



IBM GPFS V3.5 introduces File Placement Optimizer for Linux (XCC)

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At a glance

The new File Placement Optimizer feature, available with GPFS™ V3.5 on Linux™, extends GPFS for a new class of data-intensive applications, commonly referred to as *big data applications*. GPFS V3.5:

- Offers standard file system interfaces on UNIX™ and Windows™ operating systems
- Allows concurrent reads and writes from multiple nodes
- Provides high-bandwidth data availability
- Supports failover and disaster recovery to minimize single points of failure
- Offers scalable information lifecycle management to enable flexible support of different disk classes through policy-driven automation and tiered storage management
- Provides multicluster support and use of multiple networks

For ordering, contact your IBM® representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: YE001).

Overview

The IBM General Parallel File System (GPFS) is a cluster file system designed for high-performance, parallel file access and management. GPFS delivers proven reliability, multicluster support, scalability and performance with automated failure recovery, and decentralized data management for simplifying administration. GPFS provides several essential services to allow you to effectively manage growing quantities of structured and unstructured data.

The new File Placement Optimizer (FPO) feature, available with GPFS V3.5 for Linux, extends GPFS for a new class of data-intensive applications, commonly referred to as *big data applications*. Big data applications involve processing massive amounts of data with a focus on semantically transforming the data. This class of applications is massively parallel and well suited for programming frameworks such as MapReduce that allow users to do large-scale data analysis where the application execution layer handles the system architecture, data partitioning, and task scheduling. A new license type is introduced for FPO nodes in a GPFS cluster that are sharing data with other FPO nodes, but not using GPFS for other usage that requires a GPFS Server license. You must purchase either a GPFS Server license or the new GPFS FPO license for nodes in a GPFS cluster using the

GPFS FPO function. GPFS FPO is an extension of GPFS that is designed to support this emerging class of workloads by applying five innovative optimizations:

- Locality awareness to allow compute jobs to be scheduled on nodes where the data resides
- Metablocks that allow large and small block sizes to co-exist in the same file system to meet the needs of different types of applications
- Write affinity that allows applications to dictate the layout of files on different nodes in order to maximize both write and read bandwidth
- Pipelined replication to maximize use of network bandwidth for data replication
- Distributed recovery to minimize the effect of failures on ongoing computation

Licenses for offerings in this announcement include Software Subscription and Support. Software Subscription and Support contracts are managed in Passport Advantage® . Refer to the [Order handling](#) section of this announcement for further details.

If a new release of the offering in this announcement is made generally available in Passport Advantage after the announcement of the offering in System x® ordering systems, clients with valid Software and Subscription contracts may elect to take electronic delivery of the latest release.

Key prerequisites

Refer to the [Hardware requirements](#) and [Software requirements](#) sections.

Planned availability date

December 14, 2012

Description

GPFS delivers file system services to parallel and serial applications. It gives parallel applications simultaneous access to the same or different files from any node that has the GPFS file system mounted, while managing a high level of control over all file system operations. GPFS is particularly appropriate in an environment where the aggregate peak need for data bandwidth exceeds the capability of a distributed file system server.

Accessibility by people with disabilities

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

http://www.ibm.com/able/product_accessibility/index.html

Section 508 of the US Rehabilitation Act

GPFS is capable, as of December 14, 2012, when used in accordance with associated IBM documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it. A US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested at

http://www.ibm.com/able/product_accessibility/index.html

Product positioning

GPFS is ideal for a wide range of workloads where it is imperative to have high-speed, reliable access or automated management of very large file sizes, or a very large number of files:

- Scale-out data access. A high-performance scale-out file system for business applications that benefit from active/active data access from multiple nodes.
- A multicluster file system, providing a global namespace across clusters for parallel processing on compute clusters, featuring extreme scalability and throughput optimized for streaming workloads such as those common in Web 2.0, digital media, scientific, and engineering applications. Users entitled with a GPFS (Server, Client/FPO as appropriate) license are allowed shared access to files in either the cluster where the file system was created or other GPFS clusters. Each site in the network is managed as a separate cluster, while allowing shared file system access.
- HSM platform. The built-in policy engine supports multiple tiers of storage, including tape, with powerful policy-driven file placement, migration, deletion, and reporting. This makes GPFS the perfect base for a content library or archival system by mixing cost-effective storage of infrequently accessed data with the global namespace for easy accessibility.

The new File Placement Optimizer feature, available with GPFS V3.5 on Linux , extends GPFS for a new class of data-intensive applications, commonly referred to as *big data applications*. Big data applications involve processing massive amounts of data with a focus on semantically transforming the data. This class of applications is massively parallel and well suited for programming frameworks such as MapReduce that allow users to do large-scale data analysis where the application execution layer handles the system architecture, data partitioning, and task scheduling. A new license type is introduced for FPO nodes in a GPFS cluster that are sharing data with other FPO nodes, but not using GPFS for other usage that requires a GPFS Server license. You must purchase either a GPFS Server license or the new GPFS FPO license for nodes in a GPFS cluster using the GPFS FPO function. GPFS FPO is an extension of GPFS that is designed to support this emerging class of workloads by applying five innovative optimizations.

Reference information

Refer to Software Announcement [212-472](#), dated December 11, 2012 .

Refer to Software Announcement [212-473](#), dated December 11, 2012 .

Program number

Program number	VRM	Program name
5641-A07	V3.5	IBM GPFS on x86 Architecture Offerings with 1 Yr SW S&S
5641-B07	V3.5	IBM GPFS on x86 Architecture Offerings with 3 Yr SW S&S
5641-C07	V3.5	IBM GPFS on x86 Architecture Offerings with 5 Yr SW S&S

Product identification number

Program PID number

5641-A07
5641-B07
5641-C07

Order handling

To allow for ease of order submission, the offerings in this announcement can be configured in conjunction with eligible System x hardware, software, and license-only configurations that can be created for this product based on existing supported System x hardware system units in a given business environment.

Licenses for offerings in this announcement include one, three or five years of Software Subscription and Support. Software Subscription and Support renewals for all features are aligned through Passport Advantage Express® or Passport Advantage , reducing the administrative burden of keeping your Subscription and Support up to date.

If a new release of a given offering in this announcement is made generally available in Passport Advantage after the announcement of the offering in System x ordering systems, you may elect to take delivery of any release generally available for that offering during the product registration process.

Eligible software products, offered and selected during the ordering process with each hardware system, are enabled for electronic download for the system unit for which the product was ordered. Optionally, software and license-only orders can be created for these products based on existing supported hardware system units in the business environment. Offerings included in this announcement are available exclusively by electronic download.

Orders placed for the eligible offerings in this announcement will be routed and fulfilled through Passport Advantage Express . Invoicing for the initial license orders will occur through the System x order management systems. Subscription and Support renewals will be managed through Passport Advantage .

Passport Advantage allows you to have a common anniversary date for Software Subscription and Support renewals. The anniversary date, established at the order ship date for the initial product acquisition, will remain unchanged while your Passport Advantage Agreement remains in effect. New software purchases initially include 12, 36 or 60 full months of Subscription and Support coverage. Subscription and Support renewals (the first year of renewal) can be prorated to be coterminous with your common anniversary date but managed and invoiced through Passport Advantage . Thereafter, all Software Subscription and Support will renew at the common anniversary date and include 12 full months of Subscription and Support.

Education support

The following classes are available:

Course code	Course title	Course type
AN810	GPFS System Administration	Classroom
AX810	GPFS System Administration	Instructor Led-Online
AN820	GPFS Performance Tuning	Classroom
AX820	GPFS Performance Tuning	Instructor Led-Online

IBM training provides education to support many IBM offerings. Descriptions of courses for IT professionals and managers are on the IBM training website

<http://www.ibm.com/services/learning/>

Call IBM training at 800-IBM-TEACH (426-8322) for catalogs, schedules, and enrollments.

Offering Information

Product information is available via the Offering Information website

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

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM , you may link directly to Business Partner information for this announcement. A PartnerWorld® ID and password are required (use IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=212-476>

Publications

No publications are shipped with this program.

The following publications are available from the web:

- IBM GPFS Concepts, Planning, and Installation Guide (GA76-0413)
- IBM GPFS Administration and Programming Reference (SA23-2221)
- IBM GPFS Advanced Administration and Programming Reference (SC23-5182)
- IBM GPFS Problem Determination Guide (GA76-0415)
- IBM GPFS Data Management API Guide (GA76-0414)

To access the above GPFS documentation, refer to the IBM Cluster Information Center website. This website contains the most recent GPFS documentation in PDF and HTML formats and is located at

<http://publib.boulder.ibm.com/infocenter/clresctr/vxrx/index.jsp>

The IBM Publications Center

<http://www.ibm.com/shop/publications/order>

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. Payment options for orders are via credit card (in the US) or customer number for 50 countries. A large number of publications are available online in various file formats, and they can all be downloaded by all countries, free of charge.

Technical information

Specified operating environment

Hardware requirements

GPFS on x86 Architecture and the File Placement Optimizer function are supported on all IBM ServerProven® servers with the minimum hardware requirements that follow, unless stated otherwise in the GPFS FAQs:

- Intel™ EM64T processors, with a minimum of 1 GB of system memory
- AMD Opteron processors, with a minimum of 1 GB of system memory

To determine if a server is ServerProven , see the IBM ServerProven site at

<http://www-03.ibm.com/systems/info/x86servers/serverproven/compat/us/>

Additionally, see the FAQs for supported connectivity, formally qualified disk subsystems, and use of GPFS on compatible non-IBM hardware.

The GPFS FAQs are available at

http://publib.boulder.ibm.com/infocenter/clresctr/vrx/topic/com.ibm.cluster.gpfs.doc/g_pfs_faqs/gpfsclustersfaq.html

Software requirements

For the File Placement Optimizer feature on Linux with GPFS V3.5, APAR IV28687 is required and an order for the FPO license must be placed.

It is suggested that you install the latest service update that is available at

<http://www-933.ibm.com/support/fixcentral/>

GPFS for Linux on x86 Architecture V3.5 is supported on the Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and Debian distributions. FPO is not supported on the Debian distribution.

For currently supported release levels of RHEL, SLES, and Debian distributions and the latest supported kernel levels, refer to the GPFS FAQs at

http://publib.boulder.ibm.com/infocenter/clresctr/vrx/topic/com.ibm.cluster.gpfs.doc/g_pfs_faqs/gpfsclustersfaq.html

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a readme file, or other information published by IBM , such as an announcement letter. Documentation and other program content may be supplied only in the English language.

Companion products

Related products to GPFS are:

- IBM DS and DCS disk arrays
- Tivoli® Storage Manager
- Tivoli Provisioning Manager
- HPSS (High Performance Storage System)
- IBM System Storage® SAN Volume Controller

Compatibility

The GPFS FPO license permits the licensed node to perform NSD server functions for sharing GPFS data with other nodes that have a GPFS FPO or GPFS Server license. This license cannot be used to share data with nodes that have a GPFS Client license or non-GPFS nodes.

Nodes running the GPFS File Placement Optimizer feature cannot coexist or interoperate with nodes running GPFS V3.4.

Limitations

The File Placement Optimizer function is only available with GPFS 3.5 on the Linux operating system with APAR IV28687. An order must be placed for the FPO license. FPO is not supported on the Debian distribution.

The GPFS FPO license permits the licensed node to perform NSD server functions for sharing GPFS data with other nodes that have a GPFS FPO or GPFS Server license. This license cannot be used to share data with nodes that have a GPFS Client license or non-GPFS nodes.

Nodes running the GPFS File Placement Optimizer feature cannot coexist or interoperate with nodes running GPFS V3.4.

For complete and up-to-date information regarding GPFS specifications and capacities, refer to the GPFS on x86 Architecture (5724-N94) Sales Manual and to the GPFS FAQs available at

http://publib.boulder.ibm.com/infocenter/clresctr/vxrx/topic/com.ibm.cluster.gpfs.doc/g_pfs_faqs/gpfsclustersfaq.html

For additional information, refer to the [Usage restrictions](#) section, or to the License Information document that is available on the IBM Software License Agreement website

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

IBM Electronic Support

The IBM Support Portal is your gateway to technical support. This includes IBM Electronic Support tools and resources, for software and hardware, to help save time and simplify support. The Electronic Support tools can help you find answers to questions, download fixes, troubleshoot, automate data collection, submit and track problems through the Service Request online tool, and build skills. All these tools are made available through your IBM support agreement, at no additional charge.

- Read about the Electronic Support portfolio of tools:
<http://ibm.com/electronicssupport>
- Access the IBM Support Portal:
<http://ibm.com/support>
- Access the online Service Request tool:
<http://ibm.com/support/servicerequest>

Planning information

The File Placement Optimizer function is only available with GPFS 3.5 on the Linux operating system with APAR IV28687. An order must be placed for the FPO license.

The GPFS FPO license permits the licensed node to perform NSD server functions for sharing GPFS data with other nodes that have a GPFS FPO or GPFS Server license. This license cannot be used to share data with nodes that have a GPFS Client license or non-GPFS nodes.

Nodes running the GPFS File Placement Optimizer feature cannot coexist or interoperate with nodes running GPFS V3.4.

For complete and up-to-date information regarding GPFS specifications, refer to the GPFS FAQs available at

http://publib.boulder.ibm.com/infocenter/clresctr/vxrx/topic/com.ibm.cluster.gpfs.doc/g_pfs_faqs/gpfsclustersfaq.html

Customer responsibilities

See the [Limitations](#) and [Usage restrictions](#) sections.

Installability

For installation information, refer to the *GPFS Concepts, Planning, and Installation Guide*.

Software Subscription and Support (also referred to as Software Maintenance) is included with licenses purchased through Passport Advantage and Passport Advantage Express. Product upgrades and technical support are provided by the Software Subscription and Support offering as described in the Agreements. Product upgrades provide the latest versions and releases to entitled software, and technical support provides voice and electronic access to IBM support organizations, worldwide.

IBM includes Software Subscription and Support with each program license acquired. The initial period of Software Subscription and Support can be extended by the purchase of a renewal option, if available.

Packaging

After receipt of an order, the Business Partner or user client will be required to register and accept Passport Advantage or Passport Advantage Express terms and conditions. The product includes the license and Software Subscription and Support.

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.

IBM GPFS for Linux on x86 Architecture is distributed on an individual package containing the Linux installation files and GPFS Server, GPFS Client, and GPFS FPO (Linux only) installation code.

Installation files include:

- IBM International Program License Agreement in multilanguage booklet (LC23-4301-01) and its License Information in multiple languages (L-LMUY-8YAP3Y)
- Proof of Entitlement (POE)
- Product readme file that describes the program's specified operating environment and program specifications

GPFS V3.5 program filesets:

Linux :

- `gpfs_install_3.5.0-0_x86_64`

Publications are available online at

<http://publib.boulder.ibm.com/infocenter/clresctr/vxrx/index.jsp>

This program, when downloaded from a website, contains the applicable IBM license agreement and License Information, if appropriate, and will be presented for acceptance at the time of installation of the program. For future reference, the license and License Information will be stored in a directory such as LICENSE.TXT.

Security, auditability, and control

GPFS uses the security and auditability features of the operating system on which it is installed. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Software Services

IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of our lab-based, software services team and the business consulting, project management, and infrastructure expertise of our IBM Global Services team. Also, we extend our IBM Software Services reach through IBM Business Partners to provide an extensive portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support a wide range of critical business needs.

To learn more about IBM Software Services or to contact a Software Services sales specialist, visit

<http://www.ibm.com/software/sw-services/>

Ordering information

This product is only available via Passport Advantage . It is not available as shrinkwrap.

Charge metric

Program name	PID number	Charge metric
IBM GPFS on x86 Architecture V3.5 with 1 year SW S&S	5641-A07	Per 10 PVU
IBM GPFS on x86 Architecture V3.5 with 3 year SW S&S	5641-B07	Per 10 PVU
IBM GPFS on x86 Architecture V3.5 with 5 year SW S&S	5641-C07	Per 10 PVU

Processor Value Unit (PVU)

PVU is a unit of measure by which the program can be licensed. The number of PVU entitlements required is based on the processor technology (defined within the PVU table by processor value, brand, type, and model number at the website below) and the number of processors made available to the program. IBM continues to define a processor, for the purpose of PVU-based licensing, to be each processor core on a chip. A dual-core processor chip, for example, has two processor cores. The PVU table can be found at

http://www.ibm.com/software/lotus/passportadvantage/pvu_licensing_for_customers.html

Licensee can deploy the program using either full capacity licensing or virtualization capacity (sub-capacity) licensing according to the Passport Advantage Sub-Capacity Licensing Terms (refer to the web page below). If using Full Capacity licensing, Licensee must obtain PVU entitlements sufficient to cover all activated processor cores¹ in the physical hardware environment made available to or managed by the program, except for those servers from which the program has been permanently removed. If using Virtualization Capacity licensing, Licensee must obtain entitlements sufficient to cover all activated processor cores made available

to or managed by the program, as defined according to the Virtualization Capacity License Counting Rules at

http://www.ibm.com/software/lotus/passportadvantage/Counting_Software_licenses_using_specific_virtualization_technologies.html

¹

An activated processor core is a processor core that is available for use in a physical or virtual server, regardless of whether the capacity of the processor core can be or is limited through virtualization technologies, operating system commands, BIOS settings, or similar restrictions.

Notes :

- Some programs may require licenses for the program and what is being managed. In that case, the following applies. In addition to the entitlements required for the program directly, licensee must obtain PVU entitlements for this program sufficient to cover the processor cores managed by the program.
- Some programs may be licensed on a managed basis only. In that case, the following applies. Instead of the entitlements required for the program directly, licensee must obtain PVU entitlements for this program sufficient to cover the processor cores managed by the program.
- A few programs on an exception basis may be licensed on a referenced basis. In that case, the following applies. Rather than obtaining entitlements for the activated processor cores available to the program, licensee must obtain PVU entitlements for this program sufficient to cover the environment made available to the referenced program as if the program itself were executing everywhere the referenced program was executing, independent of the basis on which the referenced program is licensed.

New Licensees

Orders for new licenses will be accepted now. Electronic download ability begins on the planned availability date.

Basic Licenses

To order the programs described in this announcement, specify the type model number, order type description, supply feature, and quantity of desired licenses for the appropriate one-time charge (OTC) features listed in the tables below. After receipt of your order, you will be requested to register through Passport Advantage Express to allow for entitlement for support and notification of upgrades. Upon registration completion you will be provided with a website for the electronic download. The one-time charge for the product includes the license and Software Subscription and Support.

Single entity offering (SEO) numbers in the table below can be ordered through ibm.com. The SEO numbers in the table below are equivalent to the type model number, description, supply feature, and OTC billing feature numbers as designated in the table. After receipt of your order, you will be requested to register through Passport Advantage Express to allow for entitlement for support and notification of upgrades. Upon registration completion, you will be provided with a website for the electronic download. The one-time charge for the product includes the license and Support.

Program number and feature description	Supply feature number	OTC billing feature number	SEO number
5641-A07 IBM GPFS on x86 Architecture FPO, Per 10 PVU with 1 Yr SW S&S	5809	0440	00Y4512
5641-A07 IBM GPFS on x86 Architecture FPO, Per 250, 10 PVU with 1 Yr SW S&S	5809	0445	00Y4513

5641-B07	IBM GPFS on x86 Architecture FPO, Per 10 PVU with 3 Yr SW S&S	5829	0441	00Y4516
5641-B07	IBM GPFS on x86 Architecture FPO, Per 250, 10 PVU with 3 Yr SW S&S	5829	0446	00Y4517
5641-C07	IBM GPFS on x86 Architecture Server, Per 10 PVU with 5 Yr SW S&S	5819	0444	00Y4520
5641-C07	IBM GPFS on x86 Architecture Server, Per 250, 10 PVU with 5 Yr SW S&S	5819	0449	00Y4521
5641-C07	IBM GPFS on x86 Architecture Client, Per 10 PVU with 5 Yr SW S&S	5809	0442	00Y4522
5641-C07	IBM GPFS on x86 Architecture Client, Per 250, 10 PVU with 5 Yr SW S&S	5809	0447	00Y4523
5641-C07	IBM GPFS on x86 Architecture FPO, Per 10 PVU with 5 Yr SW S&S	5829	0443	00Y4524
5641-C07	IBM GPFS on x86 Architecture FPO, Per 250, 10 PVU with 5 Yr SW S&S	5829	0448	00Y4525

Customization options

Select the appropriate feature numbers to customize your order with delivery options desired. These features can be specified on the initial order.

Expedite shipments

Feature	Description
3445	Expedite

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

Terms and conditions

The information provided in this announcement letter is for reference and convenience purposes only. The terms and conditions that govern any transaction with IBM are contained in the applicable contract documents such as the IBM International Program License Agreement, IBM International Passport Advantage Agreement, and International Passport Advantage Express Agreement.

Licensing

IBM International Program License Agreement including the License Information document and Proof of Entitlement (PoE) govern your use of the program. PoEs are required for all authorized use.

This software license includes Software Subscription and Support (also referred to as Software Maintenance).

Agreement for Acquisition of Software Maintenance

These programs are licensed under the IBM Program License Agreement (IPLA). IBM includes one year, three years, or five years of Software Subscription and Support (also referred to as Software Maintenance) with the initial license acquisition of each program acquired.

License Information form number

L-LMUY-8YAP3Y

The program's License Information will be available for review on the IBM Software License Agreement website

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

Limited warranty applies

Yes

Limited warranty

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the IBM Software Support Handbook found at

<http://www.ibm.com/support/handbook>

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

Volume orders (IVO)

No

Passport Advantage applies

Yes, and through the Passport Advantage website at

<http://www.ibm.com/software/passportadvantage>

Usage restrictions

Yes.

GPFS has three types of licenses: a Server license, a Client license, and an FPO license. For each node in a GPFS cluster (see Permitted use of GPFS Server, GPFS Client and GPFS FPO below), the customer determines the appropriate number of GPFS Server, GPFS Client, or GPFS FPO licenses that correspond to the way GPFS is used on that node. A node is defined as an operating system image that may appear on a single computer within a cluster, on a system within a cluster, or on a partition.

During GPFS cluster configuration, the customer is prompted to identify whether a particular node is a GPFS Server, GPFS Client, or a GPFS FPO. If a GPFS Client is chosen, function that requires a GPFS Server license will be disabled on this node. If a GPFS FPO is chosen, you will not be able to designate the node as quorum, file system manager, config manager, CNFS, or AFM gateway. This license cannot be used to share data with nodes that have a GPFS Client license or non-GPFS nodes. Because the node that acts as the GPFS cluster configuration server requires a GPFS

Server designation, at least one node in the GPFS cluster requires a GPFS Server license.

Permitted use of GPFS Server

The GPFS Server license permits the licensed node to perform GPFS management functions such as cluster configuration manager, quorum node, manager node, and Network Shared Disk (NSD) server. In addition, the GPFS Server license permits the licensed node to share GPFS data directly through any application, service protocol, or method such as Network File System (NFS), Common Internet File System (CIFS), File Transfer Protocol (FTP), or Hypertext Transfer Protocol (HTTP).

Permitted use of GPFS Client

The GPFS Client license permits exchange of data between nodes that locally mount the same GPFS file system. No other export of the data is permitted. The GPFS Client may not be used for nodes to share GPFS data directly through any application, service, protocol, or method, such as NFS, CIFS, FTP, or HTTP. For these functions, a GPFS Server license would be required.

Permitted use of GPFS FPO

The GPFS FPO license permits the licensed node to perform NSD server functions for sharing GPFS data with other nodes that have a GPFS FPO or GPFS Server license. This license cannot be used to share data with nodes that have a GPFS Client license or non-GPFS nodes.

Note: Refer to the GPFS FAQs available from the following website for more information, including example configurations and license definitions regarding the GPFS Server, GPFS Client, and FPO model

http://publib.boulder.ibm.com/infocenter/clresctr/vxrx/topic/com.ibm.cluster.gpfs.doc/gpfs_faqs/gpfsclustersfaq.html

For additional information, refer to the License Information document that is available on the IBM Software License Agreement website

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

Software Subscription and Support applies

The offering in this announcement includes Software Subscription and Support (Software Maintenance) in the license.

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 Software Subscription and Support 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. Software Subscription and Support also provides you with access to updates, releases, and versions of the program. You 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.

System i Software Maintenance applies

No

Variable charges apply

No

Educational allowance available

Yes. A 15% education allowance applies to qualified education institution customers.

Statement of good security practices

IT system security involves protecting systems and information through prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed to be part of a comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective. IBM does not warrant that systems and products are immune from the malicious or illegal conduct of any party.

IBM Electronic Services

IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

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5641-B07 IBM GPFS on x86 Architecture FPO, Per 250, 10 PVU with 3 Yr SW S&S	0446	00Y4517	
5641-C07 IBM GPFS on x86 Architecture Server Per 10 PVU with 5 Yr Yr SW S&S	0444	00Y4520	
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