IBM System z Technology Summit

Tooling Showcase:
IBM Problem Determination Tools
Overview of Version 11

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Why are Customers Migrating?

Issues with Productivity, Functionality, Cost

Business (Vendor Issues)

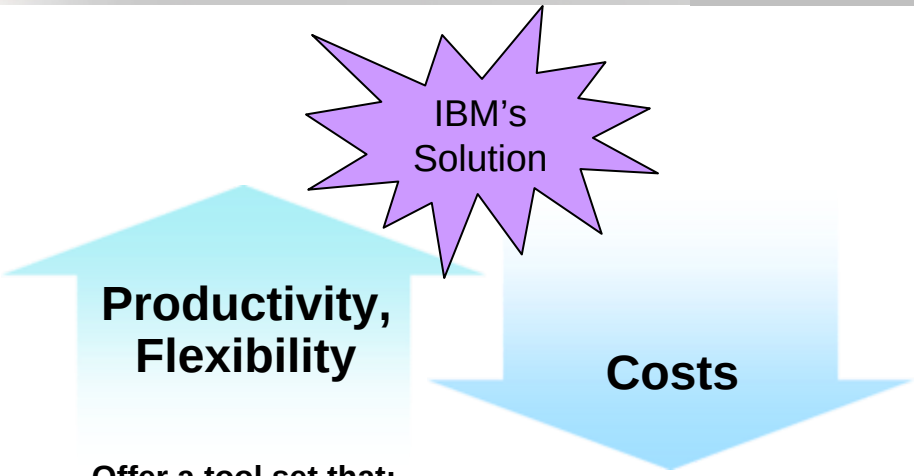
- Business Practices
- Pricing Issues
  - Upgrade fees
  - Rising maintenance fees
  - Unplanned budget overages
  - Long term contracts

Technical (Product Issues)

- Ongoing enhancements
  - Integration with other products and hardware
  - Product support
  - Administrative complexity

Application Development Environment

- Unable to deploy new applications on the platform that best meets business needs (z/OS)
- Forced to consider other platforms for application hosting or affordable tools and utilities
- Reuse traditional assets in the Internet world



Offer a tool set that:

- Exploits IBM's latest software and processor technology
- Offers wide array of key features and functions
- Enhances the Application Development Lifecycle
- Provides opportunity for increased user productivity
- Is affordably priced
- Has flexible terms and conditions
- Has no license keys

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IBM Problem Determination Tools Suite for z/OS

Best of breed application development tooling

IBM Problem Determination Tools

IBM 2011 Offerings

- Debug Tool for z/OS V11
- File Manager for z/OS V11
- Fault Analyzer for z/OS V11
- Application Performance Analyzer for z/OS V11
- Workload Simulator for z/OS & OS/390
  - Rational Functional Tester Ext
  - Rational Performance Tester z/OS
- Migration Utility
- Hourglass
- ISPF Productivity Tool

www.ibm.com/software/awdtools/deployment

GUI interfaces

Proven Functionality

- zIIP zAAP
- RDZ Integration
- WASz/Java
- Data Privacy
- Time Shifting
- IMS v11 DB2 v10 CICS TS v4.2
- ISPF Object Lists Command Lists
- End-to-End Debug
- SVC Dump Analysis
- COBOL Modernization

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z/OS Problem Determination Tools
Product Descriptions

- **Debug Tool z/OS**
  - Interactive source level debugging for multiple languages
- **Fault Analyzer for z/OS**
  - Captures and analyzes abend information about application and environment
- **File Manager for z/OS**
  - Manages production, test, and development data across multiple file formats and storage media
- **Application Performance Analyzer for z/OS**
  - Helps maximize application performance and resource consumption
- **Workload Simulator for z/OS and OS/390**
  - Regression, performance, stress, function, and capacity testing
- **ISPF Productivity Tool**
  - Integrates with ISPF providing improved access to key functionality, reducing time-consuming navigation steps
- **HourGlass**
  - Provides date and time manipulation for time sensitive applications

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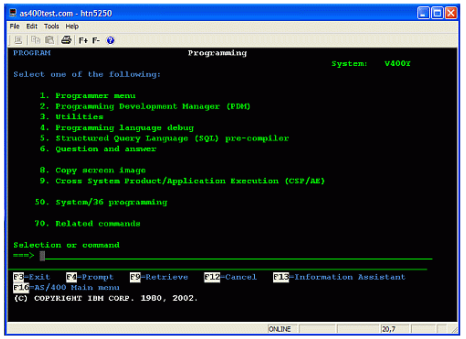
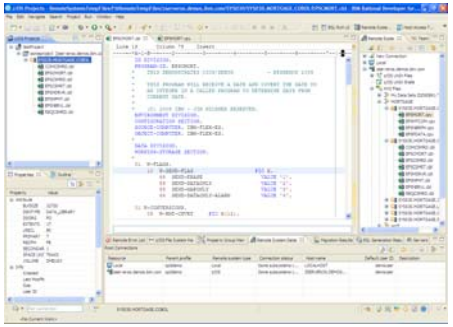
Improve developer productivity with modern interfaces

New Stand-alone GUI interfaces

- A user interface's design affects the amount of **effort** needed to **provide** input and **interpret** output from a system, and the **effort** required to **learn** how.
- Use common Eclipse-based tooling across multiple platforms and languages
  - Achieve ~15% improvement in mainframe developer productivity[1]
  - Reduce host CPU usage 50%-80%[1] with workstation syntax checking
  - Reduce training costs, more attractive IDE for younger developers



✓ **Produce code faster, save MIPS**



- Speed development with specialized editors

1. Aggregation of results from a productivity study conducted by IBM mainframe customers

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IBM Debug Tool for z/OS
Version 11

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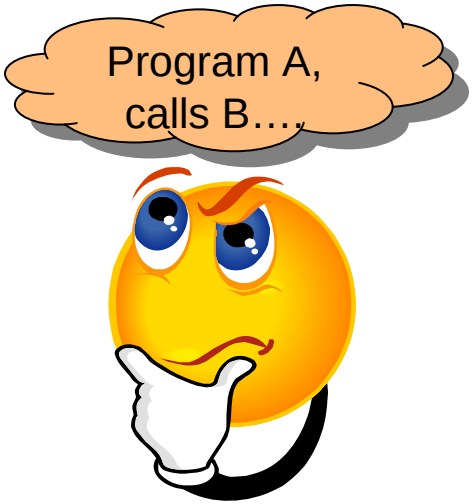
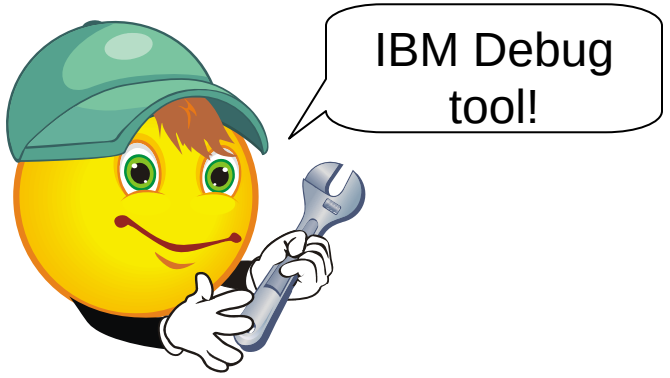
IBM Debug Tool for z/OS

Examine, monitor, and control program execution



Problem

- **Need a program testing and analysis aid that helps examine, monitor, and control the execution of application programs on a z/OS system**



Solution

- **Source level debugging**
  - Conditional and unconditional breakpoints
  - Step mode debugging
  - Variable and storage monitoring and update
- **Single debugging engine for many environments**
  - Batch
  - TSO
  - CICS
  - IMS
  - WLM
  - WASz
  - UNIX System Services
  - DB2 Stored Procedures
  - JZOS
- **Ability to run automated command scripts**
- **Frequency sampler**
- **Interactive playback support**

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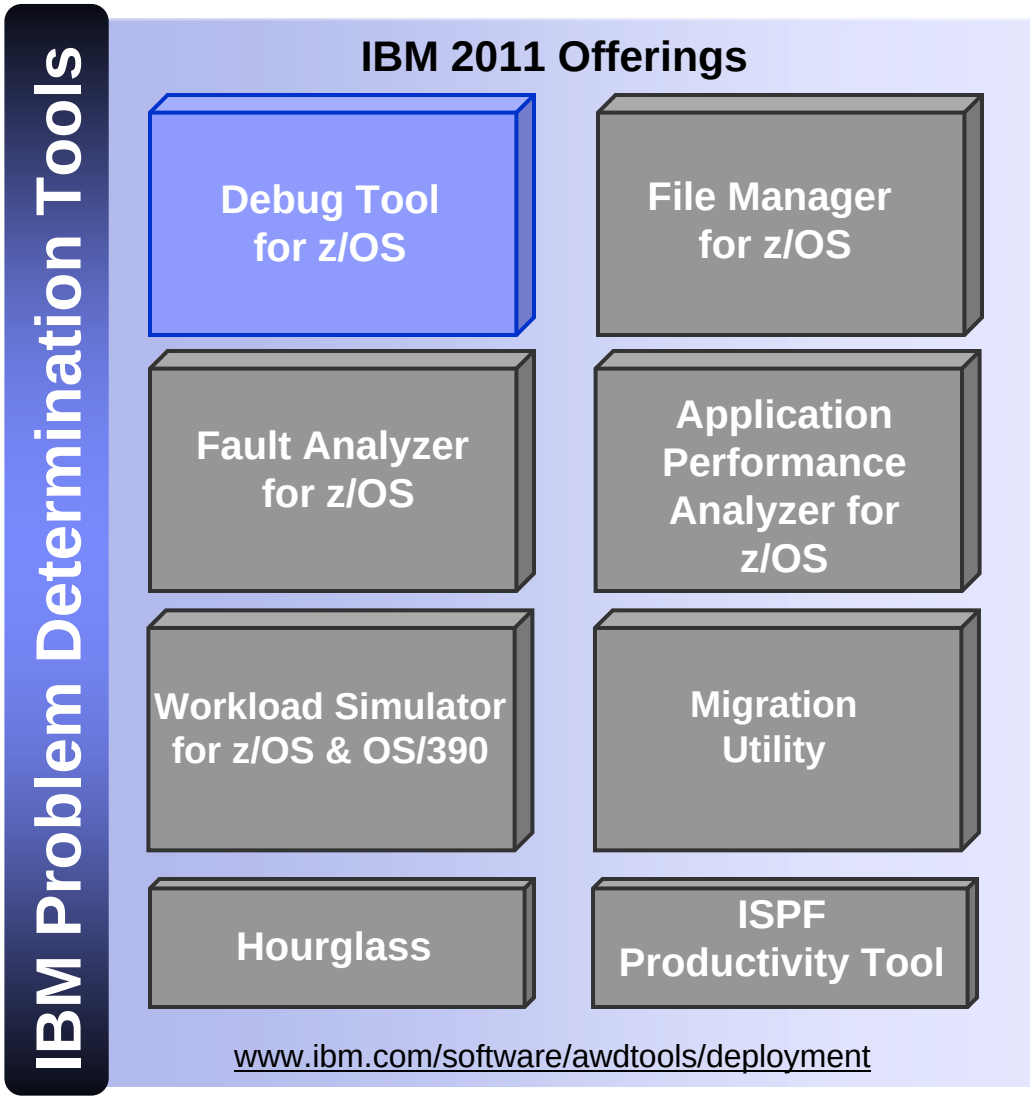
The IBM Problem Determination Tools Suite for z/OS



Debug Tool for zOS

- Interactive program debugging
- Easy setup – debug your program quickly
- Multiple languages:
  - COBOL
  - PL/I
  - C/C++
  - Assembler
- Multiple z/OS environments
  - Batch
  - TSO
  - CICS
  - IMS/TM
  - DB2 stored procedures
  - Websphere application server
  - Unix system services
- Code coverage reporting
- COBOL modernization
- GUI Eclipse plug-in for CICS Explorer **at no additional cost!**

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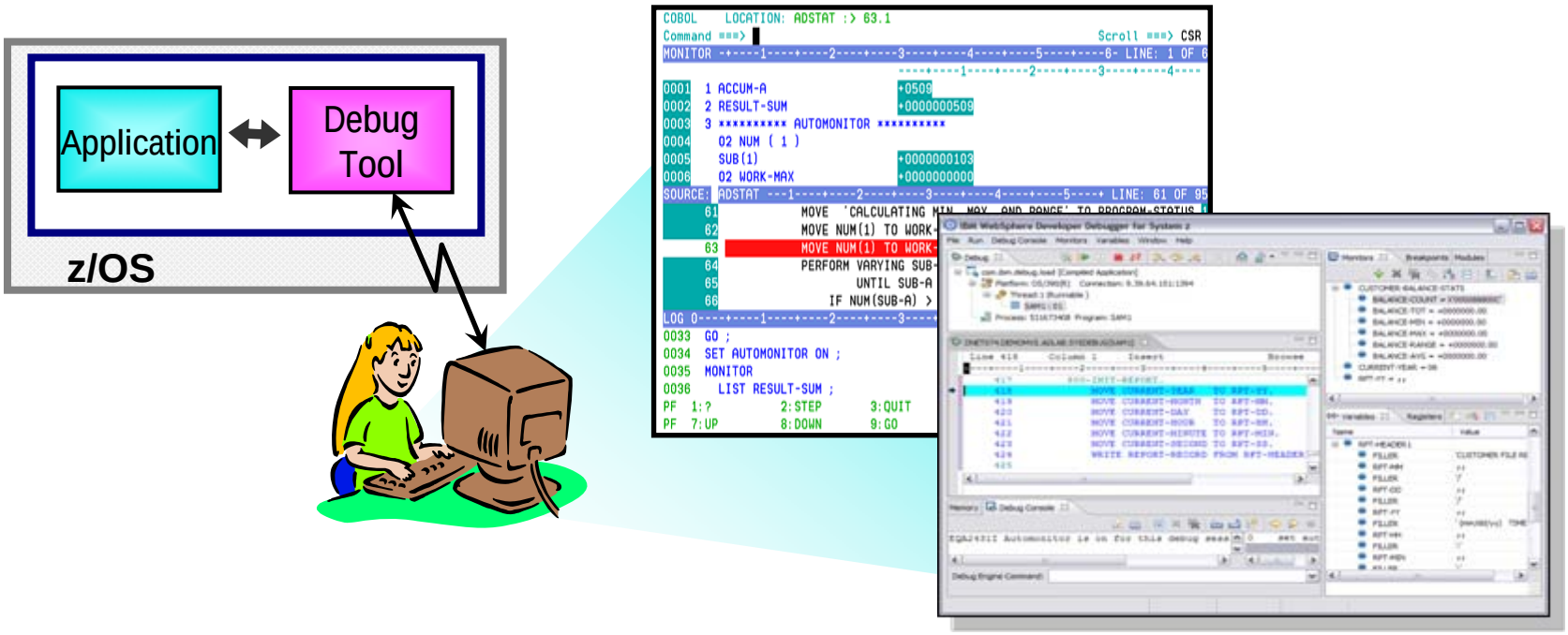
What is IBM Debug Tool for z/OS ?

- An interactive program debugger to control and monitor application programs while they run



- And a set of related online panels and batch utilities

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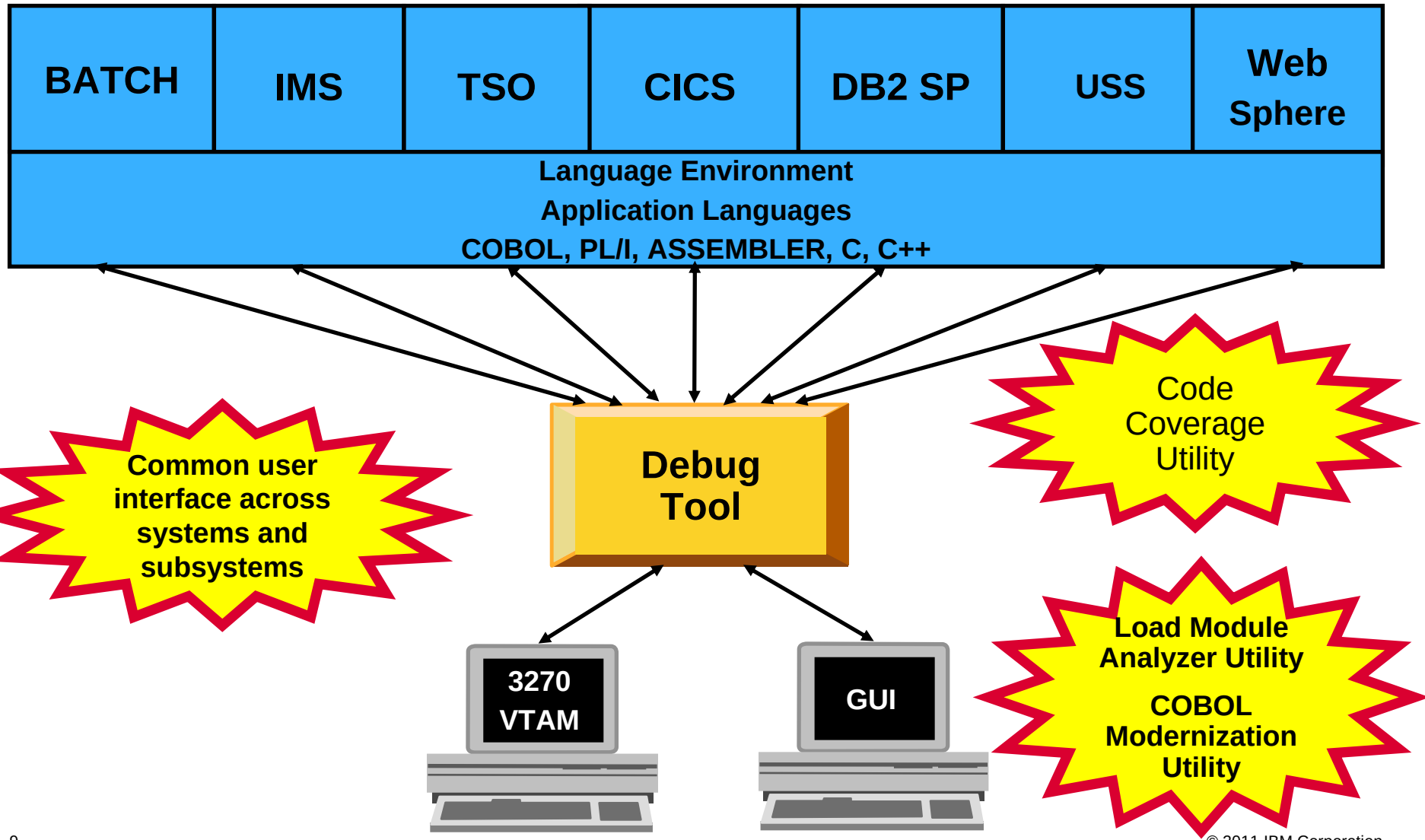
Debug enterprise applications to isolate coding issues



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Debug Tool Features

- Source-level debugging
- Multiple breakpoints
  - Conditional
  - Unconditional
- Step mode debugging
- Dynamic patching
  - Modify variables
  - Insert statements
- Command logging of debugging session
- Frequency sampler
- Programmable command entry
- Utilizes LE services
  - Breakpoints at LE conditions
  - Recovery of program abends
- Interactive playback support
- Automonitor support for COBOL, PL/I, and Assembler programs
- Save and restore sessions settings
- An interface to the Fault Analyzer
- Commands to query, allocate, and free files
- Object level disassembly debugging
- CICS
  - Detect storage violations
  - Memory editor and browser
  - Display channel and containers
  - Pattern-matching breakpoints
- 64-bit register support Assembler

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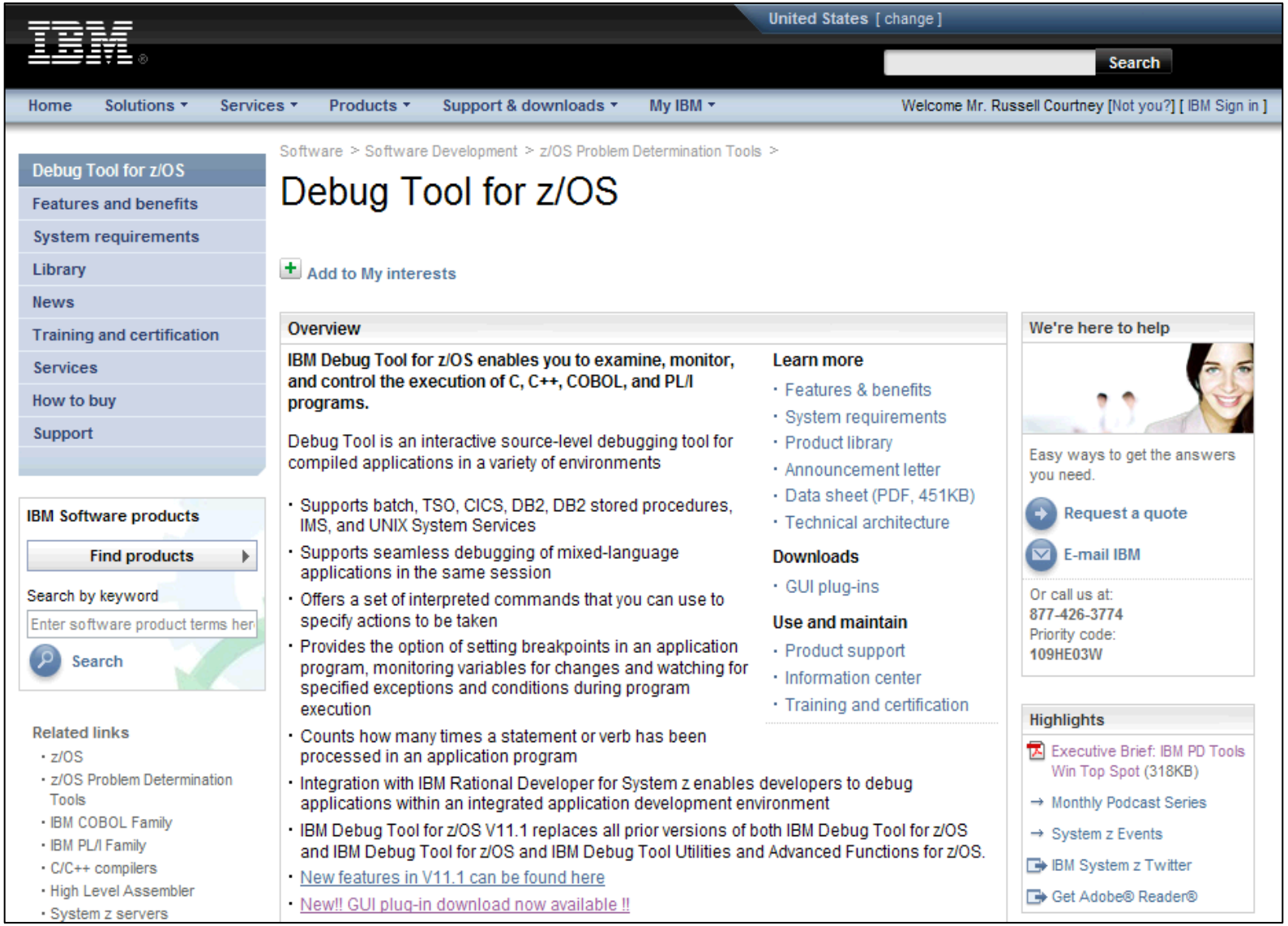

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IBM Fault Analyzer for z/OS Version 11

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IBM Fault Analyzer for z/OS

Assists in analyzing and fixing application and system failures

Problem

- **Your new developers don't have the experience to diagnose faults and dumps**
- **Your experienced developers don't have the time**

Solution

- **Analysis at application level**
- **Information gathered at time of abend**
- **Translates low-level dump information into application-level information**
- **Expands abend code and message descriptions**
- **No recompile of applications or JCL changes**
- **No performance overhead**
- **Integrated 64-bit DB2 support**
- **Interface to File Manager for z/OS**

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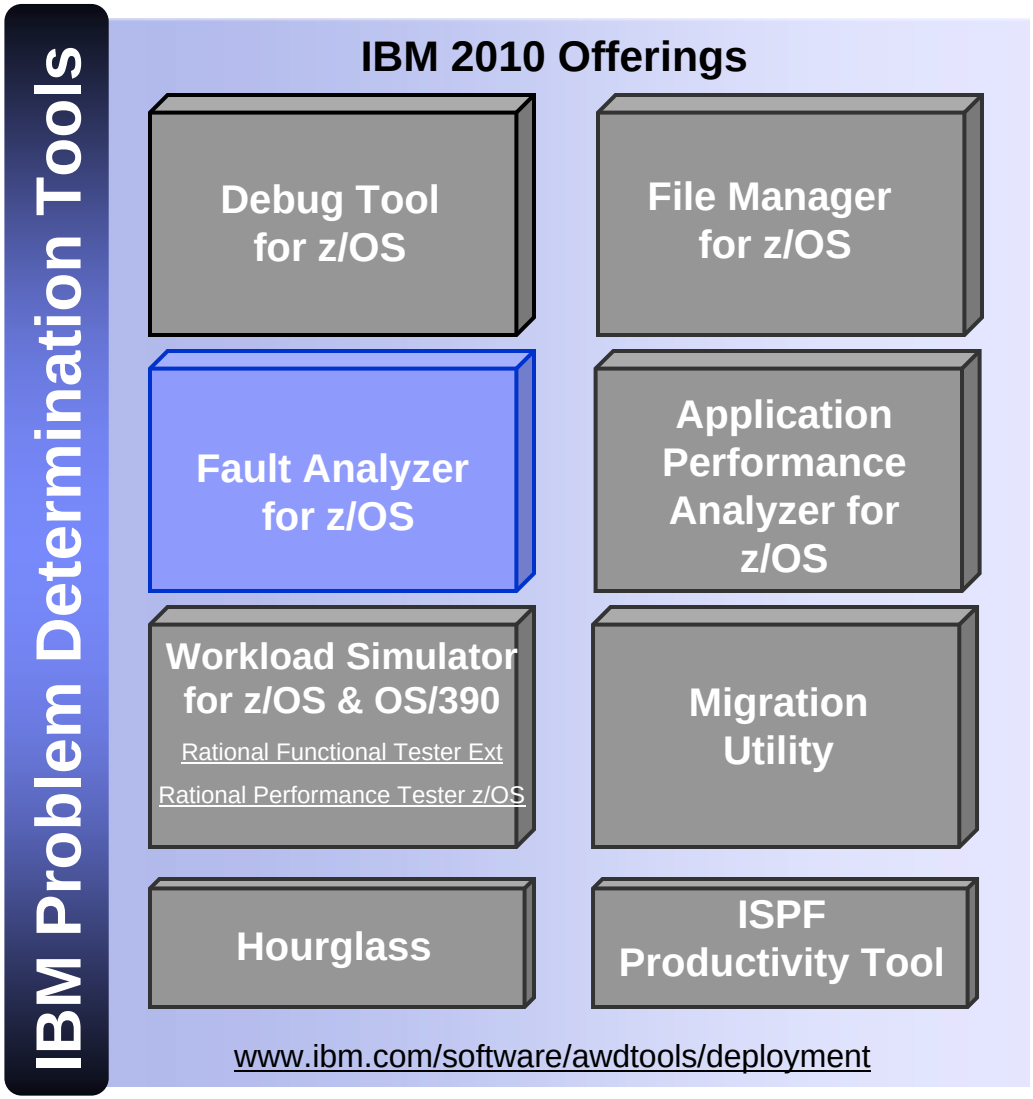
The IBM Problem Determination Tools Suite for z/OS



Fault Analyzer for zOS Highlights

- Automatic program abend capture and reporting
- Program source-level reporting
- Multiple languages and zOS environments including CICS, DB2, IMS, Enterprise PL/I, Enterprise COBOL and WebSphere Application Server for z/OS systems
- Provides a detailed report about program failures to help resolve them quickly
- Enables you to track and manage application failures and fault reports
- Offers a view of storage contents, trace tables and terminal screen images at the time of failure to help speed corrective action
- Provides the ability to customize message descriptions to be used in application-failure reports
- Eclipsed-based GUI plug-in available for download

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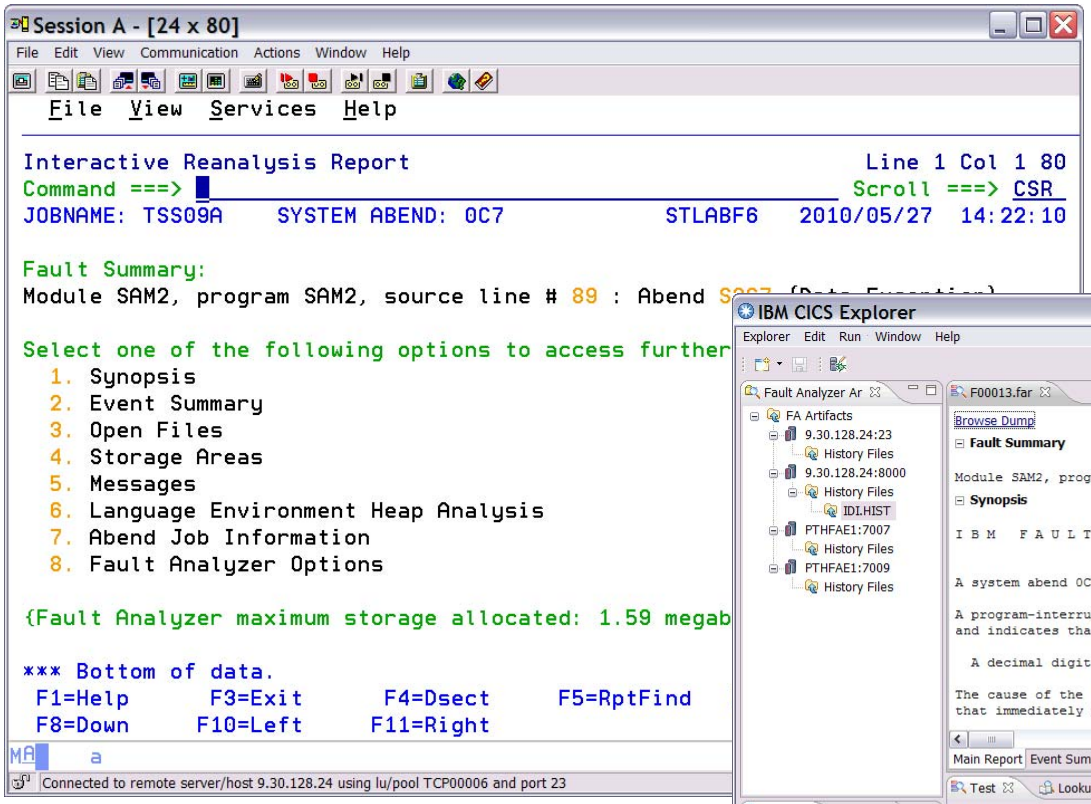
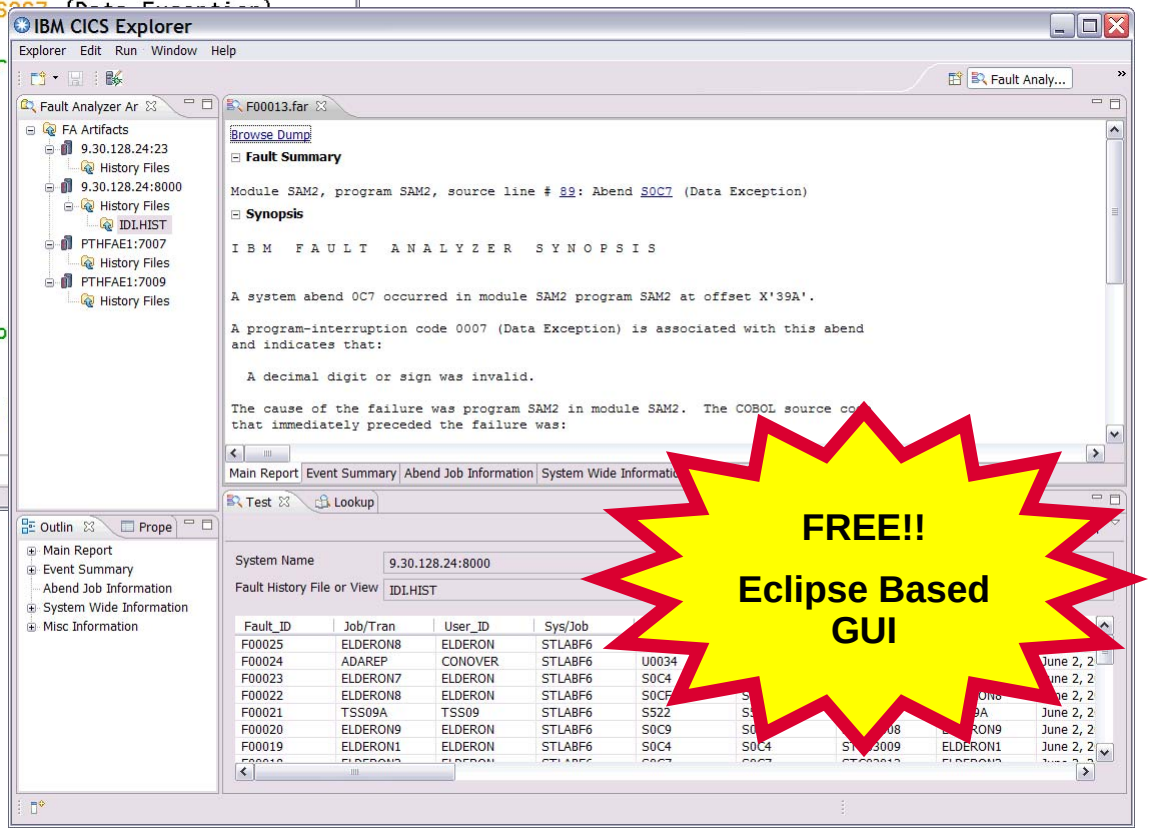
IBM Fault Analyzer for z/OS

Multiple interfaces and modes of operation





Interfaces

- ISPF
- RDz
- GUI
- CICS
- Web

Modes Of Operation

- Real-time analysis
- Batch dump re-analysis
- Interactive dump re-analysis

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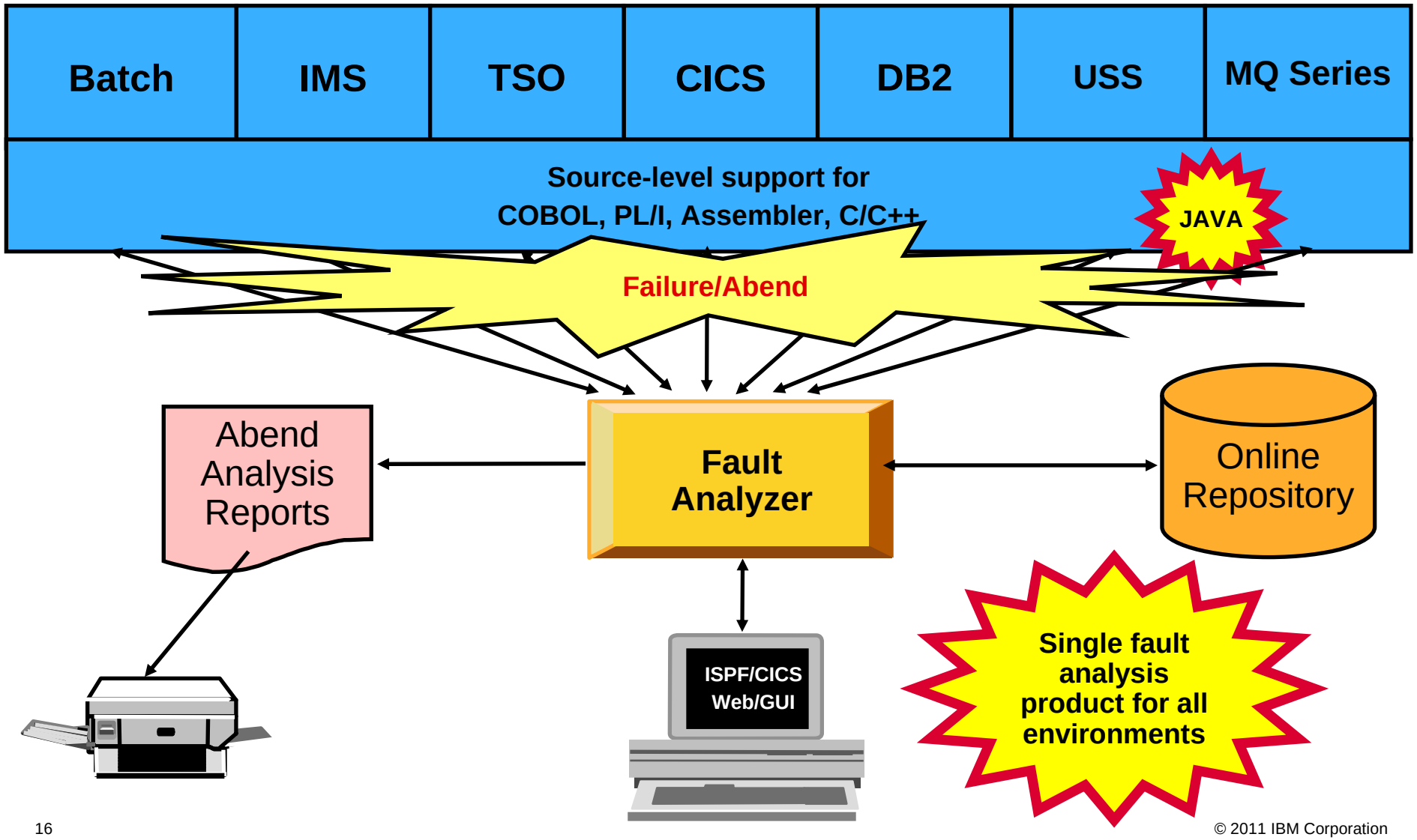
Fault Analyzer - Helps you rapidly pinpoint why and where an application failed



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Fault Analyzer provides information to determine the cause and resolution of application and system failures

- Analysis at the application level
- Information gathered at time of abend
- Translates low-level dump information into application-level information
- Expands abend code and message descriptions
- No recompile of applications
- No JCL changes
- No performance overhead
- Integrated 64-bit support
- Interface to File Manager for z/OS

- Three Modes Of Operation
  - Real-time analysis
  - Batch dump re-analysis
  - Interactive dump re-analysis
- Interfaces
  - RDz
  - Eclipsed-based GUI
  - ISPF
  - CICS
  - Web
- Support for IBM software
  - CICS TS 4.2
    - **Channels and containers** in 64-bit storage
  - DB2 V10
  - IMS V11

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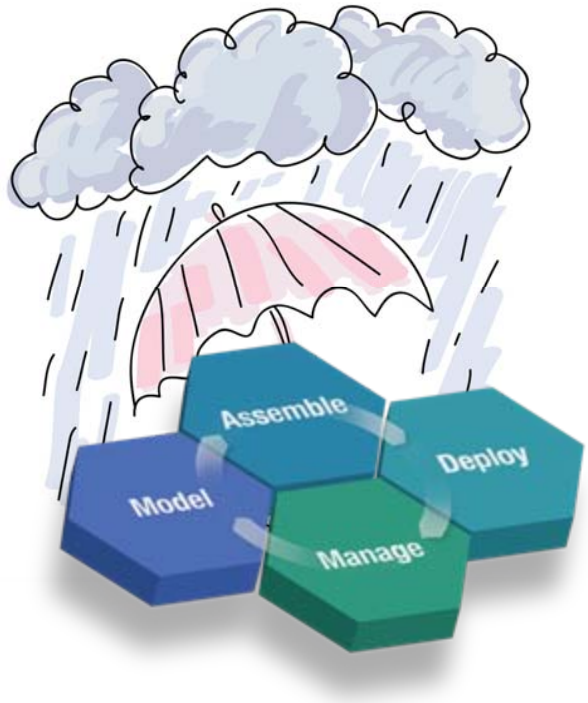
IBM Fault Analyzer for zOS

One tool for all your application abend reporting



- **Identifies the cause of a program abend**
  - Helps you quickly resolve the problem
- **Reports detailed information for:**
  - CICS
  - WAS
  - Batch
- **Source-level support for programs**
  - COBOL, PL/I, C/C++ and assembler
  - Provides detailed program source and variable value information
- **Advanced CICS Transaction Server support**
  - Reports channels and containers in 64-bit storage
  - CICS containers with XML data are formatted to simplify reviewing the XML information
- **Java enhancements**
  - Use of Java-supplied Diagnostic Tooling Framework for Java (DTFJ)
  - Java information is captured and displayed

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http://www.ibm.com/software/awdtools/faultanalyzer/library

Fault Analyzer for z/OS
Features and benefits
System requirements
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Fault Analyzer for z/OS

Library

Fault Analyzer - English:

- Version 11 Release 1
- Version 10 Release 1
- Version 9 Release 1
- Version 8 Release 1
- Version 7 Release 1
- Version 6 Release 1
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Search for text in the book in the Fault Analyzer V11 BookShelf.

Fault Analyzer, Version 11 Release 1 Publications - English (new table)

Title View/download PDF	Order number	View Book	Download Book	Last update
Program Directory (PDF, 130KB)	GI10-8857-00	-	-	11/2010
User's Guide and Reference (PDF, 3.0MB)	SC19-3131-00	View	Download (BOO, 1.6MB)	11/2010
Bookshelf	GC19-3129-00	View	Download (BKS, 1KB)	11/2010
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IBM File Manager for z/OS
Version 11

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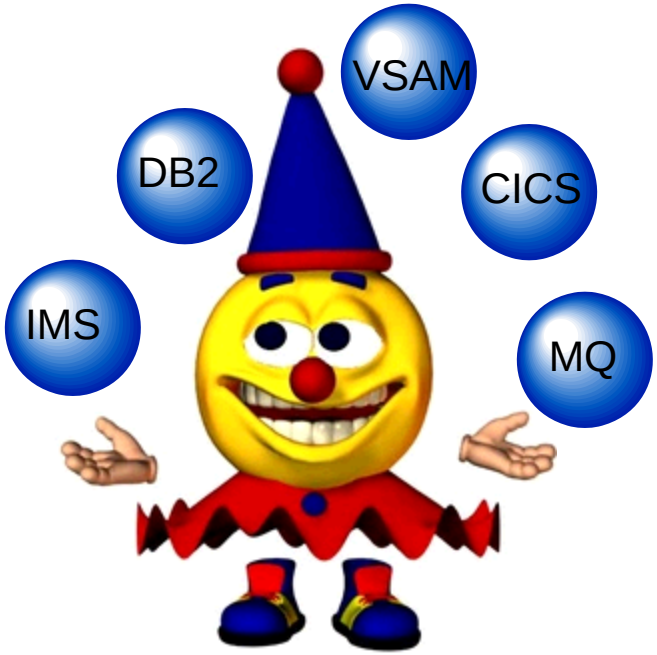
IBM File Manager for z/OS

Manage, Edit, View, Browse data stored in various formats



Problem

- **Developers need to see data in a formatted mode so they don't see non-display data**
- **Your developers need to browse, edit and view data in DB2, IMS, VSAM, Sequential datasets, etc**

IBM File Manager

- **Edit entire files regardless of size**
- **Format data with COBOL, PL/I or Assembler record layouts**
- **Scrambling sensitive data to insure data privacy across all environments**
- **Identify fields that contain invalid values**
- **Find and change data within specific fields**
- **Websphere MQ support**
- **Test data generation based on record layouts**
- **Compare data/load modules between datasets using field level mapping**

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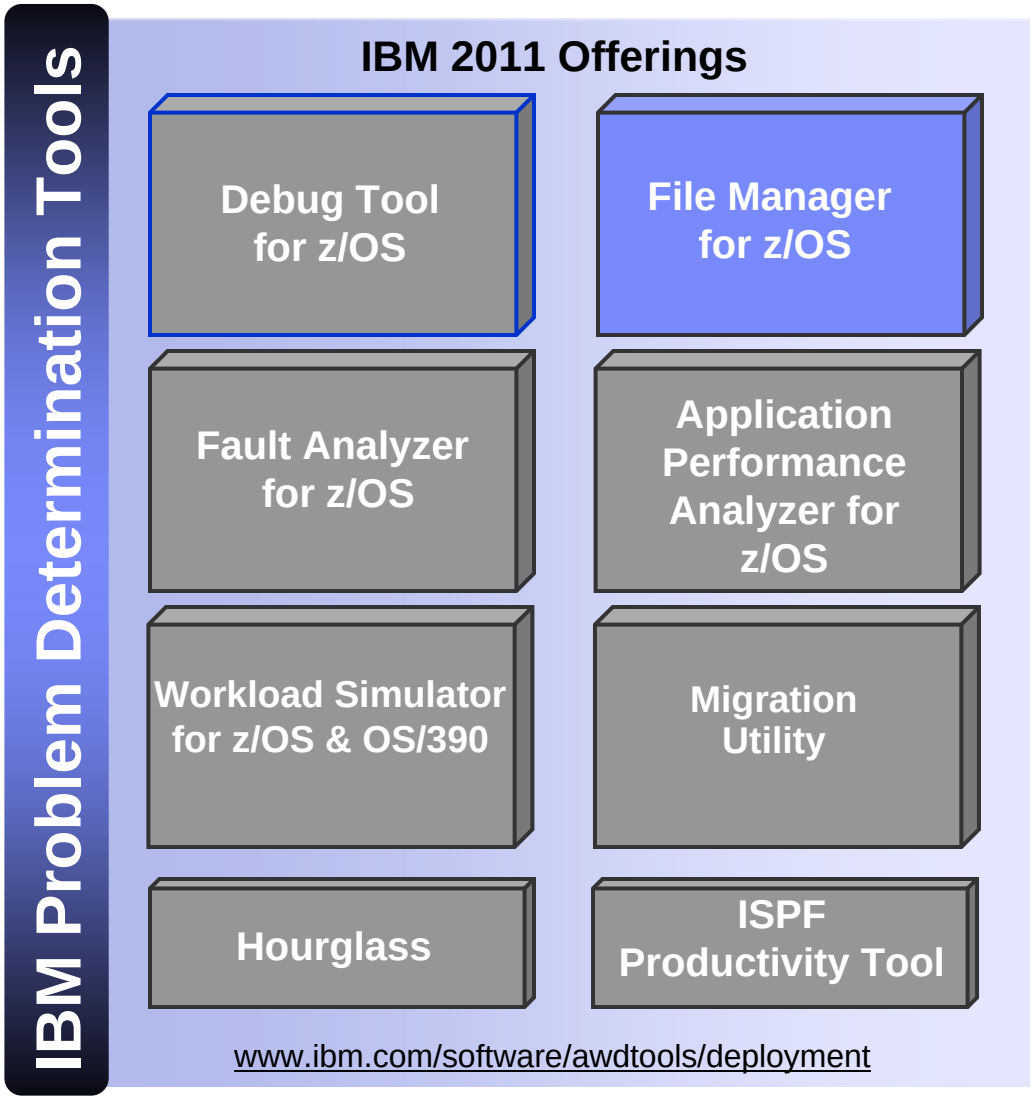
The IBM Problem Determination Tools Suite for z/OS



File Manager for zOS Highlights

- Select, create, browse, copy, edit, print, and format or reformat data files
- Manipulate data using COBOL, Assembler and PL/I record layouts interactively or in batch
- Scrambling of data for data privacy
- SQL Prototyping and Execution
- Comprehensive, user-friendly, batch and interactive utilities extends standard ISPF
- Multiple z/OS environments
  - Batch
  - TSO/ISPF
  - CICS
  - IMS/TM
  - DB2
  - Websphere MQ

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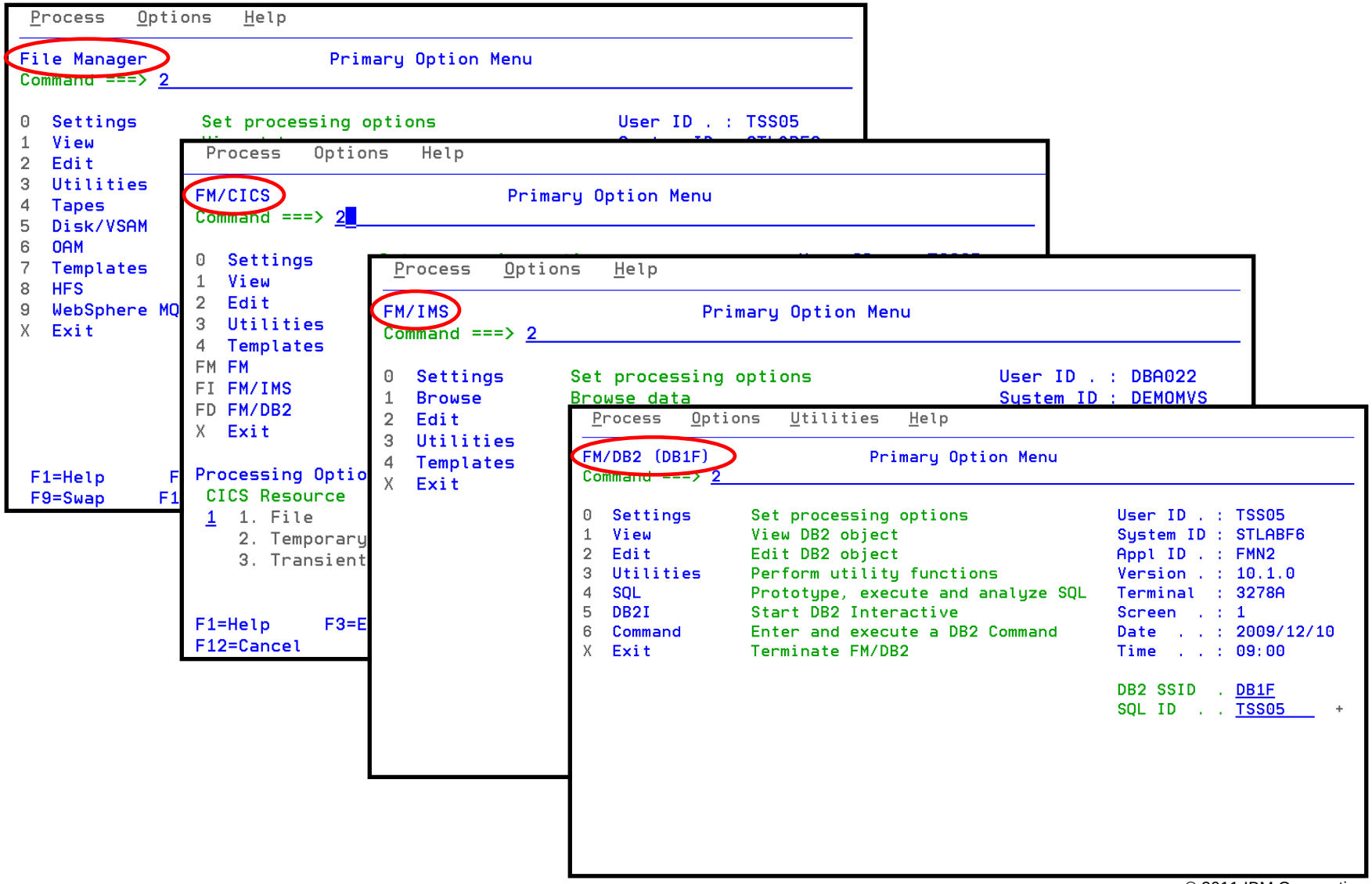
IBM File Manager for z/OS

Inclusive of all environments



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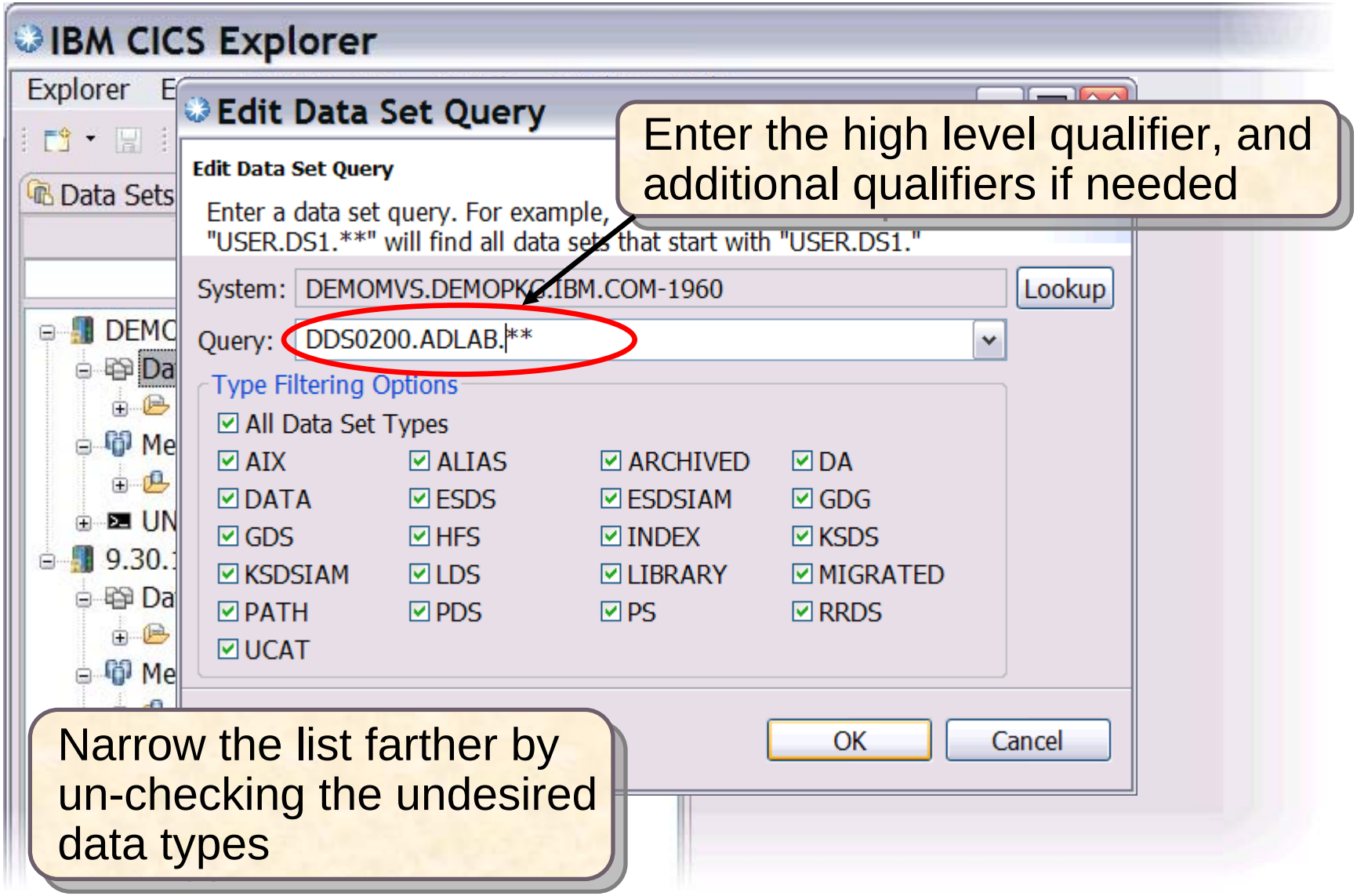
Announcing the File Manger z/OS Eclipse Based GUI



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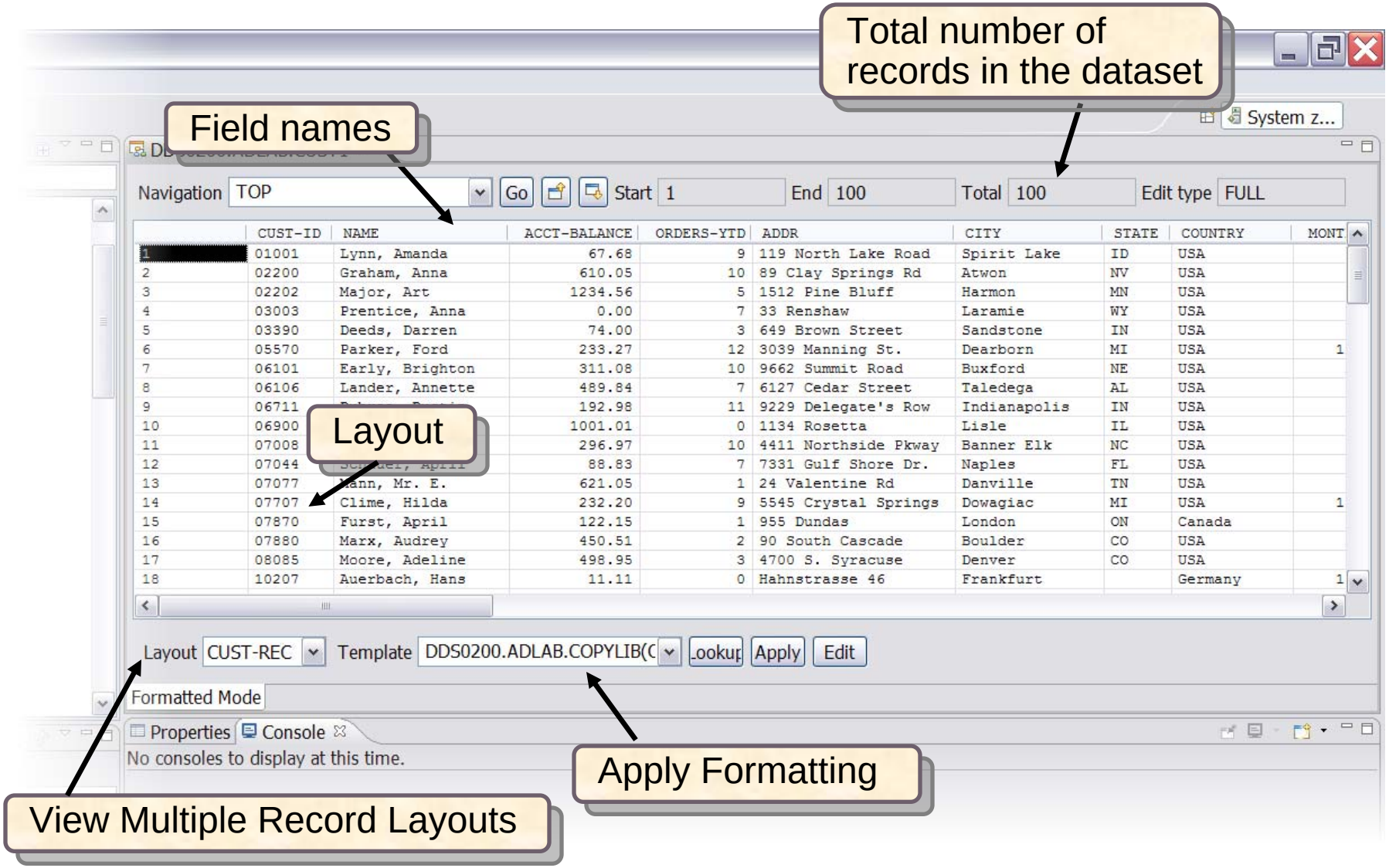
Viewing Data with Formatting



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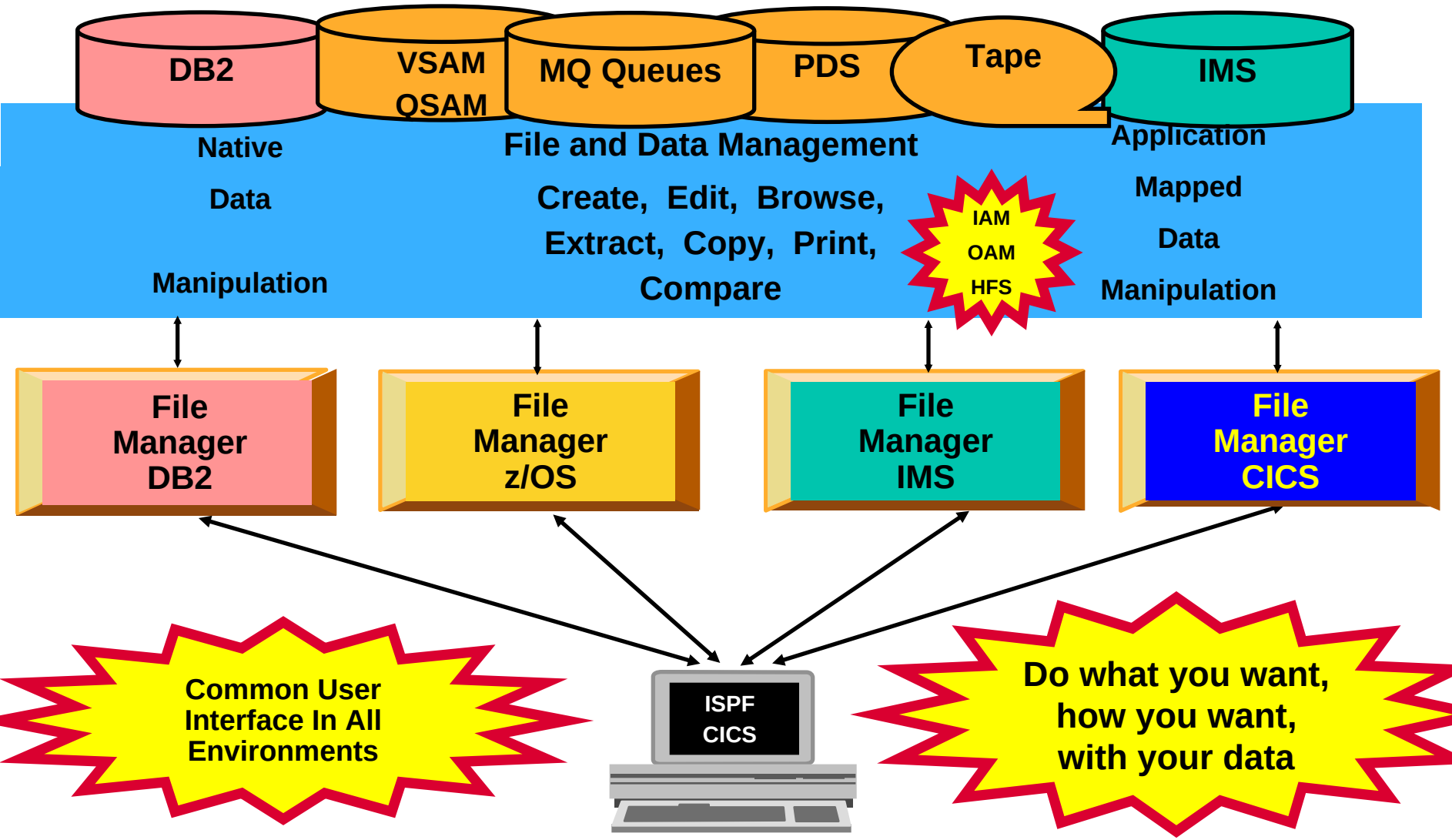
IBM File Manager for z/OS

Manage a variety of enterprise data file structures



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File Manager z/OS Features

- Full function edit and view
  - Table
  - Single
- Flexible selection criteria
  - Work with copybooks or templates
- Edit any file regardless of size
- Create data
- Print data
- Copy data
  - File reformatting
  - Scramble fields
- Catalog services
- Work with VTOC

- Compare
  - Data
  - Load Modules
- Search for and change data
  - Insert continuation JCL statement
- View or print
  - Copybooks
  - Templates
- Modes Of Operation
  - Interactive
  - Batch
- Interfaces
  - ISPF
  - CICS
  - RDz
  - **New** File Manager z/OS GUI

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File Manager CICS Features

- ISPF-like panels
- Full function edit and view
  - Table
  - Single
- Flexible selection criteria
  - Work with copybooks or templates
- CICS Resource
  - File
  - Temporary Storage
  - Transient Data
- Print data
- List Resources
- Support for extended addressability ESDSs
- Interface to File Manager z/OS
- Interface to File Manager DB2
- Interface to File Manager IMS
- Modes Of Operation
  - Interactive
- Interfaces
  - CICS
- Support for IBM Software
  - CICS TS V3.2

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File Manager DB2 Features

- Edit and View data
  - Edit a DB2 Table or View
  - select rows and columns displayed
- Print
  - Table or Single format
  - select rows and columns
- Create and Drop DB2 objects
- Copy data
  - Select rows
  - Map columns from an input table to an output table
  - Reformat and generate data while copying
  - Scramble columns
- Work with a list of DB2 objects
  - Use line commands to initiate functions
- Generate JCL for DB2 utilities:
  - COPY, LOAD, REBUILD, RECOVER, REORG, and RUNSTATS
- Relational Edit
- Grant and Revoke DB2 privileges
- Import and Export data
  - Select Rows
  - Export to a file in default FM/DB2 format, a format defined by a copybook, or a comma-delimited file
  - Import from a file generated by the Export function, or a file described by a copybook
  - Scramble columns
- Execute SQL Statements
- Create and test new SQL statements
  - Two methods: Basic and Advanced
- Modes of Operation
  - Interactive
  - Batch
- Interfaces
  - ISPF
  - CICS
- Support for IBM software
  - DB2 V10

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File Manager IMS Features

- Online utilities for IMS databases
  - Edit and Browse data
  - Extract segments from a database
  - Load segments into a database
- Support for processing databases using either:
  - physical DBD
  - logical DBD
- Access databases using either:
  - Static (existing) PSBs
  - Dynamic PSBs
- Process databases in alternate sequences using secondary indexes
- Support for HDAM, HIDAM, HISAM, HSAM, DEDB. MSDB
- Optional audit trail to record database updates
- Work with segments that have multiple layouts
- Optionally use COBOL or PL/I segment layouts to format data into fields
  - Edit and Browse segments in tabular or character format
  - Access source in PDS, PDSE, or Panvalet libraries
- Use flexible criteria to select segments for browse, edit, and extract processing
- Change segment selection criteria and formatting “on the fly”, while browsing or editing
- Modes of Operation
  - Interactive
  - Batch
- Interfaces
  - ISPF
  - CICS
- Support for IBM Software
  - IMS V11

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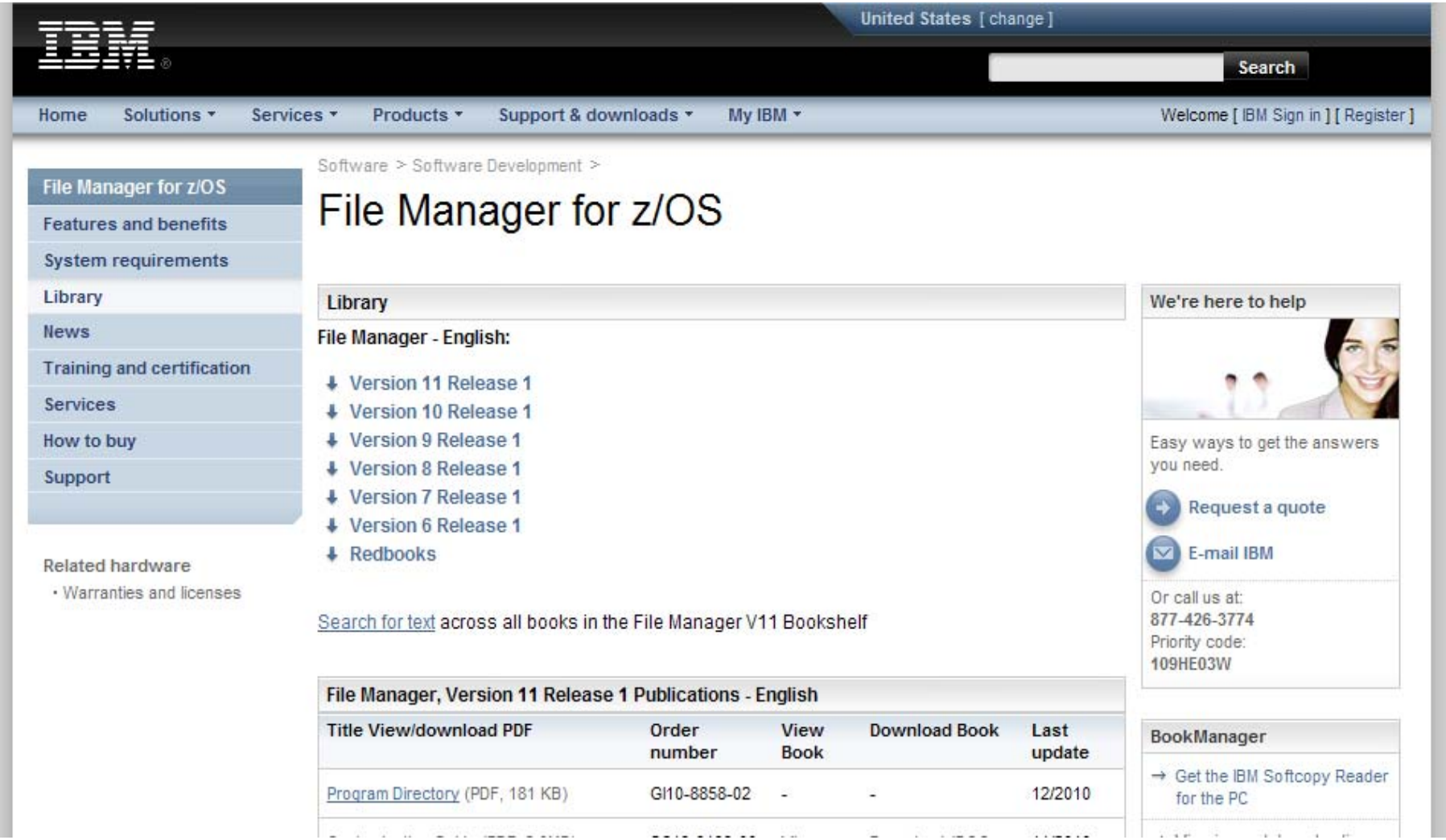

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IBM Application Performance Analyzer for z/OS Version 11

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IBM Application Performance Analyzer for z/OS

Fine tune application performance

Problem

- **Application performance problems often mean unhappy users, missed deadlines, and and unmet service levels.**

IBM Application Performance Analyzer

Solution

- **APA helps programmers identify constraints and the root cause of performance bottlenecks. Drill down to modules, programs, files, databases, SQL statements, CICS transactions, and even individual program source statements.**

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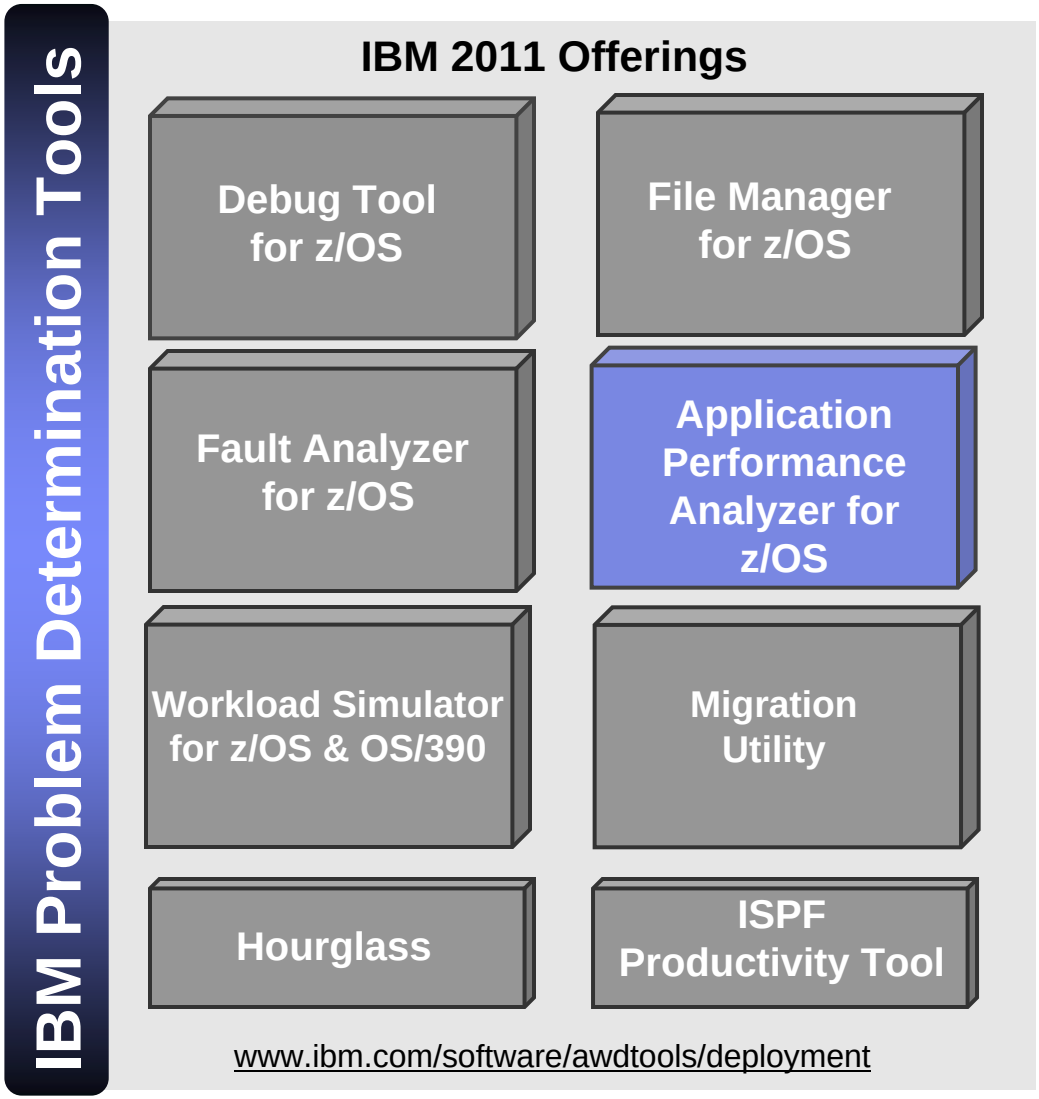
The IBM Problem Determination Tools Suite for z/OS

IBM Problem Determination Tools



Application Performance Analyzer for z/OS

- Identify performance and response time problems in production
- Reduce batch application turnaround time
- Multiple languages:
  - COBOL
  - PL/I
  - C/C++
  - Assembler
  - Java
  - Natural
- Multiple z/OS environments
  - Batch
  - CICS
  - IMS
  - DB2 (SP, DDF/DRDA)
  - Websphere MQ
  - Websphere Application Server
  - Adabas
- Can be integrated with Fault Analyzer and Application Performance Analyzer with source mapping side files
- Workstation GUI plug-in

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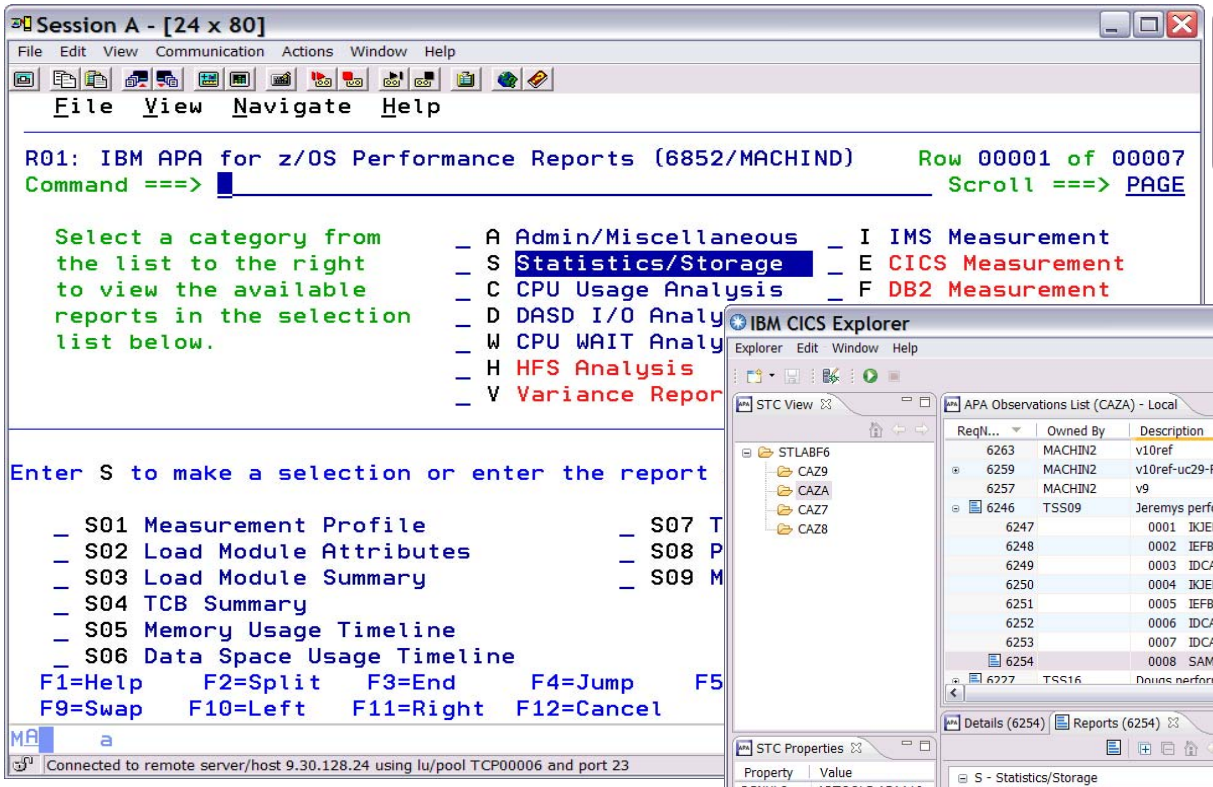
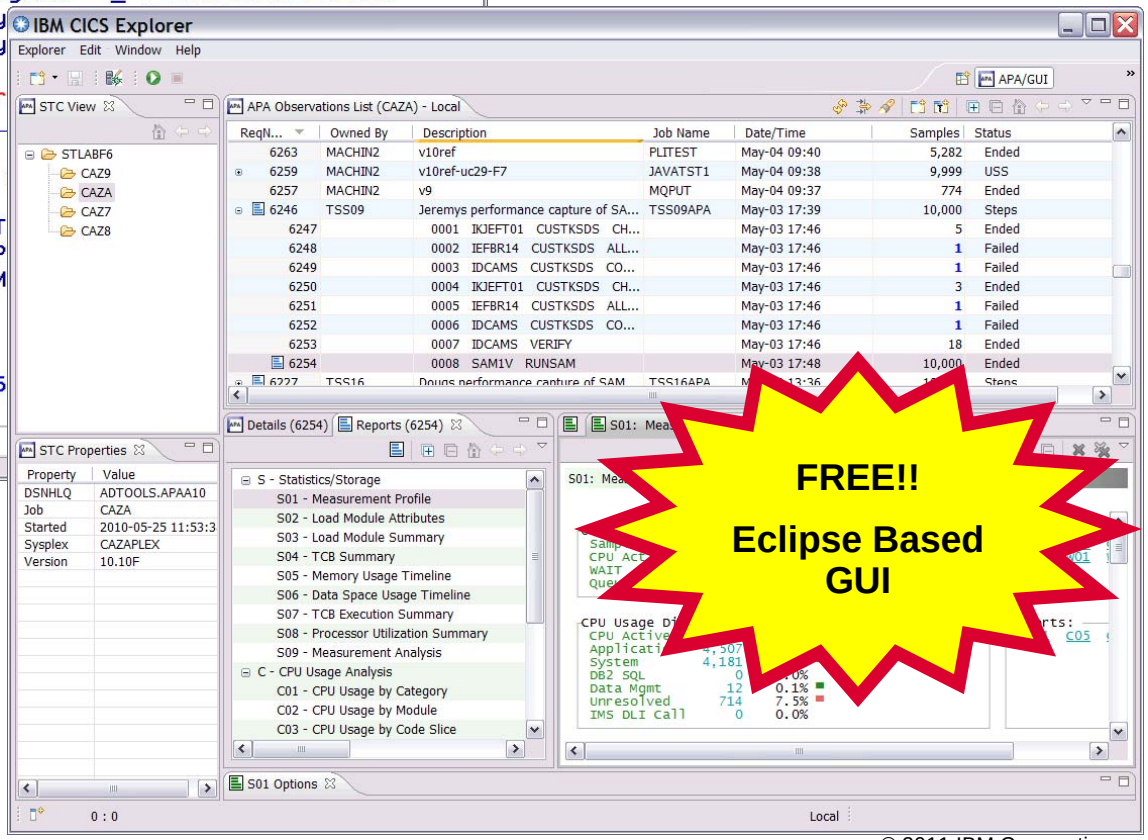
IBM Application Performance Analyzer for z/OS

3270 or GUI interfaces



Source-level support for:

- C/C++
- Assembler
- COBOL
- PL1
- JAVA



Types of Observation Sessions

- Real-Time
- Scheduled
- Via batch submission

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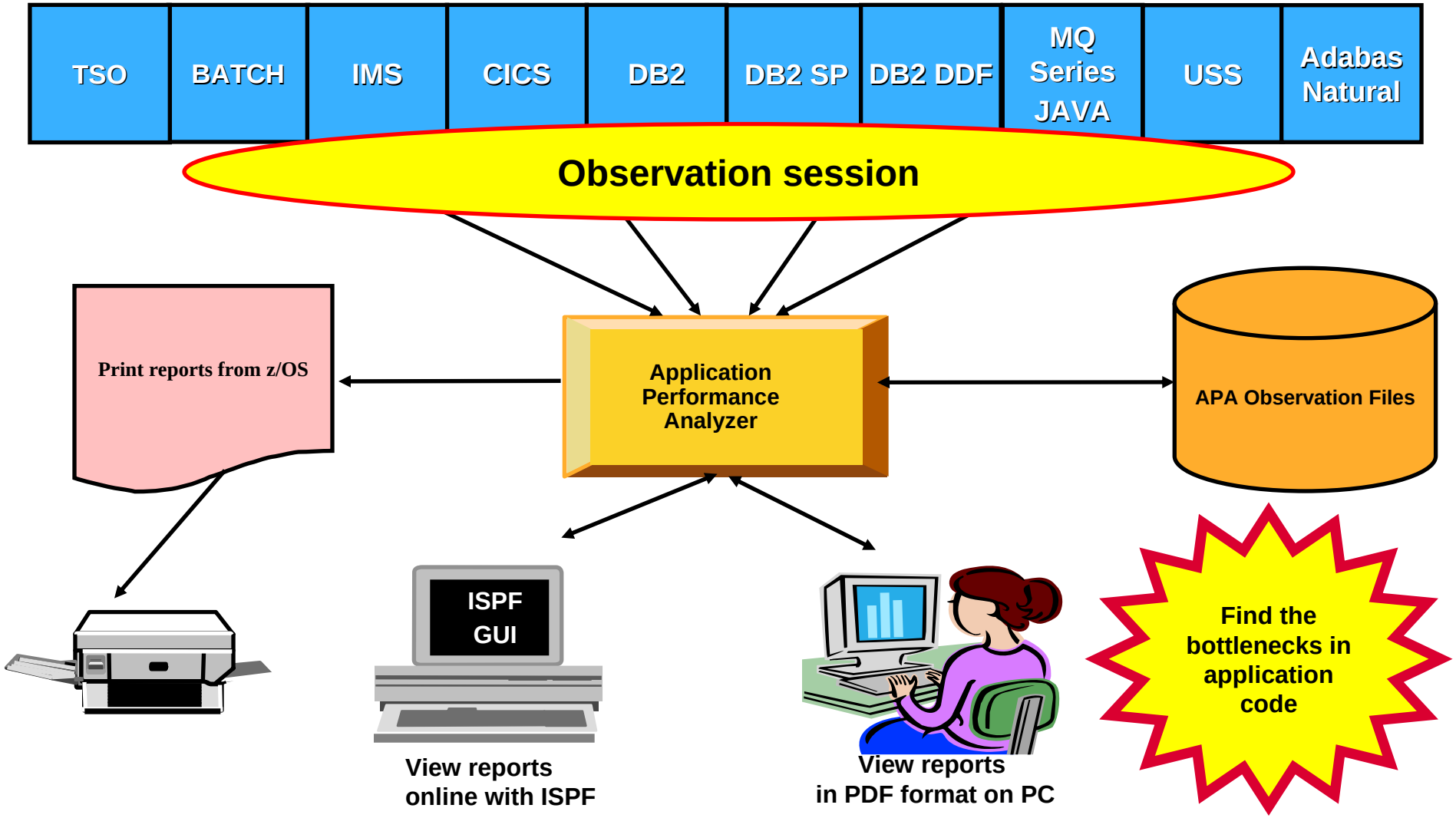
IBM Application Performance Analyzer for z/OS

Provides rapid pinpointing of enterprise application bottlenecks



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What is Application Performance Analyzer (APA) for z/OS ?

- Application Performance Analyzer for z/OS is an application performance-measurement tool that helps you perform *application performance tuning* for applications running on IBM z/OS systems
- APA will measure and report on how system resources are used by applications running in virtually any z/OS address space
- APA can minimize the time needed to resolve production performance problems by identifying the issue
- APA can also analyze transactions running under an online subsystem such as IBM CICS, IBM IMS, and WebSphere Application Server, as well as DB2 stored procedures
- Using APA helps you maximize the performance of your existing hardware resources and helps you improve the performance of your applications and subsystems
- APA aids application design, development and maintenance cycles. It helps evaluate application prototypes in the design phase, review the impact of increased data volume or changes in business requirements on performance

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Application Performance Analyzer Features

- Online analysis: Displays overall system activity, enabling you to check job execution online and select which active job to monitor.
- Monitoring: Automatically starts to monitor job performance when the job or program becomes active
- Reports: Provides multiple summary reports to assist in identifying key areas of performance bottlenecks. Analysis data is available in printed reports, which can be created as an Adobe PDF file or as an XML file
- Performance analysis: Provides CPU usage, as well as multiple DASD statistics including EXCP, VSAM statistics, and I/O wait time
- DB2 monitoring: Delivers relevant information for DB2 performance analysis and tuning, including SQL statements
- CICS monitoring: Includes monitoring by specific transaction or transaction prefix with wildcards. CICS+ provides tracing support for critical situations
- IMS support: Delivers IMS application performance data on call time and service-call time for DL/I. IMS+ can be used to trace all IMS calls.
- WebSphere MQ support: Provides CPU usage by queue, by request, and by transaction, as well as service time and wait time for the same

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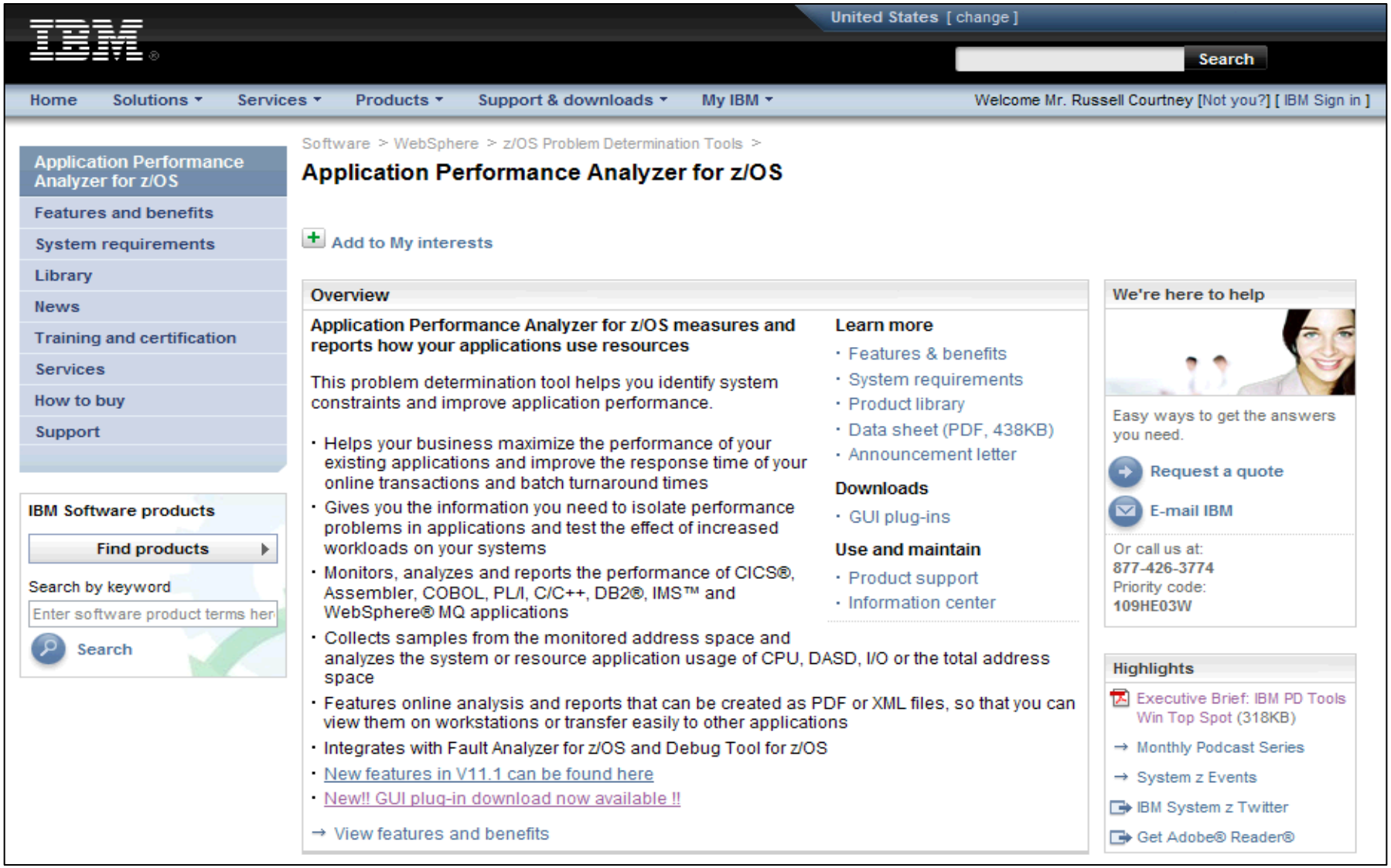
Visit our web site: www.ibm.com/software/awdtools/apa



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Our shop is currently using the free CICS Explorer?

Yes

No

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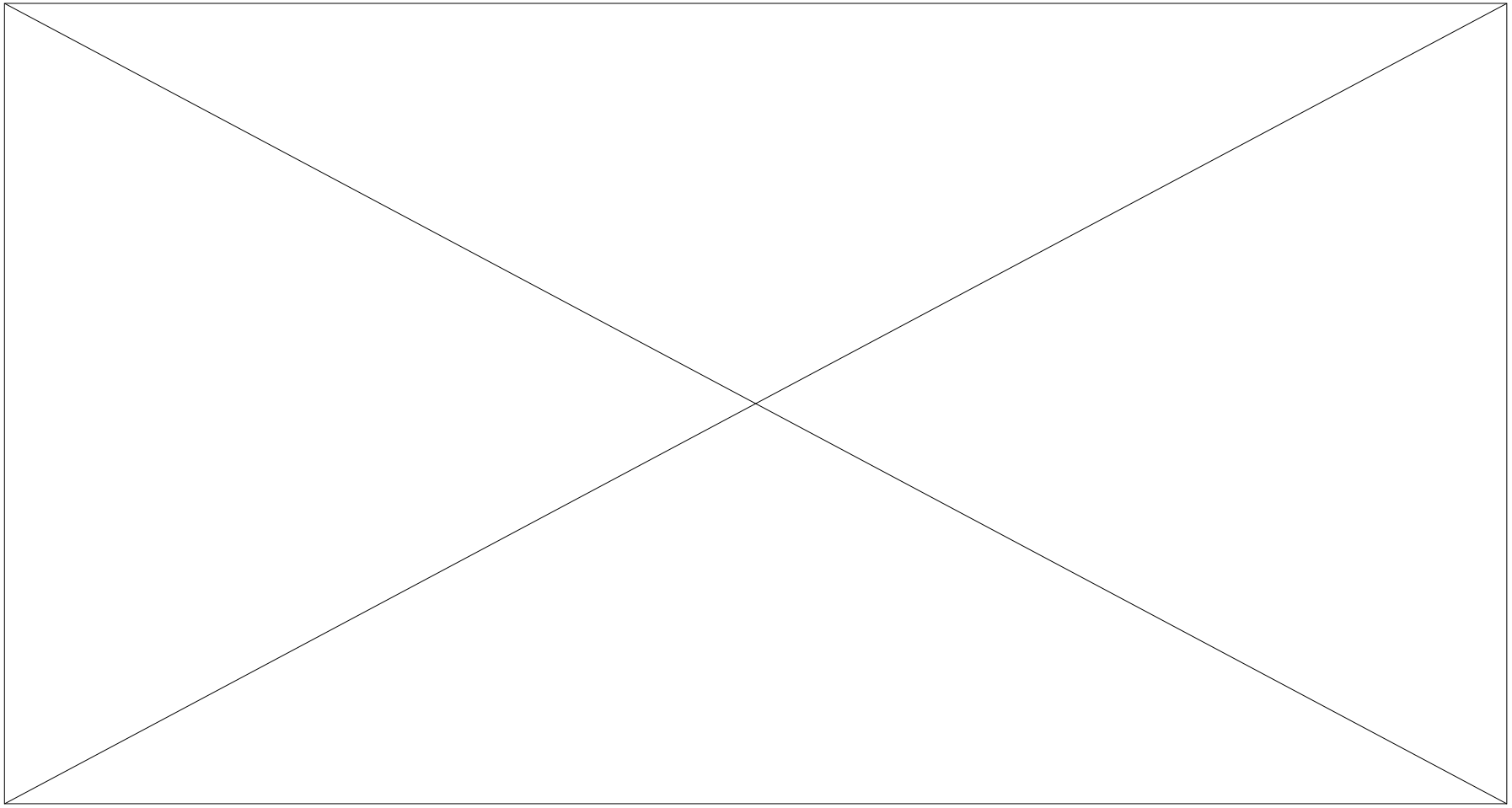
Our shop is currently using the free CICS Explorer?



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We would consider making the free Problem Determination Tool GUI's available to our developers?

Yes

No

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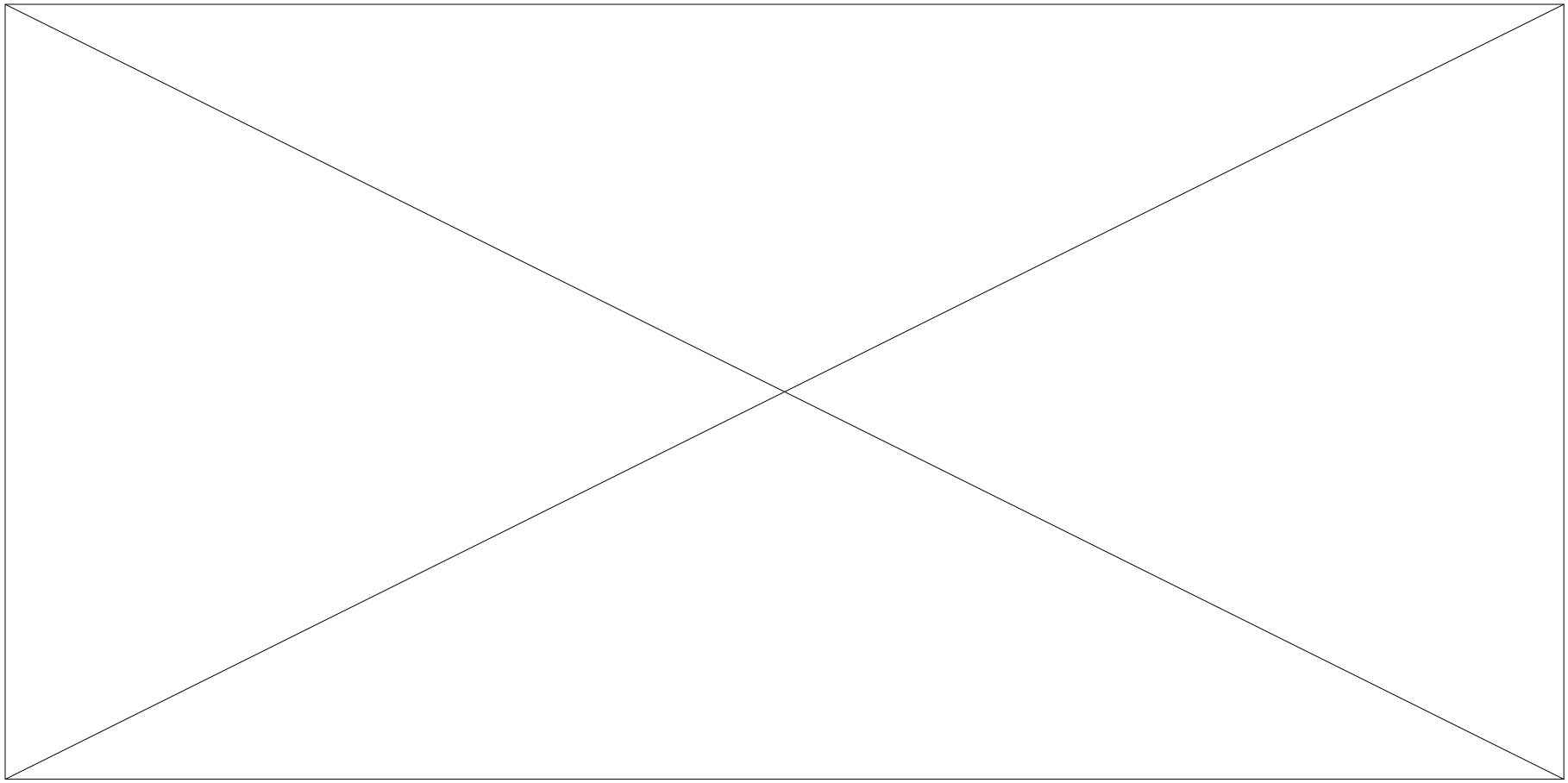
We would consider making the free Problem Determination Tool GUI's available to our developers?



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IBM Workload Simulator for OS/390 and z/OS Version 2.1

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IBM Workload Simulator for OS/390 and z/OS

Automated testing to simulate Load, Stress, Performance, and Regression tests

Problem

- **How do we get 100 users to hit the Enter Key at the same time?**
- **Can I find 300 people to do some work on this system to create some Load to see what the response time will be?**
- **Can this configuration support 2000 users? Or do I need more DASD or CPU?**

IBM Workload Simulator

Solution

- **Simulate 1 or 50,000 users**
- **Assign work to the simulated users**
- **Feed data from files or user tables**
- **Set criteria for pass / fail of an execution**
- **Capture and report on response time**

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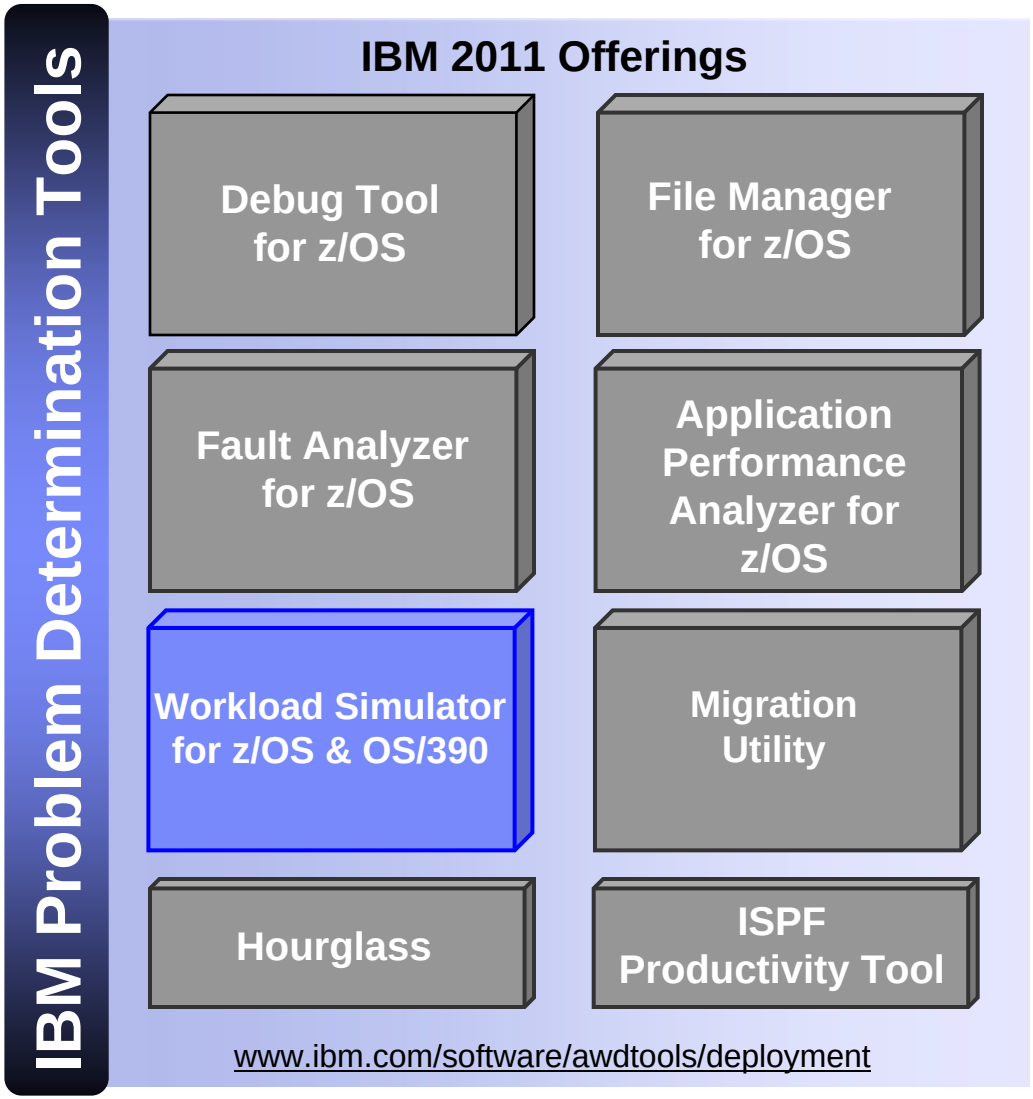
The IBM Problem Determination Tools Suite for z/OS



Workload Simulator

- Simulates network resources, such as VTAM terminals
  - WSim's "logical" network resources appear to be real to the live system
- Run test scripts to simulate network traffic against live systems and applications
  - Simulate a single terminal or resource to test application functionality
  - Define multiple resources to simulate a large number of users and high transaction volumes
- Report the status and results of tests

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What can be Simulated?

- VTAM terminals
  - Simulate secondary VTAM Logical Units (LUs) to test VTAM applications such as CICS, IMS, and TSO
- VTAM Applications
  - Simulate primary VTAM LUs to simulate an existing application or to prototype a new application
- TCP/IP clients
  - Simulate Telnet 3270, 3270E, 5250, NVT, or FTP clients communicating with servers such as TCP/IP for MVS
  - Simulate simple TCP or UDP clients
- CPI-C (CPI-C: Common Programming Interface Communications)
  - Simulate client or server CPI-C (LU6.2) transaction programs

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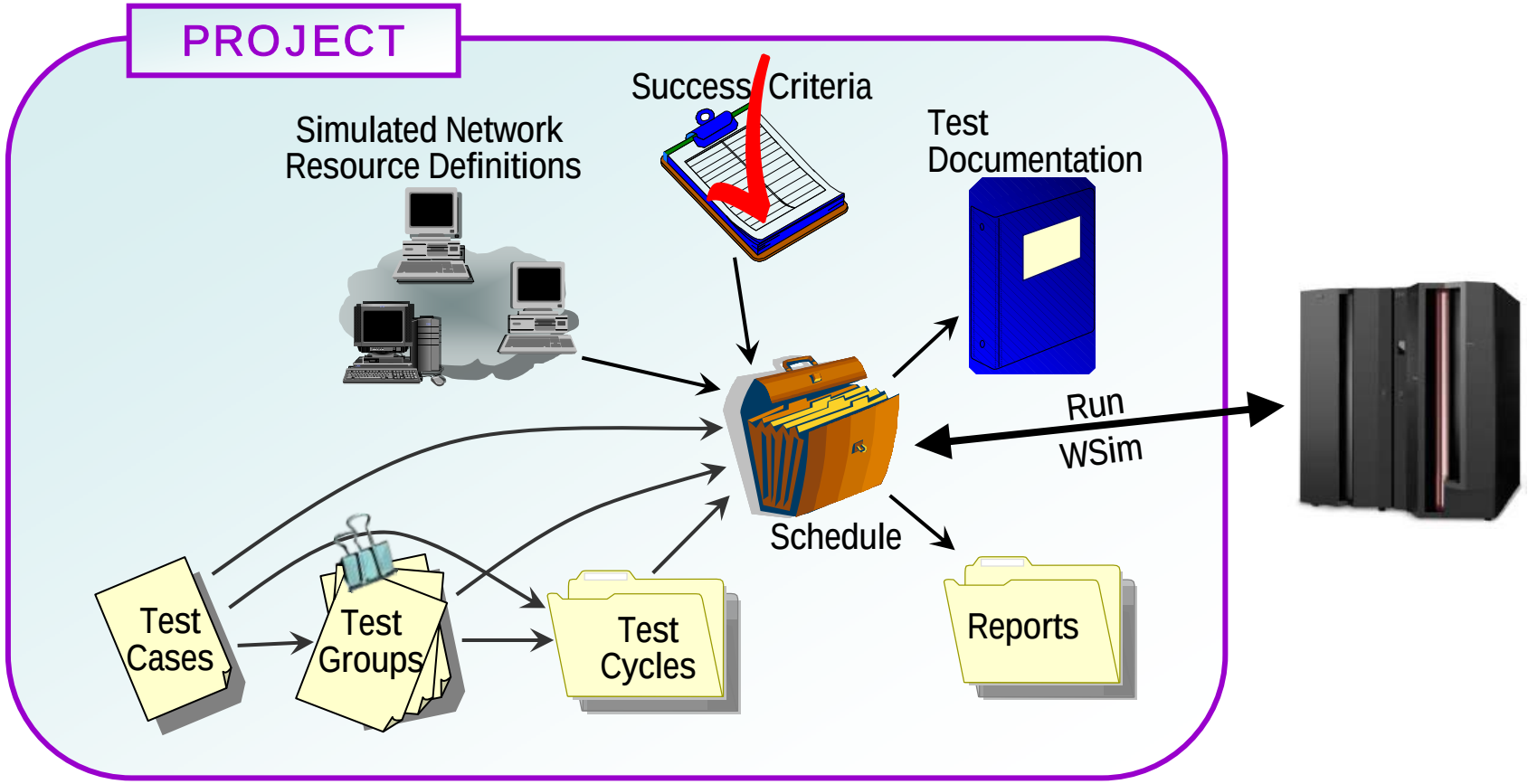
The WSim Test Manager (WTM)



- Manage and organize your tests with WTM
- WTM provides a “front-end” to the original WSim panels

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Workload Simulator Features

- Auto Generation Of Scripts
- Auto Generation Of Networks
- Controls Resource During Runs
- Simulates Different Terminals, Terminal Features And Terminal Operator Actions
- Executes Independently Of The System Under Test
- Provides utilities for post-test analysis
- REXX-like scripting language

- Conducts Reliable Stress, Performance, Regression, Function And Capacity Planning Tests
- Consistent Across Protocols
  - SNA, CPI-C, TCP/IP
- Consistent Across Operating Systems
  - z/OS & OS/390, MVS/ESA, VM/ESA

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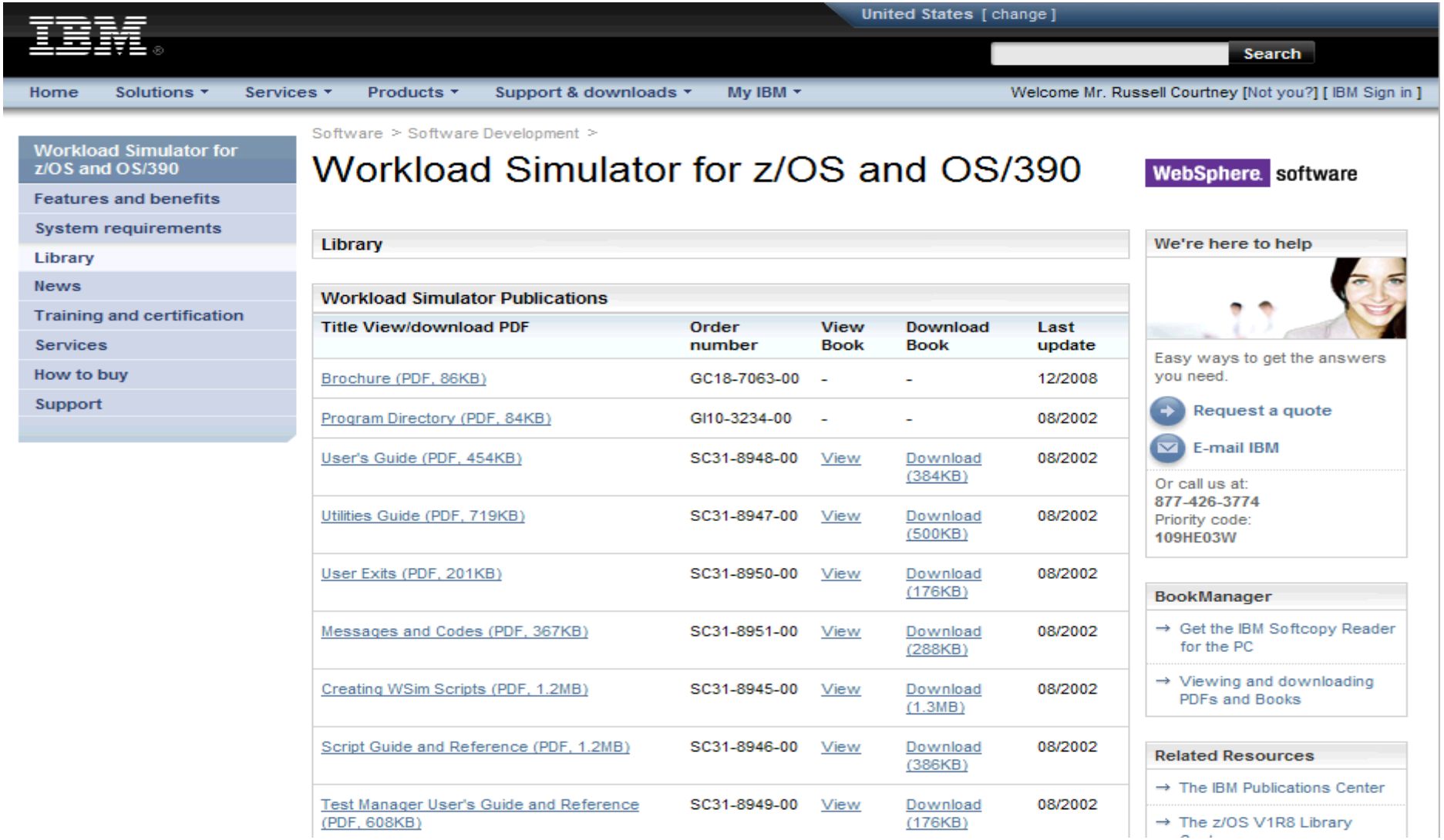
IBM Workload Simulator on the web

http://www.ibm.com/software/awdtools/deployment



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IBM
ISPF Productivity Tool for z/OS
Version 6.1

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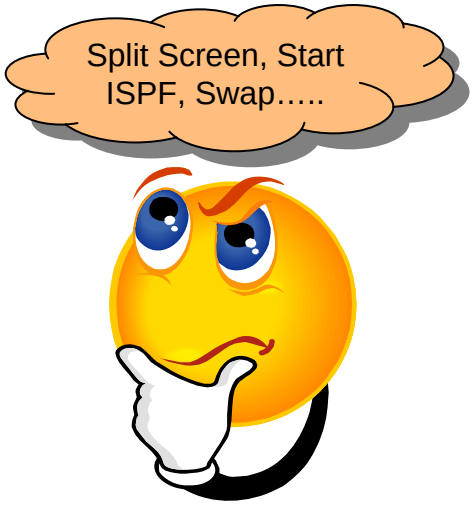
IBM ISPF Productivity Tool
Productivity and Performance enhancement for TSO/ISPF



Problem

- **Files Qualified Differently**
- **Multiple ISPF Sessions**
- **Cut and Paste Files from panel to panel**

IBM IPT

Solution

- **Reduce Navigation of ISPF Panels**
- **Create, Save, Maintain multiple ISPF Clipboards**
- **Point and Shoot Capabilities in ISPF**
- **Multiple list of files with different qualifiers on the same panel**
- **Search for text-strings in multiple members – in Multiple Datasets**
- **Filter datasets lists**

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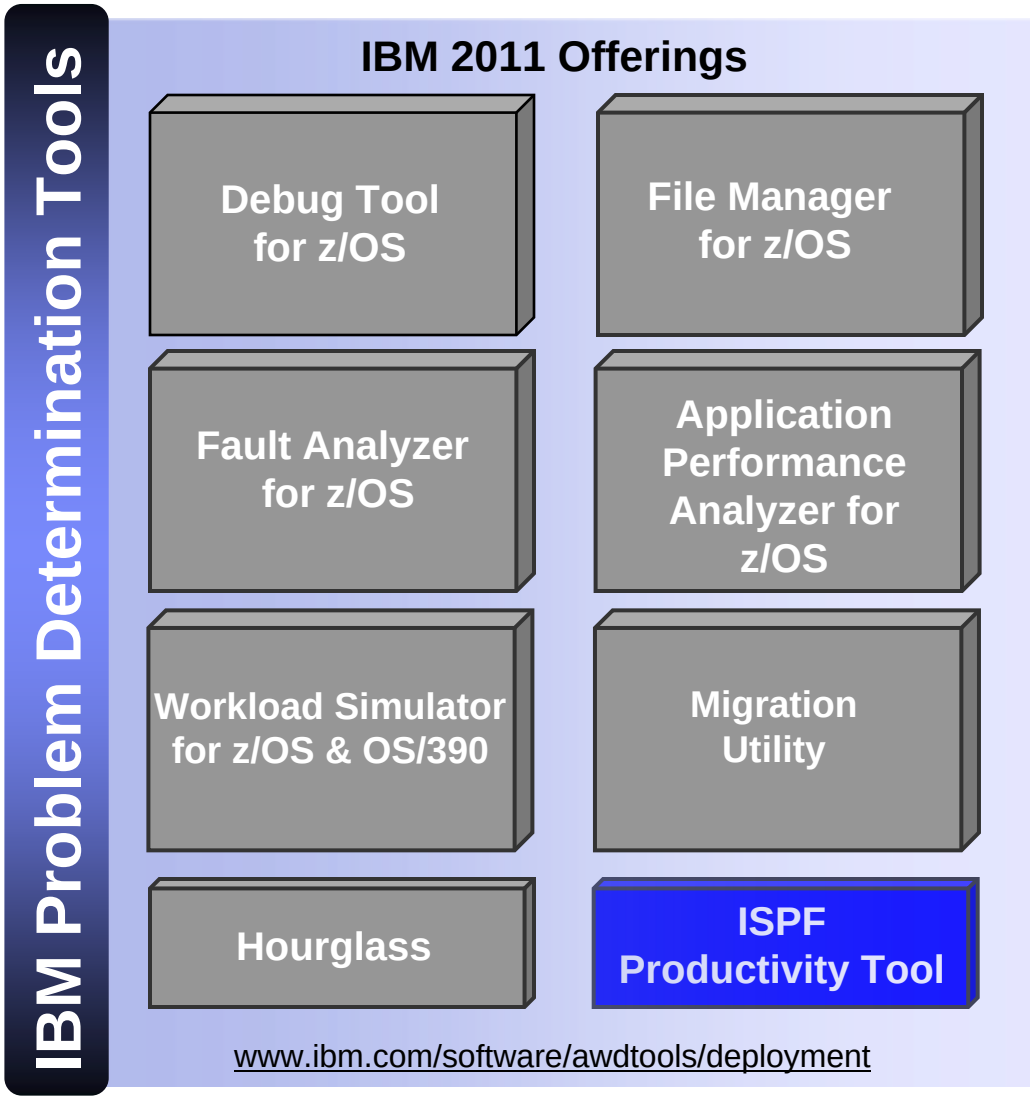
The IBM Problem Determination Tools Suite for z/OS



IPT Highlights

- Integrates enhanced functionality into the standard ISPF browse, edit, view, member list and data set list functions
- Extends the standard member lists with powerful search functionality that provides instantaneous results so that you can search through multiple members or libraries
- Helps you locate volumes, data sets, members and text
- Includes an interactive or automated interface to the change functionality and offers you the option to save changes into copies of modified members, leaving the originals intact
- Consolidates native ISPF and additional tools to provide automatic and integrated access to VSAM files, Panvalet® libraries, Librarian files, IBM DB2® tables, HFS files, PC files, catalog levels and other objects
- Uses proprietary technology for fast results

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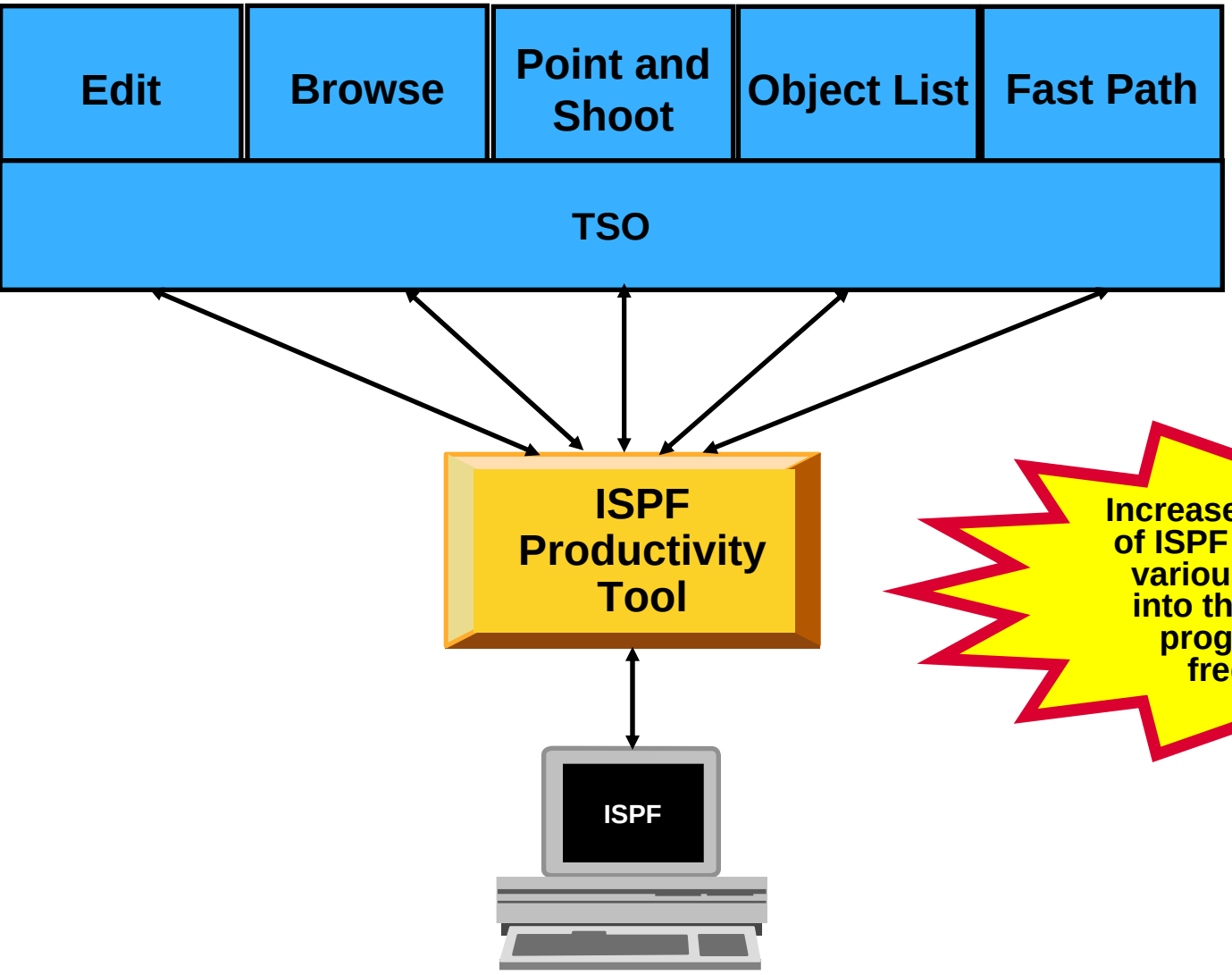
ISPF Productivity Tool – *Enhances TSO ISPF productivity*



Increases the productivity of ISPF users by packing various ISPF functions into the areas in which programmers most frequently work

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ISPF Productivity Tool Features

- Consolidates commands within a single panel
- Presents a comprehensive, object-oriented, project-related list of data sets
- Provides extensive point & shoot capabilities
- Extended TSO command execution
- Automatic PDS compression
- Reduces keystrokes and EXCP counts
- Enhanced print and clipboard capabilities

- Improves ISPF navigation
- SCLM, Librarian, Panvalet Library support
- IPT increases the productivity of ISPF users by packing various ISPF functions into the areas in which programmers most frequently work, such as browse, edit ,member lists, and dataset lists.
- New commands and functions reduce the need to navigate to additional panels to perform utility functions. This results in reduced keystrokes and increase productivity.

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ISPF Productivity Tool extends the productivity of ISPF

- Seamless integration with ISPF
- Organize files using Object Lists
- Use Member Selection Lists to work with PDS members
- Minimize panel navigation and improve productivity
  - Shortcuts
  - ISPF Productivity Tool commands
  - Extensive “Find” capabilities across multiple files
  - **Reduce keystrokes**

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IBM HourGlass for z/OS
Version 6.1

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IBM HourGlass for z/OS

Alter Date and Time to accommodate Application Testing

Problem

- **Test changes to date and time sensitive applications without creating new regions or resetting current System Date and Time**

Solution

- **Provide specific Date and Times to be used by applications in Batch, CICS, and IMS without creating new regions or altering the actual System Date and Time**
- **Test Regulatory Changes to applications**

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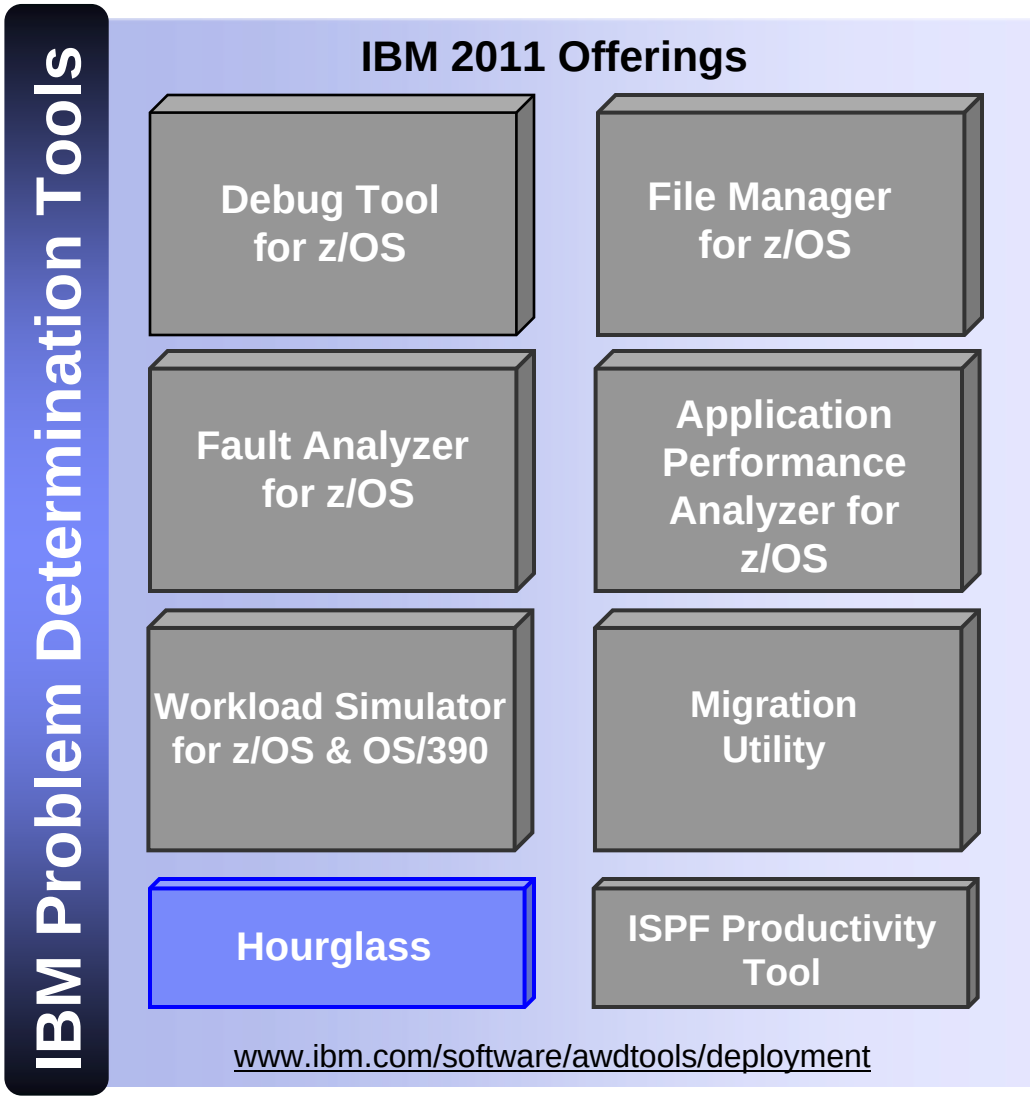
The IBM Problem Determination Tools Suite for z/OS



HourGlass

- Eligibility Checking
  - Security to identify applications that may use Hourglass
- Activate HourGlass via standard JCL
  - Override DD Statement for Date and/or Time
  - REXX Wizard to Accurately Generate Override DD Statement
  - Overrides for an entire JOB or a specific STEP
- Activate HourGlass using the provided ISPF Interface
  - Set Date and/or Time processing for JOBS
  - Restore Prior Settings
  - Review All JOB Settings
  - Review Hourglass Settings
- HourGlass Scheduling Facility
  - Continuously Roll Dates for JOBS or STEPS
  - Create/Drop Schedules
  - Up To 100 Active Schedules with Specifications for Up To 100 STEPS in each Schedule

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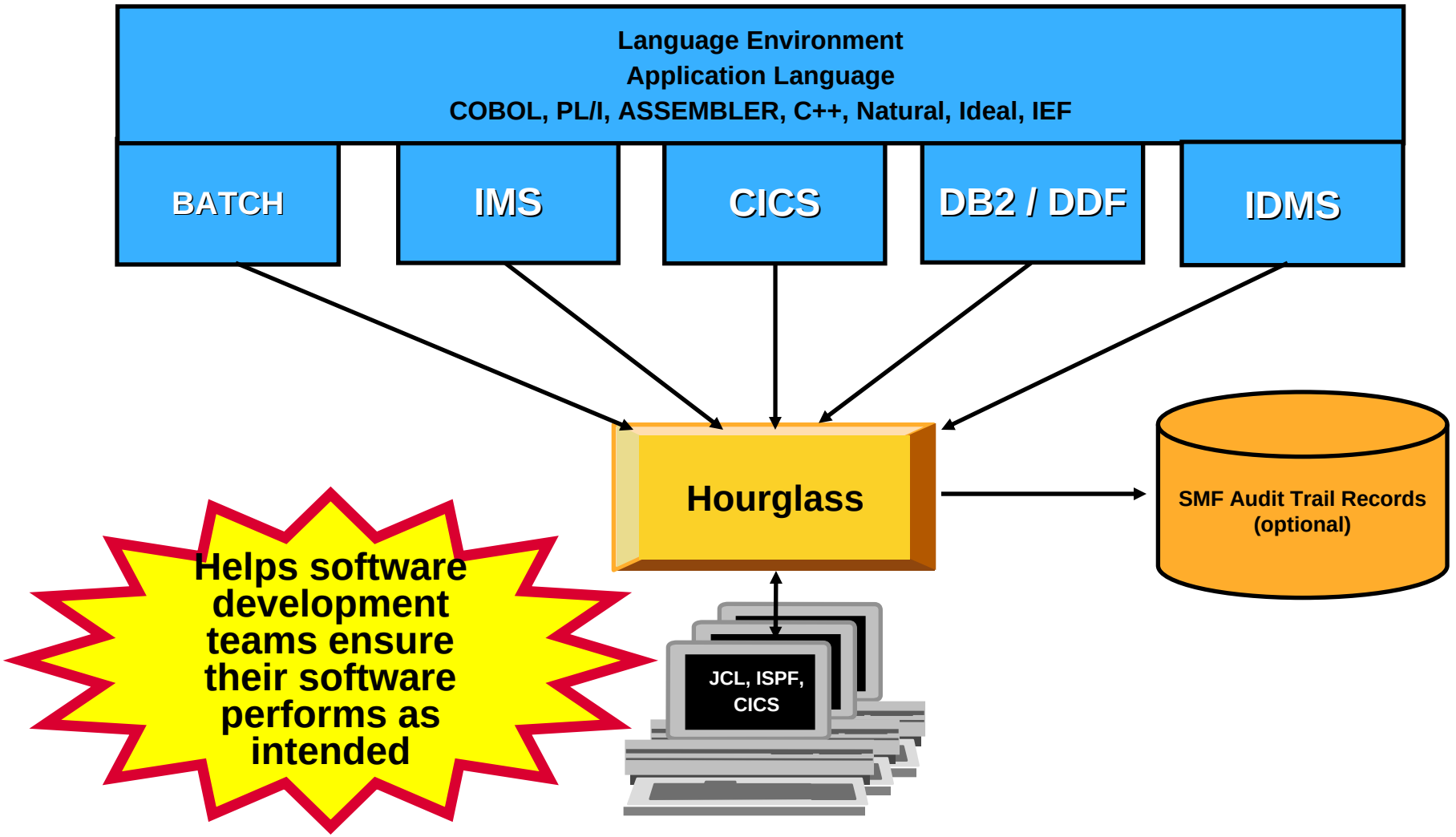
HOURGLASS – *alter dates and times for application processing or testing*



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Hourglass Features

- Eligibility Checking
  - –Security to identify applications that may use Hourglass
- Activate Hourglass via standard JCL Statements
  - –Override DD Statement for Date and/or Time
  - –REXX Wizard to Accurately Generate Override DD Statement
  - –Overrides for an entire JOB or a specific STEP
- Activate Hourglass using the provided ISPF Interface
  - –Set Date and/or Time processing for JOBS
  - –Restore Prior Settings
  - –Review All JOB Settings
  - –Review Hourglass Settings
- Hourglass Scheduling Facility
  - –Continuously Roll Dates for JOBS or STEPS
  - –Create/Drop Schedules
  - –Up To 100 Active Schedules with Specifications for Up To 100 STEPS in each Schedule

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Hourglass Features

- Hourglass for CICS
  - –CICS Region Activation
  - –Specific User, Terminal, Transaction Activation
  - –Easily Managed with the HGCC Transaction
  - –Audit Trail Facility
- Hourglass for IMS
  - –Region Activation
  - –Specific User Activation
- Hourglass for Software AG COM-PLETE
  - –Activated for Software AG Natural Application via Hourglass ISPF
- Hourglass for CA-IDMS
  - –CA-IDMS Single User Batch Applications

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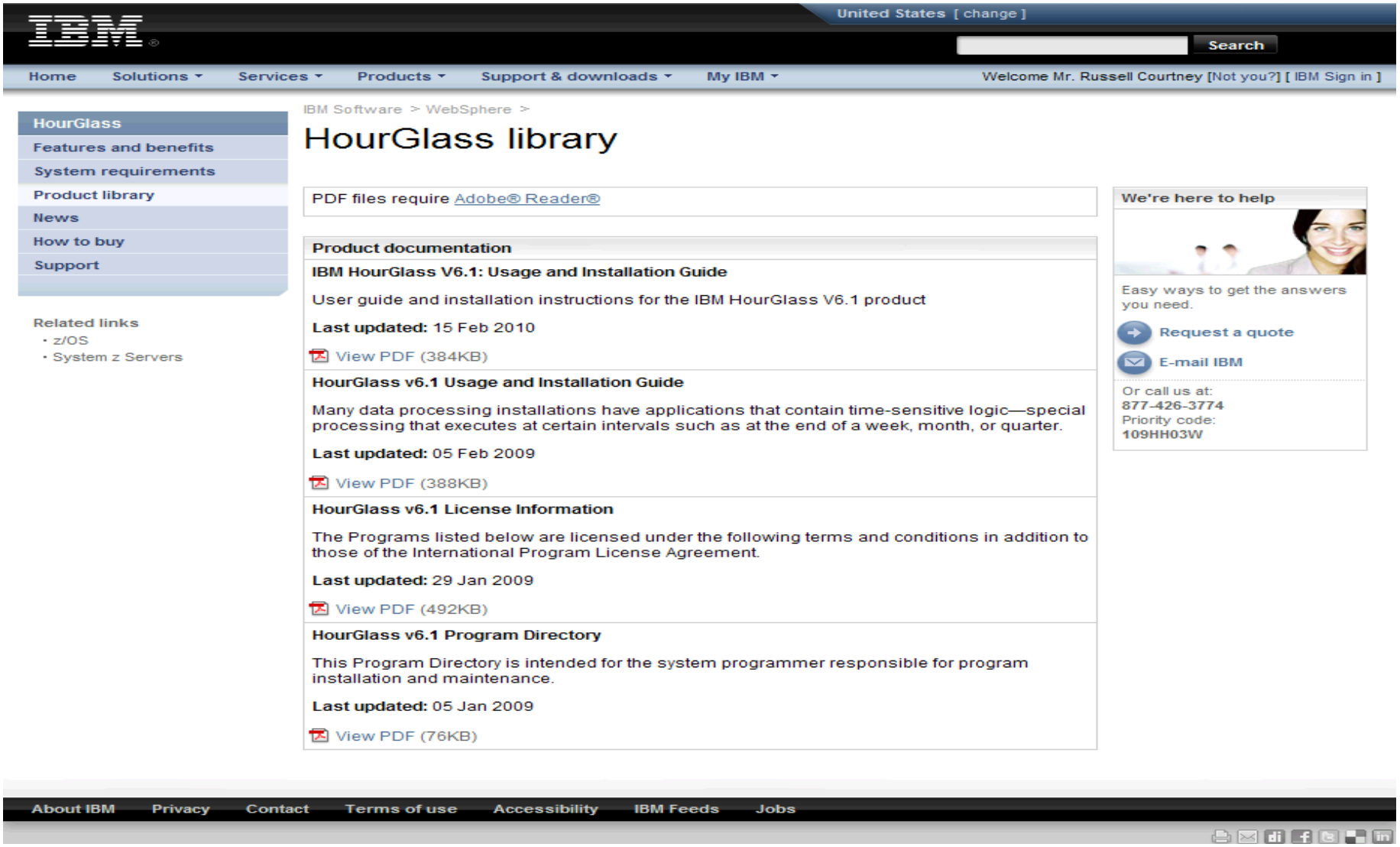
Get more information about these tools at:
http://www.ibm.com/software/awdtools/hourglass/library



IBM Migration Utility for z/OS
Version 3.2

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IBM Migration Utility for z/OS

Improve you total cost of ownership

Problem

- **Must save money but must leverage existing skills**

IBM Migration Utility

Solution

- **After conversion, continue writing & maintaining your EZT programs as long as you want to; capture COBOL business logic for SOA applications.**

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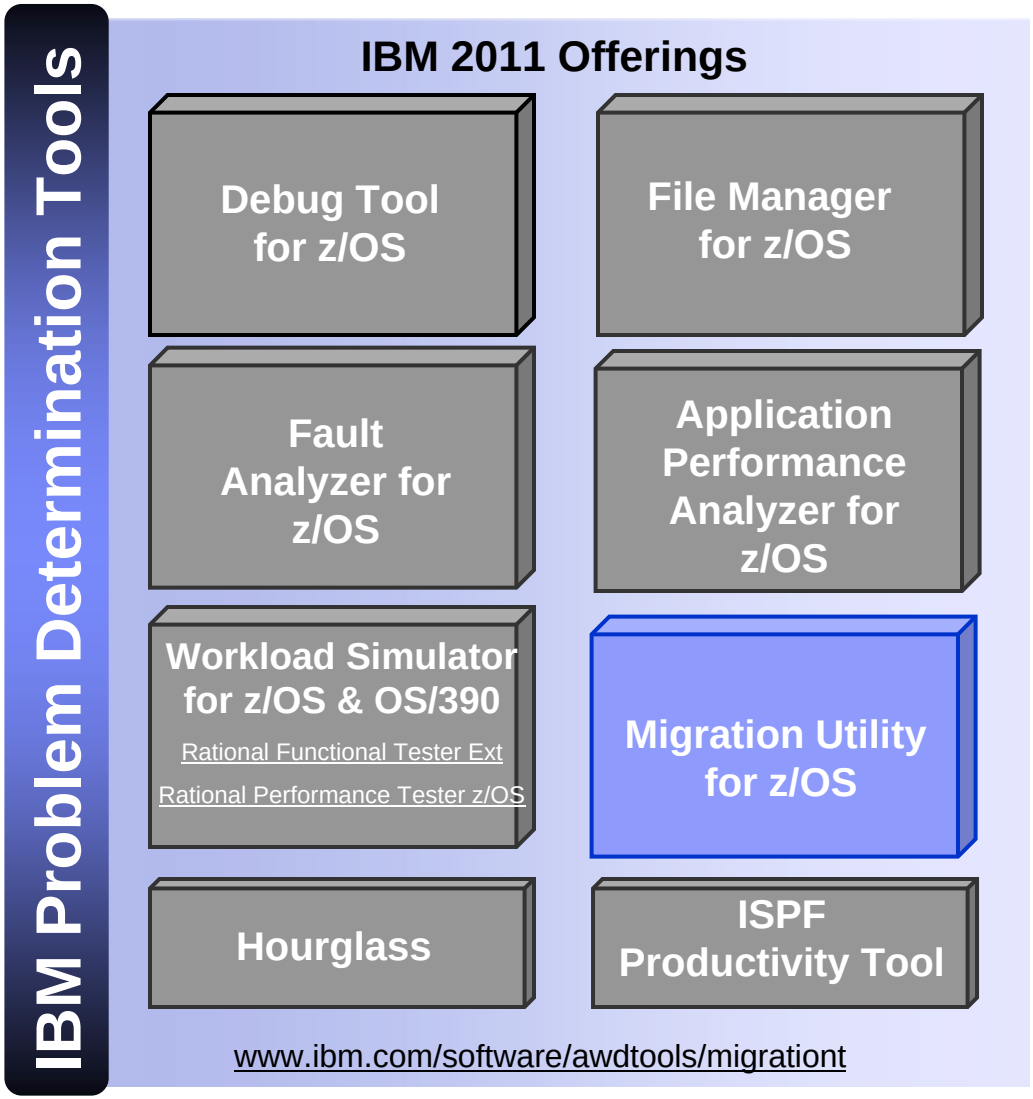
The IBM Problem Determination Tools Suite for z/OS



Migration Utility for z/OS Highlights

- Run and maintain converted programs as either COBOL programs or in the Easytrieve languages—without installing Easytrieve products.
- Delivers efficient COBOL I/O handling and memory management
- Increases COBOL sorting and searching efficiency
- Increases portability of programs
- Modernizes existing reports with the addition of a few simple new language statements
- Modifies or enhances converted programs using either Easytrieve language or COBOL
- Provides analysis of program abends, identifying the original failing Easytrieve program statement
- Creates HTML and HTML Drill Down reports and character-separated value output easily
- Batch-convert programs for more efficient processing and automatically convert and parallel test programs
- Improved Dynamic SQL options to improve performance-- a new feature in V3.2
- Report Modernization Utility converts mainframe printer files to HTML and .CSV files without modifying the originating program-- a new feature in V3.2

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Definitions:

Differentiate between CA Easytrieve Product and Easytrieve Language

- The CA Easytrieve Plus Product is licensed from CA, and may be costing you annual maintenance or capacity upgrade fees
- The CA Easytrieve and Easytrieve Plus Languages are the programming language your programs are written in – those programs are your intellectual property, just like COBOL or C programs
- With IBM Migration Utility you can continue using the Easytrieve or Easytrieve Plus languages, without having the CA Easytrieve Plus product installed, or you can simply convert and capture COBOL, maintaining in that language in the future

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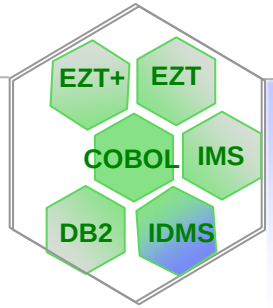
Why Migrate from CA Easytrieve?

Save Money

Improve Your Total Cost of Ownership

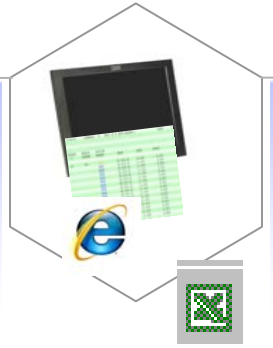


Capitalize on Investments

After conversion, continue writing & maintaining your EZT programs as long as you want to; capture COBOL business logic for SOA applications

Language Skills

Continue using EZT Languages as long as you like; switch to COBOL if/when desired



Modernize Output

Automatically convert output to HTML or .CSV formats with no program changes

Advanced Features

Drill-Down Reports

Improved Debugging

Add COBOL Statements

Ease Pain of Re-testing

With new EZT Plus version, you must to re-test programs without assistive tools

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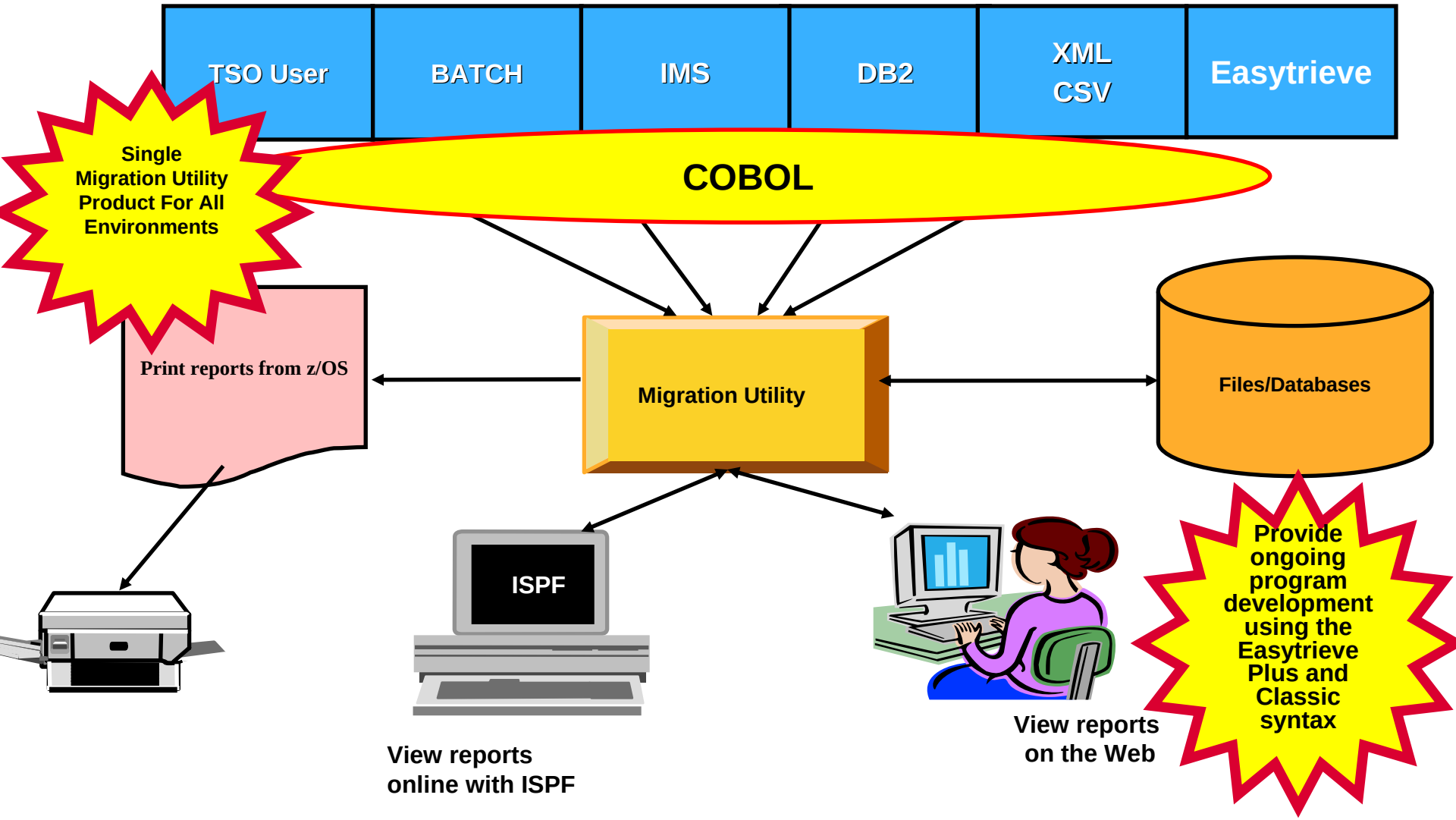
Migration Utility - *Provides rapid development for adhoc requests*



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Migration Utility Functional Overview

- Single Tool for All Supported Environments
  - JES/Batch, IMS, DB2, partial IDMS
- Benefits Provided by IBM Migration Utility:
  - Automated conversion of Easytrieve Plus programs to COBOL
  - Ongoing program development using the Easytrieve or Easytrieve Plus syntax
  - Automated testing / validation for converted programs
  - Affordable high level development tool for COBOL Environment
  - Users retain Easytrieve ease of use at a much lower cost
    - •Lower annual cost
    - •Possible machine cycle savings at run time

- Migration Utility Features
  - ***Existing and new*** Easytrieve Plus language programs can be processed by the IBM Migration Utility (IMU)
  - Programs written using Easytrieve Plus language can be converted to standard IBM COBOL
  - Creates IBM standard COBOL syntax from Easytrieve Plus language statements without Easytrieve Plus installed
  - Discovery Utility
  - Batch Conversion Utility
  - Parallel Testing and Electronic Output Comparison Utility
  - One-step driver enables re-use of existing compiler JCL with only minor changes
  - Report Modernization Utility – Generate HTML or Spreadsheet output without program changes

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The value of IBM PD Tools for z/OS

- **Reduces the time programmers need to perform common development tasks such as debugging, test data creation/management, testing, and performance analysis**
- Shortens application development cycles

- **Provides diagnostic tools that provide detailed information about production problems, and tools for rapidly correcting data problems**
- Results in reduced production down time, shortened problem resolution time, and fewer problem re-works

- **Provides an extensive collection of features and utilities to automate file and data management, copying and reformatting, data scrambling, comparison, etc.**
- Reduces loss of time and productivity spent writing in-house utilities

- **Simplifies programming tasks during the entire development process**
- Lets you spend more development time creating value, instead of struggling through mundane tasks without the right tools
- Increases productivity

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We would like to engage the Problem Determination Tools group for an on site "Live Demo"?

Yes

No

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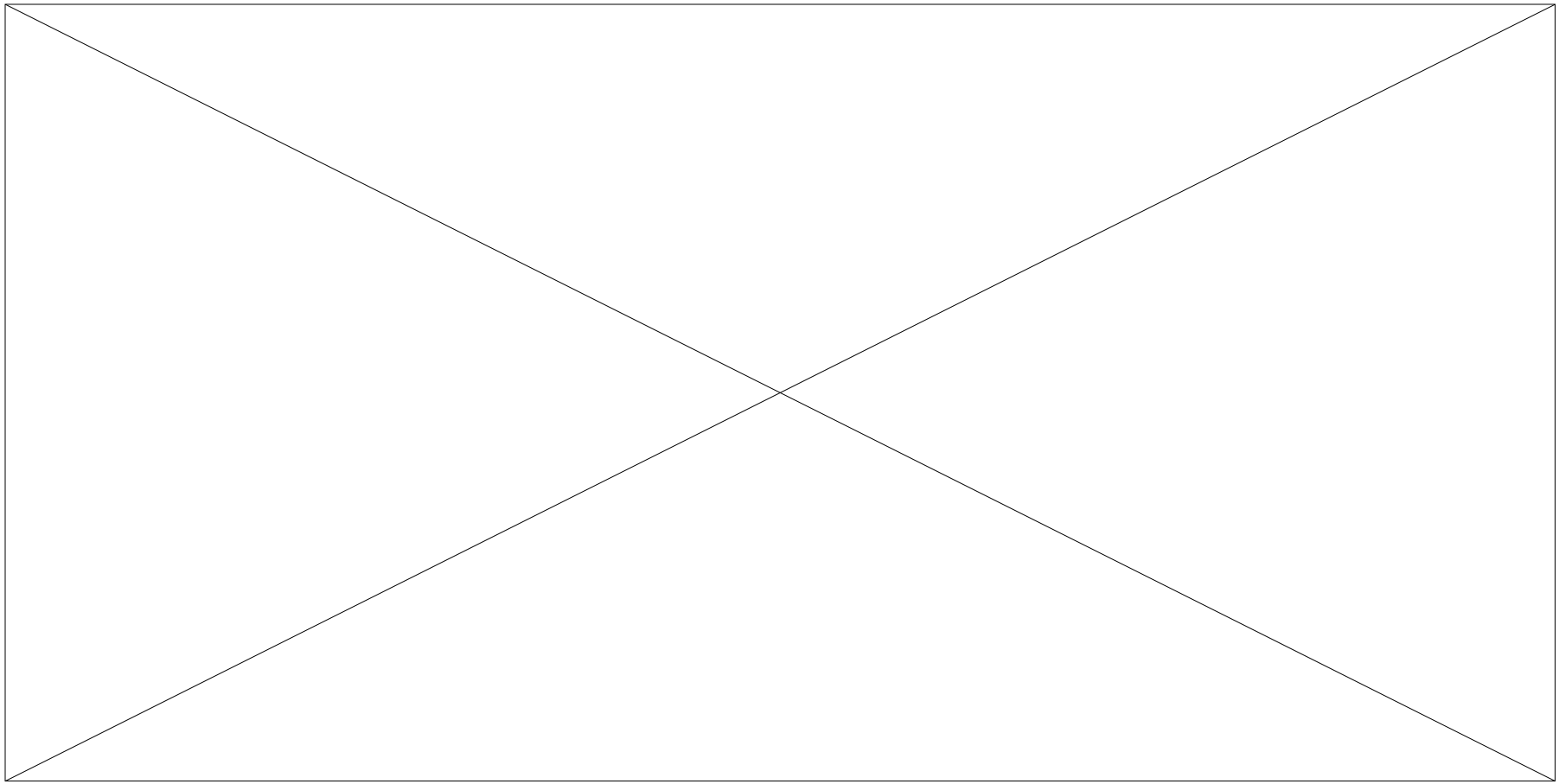
We would like to engage the Problem Determination Tools group for an on site "Live Demo"?



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We currently have problem determination Tools from

Compuware

CA

Macro4 (Unicom)

ASG

Other

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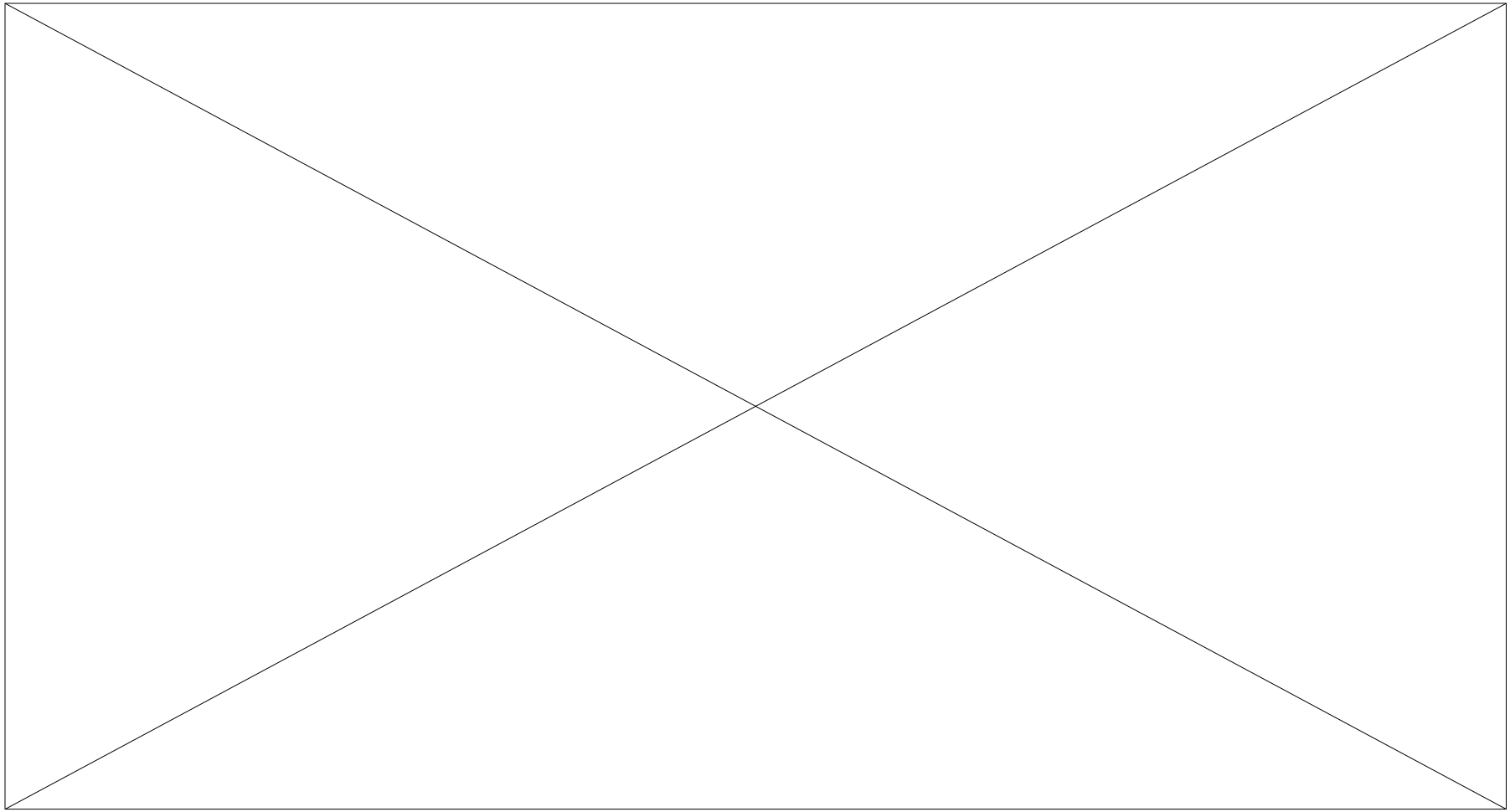
We currently have problem determination Tools from



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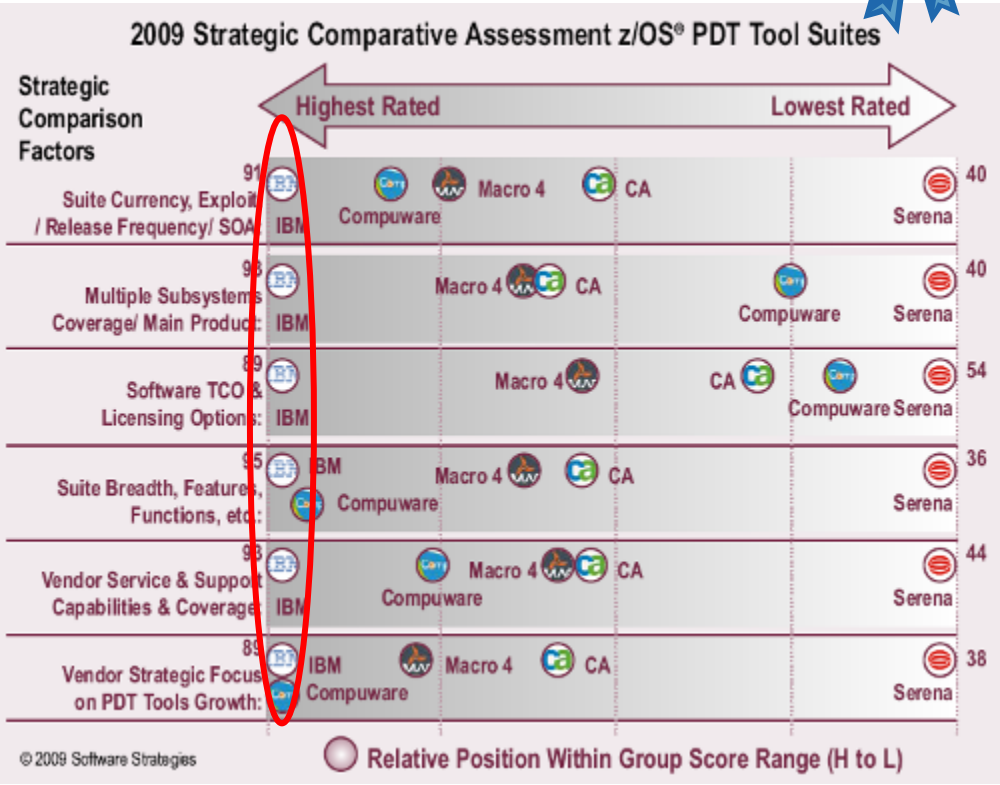
IBM Problem Determination Tools Wins Top Spot

Software Strategies Analyst Report, Released April 2011

- **IBM's PD Tools Suite Extends Technology Lead:**
  - IBM successfully challenged existing vendors in this segment since 2000
  - Modern, well-featured, fully integrated, inclusive, and good-value
  - The latest suite (V11) has now extended clear technology, feature and functional leadership



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IBM PD Tools for z/OS are a cost-effective alternative to competitive products

- **IBM is committed to customer success**
  - Affordable pricing
  - Flexible terms and conditions
  - A wide array of key features and functions
  - The opportunity to increase user productivity
  - Exploitation of IBM's latest technology
  - Dedicated Product Support Team
  - Customer Requirements Drive Product Enhancements
  - Classroom Training Services

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Problem Determination Tools "Live" Road Show

- ¾ Day Event
  - 8:30 AM until 2:00 PM local time
  - Continental Breakfast and Lunch Served
  - Presentation and Live Demos of PD Tool Products
  - Please Register
    - https://www.ibm.com/events/
    - Developer Tools Live
- IBM Locations for 2nd Quarter 2011
  - Raleigh, NC May 3, 2011
    - IBM 3100 Smoketree Court Raleigh
  - New York, NY May 6, 2011
    - IBM 33 Maiden Lane, New York
  - Richmond, VA May 10, 2011
    - IBM, 9201 Arboretum Parkway, Richmond, VA
  - Detroit, MI June 14, 2011
    - IBM 18000 West Nine Mile Rd Southfield, MI
  - Kansas City, KS/MO June 16, 2011
    - IBM 11550 Ash Street Suite 350 Leawood, KS

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