

WebSphere Commerce V7 Feature Pack 1

Stack products



This presentation summarizes the supported WebSphere® Commerce stack products with a focus on the new products and versions supported in Feature Pack 1.

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 - DB2® V9.7 Fix Pack 1
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The presentation will cover WebSphere Commerce Feature Pack 1 support for DB2, WebSphere Application Server 64-bit and WebSphere eXtreme Scale.

DB2 V9.7 Fix Pack 1

The first part of the presentation will give a high level overview of the support for DB2 Version 9.7 Fix Pack 1.



DB2 V9.7 Fix Pack 1 support – new installations

- WebSphere Commerce Feature Pack 1 supports DB2 Version 9.7 Fix Pack 1
 - DB2 9.7 Fix Pack 1 is bundled in the WebSphere Commerce Feature Pack 1 package
- For new WebSphere Commerce Version 7.0.0.1 installations
 - Install DB2 version 9.7 Fix Pack 1
 - Secondly, install WebSphere Commerce V7.0.0.1
 - Note: WebSphere Commerce V7.0.0.1 does not automatically install DB2 version 9.7.1

WebSphere Commerce Feature Pack 1 supports DB2 Version 9.7 Fix Pack 1 for both 32 and 64 bit. The WebSphere Commerce Feature Pack 1 package contains DB2 V9.7 Fix Pack 1. DB2 version 9.7 Fix Pack 1 support was introduced in WebSphere Commerce version 7 Fix Pack 1. If you are installing WebSphere Commerce Version 7.0.0.1 on a new machine, you must install DB2 version 9.7 Fix Pack 1 first and then install WebSphere Commerce 7.0.0.1. WebSphere Commerce version 7.0.0.1 does not automatically install DB2 version 9.7.1.



DB2 V9.7 Fix Pack 1 support – existing

- For existing WebSphere Commerce Version 7.0.0.0 users
 - Install WebSphere Commerce Version 7 Fix Pack 1
 - Secondly, do your database migration
- You cannot uninstall WebSphere Commerce Version 7 Fix Pack 1 after you migrate your database to DB2 V9.7

If you have an existing WebSphere Commerce version 7.0.0.0 installation and you want to migrate to DB2 version 9.7 Fix Pack 1 you need to first install WebSphere Commerce version 7 Fix Pack 1. After completing the installation of the WebSphere Commerce fix pack, proceed with the steps in 'Migrating your database from DB2 V9.5 Fix Pack 4 to DB2 V9.7 Fix Pack 1' located in the WebSphere Commerce Information Center. Remember that you cannot uninstall WebSphere Commerce Version 7 Fix Pack 1 after you migrate your database to DB2 V9.7.



DB2 V9.7 Fix Pack 1 support

- What is supported
 - All platforms (Windows®, AIX®, Solaris, and Linux®)
 - All existing WebSphere Commerce functions
 - Migration of WebSphere Commerce from previous version of DB2
 - Creating a new WebSphere Commerce instance (pre-installed DB2 V9.7)
- Limitation
 - No payment manager support
 - Not tested with DB2 V9.7 optional features

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Stack products

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WebSphere Commerce V7 Feature Pack 1 supports DB2 V9.7 Fix Pack 1 on all platforms (Windows, AIX, Solaris, and Linux). All existing WebSphere Commerce functions are supported and migration of WebSphere Commerce from previous version of DB2 is supported. If you already have DB2 V9.7 installed, support is included for creating a new WebSphere Commerce instance.

The WebSphere Commerce Feature Pack 1 support for DB2 V9.7 does not include payment manager support. WebSphere Commerce was tested with the default DB2 V9.7 Fix Pack 1 settings. Optional features in DB2 V9.7 have not been tested with WebSphere Commerce and you should avoid turning them on if possible. In particular, the DB2 9.7 registry variable `DB2_COMPATIBILITY_VECTOR` is not supported.

Section

64-bit

This section will cover WebSphere Commerce V7 Feature Pack 1 support for WebSphere Application Server 64-bit

64-bit

- WebSphere Commerce V7 Feature Pack 1 has support for both WebSphere Application Server 32 and 64-bit
 - 32 and 64-bit refer to the way a computer's processor (CPU) handles information
 - 64-bit system
 - Typically handles large amounts of random access memory (RAM) more effectively than a 32-bit system
- WebSphere Commerce 32 and 64-bit JVM
 - 32-bit JVM
 - Any cache entries that do not fit into a 1.5 Gb heap size are offloaded to disk
 - 64-bit JVM
 - Heap size is not limited to 1.5 Gb and can grow as large as necessary, reducing the need for disk offload

WebSphere Commerce uses in-memory caching for a lot of data which can lead to large heap sizes. With this in mind WebSphere Commerce V7 Feature Pack 1 has support for both WebSphere Application Server 32 and 64 bit. 32 and 64 bit refer to the way a computer's processor (CPU) handles information. Typically a 64-bit system version handles large amounts of random access memory (RAM) more effectively than a 32-bit system. Benefits of a 64-bit system are apparent when you have a large amount of RAM installed on your computer (typically 4 GB of RAM or more).

With a **32-bit** JVM, any cache entries that do not fit into a 1.5 Gb heap size are offloaded to disk (if so configured, otherwise not cached at all). With a **64-bit** JVM, the heap size can grow as large as necessary, reducing the need for disk offload.

On platforms with file system caching, such as AIX and Linux, cache contents offloaded to disk can, and in many cases, are loaded into memory by the file system cache. **32-bit** and **64-bit** JVMs have comparable performance when file system cache is used. **32-bit** JVMs, when used on a platform with an efficient file system cache such as AIX and properly tuned, will tend to deliver slightly better throughput than **64-bit** JVMs for small to moderately-sized caches.

WebSphere Commerce support for 64-bit

- What is supported
 - All platforms (Windows, AIX, Solaris, and Linux)
 - All existing WebSphere Commerce functions
 - Creating a new WebSphere Commerce instance (pre-installed WebSphere Application Server)
 - Migration from previous release (before V7) of 32bit WebSphere Commerce/WebSphere Application Server instance
- Not supported
 - Starting with WebSphere Commerce V7 on WebSphere Application Server V7 32 bit going to WebSphere Commerce V7 Feature Pack 1 on WebSphere Application Server V7 64bit

WebSphere Commerce V7.0.0.1 includes WebSphere Application Server 64-bit support. Support is included on all platforms (Windows, AIX, Solaris, and Linux). All existing WebSphere Commerce functions are supported on 64-bit. You can install WebSphere Commerce V7 with Feature Pack 1 on top of a previously installed version of WebSphere Application Server 64-bit and create a new WebSphere Commerce instance.

Migration from a 32-bit version of WebSphere Commerce and WebSphere Application Server to a 64-bit version is supported as long as you are not already on version 7 of WebSphere Commerce or WebSphere Application Server. For example, going from WebSphere Commerce V6 on WebSphere Application Server V6 32bit to WebSphere Commerce V7 Feature Pack 1 on WebSphere Application Server V7 64 bit is supported. However, going from WebSphere Commerce V7 on WebSphere Application Server V7 32 bit to WebSphere Commerce V7 Feature Pack 1 on WebSphere Application Server V7 64bit is not.

Installation considerations

- 64-bit versions of WebSphere Application Server supported:
 - WebSphere Application Server Network Deployment V7.0.0.3
- How to get the software:
 - WebSphere Application Server 64 bit is added in the WebSphere Commerce V7 Feature Pack 1 package
- Quick installation for WebSphere Commerce 64-bit is unsupported
- Installation prerequisites:
 - WebSphere Application Server 64-bit
 - DB2

The 64 bit supported version of WebSphere Application Server needed for WebSphere Commerce Feature Pack 1 is WebSphere Application Server Network Deployment Version 7.0.0.3. WebSphere Application Server 64 bit is added in the WebSphere Commerce V7 Feature Pack 1 package for you to install. Quick installation for WebSphere Commerce 64-bit is not available so you need to install WebSphere Application Server 64-bit and DB2 before installing WebSphere Commerce V7 and Feature Pack 1.

Development considerations

- Development is done on 32-bit JVM provided with Rational® Application Developer
- Develop on 32-bit and deploy to 64-bit production environment
 - No need for re-compilation on 64-bit JVM as bytecode produced by javac is the same for both platforms
 - JIT converts bytecode to 64-bit executable code

If you use WebSphere Commerce 64-bit, development will still need to be done on 32-bit JVM with Rational Application Developer. You need to develop on 32-bit and deploy to your 64-bit production environment. There is no need for re-compilation on the 64-bit JVM as bytecode produced by javac, the Java™ programming language compiler, is the same for both platforms. JIT (Just in time compiler) converts bytecode to 64-bit executable code.

Issues and limitations

- Default 64 bit system tuning settings for nursery size, max heap size and so on are different than for 32-bit JVM
- Existing customers running 32-bit version of JVM can see a throughput degradation when moving to 64-bit JVM in some cases
 - Do comparative testing and evaluation on your site to establish which option is better for you
- Limitation
 - No payment manager support on WebSphere Application Server 64 bit
 - sMash (required by Social Commerce) runs on 32bit JVM only
 - Additional manual installation steps needed
 - No 32bit to 64bit “in-release” migration for WebSphere Application Server

When moving from a 32 bit to 64 bit environment, you need to remember that tuning parameters such as nursery size and max heap size are different on a 64 bit system. You can refer to the WebSphere Application Server Information Center for more information on this. If you are currently running a 32-bit version of the JVM you might see a throughput degradation when moving to a 64-bit JVM in some cases. If you are planning to move to 64-bit you should do comparative testing and evaluation on your site to establish which option is better for you.

WebSphere Commerce support for 64-bit has some limitations. The Payment Manger is not supported on WebSphere Application Server 64 bit. Also, WebSphere sMash is not supported on the 64 bit JVM. WebSphere sMash is required by Social Commerce and you will have to install a separate 32 bit JVM for it to run on. There are additional manual installation steps needed for this, they are included in the WebSphere Commerce Information Center. Also, there is no 32bit to 64bit “in-release” migration for WebSphere Application Server as discussed on the previous slides.

Section

WebSphere Commerce-WebSphere eXtreme Scale integration

The last section will cover the integration of WebSphere Commerce and WebSphere eXtreme Scale.



WebSphere eXtreme Scale V7.0

- Separate product that is used as a powerful distributed cache to speed application access to data
- Increases responsiveness and accelerates the performance of data-intensive applications yielding higher throughput
- Replace expensive disk operations with replicated memory operations for lower costs, easier scaling and higher performance

WebSphere eXtreme Scale processes massive volumes of transactions with extreme efficiency and linear scalability. It has fast application performance and is used as a powerful distributed cache to speed application access to data. eXtreme Scale has a foundation for high-throughput transaction processing. It increases responsiveness and accelerates the performance of data-intensive applications yielding higher throughput. With eXtreme scale, you replace expensive disk operations with replicated memory operations for lower costs, easier scaling and higher performance. It has automatic replication of data for high availability and fault tolerance which can lower the risks of data loss and reduce after-hours recovery and reconciliation efforts. Extreme Scale helps with automatic data placement in which it can automatically place data and replicas according to user preference to increase overall availability. It also has flexible definition of data location where it can optimize use of server resources.

Primary benefits of deploying eXtreme Scale

- Potentially up to 25% reduction in average response time
- Less statistical fluctuation in response-time
- Potentially up to 40% improvement in time to reach steady-state after full or partial site restart, or after full cache invalidation
- Simplified tuning and operational maintenance
- Reduced I/O volume to high-speed disk
- Coherent and consistent cache
 - Same version of the page is always shown
 - Facilitate edge-caching

This slide lists the primary benefits of deploying eXtreme Scale for WebSphere Commerce compared with Dynacache and disk offload. Potential benefits include up to a 25% reduction in average response time and less statistical fluctuation in response time. This makes for a more consistent user experience. Potentially up to a 40% improvement in time to reach steady-state after full or partial site restart, or after full cache invalidation has been noticed when using eXtreme Scale with WebSphere Commerce. Simplified tuning and operational maintenance and reduced I/O volume to high-speed disk have also been noticed. Finally, testing saw a coherent and consistent cache where the same version of the page is always shown. Consistency of cache entries can also facilitate edge-caching with Akamai.

Performance results can vary

- Your results can vary due to differences in scenario and environment
- Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment
- Actual performance in a user's environment can vary

Your results can vary due to differences in scenario and environment. Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. Actual performance in a user's environment can vary.

Who should consider adding eXtreme Scale

- High-volume customers with large numbers of WebSphere Commerce JVMs and large caches will see the most benefit
- Best results for cached pages and page fragments
- Customers performing a high volume of cache invalidations
- Page fragments invalidated once, rather than once-per-JVM
- High-volume customers who are unable to use DRS for cache invalidation due to network bottlenecks

WebSphere eXtreme Scale is recommended for high-volume customers with large numbers of WebSphere Commerce JVMs and large caches. You will see the most benefit if you use a lot of cached pages and page fragments. Any site that requires a high volume of cache invalidations due to things such as promotions, inventory or price feeds can potentially benefit from using eXtreme Scale. With eXtreme Scale page fragments are invalidated once, rather than once-per-JVM for Dynacache, leading to less stress on the processor and network resources. Finally, if you are a High-volume WebSphere Commerce customer who is unable to use DRS for cache invalidation due to network bottlenecks you should consider eXtreme Scale.

Issues and limitations

- In WebSphere Commerce V7 Feature Pack 1 support is limited to eXtreme Scale V7.0
- Integration through Dynacache plug-in only
- Only distributed topology (not shared), where the eXtreme Scale server is located on a separate machine is supported
- Customers should avoid putting the WebSphere Commerce Data Cache into eXtreme Scale
 - eXtreme Scale cache performs best with JavaServer Pages files and page fragments
 - Data Cache data can reside in the Dynacache while JavaServer Pages files and page fragments reside in eXtreme Scale

In WebSphere Commerce Feature Pack 1 eXtreme Scale support is limited to eXtreme Scale version 7.0 integrated with WebSphere Commerce using the Dynacache plug-in (rather than eXtreme Scale APIs). Only distributed topology, where the WebSphere Commerce server is on one machine and the eXtreme Scale server is on a different machine, is supported. Shared eXtreme Scale topology is not supported at this time. Finally, customers should avoid putting the WebSphere Commerce Data Cache into eXtreme Scale. It is best if Data Cache data resides in the Dynacache and JavaServer Pages files and page fragments reside in eXtreme Scale.

Section

Summary

The last section will cover the summary of the presentation and references.

Summary

- WebSphere Commerce V7 Feature Pack 1 includes support for
 - DB2 V9.7 Fix Pack 1
 - WebSphere Application Server 64-bit
 - WebSphere eXtreme Scale
- There are performance enhancements, installation considerations, and limitations to think about when using these new products

WebSphere Commerce V7 Feature Pack 1 includes support for DB2 V9.7 Fix Pack 1, WebSphere Application Server 64-bit, and WebSphere eXtreme Scale. When running WebSphere Commerce you can have large cache and heap sizes. Using WebSphere Application Server 64-bit and eXtreme Scale might increase your performance, but be sure to look over the installation considerations and limitations when using these new products. It also makes sense to do comparative testing and evaluation on your site to establish which option is better for you.

References

- What is new in DB2 9.7

<http://publib.boulder.ibm.com/infocenter/db2luw/v9r7/index.jsp?topic=/com.ibm.db2.luw.wn.doc/doc/r0051514.html>

- Technote: Customers running WebSphere Commerce version 7.0 on WebSphere Application Server 32-bit version 7.0. who want to migrate to WebSphere Application Server 64-bit version 7.0

– <http://www-01.ibm.com/support/docview.wss?uid=swg21418090>

- Information center

– <http://www-01.ibm.com/software/genservers/commerce/wcbe/library/>

- Passport Advantage®

– <http://www-01.ibm.com/software/howtobuy/passportadvantage/index.html>

- WebSphere Commerce

– <http://www-01.ibm.com/software/genservers/commerceproductline/>

- WebSphere eXtreme Scale

– <http://www-01.ibm.com/software/webservers/appserv/extremescale/>

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