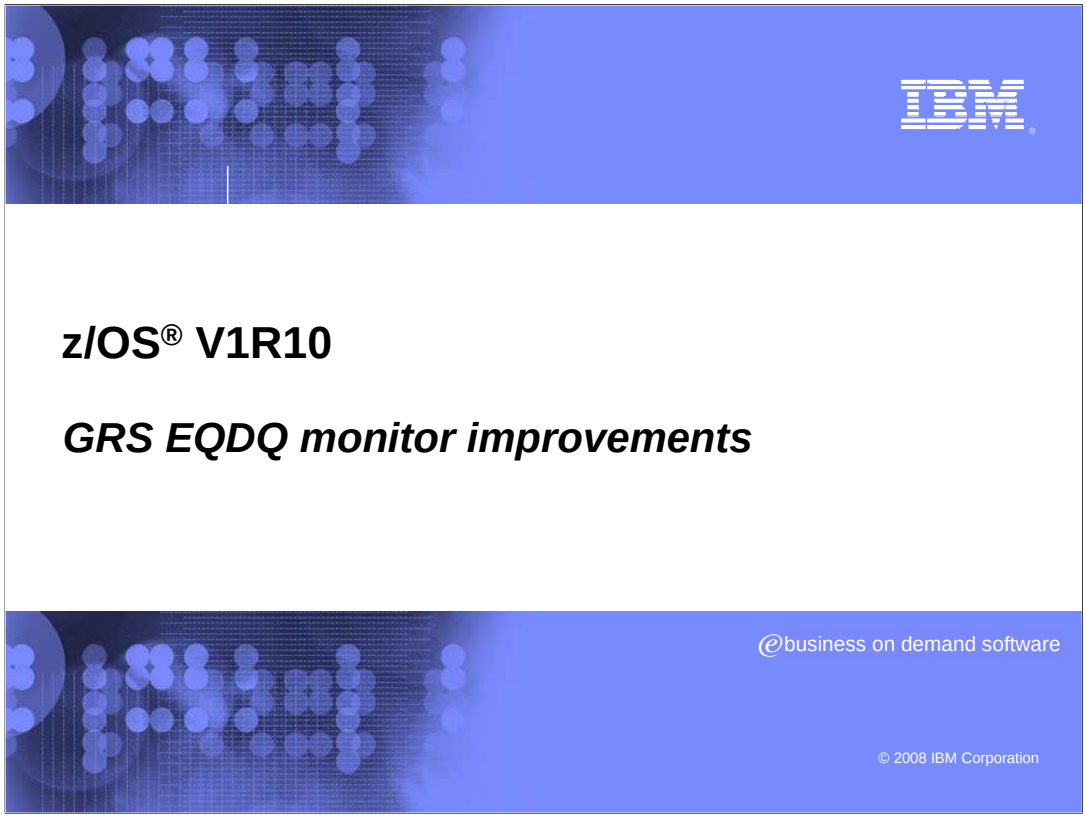
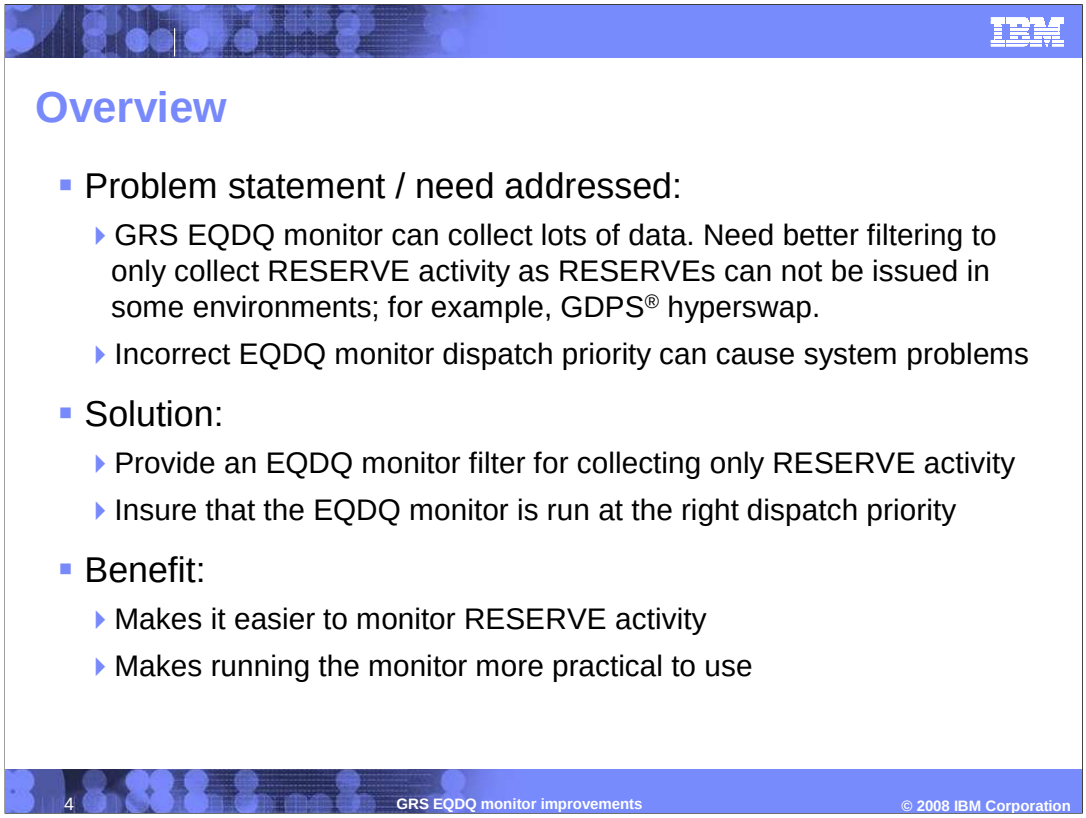

IBM
z/OS® V1R10
GRS EQDQ monitor improvements
ebusiness on demand software
© 2008 IBM Corporation

Table of contents

Session objectives

- Explain what was done and why it was done
- Identify new or changed installation procedures
- Explain any migration issues or concerns
- Explain how to use it
- Indicate list of publications and references



All three of these line items provide implicit performance improvements. GRS latch performance for non-zero key calls (such as RRS) was substantially improved. The GRS EQDQ monitor's performance was dramatically improved. However, GRS continues to have a health check that warns users not to run the monitor for long periods of time on production systems. The health check was added because:

1.Before z/OS V1R9, having the monitor on caused some ENQs to take different paths through non-monitor ENQ processing. This had exposed some errors in user code because some ENQ paths enforced/expected the exploiter to abide by certain rules where as other path were more forgiving. In R9 and above, all ENQ paths followed the more forgiving rules.

2.Having the monitor on causes performance overhead on every ENQ/DEQ/RESERVE/ISGENQ in the system. Even though the performance was dramatically reduced in R10, it still increases path length. As such the health check was left just so you are aware that you have it on. Use the monitor when needed. Information was added to the GRS Planning Guide, which suggests that if you are concerned about the performance overhead, that you measure it using the ISGEQRSP sample program. Note that performance test done just before GA showed that the R10 monitor add very little overhead. As such, performance should not be an issue, but you can always measure it yourself to be sure.

3.In earlier releases, not having the monitor set to the correct dispatch priority (needs to be SYSSTC) can cause system problems where high priority ENQs would be blocked by low priority monitor work. The monitor now joins a GRS dependent enclave, which insures that it is run at the same dispatch priority as GRS. However, note that its CPU time is now also added to the GRS address space's overall CPU time.

Overview

- New REQTYPE=NCRESERVE filter added for the GRS EQDQ monitor

  GFLG FILTER=Y/N,MATCH=Y/N

  REQTYPE = ALL (REQUESTs that pass other filtering)

  REQTYPE = NCRESERVE (Only gather Non-converted Reserves. Only gather requests that result in actual hardware reserves and pass other filtering)

  DEFAULT=ALL

See the GRS Planning Guide for information on how to control and configure the GRS monitor.

NCRESERVE stands for non-converted hardware reserve. That means that only RESERVEs that result in an actual device reserve are traced. Ones that converted with RNLs are not traced.

Usage and Invocation

- To monitor only hardware reserves, use the new REQTYPE=NCRESERVE
  - Example to only collect events that result in a hardware reserve for RESERVEs issued against the SYSZVVDS resource.
    - **GFLG FILTER=Y,**
    - **REQTYPE=NCRESERVE,MATCH=Y**
    - SVCF /*this statement is required*/
    - **NAME N=SYSZVVDS,T=M,L=8**
  - Remember that changing your filter options does not clear what was already collected by the monitor. As such the data can be misleading. You may need to restart the monitor with the new filter table if you do not want the old data in the reports.

The GRS ENQDQ monitor filter table is defined by updating a modified copy of the sample filter member ISGAMF00 contained in SYS1.SAMPLIB, assembling it, and then issuing a monitor command to make it active. Note that you may want to remove the old data first by restarting the monitor with the new filter table rather than just modifying it. ISGAMF08 is the default filter table. See the GRS Planning Guide for more information on setting up the monitor.

In this, the new REQTYPE=NCRESERVE parm specifies that only non-converted reserves (ones that result in actual device reserves) whose corresponding ENQ has a QNAME of SSYZVVDS are to be traced/collected. The previously existing MATCH=Y keyword indicates that the NAME filter must match as well. NAME N=SYSZVVDS,T=M,L=8 indicates the match information. The T=M (indicates that N= is for a major or qname) and N= SYSZVVDS that the QNAME is SYSZVVDS (catalog). The L=8 indicates the length of the major name to check for a match.

Interactions and dependencies

- Hardware dependencies
  - None
- Software dependencies
  - None
- Exploiters
  - Customers looking for a better GRS ENQ monitor
  - Customers trying to find hardware reserves will benefit from the filter support.

Migration and coexistence considerations

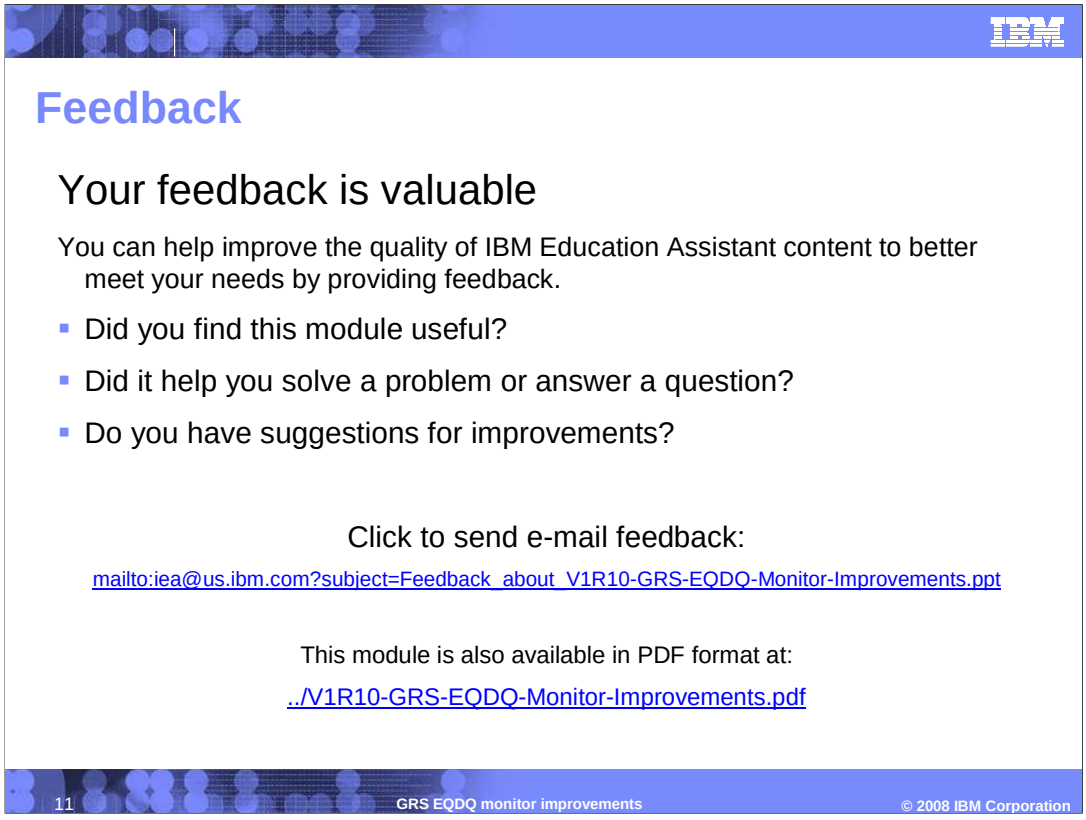
- None

Installation

- Prerequisites for installation
  - No changes!
- Installation publication references
  - None

Session summary

- Performance continues to be an area of focus
- Monitor filter changes make it easier to find hardware reserves



You can help improve the quality of IBM Education Assistant content by providing feedback.

Trademarks, copyrights, and disclaimers

The following terms are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both:

GDPS IBM z/OS

A current list of other IBM trademarks is available on the Web at http://www.ibm.com/legal/copytrade.shtml

Product data has been reviewed for accuracy as of the date of initial publication. Product data is subject to change without notice. This document could include technical inaccuracies or typographical errors. IBM may make improvements or changes in the products or programs described herein at any time without notice. Any statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business. Any reference to an IBM Program Product in this document is not intended to state or imply that only that program product may be used. Any functionally equivalent program, that does not infringe IBM's intellectual property rights, may be used instead.

Information is provided "AS IS" without warranty of any kind. THE INFORMATION PROVIDED IN THIS DOCUMENT IS DISTRIBUTED "AS IS" WITHOUT ANY WARRANTY, EITHER EXPRESS OR IMPLIED. IBM EXPRESSLY DISCLAIMS ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT. IBM shall have no responsibility to update this information. IBM products are warranted, if at all, according to the terms and conditions of the agreements (for example, IBM Customer Agreement, Statement of Limited Warranty, International Program License Agreement, etc.) under which they are provided. Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products in connection with this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products.

IBM makes no representations or warranties, express or implied, regarding non-IBM products and services.

The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents or copyrights. Inquiries regarding patent or copyright licenses should be made, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. The actual throughput or performance that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput or performance improvements equivalent to the ratios stated here.