



IBM Software Group

Holiday Readiness: Things to Consider – Lessons Learned

Speaker name:

Jeff Johnson: jeffjohn@us.ibm.com

Kevin Dillard: kdillard@us.ibm.com



WebSphere® Support Technical Exchange



Agenda

- Introduction
- Things to Consider
- Webcontainer Pool
- Datasource Connection Pool
- Memory Considerations
- Keys Table prefetch
- HotSku
- Cache invalidation
- External Interface
- Network
- Data Collection
- Summary

Introduction

The holiday season is coming! Is your WebSphere Commerce site ready to handle the increased load? Do you have the processes in place to effectively manage your WebSphere Commerce environment for peak efficiency?

This presentation will highlight issues that Support has seen in past holiday seasons.

Things to Consider

- Ensure proper capacity planning
 - ▶ Performance testing with realistic data and valid test case scenarios.
 - ▶ Failover planning, eliminate single points of failure. Regular backups

- Tune the different environment layers such as:
 - Database, WebServer and Application
 - Additional information on [performance tuning](#)

Things to Consider

- Harden environment
 - ▶ Freeze custom code deployments
 - ▶ Apply maintenance
 - Recommended Fixes and Settings

- Minimize problem determination
 - ▶ Be familiar with **MustGather data** collection to help reduce the time to resolution

WebContainer Thread Pool

- More Horsepower does not correlate to more WebContainer threads.
- Size of WebContainer thread pool determines number of threads that can run concurrently.
- Min and Max should be set to the same value to prevent overhead of creation and deletion of threads. It will also prevent possible native leaks.
- Optimal Size should be determined during load testing however a good rule of thumb is to start with 5 threads per cpu. Increase only when CPU Utilization could be higher by having additional concurrent workload.
- **Key Tuning Configurations: WebContainer Pool**

Datasource Connection Pool

- Its important to have the Datasource Connection Pool set properly to prevent overwhelming the Database server, prevent deadlocks waiting on connection.
- WebContainer threads are not the only threads that use the connection pool
- The following is [simple equation](#) to help determine proper sizing:
DataSource Connection Pool Size >=
(# Of WebContainer Threads)
+ (# Of WC Scheduler Threads)
+ 1 (for WC Key Manager)
+ 1 (for WC Auditing)
+ (# of Parallel and Serial MQ listener threads)
+ (# of non-WebContainer Threads used by Custom Code)

Memory Considerations

- Its important to understand whether you are running in a 32bit or 64bit environment and the level of JDK.
 - ▶ 32bit limits the virtual memory address space to 2gb per jvm
 - ▶ 64bit is limited to the amount of physical memory available
 - ▶ Its important to consider the overhead of garbage collection when setting your heap size as it can have an impact on overall performance
 - ▶ More Heap space does not equate to better performance

Keys table prefetch size

- In large scale environments, there can be performance improvements by increasing the prefetchsize in the keys table.
- This will help reduce the number of database round trips (reduce 2 selects and 1 update on the keys table)
- Example: If I need to insert 10 keys into the database:
 - ▶ prefetch size is 2, it will make 5 trips to the DB after every 2 keys. It will need to go to DB to get the next "2" unique keys
 - ▶ prefetch size is 10, it will make just the 1 initial trip to the DB, since it will not need to get more keys until after these 10 are used

OMS integration - HotSku

- Commerce site integrated with Sterling OMS can take advantage of the HotSku Feature.
 - ▶ Improve performance on Sterling, thus reducing wait times on Commerce transactions.
 - ▶ Prevent Deadlock and lock contentions
 - When an item is considered hot, the system does not lock it. Instead, the changes are inserted into two additional tables, one for demand and one for supply.
 - [Additional information on HotSku Feature](#)

Cache Invalidation

- Avoid clearing cache during peak hours
- Review CACHEIVL and remove unnecessary or duplicated IDs.
- Ensure the following settings to reduce invalidations:
 - ▶ `com.ibm.ws.cache.CacheConfig.filterLRUInvalidation`
 - ▶ `com.ibm.ws.cache.CacheConfig.filterTimeOutInvalidation`
 - ▶ `com.ibm.ws.cache.CacheConfig.filterInactivityInvalidation`
 - ▶ Additional details on [dynacache settings](#)
- Large dataloads or stage propagations can generate thousands of records in the CACHEIVL table which can overwhelm DRS.
 - ▶ Using `maxInvalidationDataIds` can be used to switch to full cache clear instead of a large number of invalidations.

External Interfaces

- External Interfaces can be the source of Commerce performance bottlenecks which can lead to site outages.
 - The following are few examples of external services:
 - OMS
 - Search Providers
 - SMTP
 - Testing is critical: ensure your test scenario are exercising the external interfaces.
 - If possible avoid synchronous calls to external services.

Network

- One of the most overlooked area is the Network
 - ▶ Network latency can impact overall site performance.
 - ▶ Ensure proper Network monitoring is in place
 - ▶ Firewalls are configured properly

Data Collection

- Ensure that your environment is configured to capture the appropriate data the first time an issue occurs instead of waiting for another occurrence.
- Configure for heapdumps or system cores
- Have scripts in place (Mustgather perf scripts)
- Being prepared for [Memory issues](#)

Summary

When preparing for Holiday Season

- Don't get caught by surprise
 - ▶ Implement monitoring and failover or recovery procedures
 - ▶ Be ready to collect diagnostics data

- A WebSphere Commerce server is part of a complex multi-layer architecture
 - ▶ Ensure each layer is properly tuned

- Work effectively with IBM Support
 - ▶ Stress the urgency and business impact
 - ▶ Have Mustgather in place for first failure data capture



Additional WebSphere Product Resources

- Learn about upcoming WebSphere Support Technical Exchange webcasts, and access previously recorded presentations at:
http://www.ibm.com/software/websphere/support/supp_tech.html
- Discover the latest trends in WebSphere Technology and implementation, participate in technically-focused briefings, webcasts and podcasts at:
<http://www.ibm.com/developerworks/websphere/community/>
- Join the Global WebSphere Community:
<http://www.websphereusergroup.org>
- Access key product show-me demos and tutorials by visiting IBM Education Assistant:
<http://www.ibm.com/software/info/education/assistant>
- View a webcast replay with step-by-step instructions for using the Service Request (SR) tool for submitting problems electronically:
<http://www.ibm.com/software/websphere/support/d2w.html>
- Sign up to receive weekly technical My Notifications emails:
<http://www.ibm.com/software/support/einfo.html>

Connect with us!

1. Get notified on upcoming webcasts

Send an e-mail to wsehelp@us.ibm.com with subject line “wste subscribe” to get a list of mailing lists and to subscribe

2. Tell us what you want to learn

Send us suggestions for future topics or improvements about our webcasts to wsehelp@us.ibm.com

3. Be connected!

Connect with us on Facebook

Connect with us on [Twitter](#)

Join the Client Success Essentials Community

Easily find important Support resources

- Connect with the Experts
 - ▶ Support Technical Exchanges
 - ▶ Ask the Experts Sessions
- Product Support Newsletters
- Blog & Forums
- Training videos, IEA modules
- Event Readiness
- Proactive Services Offerings
- Essential Links to key sites
 - ▶ IBM Support Portal
 - ▶ Client Success Portal
 - ▶ Fix Central

Welcome to the IBM Client Success Essentials Community!

This community brings together users of Smarter Cities, Smarter Commerce, Smarter Content and Smarter Workforce software to share, collaborate and connect with each other virtually. In this community, you'll find training videos, upcoming events, blogs, important web links, and more. Learn about our [Client Success Mission](#).

Learn and Collaborate:

Find your product in the [Product Directory](#)



Leverage Customized Offerings:



Event Readiness

Holiday Readiness, End of Support Outreach, Custom Programs, Remote Installation Assistance



Accelerated Value Program

Helping clients accelerate product adoption and ROI of their IBM software



Proactive Notifications

Sign up for support updates

The following are available to clients, business partners, and IBM employees that have products in Smarter Cities, Smarter Commerce, Smarter Content, and Smarter Workforce. [Click here to learn more.](#)



Proactive Services Offerings



Free Web-Based Trainings

<http://ibm.biz/Client-Success-Essentials>

THE INFORMATION CONTAINED IN THIS PRESENTATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. WHILE EFFORTS WERE MADE TO VERIFY THE COMPLETENESS AND ACCURACY OF THE INFORMATION CONTAINED IN THIS PRESENTATION, IT IS PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. IN ADDITION, THIS INFORMATION IS BASED ON IBM’S CURRENT PLANS AND STRATEGY, WHICH ARE SUBJECT TO CHANGE BY IBM WITHOUT NOTICE. IBM SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES ARISING OUT OF THE USE OF, OR OTHERWISE RELATED TO, THIS PRESENTATION OR ANY OTHER DOCUMENTATION, NOTHING CONTAINED IN THIS PRESENTATION IS INTENDED TO NOR SHALL HAVE THE EFFECT OF CREATING ANY WARRANTIES OR REPRESENTATIONS FROM IBM (OR ITS SUPPLIERS OR LICENSORS), OR ALTERING THE TERMS AND CONDITIONS OF ANY AGREEMENT OR LICENSE GOVERNING THE USE OF IBM PRODUCT OR SOFTWARE.

Copyright and Trademark Information

IBM, The IBM Logo and IBM.COM are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks and others are available on the web under “Copyright and Trademark Information” located at www.ibm.com/legal/copytrade.shtml.