DFSMShsm dump analysis for quick problem resolution

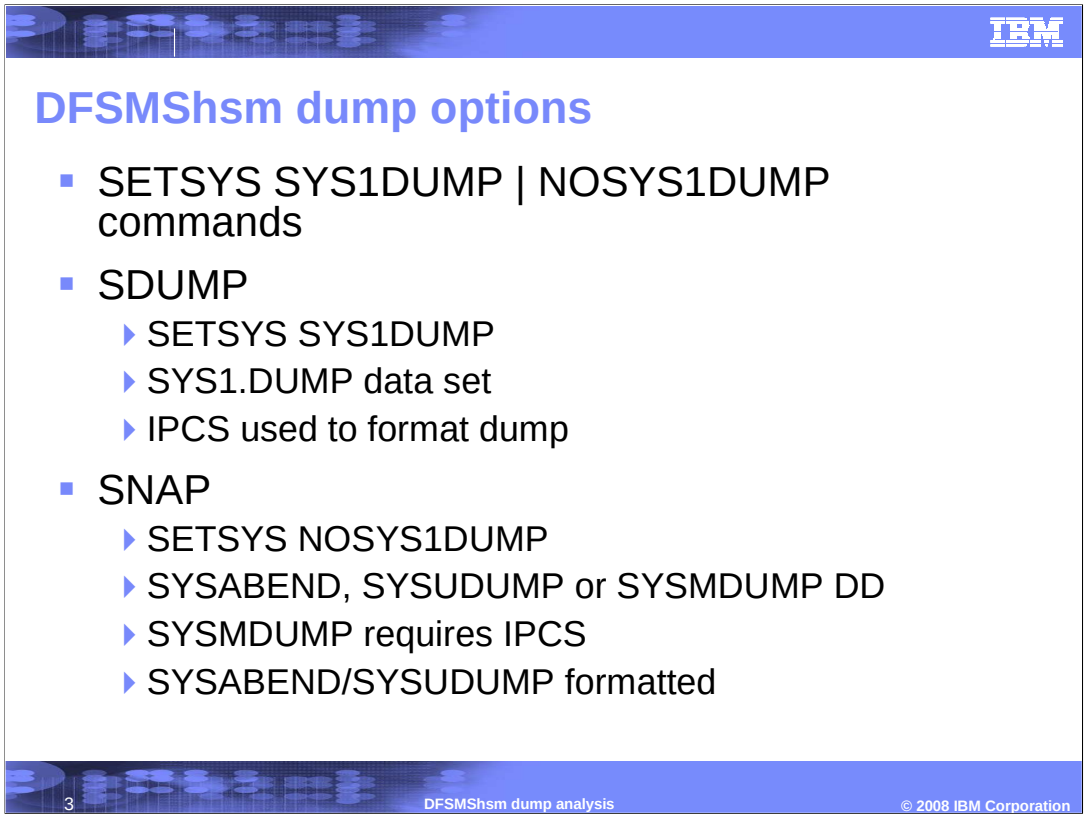
Contents

This presentation:

- reviews DFSMShsm dump options
- discusses information contained in the dump title
- summarizes DFSMShsm ABEND messages
- provides a brief dump analysis technique

This presentation reviews configuration options within DFSMShsm for dumps,. It discusses how the dump title can identify the type of dump that was captured. It summarizes information contained in DFSMShsm ABEND messages which may accompany a dump. And, it provides a short dump analysis technique to determine the owner of the code which produced the dump.

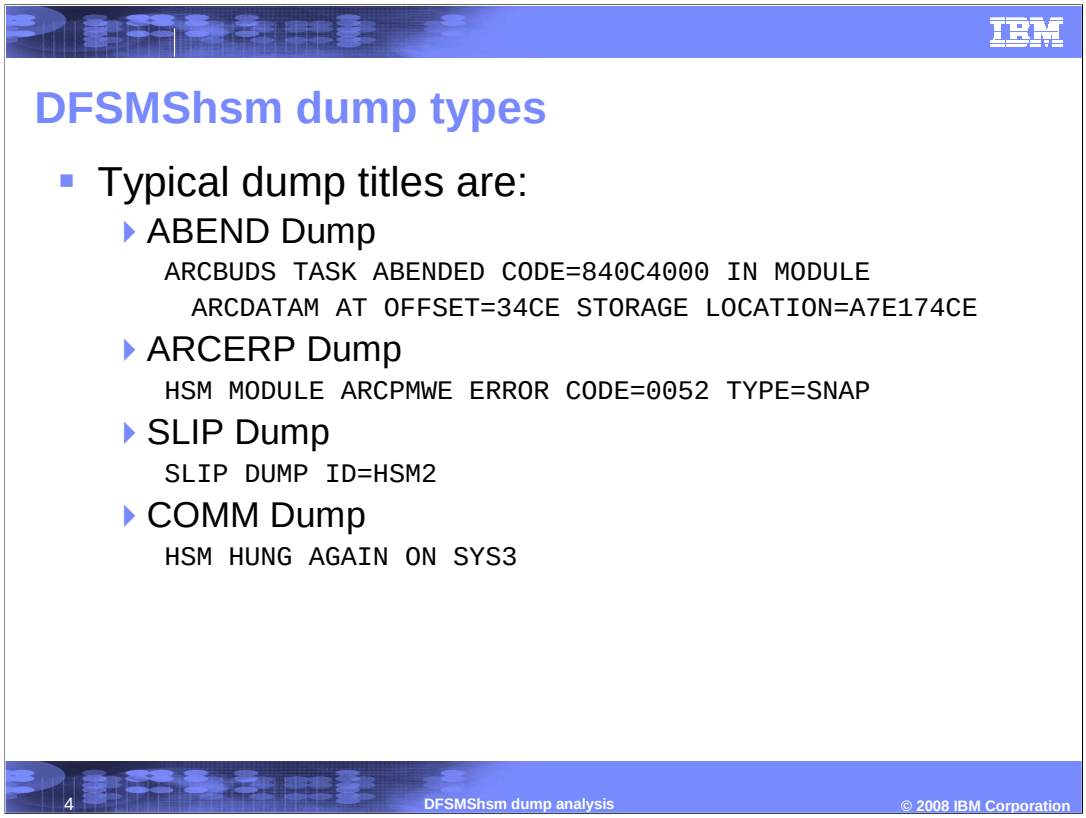
Understanding this information may help to quickly locate existing solutions for both IBM and non-IBM products, and allow routing of problems to the most appropriate support organization for further analysis. This can lead to shorter times in problem resolution.



The SETSYS SYS1DUMP and NOSYS1DUMP commands control whether DFSMShsm uses the SDUMP or SNAP system macros to request a dump when errors in the program are detected. Specifying SETSYS SYS1DUMP is highly encouraged as it produces the preferred dump output.

The SDUMP macro is used when there is an error in DFSMShsm and the SETSYS SYS1DUMP command has been specified. This will result in a dump captured to a system dump data set. Pre-allocated system dump data sets commonly begin with SYS1.DUMPxx, but dynamically allocated system dump data sets may have a different naming convention. SDUMPs are not formatted and thus require IPCS for analysis.

A SNAP macro is used when there is an error in DFSMShsm and the SETSYS NOSYS1DUMP command has been specified. This will result in a dump captured to the SYSABEND, SYSUDUMP, or SYSMDUMP DDs which are specified in DFSMShsm's startup procedure. A SYSMDUMP is unformatted and requires IPCS for analysis. A SYSABEND or SYSUDUMP is formatted.



The title of a dump can indicate the type of dump that has been captured.

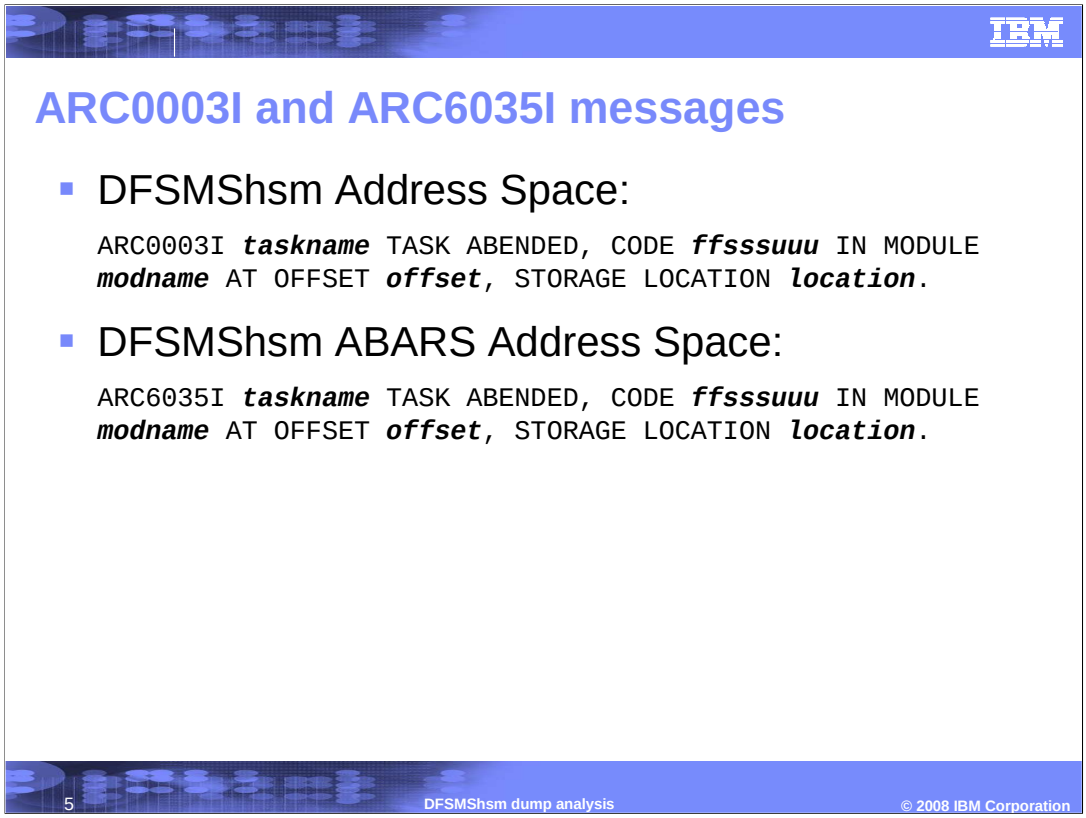
Abend dumps are typically taken after the program's ESTAI has received control and established its title. In most cases, the titles of these dumps will closely resemble the text of message ARC0003I or ARC6035I, which is discussed in the following slide.

ARCERP Dumps are taken by DFSMShsm error processing module ARCERP. Their titles closely resemble the text of message ARC0200I. These dumps are taken when a DFSMShsm module detects an error serious enough to warrant taking a dump. Note that the installation can use the DFSMShsm TRAP command to request a dump for an error condition where the default action is only to issue a message.

SLIP Dumps are created when a SLIP, typically provided by Level 2, matches a certain condition. The ID assigned in the SLIP appears in the title.

COMM Dumps are created when the System Operator issues the MVS DUMP command. The operator assigns the title to the dump.

The dump titles and types can help you to identify the reason a dump was captured and thus the corrective actions you may need to take.



The ARC0003I and ARC6035I messages indicate that a task processing within the DFSMShsm address space abended.

An ABEND that occurs in the DFSMShsm Address Space will be indicated by an ARC0003I message.

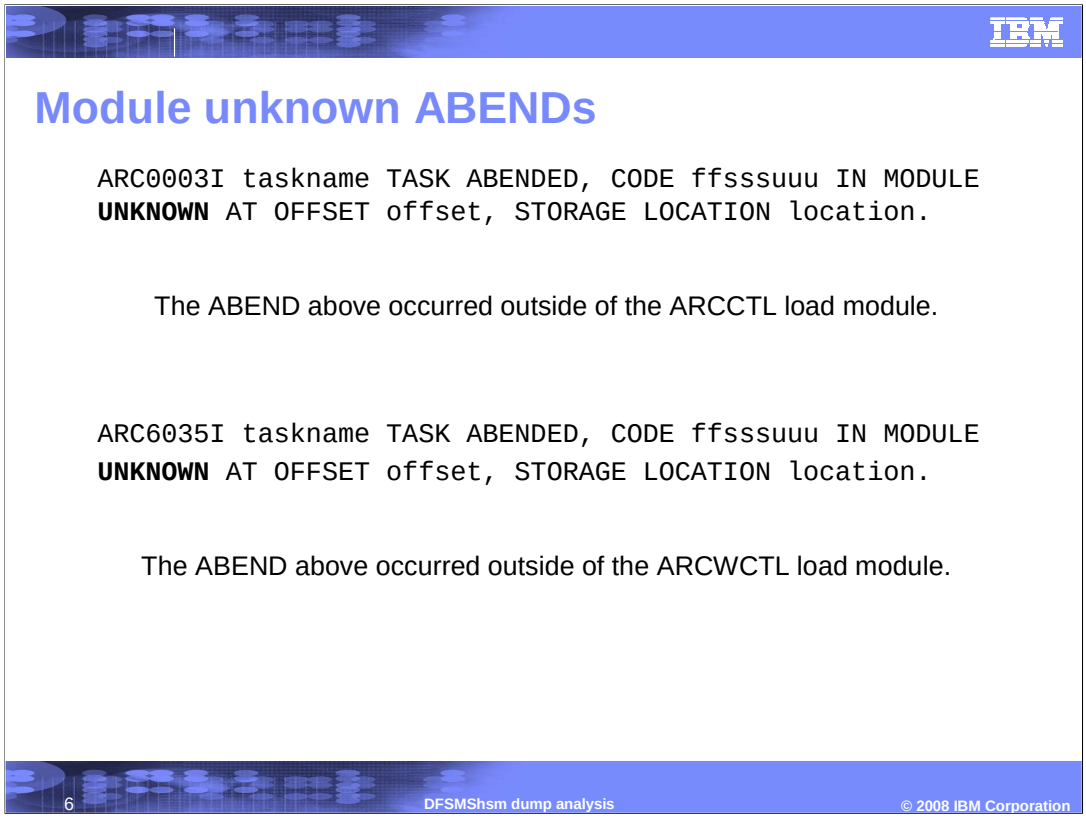
An ABEND that occurs in the DFSMShsm ABARS Address Space will be indicated by an ARC6035I message.

Searching the IBMLink knowledge base using key strings from these messages can help locate available fixes. If a matching fix is not found in the IBMLink knowledge base, review the module name that is reported in the message.

For dumps with reported module names which begin with the letters A R C, preserve the dump and contact the DFSMShsm Level 2 organization for further analysis. Additionally, non-program interrupt type abends should also be referred to DFSMShsm level 2 at this point. Examples of these non-program interrupt abends are ABENDB37 or ABEND138.

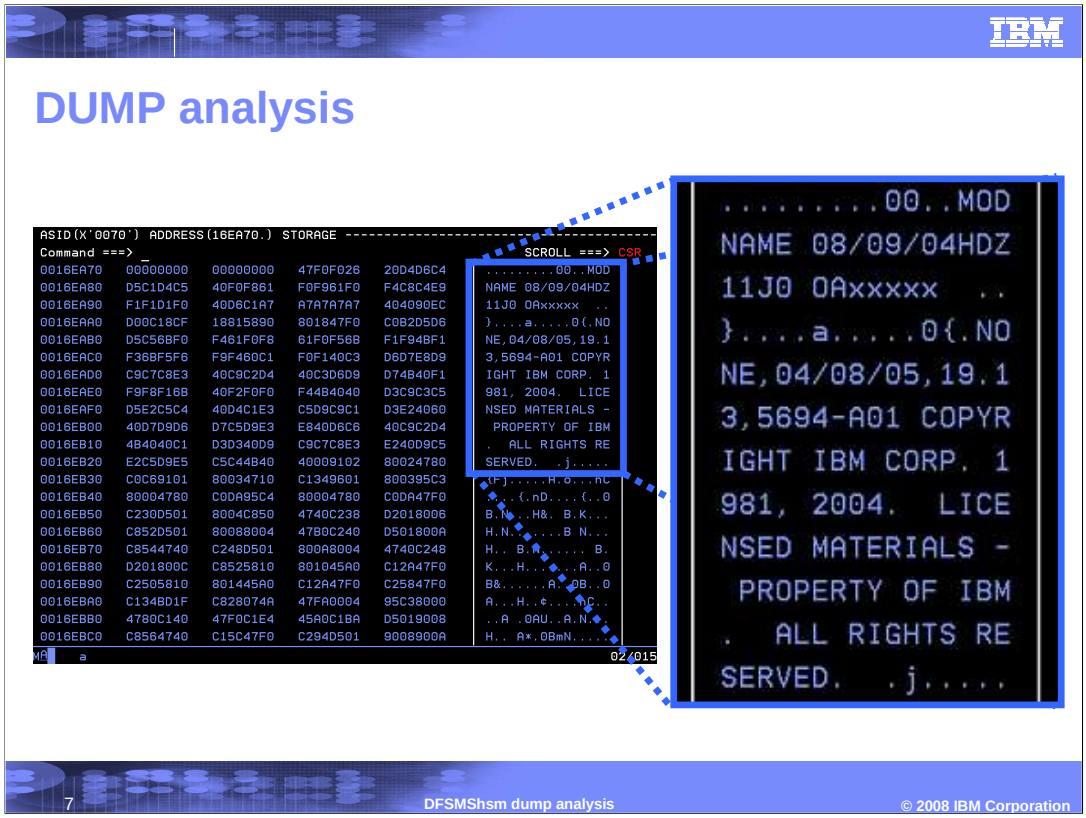
When the reported module name does not begin with the letters A R C, a different support organization within IBM may be better suited to analyze the dump. A search in IBMLink using only the module name may reveal the owner of the module.

If the reported module name indicates UNKNOWN, you can perform a quick analysis of the dump which may identify the owner of the abending code.



If you receive an ARC0003I or ARC6035I message that indicates module UNKNOWN, the ABEND occurred outside of the ARCCTL or ARCWCTL load module, respectively.

Save the storage location reported in the message and then review the dump. The next slide assumes that the dump is IPCS-compatible and you are familiar with IPCS.

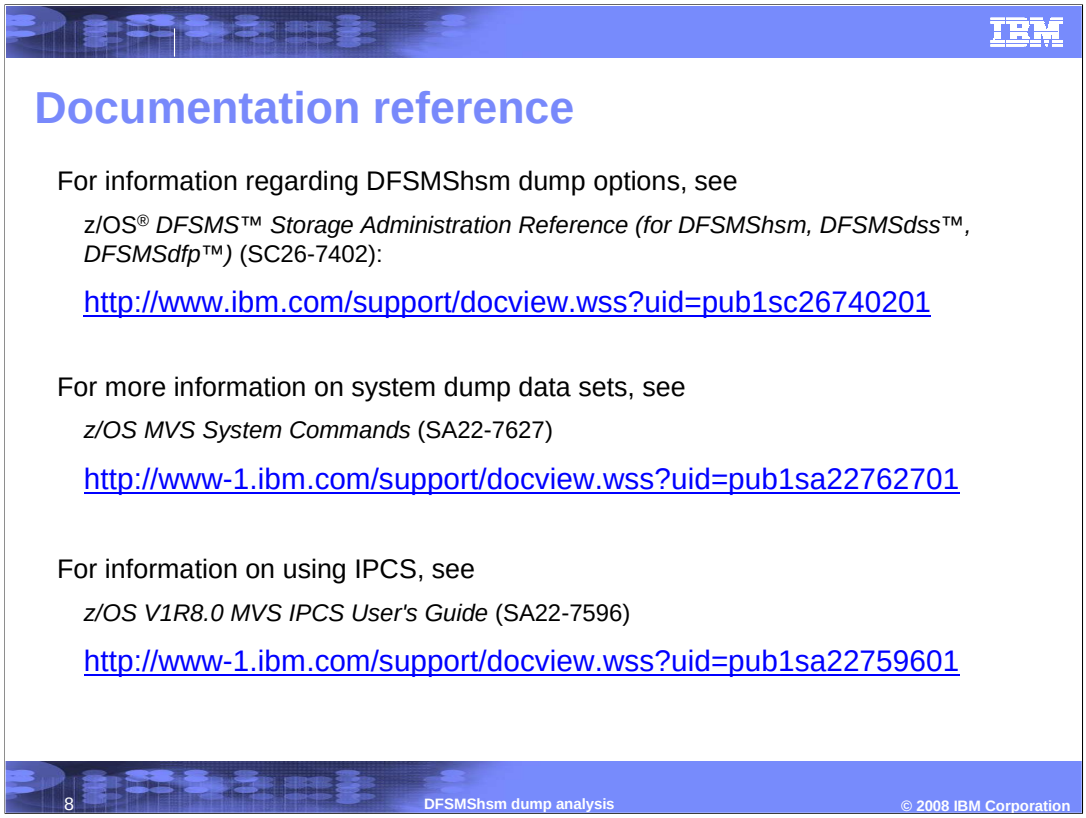


Using the failing instruction address reported in the ARC0003I or ARC6035I messages, use the IPCS BROWSE function to view that location in storage. Ensure the browsed ASID is the correct DFSMShsm or DFSMShsm ABARS address space number.

Once at the storage location, page up until you find the EBCDIC module identifier. Once there you can use the failing instruction address and the address of the module identifier to compute an approximate offset. A search using the ABEND code, module name, and offset should produce information regarding existing resolutions if they exist.

The copyright statements may help identify the owner of the module. If the code does not appear to be provided by IBM, searching knowledge bases provided by the module's owner may produce additional results.

If knowledge base searches do not lead to a resolution, contact the module owner's support organization for further analysis of the dump.



The following documentation references are provided for details on dumps and dump analysis.

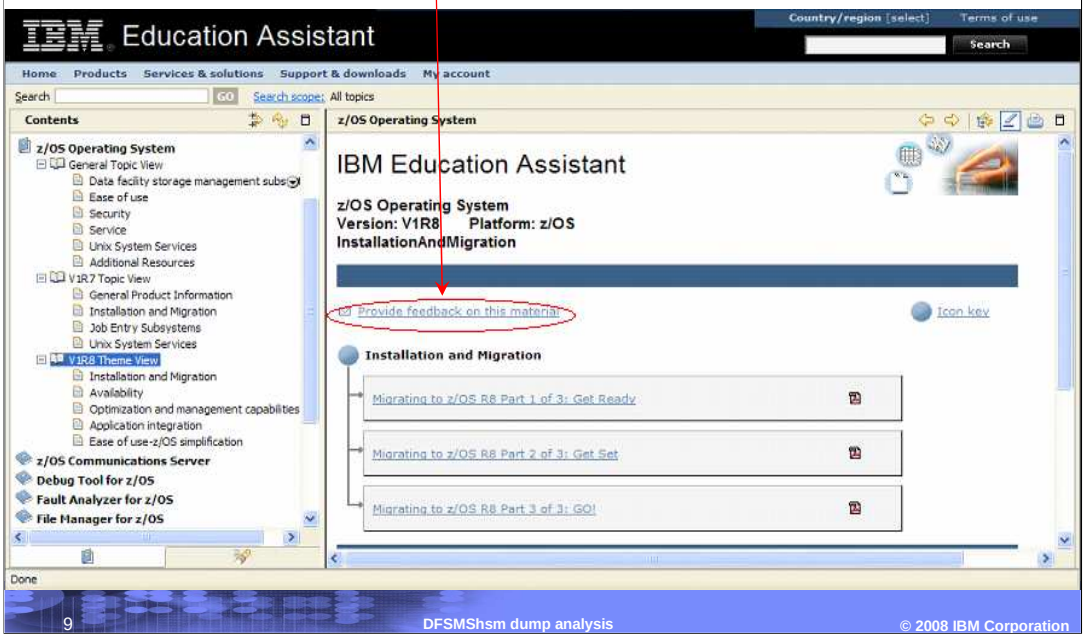
z/OS DFSMS Storage Administration Reference (for DFSMShsm, DFSMSdss, DFSMSdfp)

z/OS MVS System Commands

z/OS V1R8.0 MVS IPCS User's Guide

Did you find the IBM Education Assistant useful?

Provide feedback and specify the presentation title on your response.



- **In your feedback to IBM, answer the following three questions:**
- How helpful was this IEA presentation? Give it a rating from 1 to 5 where 1 = very helpful and 5 = not at all helpful
- Did this presentation save you a service call to IBM? Yes or No
- What other topics would you like to see covered in z/OS IEA?

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:

DFSMS DFSMSdfp DFSMSdss DFSMShsm IBM z/OS

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.