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

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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 is designed to 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:

- Enabling 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. It 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 comprising 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

Availability of programs with an encryption algorithm in France is subject to French government approval.

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®, 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 reprovisioning 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

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:

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

Platform Cluster Manager Advanced Edition is required when you need:

- To run multiple separate HPC and analytics clusters on a common hardware infrastructure. This means that you can run multiple, separate Platform LSF clusters 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 clusters and grids 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 ZP12-0498, dated October 3, 2012.

Product number

Software options:

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Managed Server

Managed 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.

Licensee must obtain entitlements for each server running the Program and for each server being managed by the Program.

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 year or three 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 or 36 full months of Subscription and Support coverage. Subscription and Support in the second year (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.

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
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.

Services

Global Technology Services

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

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For details on education offerings related to specific products, visit


Select your country, and then select the product as the category.

Technical information

Specified operating environment

Hardware requirements

Supported hardware environments:

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 x64 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)
- 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

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**

Refer to the License Information document that is available on the IBM Software License Agreement website


**Planning information**

**Customer responsibilities**

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.

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**


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**

For software products in this announcement, physical media and hardcopy documentation are not included in the deliverable package. The software code is delivered only via electronic download.

After receipt of an order, the Business Partner or client will be required to register and accept Passport Advantage or Passport Express terms and conditions. Upon registration, the end customer will be provided with a website for the electronic download. The product includes the license and one year or three years of Software Subscription and Support.

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**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 communications facilities.

Global Technology Services

Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings, for the efficient installation, implementation, and/or integration of this product.

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.

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To learn how Electronic Services can work for you, visit

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

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IBM Global Financing: Yes
Field Installable Features: Yes
Customer Setup: Yes
Model Conversions: No
Product Availability Status: New

IBM warrants that the program will conform at the date of shipment to the current specifications, provided that the program is properly used in the specified operating environment.
If you believe there is a defect in a program such that it does not meet its specifications, you must notify IBM while program services are available for the program.

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### Features and options only

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<tr>
<td>Customer setup</td>
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**Support period**

Program Services will be available for a minimum of three years. A formal withdrawal will be issued one year prior to end of Program Services.

Optional upgrade

No

Licensed Programs

Yes

### Licensing

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**License Information form number**

- L-ACHG-8YGLBV

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


**Usage restrictions:** None

**Development/Demo discount:** Up to 100%, contact your local IBM Business Partner Office for details on participation (local limitations, if any, prevail)

### Warranty service upgrades

**Field-installable features**

Yes

**Model conversions**

No
Machine installation
Customer setup. Customers are responsible for installation according to the instructions IBM provides with the machine.

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