



IBM WebSphere eXtreme Scale V8.5 for Distributed platforms provides flexible cache to support your expanding business application needs

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At a glance

IBM® WebSphere® eXtreme Scale provides simple cache for enterprise applications running on WebSphere Application Server that offers near linear scalability to a broad variety of business applications with minimal invasive changes. This lets you meet the growing needs of your business. It includes support for Windows™ and .Net applications through ADO.Net Data Services specification support.

IBM WebSphere eXtreme Scale V8.5 can offer these key benefits:

- Supports IBM WebSphere Application Server V8.0 and V8.5, including WebSphere Application Server Liberty Profile.
- Includes a simple cache for enterprise applications running on WebSphere Application Server that offers near linear scalability to a broad variety of business applications with minimal invasive changes. This can help you meet the growing needs of your business.
- Monitoring console can provide real-time views into the WebSphere eXtreme Scale data grid.
- Invalidation enhancements help enable faster, more efficient caching within WebSphere Commerce scenarios.
- Includes expanded WebSphere stack integration, including support for WebSphere Application Server V8.0 and V8.5, WebSphere Portal V7.0, and WebSphere Commerce V6.0 and V7.0.
- Data Serializer plug-in interfaces allow storage of arbitrary data in the grid in a user-defined, serialized format such that query, indexes, and application code can more efficiently interrogate data object data without inflating them into a Java™ object form.
- Allows an administrator to include grid queries in tracking the source of SQL requests to IBM DB2® via support for DB2 Performance Monitor.
- XTP capability enhancements are designed to offer better performance, consistent and predictable response times, and lower memory costs.
- Includes new Spring 3.1 Cache provider support.

For ordering, contact Your IBM representative or an IBM Business Partner.
For more information contact the Americas Call Centers at
800-IBM-CALL (426-2255).

Reference: YE001

Overview

IBM WebSphere eXtreme Scale delivers Extreme Transaction Processing (XTP) capabilities that can ensure a smarter application infrastructure to support your most demanding business-critical applications. It allows you to overcome traditional IT performance limitations to generate the levels of global scale, process efficiencies, and business intelligence needed for smarter outcomes and for sustainable competitive advantage for your business.

WebSphere eXtreme Scale V8.5 offers the following new capabilities:

- Better integration across WebSphere portfolio of products:
 - Supports IBM WebSphere Application Server V8.0 and V8.5. WebSphere Application Server Liberty Profile support includes built-in caching profiles for HTTP Session Provider, a WXS Client for Liberty, and a WXS Server for Liberty.
 - Supports IBM WebSphere Portal V7.0.
 - Can now serve as a DynaCache replacement within WebSphere Portal V7.0, making content available in a centralized location.
 - Supports IBM WebSphere Commerce V6.0 and V7.0, including invalidation enhancements that enable faster, more efficient caching within WebSphere Commerce scenarios.
- A Grid Query Console, now included with the WebSphere eXtreme Scale V8.5 UI, to allow monitoring, inspection, and invalidation of specific cache content.
- Spring 3.1 Cache provider support.

Key prerequisites

Requires WebSphere eXtreme Scale V8.5 supported environments -- IBM AIX®, HP-UX, Linux™, Linux on System z®, Solaris, or Microsoft™ Windows.

Planned availability date

- April 27, 2012: Electronic distribution
- May 25, 2012: Media pack

Description

The following describes the benefits of a WebSphere eXtreme Scale grid, consisting of servers and clients, as a whole.

Today's dynamic business environments and economic uncertainty mean organizations must work smarter to remain competitive and responsive to changing customer demands. Key to working smarter is business agility and cost optimization. Our planet is becoming increasingly smart and interconnected. As more people around the planet join the digital world, they drive exponential growth of business and non-business transactions for everything from web commerce and RFID processing in dynamic supply chains to online social networking and gaming. In order to meet demands, you need to ensure that critical applications experiencing huge demand levels, requiring immediate response, or expanding to massive scale can deliver.

IBM WebSphere eXtreme Scale delivers extreme transaction processing capabilities that can help ensure you have a Smart service-oriented architecture (SOA)-based application infrastructure to support your most demanding business-critical applications. WebSphere eXtreme Scale V8.5 can help you to overcome traditional IT performance limitations to generate the levels of global scale, process efficiencies, and business intelligence needed for smarter business outcomes,

such as sustainable competitive advantage and maximized revenues. WebSphere eXtreme Scale is designed to work in heterogeneous environments across all leading platforms and server virtualization environments. It can process massive volumes of transactions with extreme efficiency and linear scalability. WebSphere eXtreme Scale V8.5 operates as an in-memory data grid that dynamically processes, partitions, replicates, and manages application data and business logic across hundreds of servers.

With IBM WebSphere eXtreme Scale V8.5, you get capabilities that extend the value of a linearly scalable elastic data store to a broad range of business applications that utilize the WebSphere Application Server dynamic cache service. WebSphere eXtreme Scale V8.5 can ease the burden on the application developer by handling many of the common data store exception and retry tasks. In addition, WebSphere eXtreme Scale V8.5 can be integrated into existing management tools.

WebSphere eXtreme Scale V8.5 offers these new features:

- Expanded WebSphere stack integration, including support for IBM WebSphere Application Server V8.0 and V8.5, and as a DynaCache replacement in IBM WebSphere Portal V7.0. This latest integration enables you to use the eXtreme Scale cache as a dynamic cache provider replacement for WebSphere Portal content rendering, making content available in a centralized location (shared, highly available vs being stored on a local DynaCache) and warm on server startup for increased efficiency.
- Support for the new IBM WebSphere Application Server V8.5 Liberty Profile, providing a smaller installation footprint. Support for WebSphere eXtreme Scale deployment in a WebSphere Application Server Liberty Profile environment enables dynamic configuration, minimizes footprint, and reduces startup time of the WebSphere Application Server and WebSphere eXtreme Scale servers.
- Seamless integration with WebSphere Application Server and enhancing ease of setup and maintainability by moving to the Installation Manager platform for installation and upgrades.
- New monitoring capabilities with the Grid Query Console, allowing inspection and invalidation of cached data.
- Extreme Transaction Processing (XTP) capability enhancements that are designed to offer better performance, consistent and predictable response times, and lower memory costs.

WebSphere eXtreme Scale can enhance applications to support growing business needs through the following innovative usage scenarios and configurations:

- Simple data and database: Applications can access data structures to improve performance and throughput using a WebSphere eXtreme Scale configuration as a local cache. WebSphere eXtreme Scale enhances this traditional data-caching scenario by offering failover capability.
- Client or server: A Java Virtual Machine (JVM) can have a local WebSphere eXtreme Scale grid, which sits in front of a remote grid serving as a "near cache" for a subset of the data. This allows you to leverage a large remote cache to offload back-end processing or to help speed up access to cached results. Applications can use the distributed locking services provided by the remote grid to coordinate access to shared data across clients.
- Map and reduced support: WebSphere eXtreme Scale clients can invoke agents that run against massive amounts of data on multiple nodes in parallel. They can then aggregate the results stored in the grid in parallel.

Extreme scalability of application patterns and usage scenarios are facilitated by the use of a non-centralized, peering configuration, and dynamic deployment model allowing WebSphere eXtreme Scale maps to potentially span thousands of Java Virtual Machines (JVMs) and allowing extremely large datasets.

In addition, WebSphere eXtreme Scale lets you add more partitions to help increase capacity. It includes efficient, new algorithms to allow in-memory caches to grow elastically as the number of available JVMs or actual machines changes.

Traditionally, distributed cache products use Map APIs as their primary programming model. WebSphere eXtreme Scale offers this, and allows graphs of objects to be easily pushed to the cache. Simple Java objects can be annotated, and a simpler API can transparently allow these graphs to be fetched from the grid, as well as to push any changes made by the application back to the grid. This can significantly simplify programming compared with traditional JCache or Map-based APIs, helping to improve productivity of the application developers by allowing them to focus on the core business logic.

Further, as the amount of data within the data grid grows, and usage scenarios become more ubiquitous, it is increasingly important to address challenges related to operational flexibility. A major challenge relates to managing a data grid running on thousands of servers.

The WebSphere eXtreme Scale Catalog Service automatically lays out data (primaries and replicas) across the set of online servers in a balanced fashion. As servers are started or stopped, it automatically adjusts and elastically moves data across the grid to help ensure that failed replica servers are replaced, and spreads the data across all servers in the grid for optimum performance and continuous availability.

WebSphere eXtreme Scale offers a flexible approach to the deployment of grid components or an existing cluster packaging and deployment framework. This is accomplished via the introduction of a centralized coordinator service, called the Catalog Service, that can help:

- Achieve high availability by clustering, and uses synchronous memory replication among grid members to persist the runtime state of the data grid
- Enable optimal performance by automatically balancing data and partitions over the set of servers hosting a grid

The new WebSphere Application Server console extensions allow administrators and deployers to enable eXtreme Scale session persistence, and to enable eXtreme Scale as a DynaCache provider directly from the WebSphere Application Server console. With the WebSphere eXtreme Scale V8.5 console, administrators and deployers can monitor eXtreme Scale grids in a fashion that is already integrated into their current usage flows. The WebSphere eXtreme Scale V8.5 console can support AIX (32 bit), AIX (64 bit), Linux x86, Linux x86-64, Windows (32 bit and 64 bit).

For complete product information, visit

<http://www.ibm.com/software/webservers/appserv/extremescale>

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

WebSphere eXtreme Scale compliments the WebSphere Application Server family of products by providing a distributed caching platform for WebSphere business applications and can run with many WebSphere stack products. WebSphere eXtreme Scale V8.5 goes beyond these simple network attached cache capabilities, providing a flexible and robust solution enabling more sophisticated caching scenarios where applications and data may be located on the same server.

WebSphere Business Events eXtreme Scale software integrates WebSphere eXtreme Scale and WebSphere Business events into a single product supporting customers with high volumes of business events flowing through their enterprise.

Reference information

For information about IBM WebSphere DataPower® XC10 Appliance, refer to Hardware Announcement [112-075](#), dated April 24, 2012.

For information about DataPower Appliance Support Registration, refer to Software Announcement [211-136](#), dated April 05, 2011.

For complete information about WebSphere Application Server V8.5 Liberty Profile, refer to Software Announcement [212-109](#), dated April 24, 2012.

Program number

Program Name	Program Number
IBM webSphere extreme Scale v8.5	5724-x67

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

No publications are shipped with this product.

The following WebSphere eXtreme Scale V8.5 user assistance is available:

- In Product Overview, Administration Guide, and Programming Guide PDFs
- At the product forum for discussing WebSphere eXtreme Scale V8.5 topics with the community
- At the information center
- Access to articles, podcasts, and tutorials in the WebSphere Developer's Community for Emerging Technologies in

<http://www.ibm.com/developerworks/spaces/emerge>

The total set of product documentation and user assistance is available from the WebSphere eXtreme Scale portal

<http://www.ibm.com/developerworks/wikis/display/extremescale>

For optimal viewing of this documentation on the Internet, you need a web browser that supports HTML 4 and CSS. To view a downloaded version of the InfoCenter, you must have a copy of either the WebSphere Help System or Eclipse installed on your local machine. Terms and conditions for use of the machine readable files are shipped with the files.

Specified operating environment

Hardware and software requirements for WebSphere eXtreme Scale

AIX

Hardware requirements

AIX (32 bit)

- IBM POWER® family of processors. For additional Information, visit <http://www-01.ibm.com/support/docview.wss?rs=180&uid=swg27006921>
- Minimum 512 MB physical memory; 1 GB recommended
- CD-ROM drive

Note: 64-bit hardware is required to run AIX V6.1 (POWER4, POWER5, or POWER6® systems only).

Architecture models that use 604e processors are not 64-bit capable and will not run AIX V6.1.

AIX (64 bit)

- IBM POWER family of processors. For additional information, visit <http://www-01.ibm.com/support/docview.wss?rs=180&uid=swg27006921>
- Minimum 1 GB physical memory recommended
- CD-ROM drive

Note: 64-bit hardware is required to run AIX V6.1 (POWER4, POWER5, or POWER6 systems only).

Architecture models that use 604e processors are not 64-bit capable and will not run AIX V6.1.

Operating systems

- Operating systems (32 bit)
 - AIX V6.1 with Recommended Maintenance package 6100-00-04
- Operating systems (64 bit)
 - AIX V7.1 with Recommended Maintenance package 7100-00-01
 - AIX V6.1 with Recommended Maintenance package 6100-00-04

AIX product site

<http://www.ibm.com/systems/power/software/ aix/index.html>

Software requirements

- WebSphere eXtreme Scale running integrated with WebSphere Application Server requires one of the following:
 - WebSphere Application Server V6.1.0.41, or later
 - WebSphere Application Server V7.0.0.21, or later
 - WebSphere Application Server V8.0.0.2, or later
 - WebSphere Application Server V8.5.0, or later
- For information on recommended WebSphere Application Server fixes, visit <http://www.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg27004980>

- WebSphere eXtreme Scale running with Java Platform Standard Edition requires a compliant Java Virtual Machine V1.5, or later.
- The WebSphere eXtreme Scale REST data service requires a web server that implements the Java Servlet specification V2.3, or later.
- WebSphere eXtreme Scale REST data service client is compatible with Open Data Protocol V1.0. The client library Microsoft .NET Framework 3.5 was tested with Service Pack 1. For more information, visit
<http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=22>
- For more information about Open Data Protocol, visit
<http://www.odata.org>
- WebSphere eXtreme Scale agent for IBM Tivoli® Monitoring requires IBM Tivoli Monitoring V6.2.1, or later
- WebSphere eXtreme Scale agent for Hyperic HQ requires Hyperic HQ V4.0, or later

HP-UX Intel™ Itanium™

Hardware requirements

- Intel Itanium 2 processor
- For disk space requirement, visit
<http://www-01.ibm.com/support/docview.wss?rs=180&uid=swg27006921>
- Minimum 1 GB physical memory recommended
- CD-ROM drive

Operating systems (64 bit)

- HP-UX 11iv2 Patch Bundle, dated December 2007 (64-bit kernel support)
- HP-UX 11iv3 Patch Bundle, dated December 2007 (64-bit kernel support)
- HP-UX 11i product site
<http://h71028.www7.hp.com/enterprise/w1/en/os/hpux11i-overview.html>

Software requirements

- WebSphere eXtreme Scale running integrated with WebSphere Application Server requires one of the following:
 - WebSphere Application Server V6.1.0.41, or later
 - WebSphere Application Server V7.0.0.21, or later
 - WebSphere Application Server V8.0.0.2, or later
 - WebSphere Application Server V8.5.0, or later
- For information on recommended WebSphere Application Server fixes
<http://www.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg27004980>
- WebSphere eXtreme Scale running with Java Platform Standard Edition requires a compliant Java Virtual Machine V1.5, or later.
- The WebSphere eXtreme Scale REST data service requires a web server that implements the Java Servlet specification V2.3, or later.
- WebSphere eXtreme Scale REST data service client is compatible with Open Data Protocol V1.0. The client library Microsoft .NET Framework 3.5 was tested with Service Pack 1. For more information, visit
<http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=22>
- For more information on Open Data Protocol, visit
<http://www.odata.org>
- WebSphere eXtreme Scale agent for IBM Tivoli Monitoring requires IBM Tivoli Monitoring V6.2.1, or later.
- WebSphere eXtreme Scale agent for Hyperic HQ requires Hyperic HQ V4.0, or later.

Linux on x86

Hardware requirements

- Intel Pentium™ processor at 500 MHz or faster
- Intel EM64T or AMD Opteron
- For related information, refer to technote #1237439
<http://www.ibm.com/support/docview.wss?uid=swg21237439>
- Disk space requirements, visit
<http://www-01.ibm.com/support/docview.wss?rs=180&uid=swg27006921>
- Minimum 512 MB of physical memory; 1 GB recommended
- CD-ROM drive

Operating systems (32 bit)

Red Hat Enterprise Linux

- Red Hat Enterprise Linux, V5 with Update 6
- Red Hat Enterprise Linux, V6
- Red Hat Enterprise Linux product site
<http://www.redhat.com/rhel/>

SUSE Linux Enterprise Server

- SUSE Linux Enterprise Server, V10 with SP 3
- SUSE Linux Enterprise Server, V11; refer to SLES11 technotes, by visiting
http://www.ibm.com/support/search.wss?rs=180&tc=SSEQTP&q=SLES11_70
- SUSE Linux Enterprise Server product site
<http://www.novell.com/products/server/>

Software requirements

- WebSphere eXtreme Scale running integrated with WebSphere Application Server requires one of the following:
 - WebSphere Application Server V6.1.0.41, or later
 - WebSphere Application Server V7.0.0.21, or later
 - WebSphere Application Server V8.0.0.2, or later
 - WebSphere Application Server V8.5.0, or later
- For information on recommended WebSphere Application Server fixes, visit
<http://www.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg27004980>
- WebSphere eXtreme Scale running with Java Platform Standard Edition requires a compliant Java Virtual Machine V1.5, or later.
- The WebSphere eXtreme Scale REST data service requires a web server that implements the Java Servlet specification V2.3, or later.
- WebSphere eXtreme Scale REST data service client is compatible with Open Data Protocol V1.0. The client library Microsoft .NET Framework 3.5 with the Service Pack 1 Update was tested. For more information, visit
<http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=22>
- For more information on Open Data Protocol
<http://www.odata.org>
- WebSphere eXtreme Scale agent for IBM Tivoli Monitoring requires IBM Tivoli Monitoring V6.2.1, or later.
- WebSphere eXtreme Scale agent for Hyperic HQ requires Hyperic HQ V4.0, or later.

Linux x86-64

Hardware requirements

- AMD Opteron and Intel EM64T (64-bit kernel support only)
- For disk space requirements, visit <http://www-01.ibm.com/support/docview.wss?rs=180&uid=swg27006921>
- Minimum 1 GB physical memory recommended
- CD-ROM drive

Operating systems (32 bit)

Red Hat Enterprise Linux

- Red Hat Enterprise Linux, V5 with Update 6
- Red Hat Enterprise Linux, V6
- Red Hat Enterprise Linux product site <http://www.redhat.com/rhel/>

SUSE Linux Enterprise Server

- SUSE Linux Enterprise Server, V10 with SP 3
- SUSE Linux Enterprise Server, V11; refer to technotes for SLES11 by visiting http://www.ibm.com/support/search.wss?rs=180&tc=SSEQTP&q=SLES11_70
- SUSE Linux Enterprise Server product site <http://www.novell.com/products/server/>

Operating systems (64 bit)

- Red Hat Enterprise Linux, V5 with Update 6
- Red Hat Enterprise Linux, V6
- Red Hat Enterprise Linux product site <http://www.redhat.com/rhel/>
- SUSE Linux Enterprise Server, V10 with SP 3
- SUSE Linux Enterprise Server, V11
- SUSE Linux Enterprise Server product site <http://www.novell.com/products/server/>

Software requirements

- WebSphere eXtreme Scale running integrated with WebSphere Application Server requires one of the following:
 - WebSphere Application Server V6.1.0.41, or later
 - WebSphere Application Server V7.0.0.21, or later
 - WebSphere Application Server V8.0.0.2, or later
 - WebSphere Application Server V8.5.0, or later
- For information on recommended WebSphere Application Server fixes, visit <http://www.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg27004980>
- WebSphere eXtreme Scale running with Java Platform Standard Edition requires a compliant Java Virtual Machine V1.5, or later.
- The WebSphere eXtreme Scale REST data service requires a web server that implements the Java Servlet specification V2.3 or later.
- WebSphere eXtreme Scale REST data service client is compatible with Open Data Protocol V1.0. The client library Microsoft .NET Framework 3.5 with the Service Pack 1 Update was tested. For more information, visit

<http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=22>

- For more information on Open Data Protocol, visit <http://www.odata.org>
- WebSphere eXtreme Scale agent for IBM Tivoli Monitoring requires IBM Tivoli Monitoring V6.2.1, or later.
- WebSphere eXtreme Scale agent for Hyperic HQ requires Hyperic HQ V4.0, or later.

Linux on IBM System z

Hardware requirements

- System z processors
- Minimum of 1,119 MB available disk space for installation
- Minimum of 512 MB memory; 1 GB recommended
- CD-ROM drive

Operating systems (32 bit)

- Red Hat Enterprise Linux, V5 with Update 6 (64-bit kernel support only)
- Red Hat Enterprise Linux, V6 (64-bit kernel support only)
- Red Hat Enterprise Linux product site
<http://www.redhat.com/rhel/>
- SUSE Linux Enterprise Server, V9 with SP4 (64-bit kernel support only); refer to SUSE Linux Enterprise Server 9 product site by visiting
<http://www.novell.com/products/server9/>
- SUSE Linux Enterprise Server, V10 with Update 1 (64-bit kernel support only)
- SUSE Linux Enterprise Server, V11 (64-bit kernel support only)
- SUSE Linux Enterprise Server product site
<http://www.novell.com/products/server/>

Operating systems (64 bit)

- Red Hat Enterprise Linux, V5 with Update 1
- Red Hat Enterprise Linux, V6
- Red Hat Enterprise Linux product site
<http://www.redhat.com/rhel/>
- SUSE Linux Enterprise Server, V10 with Update 1
- SUSE Linux Enterprise Server, V11; refer to technotes for SLES11, by visiting
http://www.ibm.com/support/search.wss?rs=180&tc=SSEQTP&q=SLES11_70
- SUSE Linux Enterprise Server product site
<http://www.novell.com/products/server/>

Software requirements

- WebSphere eXtreme Scale running integrated with WebSphere Application Server requires one of the following:
 - WebSphere Application Server V6.1.0.41, or later
 - WebSphere Application Server V7.0.0.21, or later
 - WebSphere Application Server V8.0.0.2, or later
 - WebSphere Application Server V8.5.0, or later
- For information on recommended WebSphere Application Server fixes
<http://www.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg27004980>

- WebSphere eXtreme Scale running with Java Platform Standard Edition requires a compliant Java Virtual Machine V1.5, or later.
- The WebSphere eXtreme Scale REST data service requires a web server that implements the Java Servlet specification V2.3 or later.
- WebSphere eXtreme Scale REST data service client is compatible with Open Data Protocol V1.0. The client library Microsoft .NET Framework 3.5 with the Service Pack 1 The update was tested. For more information, visit <http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=22>
- For more information on Open Data Protocol, visit <http://www.odata.org>
- WebSphere eXtreme Scale agent for IBM Tivoli Monitoring requires IBM Tivoli Monitoring V6.2.1, or later.
- WebSphere eXtreme Scale agent for Hyperic HQ requires Hyperic HQ V4.0, or later.

Linux on POWER

Hardware requirements

IBM POWER family of processors or IBM BladeCenter® (32 bit and 64 bit)

- Minimum 1,231 MB available disk space for installation (32 bit); 1,262 MB recommended for 64 bit
- Minimum 512 MB of physical memory for 32 bit (1 GB recommended)
- Minimum 1 GB of physical memory recommended for 64 bit
- CD-ROM drive

Operating systems (32 bit and 64 bit)

- Red Hat Enterprise Linux, V5 with Update 6
- Red Hat Enterprise Linux, V6
- Red Hat Enterprise Linux product site <http://www.redhat.com/rhel/>
- SUSE Linux Enterprise Server, V10 with Update 1
- SUSE Linux Enterprise Server, V11; refer to technotes for SLES11, by visiting http://www.ibm.com/support/search.wss?rs=180&tc=SSEQTP&q=SLES11_70
- SUSE Linux Enterprise Server product site <http://www.novell.com/products/server/>

Software requirements

- WebSphere eXtreme Scale running integrated with WebSphere Application Server requires one of the following:
 - WebSphere Application Server V6.1.0.41, or later
 - WebSphere Application Server V7.0.0.21, or later
 - WebSphere Application Server V8.0.0.2, or later
 - WebSphere Application Server V8.5.0, or later
- For information on recommended WebSphere Application Server fixes <http://www.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg27004980>
- WebSphere eXtreme Scale running with Java Platform Standard Edition requires a compliant Java Virtual Machine V1.5, or later.
- The WebSphere eXtreme Scale REST data service requires a web server that implements the Java Servlet specification V2.3, or later.
- WebSphere eXtreme Scale REST data service client is compatible with Open Data Protocol V1.0. The client library Microsoft .NET Framework 3.5 with the Service Pack 1 Update was tested. For more information, visit

<http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=22>

- For more information on Open Data Protocol, visit <http://www.odata.org>
- WebSphere eXtreme Scale agent for IBM Tivoli Monitoring requires IBM Tivoli Monitoring V6.2.1, or later.
- WebSphere eXtreme Scale agent for Hyperic HQ requires Hyperic HQ V4.0, or later.

Solaris SPARC

Hardware requirements

- Sun Solaris operating environment compatible SPARC workstation at 440 MHz, or faster
- For disk space requirements, visit <http://www-01.ibm.com/support/docview.wss?rs=180&uid=swg27006921>
- Minimum 512 MB physical memory; 1 GB recommended
- CD-ROM drive

Operating systems (32 bit)

- Sun Solaris operating environment, V9 with Patch Cluster, dated January 3, 2008, or later (32-bit and 64-bit kernel support)
- Sun Solaris operating environment, V10 with Patch Cluster dated January 7, 2008, or later (32-bit and 64-bit kernel support)
- Sun product site <http://www.sun.com/products/index.jsp>

Operating systems (64 bit)

- Sun Solaris operating environment, V10 with Patch Cluster, dated October 2009, or later (64-bit kernel support)

Software requirements

- WebSphere eXtreme Scale running integrated with WebSphere Application Server requires one of the following:
 - WebSphere Application Server V6.1.0.41, or later
 - WebSphere Application Server V7.0.0.21, or later
 - WebSphere Application Server V8.0.0.2, or later
 - WebSphere Application Server V8.5.0, or later
- For information on recommended WebSphere Application Server fixes, visit <http://www.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg27004980>
- WebSphere eXtreme Scale running with Java Platform Standard Edition requires a compliant Java Virtual Machine V1.5, or later.
- The WebSphere eXtreme Scale REST data service requires a web server that implements the Java Servlet specification V2.3, or later.
- WebSphere eXtreme Scale REST data service client is compatible with Open Data Protocol V1.0. The client library Microsoft .NET Framework 3.5 was tested with Service Pack 1. For more information, visit <http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=22>
- For more information on Open Data Protocol <http://www.odata.org>
- WebSphere eXtreme Scale agent for IBM Tivoli Monitoring requires IBM Tivoli Monitoring V6.2.1, or later.
- WebSphere eXtreme Scale agent for Hyperic HQ requires Hyperic HQ V4.0, or later.

Solaris x64

Hardware requirements

- AMD Opteron or Intel EM64T
- Minimum 512 MB physical memory; 1 GB recommended
- CD-ROM drive

Operating systems (64 bit)

- Sun Solaris operating environment, V10 with Patch Cluster, dated October 2009, or later (64-bit kernel support)
- Sun product site
<http://www.sun.com/products/index.jsp>

Software requirements

- WebSphere eXtreme Scale running integrated with WebSphere Application Server requires one of the following:
 - WebSphere Application Server V6.1.0.41, or later
 - WebSphere Application Server V7.0.0.21, or later
 - WebSphere Application Server V8.0.0.2, or later
 - WebSphere Application Server V8.5.0, or later
- For information on recommended WebSphere Application Server fixes, visit
<http://www.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg27004980>
- WebSphere eXtreme Scale running with Java Platform Standard Edition requires a compliant Java Virtual Machine V1.5, or later.
- The WebSphere eXtreme Scale REST data service requires a web server that implements the Java Servlet specification V2.3, or later.
- WebSphere eXtreme Scale REST data service client is compatible with Open Data Protocol V1.0. The client library Microsoft .NET Framework 3.5 was tested with the Service Pack 1 For more information, visit
<http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=22>
- For more information on Open Data Protocol, visit
<http://www.odata.org>
- WebSphere eXtreme Scale agent for IBM Tivoli Monitoring requires IBM Tivoli Monitoring V6.2.1, or later.
- WebSphere eXtreme Scale agent for Hyperic HQ requires Hyperic HQ V4.0, or later.

Windows

Hardware requirements

For Windows (32 bit)

- Intel Pentium processor at 500 MHz or faster
- Intel EM64T or AMD Opteron
- Minimum 512 MB physical memory; 1 GB recommended
- CD-ROM drive

For Windows (64 bit)

- AMD Opteron or Intel EM64T
- Minimum 1 GB of physical memory recommended
- CD-ROM drive

Operating systems

For Windows (32 bit)

Supported for application design, development and testing; no support for production use:

- Microsoft Vista Business
- Microsoft Vista Enterprise
- Microsoft Vista Ultimate
- Microsoft Vista Ultimate SP1
- Windows Vista product site
<http://www.microsoft.com/windows/windows-vista/default.aspx>
- Microsoft Windows 7 Professional
- Microsoft Windows 7 Enterprise
- Microsoft Windows 7 Ultimate
- Windows 7 product site
<http://www.microsoft.com/windows/windows-7/default.aspx>
- Microsoft Windows XP Professional with SP2

Supported for production use include:

- Microsoft Windows Server 2003 x64 with SP2
- Microsoft Windows Server 2003, Datacenter with SP2
- Microsoft Windows Server 2003, Enterprise with SP2
- Microsoft Windows Server 2003, Standard with SP2
- Microsoft Windows Server 2003 R2
- Microsoft Windows Server 2003 x64 R2
- Windows Server 2003 product site
<http://www.microsoft.com/download/en/>
- Microsoft Windows Server 2008 R2, Standard x64
- Microsoft Windows Server 2008 R2, Enterprise x64
- Microsoft Windows Server 2008 R2, Datacenter x64
- Windows Server 2008 R2 product site
<http://www.microsoft.com/en-us/server-cloud/windows-server/default.aspx>
- Microsoft Windows Server 2008, Datacenter with SP1
- Microsoft Windows Server 2008 x64 Datacenter with SP1
- Microsoft Windows Server 2008, Enterprise with SP1
- Microsoft Windows Server 2008 x64 Enterprise with SP1
- Microsoft Windows Server 2008, Standard with SP1
- Microsoft Windows Server 2008 x64 Standard with SP1

For Windows (64 bit)

- Microsoft Windows Server 2003 x64 with SP2
- Microsoft Windows Server 2003 x64 R2
- Windows Server 2003 product site
<http://www.microsoft.com/download/en/>
- Microsoft Windows Server 2008 Enterprise x64 with SP1
- Microsoft Windows Server 2008 Datacenter x64 with SP1
- Microsoft Windows Server 2008 Standard x64 with SP1
- Microsoft Windows Server 2008 R2, Standard x64

- Microsoft Windows Server 2008 R2, Enterprise x64
- Microsoft Windows Server 2008 R2, Datacenter x64
- Windows Server 2008 R2 product site
<http://www.microsoft.com/en-us/server-cloud/windows-server/default.aspx>

Software requirements

- WebSphere eXtreme Scale running integrated with WebSphere Application Server requires one of the following:
 - WebSphere Application Server V6.1.0.41, or later
 - WebSphere Application Server V7.0.0.21, or later
 - WebSphere Application Server V8.0.0.2, or later
 - WebSphere Application Server V8.5.0, or later
- For information on recommended WebSphere Application Server fixes, visit
<http://www.ibm.com/support/docview.wss?rs=180&context=SSEQTP&uid=swg27004980>
- WebSphere eXtreme Scale running with Java Platform Standard Edition requires a compliant Java Virtual Machine V1.5, or later.
- The WebSphere eXtreme Scale REST data service requires a web server that implements the Java Servlet specification V2.3, or later.
- WebSphere eXtreme Scale REST data service client is compatible with Open Data Protocol V1.0. The client library Microsoft .NET Framework 3.5 was tested with Service Pack 1. For more information, visit
<http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=22>
- For more information on Open Data Protocol, visit
<http://www.odata.org>
- WebSphere eXtreme Scale agent for IBM Tivoli Monitoring requires IBM Tivoli Monitoring V6.2.1, or later.
- WebSphere eXtreme Scale agent for Hyperic HQ requires Hyperic HQ V4.0, or later.

Hardware and software requirements for WebSphere eXtreme Scale console

The following describes the unique hardware and software requirements for running the WebSphere eXtreme Scale console. The console can monitor WebSphere eXtreme Scale on supported platforms. This section describes the requirements for running the console run-time itself.

- **AIX (32 bit)**
 - IBM POWER family of processors
 - Minimum 512 MB physical memory; 1 GB recommended
 - CD-ROM drive

Note: 64-bit hardware is required to run AIX V6.1 (POWER4, POWER5, or POWER6 systems only). Architecture models that use 604e processors are not 64-bit capable and will not run AIX V6.1.

 - Operating systems
 - AIX V7.1 with Recommended Maintenance package 7100-00-01
 - AIX V6.1 with Recommended Maintenance package 6100-00-04 support
- **AIX (64 bit)**
 - IBM POWER family of processors. For additional Information, visit
<http://www-01.ibm.com/support/docview.wss?rs=180&uid=swg27006921>
 - Minimum 1 GB physical memory recommended
 - CD-ROM drive

Note: 64-bit hardware is required to run AIX V6.1 (POWER4, POWER5, or POWER6 systems only). Architecture models that use 604e processors are not 64-bit capable and will not run AIX V6.1.

- Operating systems
 - AIX V7.1 with Recommended Maintenance package 7100-00-01
 - AIX V6.1 with Recommended Maintenance package 6100-00-04
- **Linux on x86**
 - Intel Pentium processor at 500 MHz or faster
 - Intel EM64T or AMD Opteron; For related information, refer to technote #1237439
<http://www.ibm.com/support/docview.wss?uid=swg21237439>
 - Disk space requirements, visit
<http://www-01.ibm.com/support/docview.wss?rs=180&uid=swg27006921>
 - Minimum 512 MB of physical memory; 1 GB recommended
 - CD-ROM drive
 - Operating systems
 - SUSE Linux Enterprise Server, V10 with Update 2, or later
 - Red Hat Enterprise Linux, V5 with Update 1, or later
- **Linux x86-64**
 - AMD Opteron and Intel EM64T (64-bit kernel support only)
 - For disk space requirements, visit
<http://www-01.ibm.com/support/docview.wss?rs=180&uid=swg27006921>
 - Minimum 1 GB physical memory recommended
 - CD-ROM drive
 - Operating systems
 - SUSE Linux Enterprise Server, V10 with Update 2, or later
 - Red Hat Enterprise Linux, V5 with Update 1, or later
- **Windows (32 bit)**
 - Intel Pentium processor at 500 MHz or faster
 - Intel EM64T or AMD Opteron
 - Minimum 512 MB physical memory; 1 GB recommended
 - CD-ROM drive
 - Operating systems
 - Microsoft Windows Server 2003, with SP1
 - Microsoft Windows Server 2008, with SP1
- **Windows (64 bit)**
 - AMD Opteron or Intel EM64T
 - Minimum 1 GB of physical memory recommended
 - CD-ROM drive
 - Operating systems
 - Microsoft Windows Server 2003 x64 with SP1
 - Microsoft Windows Server 2008 x64 with SP1

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

The following products could be purchased with this product:

- IBM WebSphere DataPower XC10 Appliance - Provides a purpose-built, easy-to-use appliance designed for simplified deployment and hardened security at the caching tier of your enterprise application infrastructure. The WebSphere eXtreme Scale client for z/OS® is tested and certified to work with the WebSphere DataPower XC10 Appliance.
- IBM WebSphere Adapters - Helps you integrate applications, technologies, and partner systems within and outside the enterprise. This extended range of adapters is integral to a scalable integration infrastructure for your on-demand business.
- IBM WebSphere Integration Developer - The declarative visual drag-and-drop developer tool for IBM WebSphere ESB as well as WebSphere Adapters and WebSphere DataPower. It supports integration in Business Process Manager Advanced.
- IBM Business Process Manager V7.5 - A comprehensive and consumable business process management platform that provides total visibility and management of your business processes. It includes tooling and run-time modules for process design, execution, monitoring, and optimization, and is specifically designed to make it easy for process owners and business users to engage directly in the improvement of their business processes. It provides a single Business Process Manager platform with multiple configurations to match a company's desired entry point to Business Process Manager.
- IBM WebSphere Business Events - An offering designed specifically for managing business events flowing across systems and people, with the specific goal of providing timely insight and enabling response.
- IBM Business Monitor - Helps you get real-time visibility of business processes and actively manage them.
- IBM WebSphere MQ - Provides standards-based, reliable, and secure connectivity between applications and systems, giving access to more than 80 different platform configurations.
- IBM WebSphere Message Broker - Running on top of WebSphere MQ, helps you extend your connectivity between applications with high-performance transformation and routing by integrating a wide range of applications and various data formats.
- IBM WebSphere DataPower SOA Appliances - Easy-to-deploy network devices that simplify, help encrypt, and accelerate XML and web services deployments and extend core service-oriented architecture (SOA) infrastructure components such as WebSphere ESB, WebSphere MQ, WebSphere Message Broker, and WebSphere Process Server.
- IBM WebSphere Extended Deployment - Seamlessly integrates into a WebSphere platform installation, easily accessible using the same administration console as WebSphere Application Server, WebSphere ESB, and WebSphere Process Server.

Limitations

WebSphere Application Server client applications can access remote WebSphere eXtreme Scale grids and can locally cache data via the WebSphere eXtreme Scale "near cache" technology. Additionally, WebSphere eXtreme Scale can be used as a local cache.

Planning information

Installability

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 (Software Maintenance) 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 (also referred to as Software Maintenance) with each program license acquired. The initial period of Software Subscription and Support (Software Maintenance) can be extended by the purchase of a renewal option, if available.

Packaging

IBM WebSphere eXtreme Scale V8.5 ships on DVDs.

Security, auditability, and control

WebSphere eXtreme Scale V8.5 uses the security and auditability features of the host operating system. 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.

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Ordering information

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For more information about IBM Software Value Plus, visit

<http://www-01.ibm.com/software/info/itsolutions/softwarevalueplus/>

To locate IBM Business Partners for Software Value Plus in your geography for a specific Software Value Plus portfolio, contact your IBM representative.

Product group: webSphere

Product Identifier	Description	(PID)
IBM WebSphere	extreme Scale	5724-x67

Product category: Application Integration Middleware Other

Charge metric

Program name	PID number	Charge unit description
IBM webSphere extreme Scale	5724-x67	Processor Value Unit

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 cores* 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

* 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.

Passport Advantage

Product description	Product ID
IBM WebSphere extreme Scale	5724-X67

Passport Advantage

Here is the complete listing of part numbers for IBM WebSphere eXtreme Scale V8.5:

Description	Part number
WebSphere extreme Scale V8.5:	
Per Processor Value Unit	
License + Software S&S 12 months	D572PLL
Annual Software S&S Renewal 12 months	E02E9LL
Software S&S reinstatement 12 months	D572QLL
Trade up from Qualified Competitor	
Per Processor Value Unit	D0A4NLL
License + Software S&S 12 months	

Passport Advantage trade up

Below is a list of precursor products for which you must have already acquired a license, in order to be eligible to acquire equivalent licenses using the trade up part numbers.

Precursor product	Trade-up product	Trade-up part number
Qualified competitor	WebSphere extreme Scale V8.5: Trade up from Qualified Competitor Per Processor Value Unit License + Software S&S 12 months	D0A4NLL
Qualified competitor	WebSphere extreme Scale V8.5 for Linux on System z: Trade up from Qualified Competitor Per Processor Value Unit License + Software S&S 12 months	D0A4PLL

Consult your IBM representative if you have any questions.

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.

Media pack description	Part number
IBM WebSphere extreme Scale for Multiplatforms V8.5 Multilingual Multimedia 128 Bit Encryption Media Pack	BA14BML

Cross-platform product for use on System z Integrated Facility for Linux (IFL) engines

Order the part numbers that follow when the product is intended to run on the Linux operating system on System z IFL engines. If the product is not intended to run on the Linux operating system on System z IFL engines, order from the other set of part numbers in this announcement. This set of part numbers provides the identical supply and authorization as the other set in this announcement.

Program name/Description	Part number
WebSphere extreme Scale V8.5 for Linux on System z:	
Per Processor Value Unit	
License + Software S&S 12 months	D572MLL
Annual Software S&S Renewal 12 months	E02E8LL
Software S&S reinstatement 12 months	D572NLL
Trade up from Qualified Competitor	D0A4PLL

Per Processor Value Unit
License + Software S&S 12 months

On/Off Capacity on Demand (CoD)

IBM WebSphere extreme Scale (5724-x67)

Part number	Description
D60QWLL	websphere extreme scale per processor day On/Off CoD temp use charge

Processor Value Unit (PVU) sub-capacity licensing

This software product is eligible for sub-capacity licensing. Customers must accept the terms of the IBM International Passport Advantage Agreement Attachment for Sub-Capacity Licensing Terms (Attachment), and must obtain PVU Proofs of Entitlement (PoEs) for the maximum processor core capacity available to an eligible sub-capacity product when deployed in an eligible virtualization environment. This is also referred to as sub-capacity or virtualization capacity licensing.

Customers must use the IBM License Metric Tool unless they meet the exceptions described in the Attachment.

For information regarding PVU sub-capacity licensing, including terms and IBM License Metric Tool ordering information, visit

<http://www.ibm.com/software/lotus/passportadvantage/subcaplicensing.html>

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

License Information form number

- IBM WebSphere eXtreme Scale V8.5: L-STHN-8RMLCF

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>

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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.

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Other terms

Volume orders (IVO)

No

IBM International Passport Advantage Agreement

Passport Advantage applies

Yes, and through the Passport Advantage website at

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

Usage restriction

Yes

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.

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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>

System i Software Maintenance applies

No

Variable charges apply

No

Educational allowance available

Not applicable.

Sub-capacity pricing terms and conditions

To be eligible for sub-capacity pricing, the machine on which the eligible products are installed and running must be eligible for sub-capacity pricing terms and conditions. Software pricing, at less than full machine capacity for eligible products, apply when running:

- AIX 5L™ V5.1, or later, on an IBM System p® 690 or equivalent partition-capable operating system and machine
- OS/400® V5R1, or later, running on an IBM System i®
- Linux running in an LPAR under AIX 5L V5.1, OS/400 V5R1, or in a partition on an equivalent partition-capable operating system and server

Sub-capacity pricing for eligible products is based on the current program pricing methodology, but the number of processors will be determined based on the sum of processors for all partitions where the program is defined (used). To obtain pricing at less than full machine capacity for eligible products, you are required to:

- Install and use, when available, IBM's license use management program, which installs with eligible IBM programs.
- Install available updates to the operating system and eligible products such that license use can be accurately managed.
- Determine if the use of sub-capacity pricing terms results in a reduced requirement for entitlements; you can reallocate the entitlement difference by distributing entitlements across a larger or different set of systems, or reserve them for future growth. There will be no refunds for these freed up entitlements. Subscription, Software Maintenance and support volumes, and entitlements for existing contracts will continue at the same levels as the acquired licenses.

On/Off Capacity on Demand (CoD)

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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.

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Prices

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

Passport Advantage

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