWMA must also be submitted. SWMA for VIOS is priced based on per processor, by processor group.

A separate ALC (5771-VAL) will be applied to the orders of customers who have allowed their SWMA agreements expire.

For each Partition Load Manager V1.1 (5765-G31) license ordered, an order for either the one-year (5773-PLM) or three-year (5773-PLM) SWMA must also be submitted. SWMA for Partition Load Manager is priced based on per processor, by processor group.

A separate ALC (5771-PAL) will be applied to the orders of customers who have let their SWMA agreements expire.

Customers should select from the following table for their SWMA coverage:

<table>
<thead>
<tr>
<th>Description</th>
<th>Processor group</th>
<th>Feature number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWMA for VIOS, 1 Year (5771-VIO)</td>
<td>E5</td>
<td>0615</td>
</tr>
<tr>
<td></td>
<td>F5</td>
<td>0616</td>
</tr>
<tr>
<td></td>
<td>E5</td>
<td>0617</td>
</tr>
<tr>
<td></td>
<td>F5</td>
<td>0618</td>
</tr>
</tbody>
</table>

**ALC**

For customers who let their SWMA contracts expire, the following ALC will apply:

- **SWMA for VIOS, 3 Year (5773-VIO)**
  - Per Processor: E5 0571, F5 0572
  - Per Processor: E5 0573, F5 0574

- **SWMA for Partition Load Manager, 1 Year (5771-PLM)**
  - Per Processor: E5 0675, F5 0676
  - Per Processor: E5 0677, F5 0678

- **SWMA for Partition Load Manager, 3 Year (5773-PLM)**
  - Per Processor: E5 0625, F5 0626
  - Per Processor: E5 0627, F5 0628

**Upgrades**

Upgrades are done through an existing SWMA contract. Customers who have SWMA and wish to get an upgrade should place a System Program Order (SPO) for delivery of media and hardcopy entitled publications for VIOS V1.1 (5765-G34) or Partition Load Manager V1.1 (5765-G31).

**Customization options**

Select the appropriate feature number to customize your order with delivery option desired. This feature can be specified on the initial or MES orders.

**Expedite shipments**

- **Local IBM Office Expedite (for IBM use only)**
  - Feature number: 3445

  Expedite shipments will be processed to receive 72-hour delivery from the time IBM Software Delivery and Fulfillment (SDF) receives the order. SDF will then ship the order via overnight air transportation.

- **SPO (5692-A5L):** A 5692-A5L SPO is mandatory for shipments of program distribution and publications. The individual licensed program orders (for example, 5765-G34) are for registration and billing purposes only. No shipment occurs under these orders.
To receive shipment of machine-readable materials on a CD-ROM requires an SPO (5692-A5L). To prevent additional billing expenses, place only one SPO order per machine.

Select the following SPO (5692-A5L) feature number for the licensed program to be delivered on the CD-ROM.

<table>
<thead>
<tr>
<th>Program name</th>
<th>Program number</th>
<th>SPO feature number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual I/O Server</td>
<td>0999</td>
<td>5765-G34</td>
</tr>
<tr>
<td>Partition Load Manager</td>
<td>1424</td>
<td>5765-G31</td>
</tr>
</tbody>
</table>

**Basic machine-readable material:** Select one of the following priced feature numbers for media type under 5692-A5L. The media process charge is a one-time, non-discountable charge per SPO order when media is selected.

<table>
<thead>
<tr>
<th>Media type</th>
<th>Media feature number</th>
<th>Media process charges feature number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD-ROM</td>
<td>3410</td>
<td>1004</td>
</tr>
<tr>
<td>CD-ROM</td>
<td>3410</td>
<td>1005</td>
</tr>
</tbody>
</table>

### Terms and conditions

**Agreement:** IPLA. Proofs of Entitlement (PoE) are required for all authorized use.

This software license includes SWMA, previously referred to as Software Subscription and Technical Support.

The following agreements apply for maintenance and do not require customer signatures:

- IBM Agreement for Acquisition of Support (Z125-6011)
- Addendum for Support (SWMA) for Select iSeries™ and pSeries Programs (Z125-6495)

**Limited warranty applies:** Yes

**Warranty:** This program has warranty for a minimum of one year from acquisition from IBM or an authorized IBM Business Partner. The warranty provided to the customer, for at least one year from acquisition, is access to databases (read Web sites) for program information and FAQs, including any known fixes to defects, which the customer can download or obtain otherwise and install at leisure.

**Program technical support:** Technical support of a program product will be available for a minimum of three years from the general availability date, as long as your SWMA is in effect. This technical support allows you to obtain assistance (via telephone or electronic means) from IBM for product-specific, task-oriented questions regarding the installation and operation of the program product. SWMA also provides you with access to updates, releases, and versions of the program. Customers will be notified, via announcement letter, of discontinuance of support with 12 months’ notice. If you require additional technical support from IBM, including an extension of support beyond the discontinuance date, contact your IBM representative or IBM Business Partner. This extension may be available for a fee.

Money-back guarantee: If for any reason you are dissatisfied with the program, return it within 30 days from the invoice date, to the party (either IBM or its reseller) from whom you acquired it, for a refund. This applies only to your first acquisition of the program.

**Copy and use on home/portable computer:** No

**Volume orders (IVO):** Yes, contact your IBM representative.

**Passport Advantage® applies:** No

**SWMA applies:** Yes

All distributed software licenses include SWMA (Software Subscription and Technical Support) for a period of 12 months from the date of acquisition, providing a streamlined way to acquire IBM software and assure technical support coverage for all licenses. Extending coverage for a total of three years from date of acquisition may be elected.

While your SWMA is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions; and code-related questions. IBM provides assistance via telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your end users.) IBM provides Severity 1 assistance 24 hours a day, every day of the year. For additional details, consult your IBM Software Support Guide at

http://techsupport.services.ibm.com/ guides/handbook.html

SWMA does not include assistance for the design and development of applications, your use of programs in other than their specified operating environment, or failures caused by products for which IBM is not responsible under this agreement.

**IBM operational support services — SoftwareXcel:** No

**AIX/UNIX® Upgrade Protection applies:** No

**Entitled Upgrade for current AIX/UNIX Upgrade Protection licensees:** No

**iSeries Software Subscription applies:** No

**Variable charges apply:** Yes

**Educational allowance available:** Yes, 15% education allowance applies to qualified education institution customers.

---

**IBM Electronic Services**

IBM Global Services has transformed its delivery of hardware and software support services to put you on the road to higher systems availability. IBM Electronic Services is a Web-enabled solution that provides you with an exclusive, no-additional-charge enhancement to the service and support on the IBM eServer. You should benefit from greater system availability due to faster problem resolution and preemptive monitoring. IBM Electronic Services is comprised of two separate, but complementary, elements: IBM Electronic Services news page and IBM Electronic Service Agent™.
IBM Electronic Services news page provides you with a single Internet entry point that replaces the multiple entry points traditionally used by customers to access IBM Internet services and support. By using the news page, it enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The IBM Electronic Service Agent is a no-additional-charge software that resides on your IBM eServer system. It is designed to proactively monitor events and transmit system inventory information to IBM on a periodic customer-defined timetable. The IBM Electronic Service Agent tracks system inventory, hardware error logs, and performance information. If the server is under a current IBM maintenance service agreement or within the IBM warranty period, the Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to provide proactive service that maintains higher system availability and performance. In addition, information collected through the Service Agent will be made available to IBM service support representatives when they are helping answer your questions or diagnosing problems.

To learn how IBM Electronic Services can work for you, visit http://www.ibm.com/support/electronic

---

**Prices**

<table>
<thead>
<tr>
<th>Description</th>
<th>Processor group</th>
<th>Feature number</th>
<th>OTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIOS V1.1 (5765-G34)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Processor</td>
<td>E5</td>
<td>0001</td>
<td>$ 0</td>
</tr>
<tr>
<td>Per Processor</td>
<td>F5</td>
<td>0002</td>
<td>0</td>
</tr>
<tr>
<td>Partition Load Manager V1.1 (5765-G31)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Processor</td>
<td>E5</td>
<td>0001</td>
<td>0</td>
</tr>
<tr>
<td>Per Processor</td>
<td>F5</td>
<td>0002</td>
<td>0</td>
</tr>
</tbody>
</table>

* One-time charge

**SWMA**

For each VIOS V1.1 (5765-G34) license ordered, an order for either the one-year (5771-VIO) or three-year (5773-VIO) SWMA must also be submitted. SWMA for VIOS is priced based on per processor, by processor group.

A separate ALC (5771-VAL) will be applied to the orders of customers who let their SWMA agreements expire.

For each Partition Load Manager V1.1 (5765-G31) license ordered, an order for either the one-year (5771-PLM) or three-year (5773-PLM) SWMA must also be submitted. SWMA for Partition Load Manager is priced based on per processor, by processor group.

A separate ALC (5771-PAL) will be applied to the orders of customers who let their SWMA agreements expire.

Customers should select from the following table for their SWMA coverage:

**SWMA for VIOS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Processor group</th>
<th>Feature number</th>
<th>OTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWMA for VIOS, 1 Year (5771-VIO)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Processor</td>
<td>E5</td>
<td>0615</td>
<td>$ 90</td>
</tr>
<tr>
<td>24 x 7 Support</td>
<td></td>
<td>0616</td>
<td>24</td>
</tr>
<tr>
<td>Per Processor</td>
<td>F5</td>
<td>0617</td>
<td>90</td>
</tr>
<tr>
<td>24 x 7 Support</td>
<td></td>
<td>0618</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Processor group</th>
<th>Feature number</th>
<th>OTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWMA for VIOS, 3 Year (5773-VIO)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Processor</td>
<td>E5</td>
<td>0571</td>
<td>245</td>
</tr>
<tr>
<td>24 x 7 Support</td>
<td></td>
<td>0572</td>
<td>64</td>
</tr>
<tr>
<td>Per Processor</td>
<td>F5</td>
<td>0573</td>
<td>245</td>
</tr>
<tr>
<td>24 x 7 Support</td>
<td></td>
<td>0574</td>
<td>64</td>
</tr>
</tbody>
</table>

**SWMA for Partition Load Manager**

<table>
<thead>
<tr>
<th>Description</th>
<th>Processor group</th>
<th>Feature number</th>
<th>OTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWMA for Partition Load Manager, 1 Year (5771-PLM)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Processor</td>
<td>E5</td>
<td>0675</td>
<td>$ 20</td>
</tr>
<tr>
<td>24 x 7 Support</td>
<td></td>
<td>0676</td>
<td>5</td>
</tr>
<tr>
<td>Per Processor</td>
<td>F5</td>
<td>0677</td>
<td>20</td>
</tr>
<tr>
<td>24 x 7 Support</td>
<td></td>
<td>0678</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Processor group</th>
<th>Feature number</th>
<th>OTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWMA for Partition Load Manager, 3 Year (5773-PLM)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Processor</td>
<td>E5</td>
<td>0625</td>
<td>55</td>
</tr>
<tr>
<td>24 x 7 Support</td>
<td></td>
<td>0626</td>
<td>14</td>
</tr>
<tr>
<td>Per Processor</td>
<td>F5</td>
<td>0627</td>
<td>55</td>
</tr>
<tr>
<td>24 x 7 Support</td>
<td></td>
<td>0628</td>
<td>14</td>
</tr>
</tbody>
</table>

**ALC:** For customers who let their SWMA contracts expire, the following ALCs will apply:

<table>
<thead>
<tr>
<th>Description</th>
<th>Processor group</th>
<th>Feature number</th>
<th>OTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWMA for VIOS (5771-VAL)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALC</td>
<td>E5</td>
<td>0621</td>
<td>$45</td>
</tr>
<tr>
<td>ALC</td>
<td>F5</td>
<td>0622</td>
<td>45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Processor group</th>
<th>Feature number</th>
<th>OTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWMA for Partition Load Manager (5771-PAL)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALC</td>
<td>E5</td>
<td>0672</td>
<td>10</td>
</tr>
<tr>
<td>ALC</td>
<td>F5</td>
<td>0673</td>
<td>10</td>
</tr>
</tbody>
</table>

**Variable charges:** The applicable processor-based OTC will be based on the group of the designated machine on which the program is licensed for use. If the program is designated to a processor in a group for which no charge is listed, the charge of the next higher group listed applies. For movement to a machine in a higher group, an upgrade charge equal to the difference in the then-current charges between the two groups will apply. For movement to a machine in a lower group, there will be no adjustment or refund of charges paid.
Order now

To order, contact the Americas Call Centers, your local IBM representative, or your IBM Business Partner.

To identify your local IBM representative or IBM Business Partner, call 800-IBM-4YOU (426-4968).

Phone: 800-IBM-CALL (426-2255)
Fax: 800-2IBM-FAX (242-6329)
Internet: ibm_direct@vnet.ibm.com
Mail: IBM Americas Call Centers
      Dept: IBM CALL, 11th Floor
      105 Moatfield Drive
      North York, Ontario
      Canada M3B 3R1

Reference: RE001

The Americas Call Centers, our national direct marketing organization, can add your name to the mailing list for catalogs of IBM products.

Note: Shipments will begin after the planned availability date.

Trademarks

POWER5, POWER, iSeries, and Electronic Service Agent are trademarks of International Business Machines Corporation in the United States or other countries or both.
pSeries, AIX, eServer, and Passport Advantage are registered trademarks of International Business Machines Corporation in the United States or other countries or both.
UNIX is a registered trademark of the Open Company in the United States and other countries.
Linux is a trademark of Linus Torvalds in the United States, other Countries or both
Other company, product, and service names may be trademarks or service marks of others.