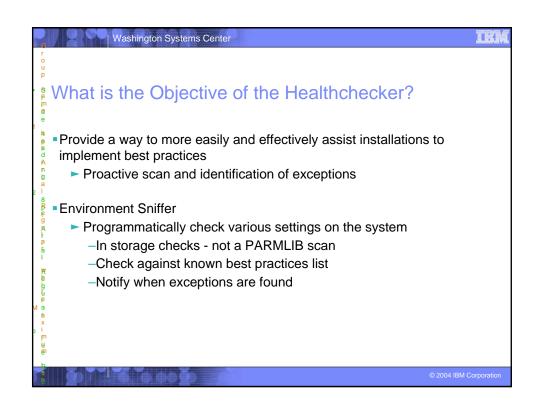
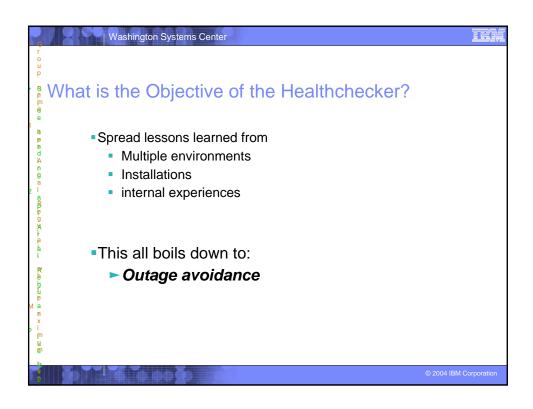
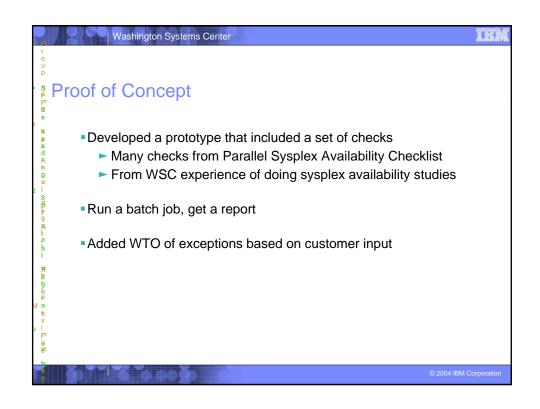
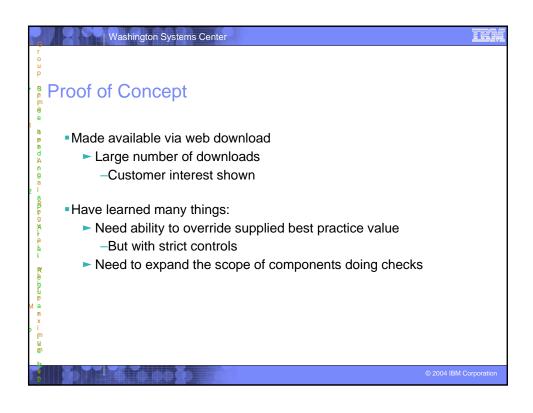


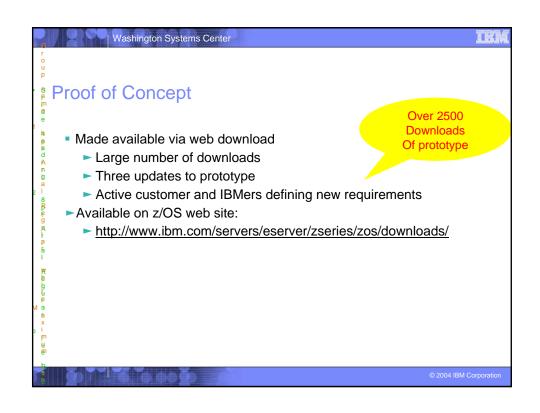
# What is the problem? Designers and developers do not know what they do not know Multiple tuning knobs for flexibility Sometimes, default values are best guess Some best practices not known until real customer experiences from multiple production environments Need the ability to improve availability characteristics









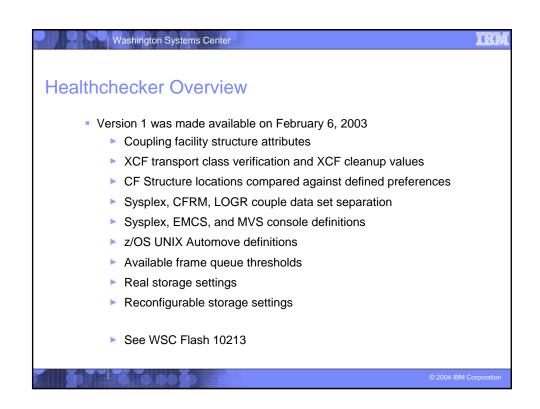


### Existing Healthchecker Overview Free "as-is" tool that can be downloaded from the Web Upload to OS/390 R10 or z/OS system Run as a batch job View exception messages and reports Make suggested changes manually Mostly a Configuration Checker Not an msys for Operations replacement

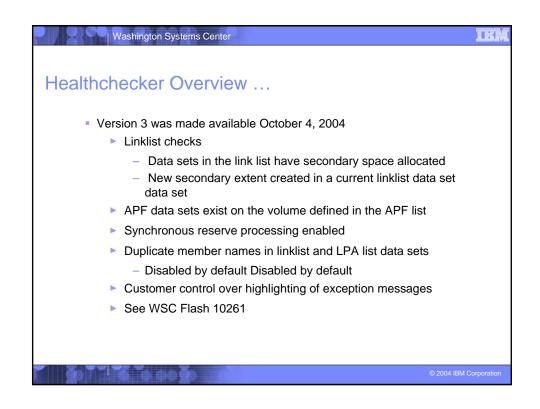
No automatic correction of problems

No online panel displays

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# Healthchecker Overview • Version 2 was made available on April 29, 2003 • Additional support and new checks - Write-to-operator (WTO) message support - Severity designation for checks - Virtual Storage checks and mapping - New data set (HCDATA) required • See WSC Flash 10225



### Healthchecker Installation Obtain Resource Link ID ibm.com/servers/resourcelink Go to z/OS Homepage and download ibm.com/servers/eserver/zseries/zos/downloads What is in the download package hchecker.mmddyy.load.bin hchecker.mmddyy.samplib.bin hchecker.mmddyy.readme.txt hchecker.survey.txt z/OS and Sysplex Health Checker User's Guide (SA22-7931-03)

### Healthchecker Installation ... Upload the two binary files Use TSO RECEIVE INDATASET(dsn) APF-authorize the load library Use SAMPLIB job ALLOHCDA to allocate the HCDATA file on each system Modify and submit SAMPLIB job HCHECK

### Healthchecker Execution Output

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- Issues WTOs for each exception
  - \*HZS003I High Severity: CDS\_DATASET\_SEPARATION: Multiple PRIMARY couple datasets reside on volume XCFCD2

HZS002I Medium severity: XCF\_SIGNALLING: GROUP 'UNDESIG' not assigned to transport class xyz on system (SYSA)

HZS001I Low severity: CONSOLE\_ROUTCODE\_11: One or more console found with ROUTCODE (11)

- LOG DD
  - Information about each check performed
  - 'Health Checker For z/OS and Sysplex' is starting Operating System z/OS 01.06.00

Check COUPLINGFACILITY\_STRUCTURE started

MSG00202 COUPLINGFACILITY\_STRUCTURE The state of coupling facility CF2 is: NORMAL, VOLATILE

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### Healthchecker Execution Output

- REPORT DD
  - Exception details

\*Medium severity Exception: IBM Criteria not met\* XCF\_SIGNALLING ------ (check #1) Group 'UNDESIG' has not been assigned to transport class XYZ defined on system SYSA.

IBM suggests that users explicitly assign the collection of undesignated groups to each transport class by coding the pseudo-group name UNDESIG in GROUP keyword on the CLASSDEF statement in the COUPLExx member of PARMLIB.

Action: Edit the COUPLExx member of PARMLIB and be sure that each CLASSDEF assigns at least the pseudo-group name UNDESIG to the transport class via the GROUP keyword. For example:

CLASSDEF CLASS(ONE) CLASSLEN(956) MAXMSG(800) GROUP(UNDESIG)

CLASSDEF CLASS(TWO) CLASSLEN(8K) MAXMSG(750) GROUP(UNDESIG,GROUP2)

IBM Reason: Avoid problems with XCF signalling.

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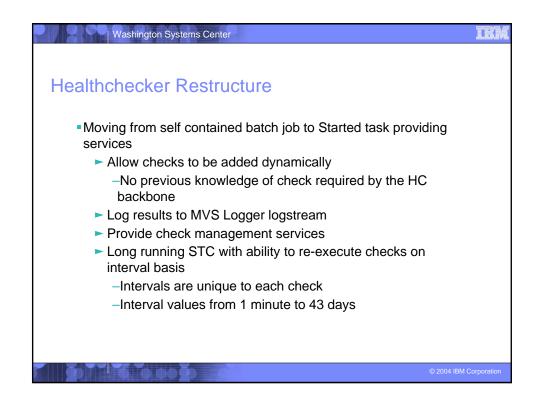
### Healthchecker Customization Modify PARMS to override IBM check values Checks are shipped as USERPARM in SAMPLIB data set To modify copy IBM's USERPARM to a backup member Disable or modify any check Specify NOCALL to disable Modification requires a reason and date Create your own USERPARM with your modified or disabled checks

Healthchecker Customization ...

To Disable GRS\_SyncRsv check

CHECK(GRS\_SyncRsv)
NOCALL
DATE(20040915)
REASON('Scheduled to implement in November);

# Customers Have Asked For A more formal product With formal support Checks from more z/OS components Checks from more IBM products Checks from ISV products Ability to write their own checks



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11.1

### IBM z/OS V1.6 Announcement (204-180)

- IBM Health Checker for z/OS and Sysplex will be a new base function in z/OS 1.7 (FMID HZS7720)
  - Checks delivered separately from the framework, can be added dynamically
  - Checks delivered by elements and components as PTFs
  - User overrides check defaults via HZSPRMxx parmlib updates or MODIFY command
- Framework and most checks intended to be made available as z/OS web download for z/OS releases V1.4, V1.5, and V1.6
- Initial support for most existing checks with plans for incremental delivery of new checks
- SDSF support for managing checks with CK panel

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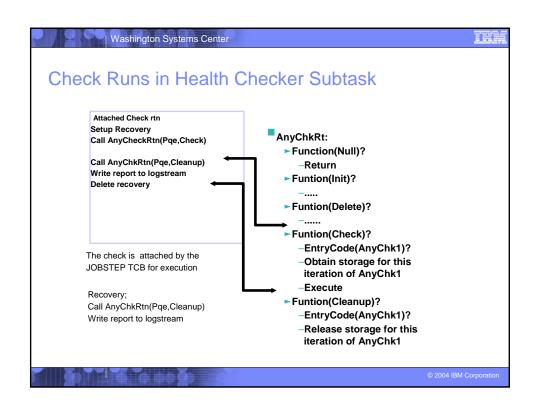
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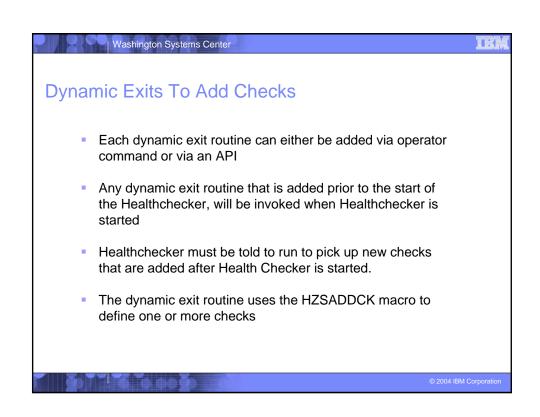
11:1

### **New Structure Overview**

- Each check has 3 parts
  - The dynamic exit routine that identifies the check to the Healthchecker
  - ► The check itself
  - A message table to define messages that are issued by the check

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### **Check Structure**

- 32 bytes check name and 16 bytes check owner (Company name, and component)
- Entry code (used by the check routine when a single check routine has multiple functions)
- The date the best practice values were recommended
- 126 bytes reason that summarizes why the check was written
- The severity of the problem(s) the check is looking for.
- Any default parameter values.
- The default Interval
- The name of the check load module
- The name of the check message table

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### **Check Structure**

- Each check is called with a check entry code as defined by HSADDCHK
- Function code:
  - Initialization Initialization processing (once per life of check)
  - Verify installation parameters
  - Any processing that should be done one for the life of the check
  - Check Normal check processing
  - Check\_cleanup free any storage obtained during the check.
  - ► Check\_delete cleanup for any processing done during check initialization

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### **Check Message Table**

- Each check has a message table
- Common look and feel
- Structured diagnostic message
- Each message is owned by the check.
- Exception messages contain the WTO text
- Message language based on XML/SGML
- Message source is converted to an assembler file that must be compiled and linked to create the message load module that is included with the check.

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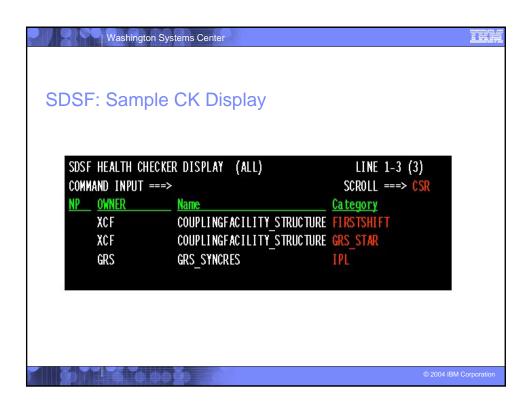
### Messages

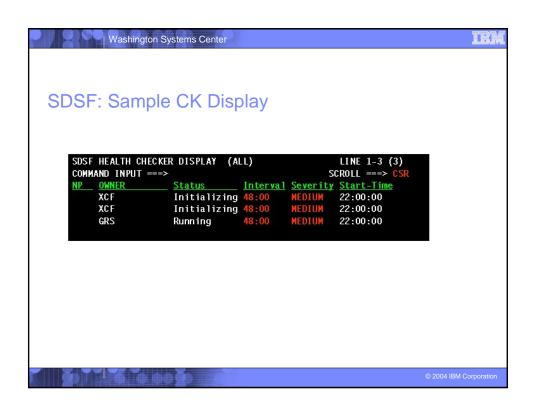
- Checks issue both <u>verbose</u> ('configuration is good' messages) and <u>exception</u> messages.
- Check output
  - WTOs exception messages are written as a HSZ (Healthchecker) message number and the component message ID follows HZS msg: HZS001I IXL002I...
    - Output: All messages are written to the REPORT file (last instance of check)
    - Check history via MVS Logger logstream
    - •When an exception message is written, a summary WTO is written to outline the problem

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### Washington Systems Center **External Interfaces** Parmlib Support HZSPRMxx Concatenation of members supported ► Cross Component support ► User overrides to: Severity, WTO descriptor codes, intervals, active or inactive, categories, parameter values Categories Installations can group multiple checks - Perform actions against categories - One check can be in up to 16 categories Operator Interfaces ► Command interface Display Command Modify Checks ►Run now, pause, refresh, etc. ► SDSF CK panel

## SDSF CK Panel Display checks, attributes, and status, taking advantage of standard SDSF sort, filter, and arrange support Alter check attributes status, interval, severity, category, and WTO descriptor Browse check output for the most recent check Print check output or sent it to a data set





```
THE
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SDSF: Sample CK Display, Browse a Check
 SDSF_OUTPUT_DISPLAY_ALTERNATE_CONSOLE_GROUPS - LINE_0
                                                    COLUMNS 02- 81
COPPRIND INPUT ===> CSR

TOP OF DATA
*Medium severity Exception: IBM Criteria not met*
ALTERNATE_CONSOLE_GROUPS
   The following consoles have no alternate group (ALTGRP) defined:
               Name
                        Type
                                      System
              BARCON1 MCS
                                       (Inactive)
IBM suggests that alternate groups be defined to increase availability if
   there is a console failure. MVS can then switch to another console. MVS
   searches for the first available console based on the order of the
   console members defined for the alternate console group. Alternate
   groups help to avoid single points of failure. Note that IBM does NOT
   suggest use of the ALTCONS facility.
   Action: To define an alternate group, use the ALTGRP keyword of the
```

