



IBM Platform Cluster Manager V4.1 Advanced Edition can consolidate your cluster and grid environments

Table of contents

1 Overview	4 Publications
2 Key prerequisites	4 Technical information
2 Planned availability date	7 Ordering information
2 Description	8 Terms and conditions
3 Product positioning	12 Prices
3 Program number	

At a glance

IBM® Platform Cluster Manager V4.1 Advanced Edition:

- Automates the self-service assembly of multiple heterogeneous high performance computing (HPC) and analytics clusters
- Shares the compute infrastructure for running multiple HPC and analytics clusters for use by multiple teams
- Creates secure multi-tenant clusters
- Manages all components of running infrastructure from a single management pane
- Provides intelligent policy-based provisioning decisions to Extreme Cloud Administrative Toolkit (xCAT)

Overview

IBM Platform Cluster Manager V4.1 Advanced Edition automates the self-service assembly of multiple heterogeneous HPC and analytics clusters on shared compute infrastructure. The cluster manager creates a secure multi-tenant analytics and HPC cloud for users running technical computing and analytics workloads to dynamically create clusters and grids on demand, consolidate a scattered cluster infrastructure, increase hardware utilization, gain access to larger cluster infrastructures, and rapidly deploy multiple heterogeneous HPC environments.

Platform Cluster Manager Advanced Edition can deliver:

- Increased agility and innovation by enabling self-service provisioning of HPC and analytics clusters in minutes
- Decreased operating costs through increased utilization of existing servers and increased operational efficiency (hundreds of servers per administrator)
- Reduced capital expenditure by reusing existing hardware resources
- Increased utilization of pooled resources by providing larger clusters and grids, and by reprovisioning nodes to meet the needs of the workload

IBM Platform Cluster Manager Advanced Edition has the following advanced capabilities over IBM Platform Cluster Manager Standard Edition:

- Providing on-demand self-service cluster provisioning
- Managing multiple separate clusters as a single resource pool
- Creating a secure multi-tenant environment

- Provisioning physical, virtual, and hybrid physical-virtual clusters
- Dynamically growing and shrinking a user's logical cluster size based on workload and resource allocation policy

Platform Cluster Manager Advanced Edition runs on the latest generation of IBM System x® iDataPlex®, Intelligent Cluster™, and other rack-based servers and is also supported on non-IBM industry standard x86_64 hardware. By prequalifying and certifying these platforms at scale, IBM can help you take the risk out of deploying mission-critical grid computing deployments.

Key prerequisites

- A physical computing environment comprised of x86_64 servers
- Cluster nodes that are capable of running the required operating systems
- Cluster nodes that are connected through a fast TCP/IP network infrastructure

Planned availability date

- December 14, 2012: Electronic delivery
- January 11, 2013: Physical media

Description

Typical HPC and analytics clusters are built for a specific purpose. The applications running in these clusters are varied and may require differences in the hardware and software environment. In addition, separate projects may build their own separate clusters, and separate user groups may need to securely separate themselves from each other. If you have multiple clusters, you can benefit by consolidating these clusters. You need a dynamic and flexible infrastructure to support the performance required by these compute-intensive workloads.

By offering self-service capability, Platform Cluster Manager Advanced Edition enables timelier provisioning of HPC and analytics clusters, and enhances user productivity. It creates an analytics and HPC cloud for users running technical computing and analytics workloads to consolidate their disparate cluster infrastructure. This delivers increased hardware utilization and the ability to meet or exceed your service level agreements (SLAs) while lowering operational expenditures (OPEX). It also enables you to rapidly deploy HPC and analytics clusters and supports multiple heterogeneous HPC and analytics clusters such as IBM Platform LSF®, IBM Platform Symphony®, or Grid Engine. With integrated management capabilities, Platform Cluster Manager Advanced Edition can deliver a single pane to monitor and manage your entire infrastructure.

With Platform Cluster Manager Advanced Edition, you can deploy multiple heterogeneous HPC and analytics clusters and grids through self service. Resources are shared across clusters by rapidly re-provisioning to meet the cluster needs. Once deployed, the size of the HPC and analytics clusters can grow and shrink (flex) based on demand and to meet SLAs. Flexing maximizes utilization and reduces performance bottlenecks by allocating the resources where they are needed.

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

Product positioning

Platform Cluster Manager Advanced Edition is part of a family of cluster and grid workload management solutions. Platform Cluster Manager Advanced Edition is an enabling technology that is used to provision the cluster and grid workload managers. More specifically, it is used to provision multiple cluster and grid workload managers on a shared set of hardware resources. Platform Cluster Manager Advanced Edition first provisions the HPC and analytics clusters, and then you connect to the provisioned HPC or analytics cluster to run your workload. The cluster manager is also used to manage the running HPC and analytics clusters, and to shut them down when they are no longer needed.

Among the HPC and analytics products that Platform Cluster Manager Advanced Edition can deploy are:

- IBM Platform LSF
- IBM Platform Symphony
- Most third-party workload managers

Platform Cluster Manager Advanced Edition is required when customers need:

- To run multiple separate HPC and analytics clusters on a common hardware infrastructure. This means the customer can run multiple, separate Platform LSF and Platform Symphony clusters. This includes almost any combination of IBM and third-party workload managers.
- On-demand self-service provisioning to create HPC and analytics clusters on demand.
- Pooling of existing separate cluster and grid resources.
- Secure multi-tenancy with access controls, policies, and resource limits to enable sharing.
- Rapid provisioning (minutes) of HPC and analytics clusters on physical and virtual resources.
- Elasticity, where the size of deployed HPC and analytics clusters can be expanded and shrunk over time using predefined rules.
- Runtime management, reporting, and analytics of the HPC and analytics clusters.
- Heterogeneous support for other HPC and analytics clusters technologies such as IBM Platform LSF , IBM Platform Symphony , or Grid Engine.

Reference information

Refer to Preview Announcement [A12-0811](#), dated October 03, 2012 .

Program number

Program number	VRM	Program name
5725-G88	4.1.0	Platform Cluster Manager

Offering Information

Product information is available via the Offering Information website

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

Also, visit the Passport Advantage® website

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

Publications

The following publications and documentation are shipped with the product and available on the web:

- Platform Cluster Manager Advanced Edition, Quick Up and Running Guide
- Platform Cluster Manager Advanced Edition, Installation Guide
- Platform Cluster Manager Advanced Edition, Administration Guide
- Platform Cluster Manager Advanced Edition, Release Notes

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

Platform Cluster Manager V4.1 Advanced Edition is supported on IBM System x iDataPlex , Intelligent Cluster , and other rack-based servers and is also supported on non-IBM x86_64 servers.

The installations are typically large and involve a significant amount of hardware. Because of this, rack-based solutions tend to be the most practical. The choice of hardware is typically dictated by the type of workload that you expect to run in this environment.

Platform Cluster Manager Advanced Edition installations involve a predefined management node and a large number of compute hosts.

Software requirements

Platform Cluster Manager V4.1 Advanced Edition supports the following operating environments:

- Master node installation:
 - Red Hat Enterprise Linux™ (RHEL) 6.3 (x86_64 bit)
- Physical machine provisioning:
 - xCAT 2.7.6
 - IBM Support for xCAT V2 - recommended
- xCAT provisioning node installation:
 - RHEL 6.3 (x86_64 bit)
 - CentOS 5.8 (x86_64 bit)
- Provisions the following operating environments:
 - RHEL 6.3 (x86_64 bit)

- KVM on RHEL 6.3 (x86_64 bit)
- CentOS 5.8 (x86_64 bit)
- Supports the following virtualization environments:
 - KVM on RHEL 6.3 (x86_64 bit)
 - IBM SmartCloud™ Provisioning 2.1
 - vSphere 5.0 with ESXi 5.0
- Provisions the following guest operating environments:
 - RHEL 6.3 (x86_64 bit)
 - Microsoft™ Windows™ 2008 (64 bit)
- Provisions the following storage clients:
 - IBM GPFS™ client node V3.5
- Manages the following network infrastructure:
 - IBM RackSwitch™ G8000, G8052, G8124, and G8264
 - Mellanox InfiniBand Switch System IS5030, SX6036, and SX6512
 - Cisco Catalyst 2960 and 3750 switches
- The Master node requires:
 - MySQL, stand-alone 5.1.64
 - Oracle 11g Release 2 or Oracle 11g XE

The web console requires Adobe™ Flash Player 10, or later, and is supported on:

- Internet Explorer 8 and 9 on Windows
- Firefox 10 on Windows
- Firefox 3.6 on Linux

Platform Cluster Manager Advanced Edition supports most workload managers, and supports the following:

- Platform LSF V8.3, or later
- Platform Application Center V8.3
- Platform Symphony V5.2, or later
- IBM InfoSphere® BigInsights™ V1.4

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

Typical use of this product is in conjunction with HPC workload managers such as IBM Platform LSF, IBM Platform Symphony, Grid Engine, PBS, and Hadoop.

Compatibility

Platform Cluster Manager V4.1 Advanced Edition is compatible with most cluster and grid technologies. Compatibility is limited by the operating systems supported.

Limitations

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

Performance considerations

The performance of this product depends upon many factors, including the number of nodes in the cluster, the number of users querying the system, and the frequency of queries. As these increase, the scheduling cycle and user response time will increase.

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

Because Platform Cluster Manager Advanced Edition is designed to support various HPC and analytics environments, the requirements of these environments need to be considered when procuring new hardware. HPC and analytics environments benefit greatly from fast interconnects, such as InfiniBand, and should be considered in procurement. The best system should be selected in consultation with IBM System x and IBM Platform product specialists. The optimal configuration will depend on the scale of the HPC and analytics environments and the nature of anticipated application workloads.

Customer responsibilities

Support for xCAT is not covered by the Platform Cluster Manager Advanced Edition software subscription and support. For production installations, it is recommended that IBM Support for xCAT be purchased (5724-V63 or 5724-V64).

Installability

When installing Platform Cluster Manager V4.1 Advanced Edition, you must follow the instructions in the documents named *Platform Cluster Manager Advanced Edition, Quick Up and Running Guide* or *Platform Cluster Manager Advanced Edition, Installation Guide*. These documents provide a thorough explanation of the steps involved in installing the program.

You will need to obtain the software and licenses needed to provision your HPC and analytics environments. For example, if you want to provision multiple Platform LSF clusters, you will need to acquire the Platform LSF software and the licenses suitable for your environment.

Packaging

Platform Cluster Manager V4.1 Advanced Edition is distributed on multiple DVD media options and available for electronic download with multiple eAssemblies. Included are:

- IBM International Program License Agreement (L-ACHG-8YGLBV) in multiple languages
- Release notes

- Installation or User's Guide
- Required files

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

Platform Cluster Manager Advanced Edition uses the security and auditability features of the system in 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.

Product group: IBM Platform Computing
 Product Identifier Description (PID)
 IBM Platform Cluster Manager 5725G88

Product category: Other Software

Charge metric

Program name	Part number or PID number	Charge metric
IBM Platform Cluster Manager	5725-G88	Managed server

Server

Server is a unit of measure by which the program can be licensed. A *server* is a physical computer that is comprised of processing units, memory, and input/output capabilities and that executes requested procedures, commands, or applications for one or more users or client devices. Where racks, blade enclosures, or other similar equipment is being employed, each separable physical device (for example, a blade or a rack-mounted device) that has the required components is considered itself a separate server. For the purpose of server-based licensing, licensee must obtain entitlements for each server that is made available to the program, regardless of the

number of processor cores and partitions in the server or the number of copies of the program on the server.

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 entitlements for this program sufficient to cover the servers 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 entitlements for this program sufficient to cover the servers managed by program.

Passport Advantage

Program name/Description	Part number
IBM Cluster Manager Advanced Edition V4.1 Multiplatform English Media Pack	AJ00TEN

Passport Advantage customer: Media pack entitlement details

Customers with active maintenance or subscription for the products listed are entitled to receive the corresponding media pack.

Entitled maintenance offerings description	Part number
IBM PLAT CLUSTER MGR ADV MANAGED SVR LIC + SW S&S 12 MO	D0Q17LL

Media packs description	Part number
IBM Cluster Manager Advanced Edition V3.2 Multiplatform	AJ00JEN

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 the IBM Agreement for Acquisition of Software Maintenance.

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a renewal option, if available. These programs have a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

License Information form number

L-ACHG-8YGLBV

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).

Money-back guarantee

If for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of your invoice date you return the program and its PoE to the party from whom you obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

For clarification, note that (1) for programs acquired under the IBM International Passport Advantage offering, this term applies only to your first acquisition of the program and (2) for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

Volume orders (IVO)

No

Passport Advantage applies

Yes, and through the Passport Advantage website at

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

Software Subscription and Support applies

Yes. 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 one year of 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.

While your Software Subscription and Support 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, 7 days a week. For additional details, consult your IBM Software Support Handbook at

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

Software Subscription and Support 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 the applicable agreements.

For additional information about the International Passport Advantage Agreement and the IBM International Passport Advantage Express Agreement, visit the Passport Advantage website at

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

IBM Operational Support Services -- SupportLine

No

System i Software Maintenance applies

No

Variable charges apply

No

Educational allowance available

Not applicable.

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.

Electronic Service Agent™ and the IBM Electronic Support web portal are dedicated to providing fast, exceptional support to IBM Systems customers. The IBM Electronic Service Agent tool is a no-additional-charge tool that proactively monitors and reports hardware events, such as system errors, performance issues, and inventory. The Electronic Service Agent tool can help you stay focused on your company's strategic business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues. Servers enabled with this tool can be monitored remotely around the clock by IBM Support all at no additional cost to you.

Now integrated into the base operating system of AIX® 5.3, AIX 6.1, and AIX 7.1, Electronic Service Agent is designed to automatically and electronically report system failures and utilization issues to IBM, which can result in faster problem resolution and increased availability. System configuration and inventory information collected by the Electronic Service Agent tool also can be viewed on the secure Electronic Support web portal, and used to improve problem determination and resolution by you and the IBM support team. To access the tool main menu, simply type "smitty esa_main", and select "Configure Electronic Service Agent ." In addition, ESA now includes a powerful Web user interface, giving the administrator easy access to status, tool settings, problem information, and filters. For more information and documentation on how to configure and use Electronic Service Agent, refer to

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

The IBM Electronic Support portal is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. This portal enables you to gain easier access to IBM resources for assistance in resolving technical problems. The My Systems and Premium Search functions make it even easier for Electronic Service Agent tool-enabled customers to track system inventory and find pertinent fixes.

Benefits

Increased uptime: The Electronic Service Agent tool is designed to enhance the Warranty or Maintenance Agreement by providing faster hardware error reporting and uploading system information to IBM Support. This can translate to less wasted time monitoring the "symptoms," diagnosing the error, and manually calling IBM Support to open a problem record. Its 24 x 7 monitoring and reporting mean no more dependence on human intervention or off-hours customer personnel when errors are encountered in the middle of the night.

Security: The Electronic Service Agent tool is designed to be secure in monitoring, reporting, and storing the data at IBM. The Electronic Service Agent tool securely transmits either via the Internet (HTTPS or VPN) or modem, and can be configured to communicate securely through gateways to provide customers a single point of exit from their site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a customer's system. System inventory information is stored in a secure database, which is protected behind IBM firewalls. It is viewable only by the customer and IBM. The customer's business applications or business data is never transmitted to IBM.

More accurate reporting: Since system information and error logs are automatically uploaded to the IBM Support center in conjunction with the service request, customers are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM, problem error data is run through a data knowledge management system and knowledge articles are appended to the problem record.

Customized support: Using the IBM ID entered during activation, customers can view system and support information in the "My Systems" and "Premium Search" sections of the Electronic Support Web site at

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

My Systems provides valuable reports of installed hardware and software using information collected from the systems by Electronic Service Agent . Reports are available for any system associated with the customer's IBM ID. Premium Search combines the function of search and the value of Electronic Service Agent information, providing advanced search of the technical support knowledgebase. Using Premium Search and the Electronic Service Agent information that has been collected from your system, customers are able to see search results that apply specifically to their systems.

For more information on how to utilize the power of IBM Electronic Services, contact your IBM Systems Services Representative, or visit

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

Prices

Prices are subject to change without notice.

For additional information and current prices, contact your local IBM representative.

GST, QST, and sales taxes, where applicable, are extra.

Passport Advantage

For Passport Advantage and charges, contact your IBM representative or your authorized IBM Business Partner. Additional information is also available at

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

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<https://www.ibm.com/software/howtobuy/passportadvantage/paoreseller>

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Financing from IBM Global Financing helps you preserve cash and credit lines, enables more technology acquisition within current budget limits, permits accelerated implementation of economically attractive new technologies, offers

payment and term flexibility, and can help match project costs to projected benefits. Financing is available worldwide for credit-qualified customers.

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