



IMS Tools Autonomics and Modernization – Trends and Directions

Session Number IMS-1330A

Christopher Holtz, IBM
Bob Magid, IBM
Joe Sacco, IBM

IBM Software

Information On Demand **2011**



Agenda

- Why Autonomics and Modernization?
- IMS Tools Vision
- All-in-One Solutions
 - IMS Database Solution Pack
 - IMS Fast Path Solution Pack
- IMS Tools Autonomics Director
- IMS Tools Administration Console
- Summary
- Questions and Discussion



Why Autonomics and Modernization?

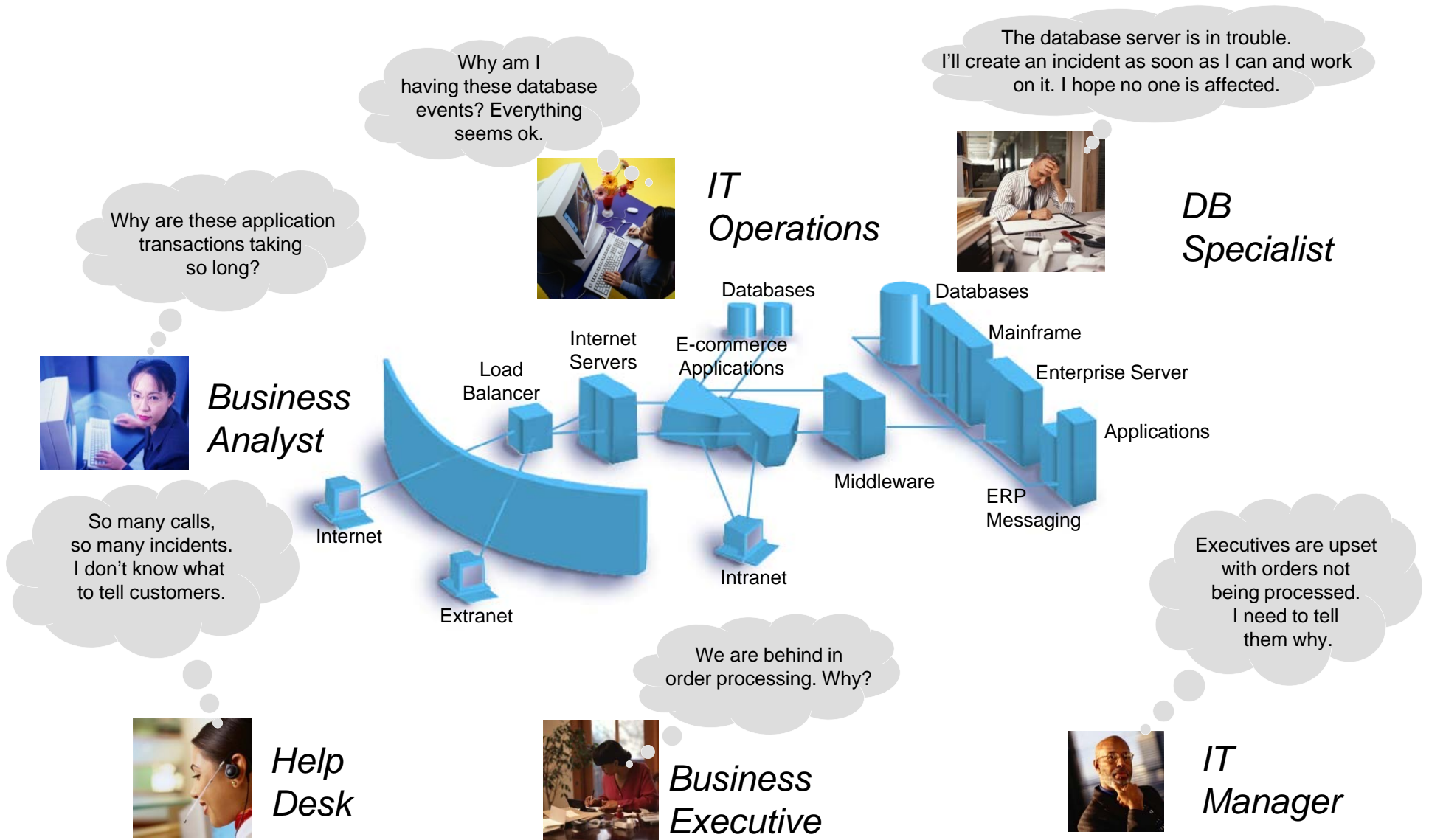
Now more than ever, business challenges demand it

- Unanticipated problems can result in downtime and loss of revenue
- Increased burden of system management and maintenance
- Problem determination is time and resource intensive
 - Expert skills are often spent determining when a problem took place rather than figuring out how to fix it
- DBA resources are dwindling
 - Expert skills are wasted on repetitive tasks
- Time and resources are not available for developing new applications, pursuing new technologies, and growing business

“The information technology industry is obliterating barriers and setting records with astonishing regularity, but now we face a problem springing from the very core of our success....More than any other IT problem, this one, if it remains unsolved, will actually prevent us from moving to the next era of computing. The obstacle is complexity.”

— Paul Horn, Senior Vice President, Research, IBM

When problems do occur, the impact can be extensive



User Interface Modernization is Critical



- Modern graphical user interfaces:
 - Provide a richer user experience and can convey more information
 - Reduce the need for IMS or Z specific knowledge
 - Shorten the IMS learning curve for new DBAs
 - Enable deeper integration between tools and across platforms
 - Customers expect it!

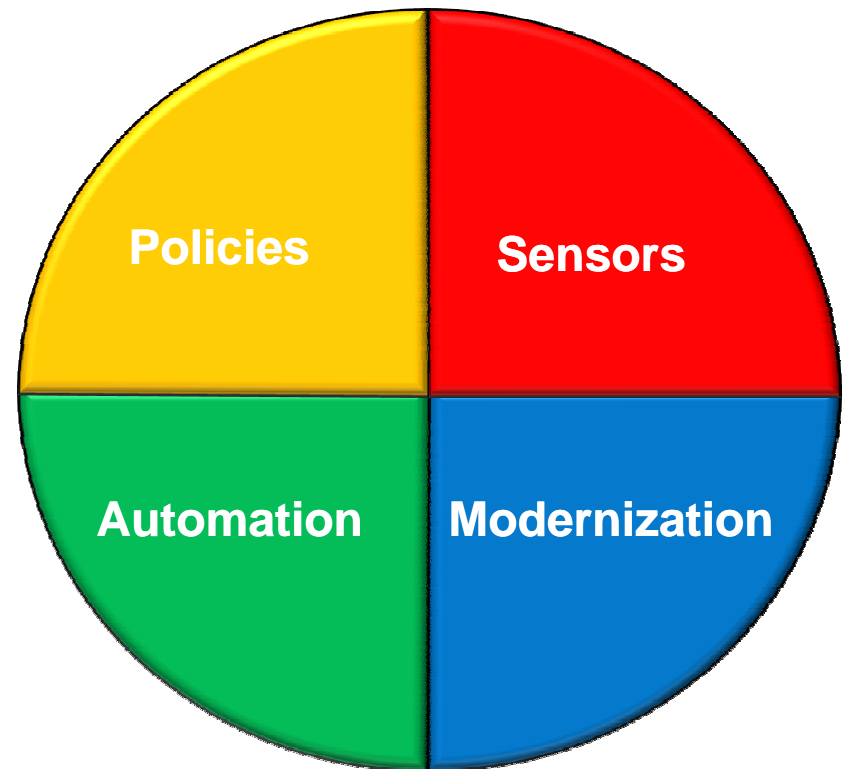
What we're doing

- Leap ahead to graphical user interfaces for IMS
 - Focus on web-based interfaces
 - Exploit the latest relevant technologies
 - Allow access from anywhere via the Internet

IMS Tools Vision



Putting information to work

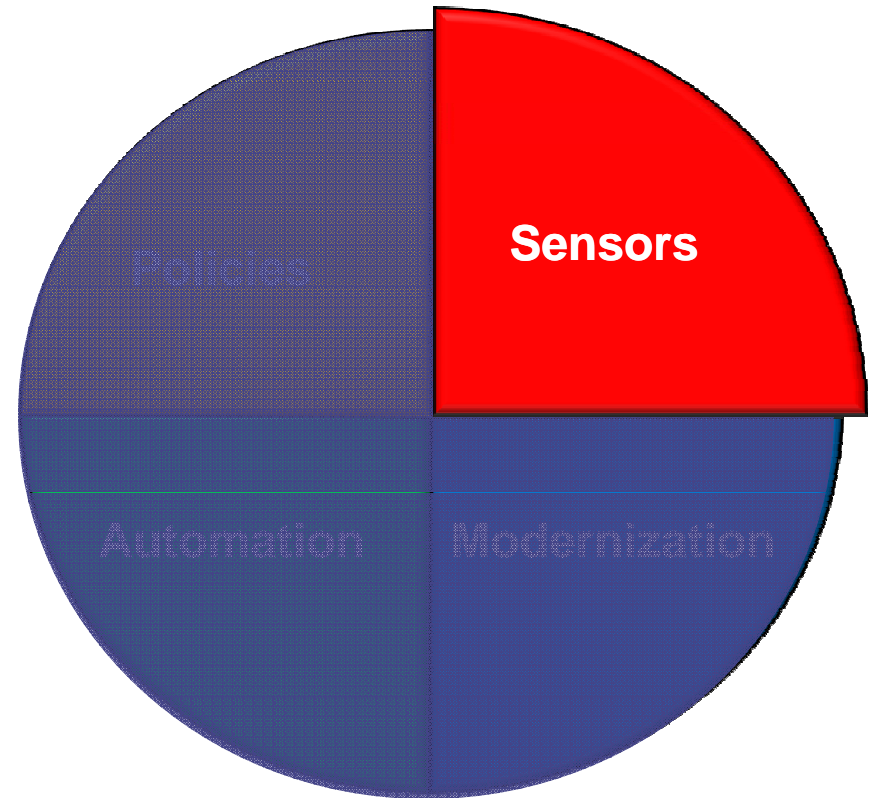


IMS Tools Vision



Putting information to work

Gather database statistics at regular intervals for your environment – e.g. space utilization, fragmentation, and optimization

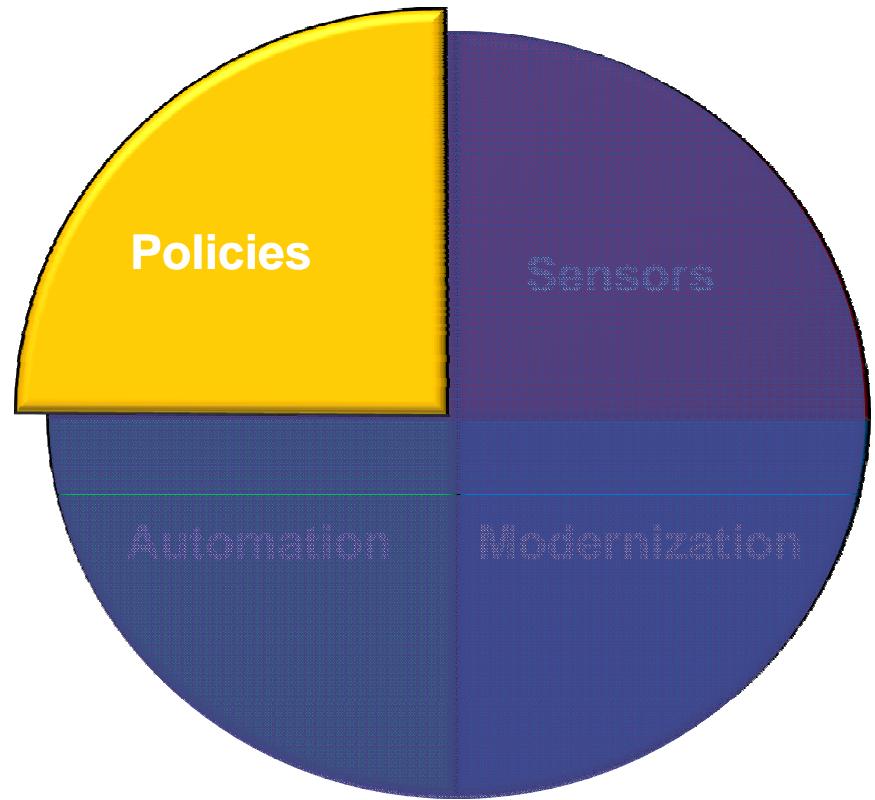


IMS Tools Vision



Putting information to work

User-defined policies and thresholds to determine when exceptions should be triggered and notifications should be sent

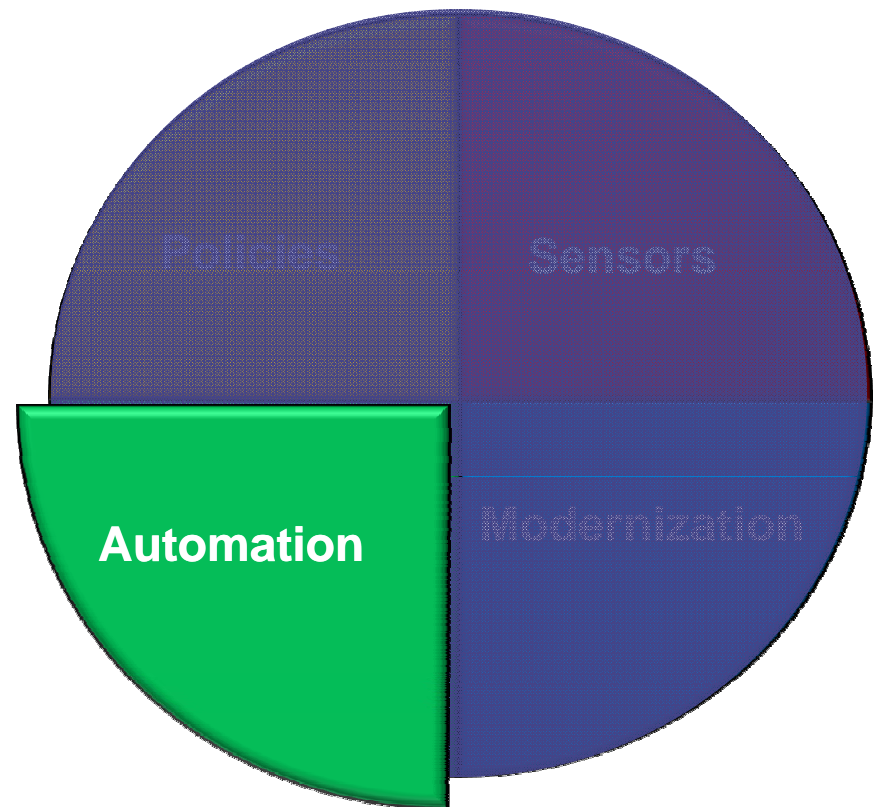


IMS Tools Vision



Putting information to work

Recommending and taking corrective actions based on the exceptions that are raised when thresholds are reached

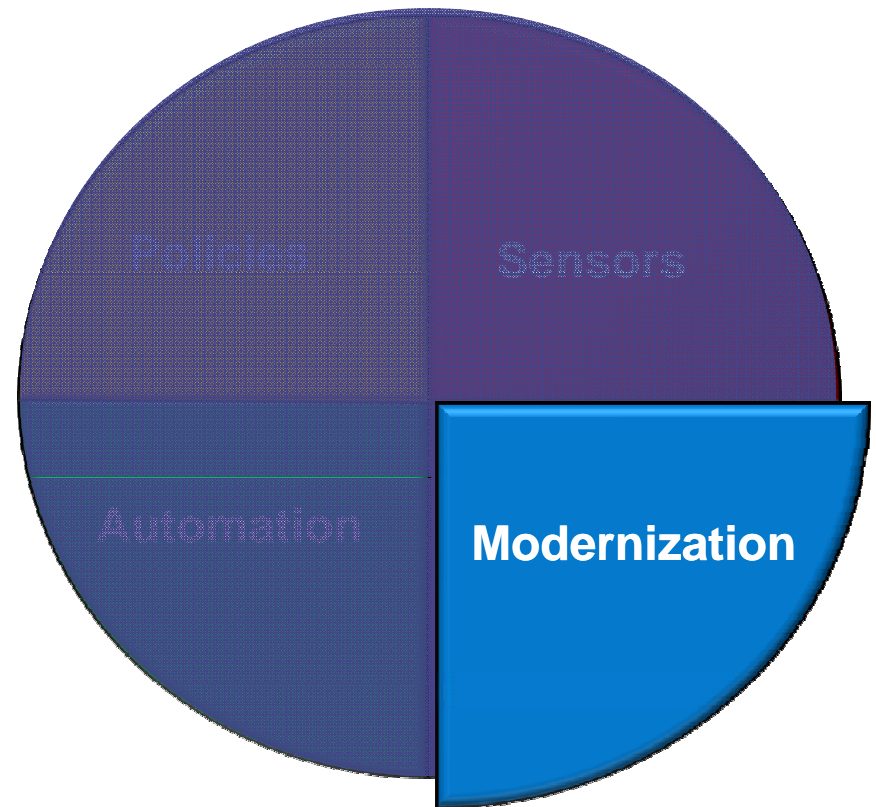


IMS Tools Vision



Putting information to work

Performing all of these actions from a rich, web-based user interface that is easy to install and access



Putting it all Together: IMS Tools Solution Packs

- High performance IMS Tools help you perform your IMS database management tasks – providing full end-to-end solutions
- A full suite of IMS Tools to help with:
 - Full-function database maintenance
 - Fast Path database maintenance
 - Recovery
 - Performance and tuning
- Built on our vision, built for you
 - Easier to install
 - Easier to maintain
 - Increased integration
 - Automated
 - Modern
 - Built to fit any size shop



Our Newest Offerings!

- IMS Database Solution Pack 1.2 and IMS Fast Path Solution Pack 1.2
 - Already announced
 - October 11, 2011
 - Available this December
 - December 9, 2011
- Customer value
 - Provides a full set of tools for maintaining and managing your IMS full-function and Fast Path databases
 - Includes important High Performance utilities
 - Utilizes Sensors, Policies, Automation, and Modernization
 - Delivers on the IMS Tools vision



IBM Tools Base for z/OS

- A prerequisite for all IMS Tools Solution Packs
- Contains all the common infrastructure components, including the IMS Tools Knowledge Base, for enabling autonomies and next-generation UIs
- IMS Tools Knowledge Base repository holds the information to help you make expert decisions
 - Sensor Data
 - Policy Services
 - Reports
- No charge PID
 - Program number: 5655-V93
 - IBM Tools Base for z/OS 1.3



Sensors: Collecting the Basic Information You Need

- Statistical point-in-time sensor data
 - Stored in IMS Tools Knowledge Base repository
 - Historically maintained per user specifications
 - Over 60 separate data elements related to space usage, optimization, and fragmentation
 - E.g. data set extents, DASD volume usage, data set free space, roots distribution, RAP usage, CI/CA splits, and IMS free space
- Two methods of collection:
 - Standalone database Sensor utilities for full-function and Fast Path databases
 - Integrated with existing IMS Tools
- Integrated Tools support
 - High Performance Image Copy, High Performance Pointer Checker
 - Fast Path Analyzer, Fast Path Online Pointer Checker

Policies: Using Sensor Data to Help Make Decisions

- Policy definitions are used to evaluate specific database states
 - E.g. the state of space utilization at a specific instance in time
 - Threshold values are compared against sensor data for a given database or group of databases
 - When thresholds are met or exceeded, exceptions occur
- Works “out of the box”
 - Ships with predefined policies and threshold values
 - Full ISPF interface provided for policy management
- Customizable to fit your shop
 - You can define your own sets of threshold values
 - Customize the messages sent when exceptions do occur
 - Specify who receives which messages and how
 - WTO, e-mail, or text

Automation: Delivering on our Vision



IMS Tools Autonomics Director

- Passive autonomics for IMS databases
- Automates ongoing database monitoring and maintenance tasks based on a detailed understanding of the current state of your IMS databases
- Recommends when databases should be reorganized
- Provides a scheduling feature that allows you to control how frequently sensor data is collected and how frequently policies are evaluated

Customer value

- Help prevent problems before they occur
 - Higher availability and performance through optimally organized data
- Consistent and reliable monitoring of database status
 - Regular collection/evaluation at predefined intervals

Automation: Delivering on our Vision



- Simplify ongoing database monitoring and maintenance tasks
 - Relieve the day-to-day burden on IMS DBAs
 - Reduce analysis overhead by generating recommended actions
 - Reduce the skill set that is required to analyze database status
- Efficient use of system resources through integration with existing IMS Tools
 - Collect information about database status in conjunction with IMS Tools execution
- Historical collection of database status for growth and trends projections
 - Synergy with the new IMS Administration Console
- Get you up and running quickly
 - Simple to install and customize
 - One-time set up
 - Easy to use

Autonomics Director Overview



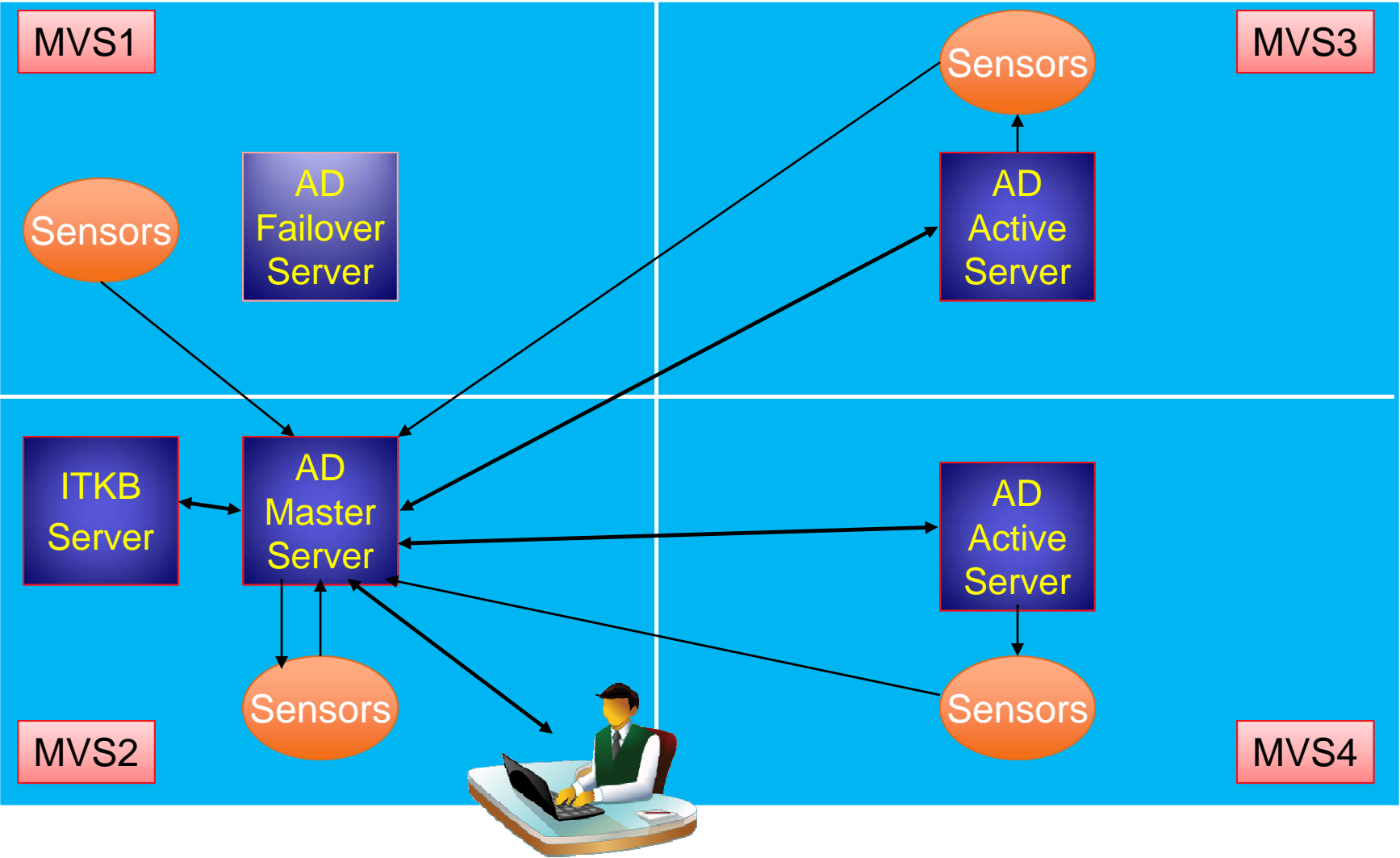
- Automatic collection of Sensor data
 - Integrates with IMS Tools image copy and pointer checker processes
- On Demand collection/evaluation for immediate issues
 - “I have a problem and need the information now!”
- Automatic analysis and evaluation of database status
 - Based on user-defined policies and thresholds
- Recommendation for reorganization
 - Easy to understand: simple “yes” or “no”
- E-mail or text notification when a reorganization is recommended
 - Alert DBA to consider taking action
- Flexible scheduling around peak workloads
 - Doesn't interfere with production throughput or response

Autonomics Director Overview

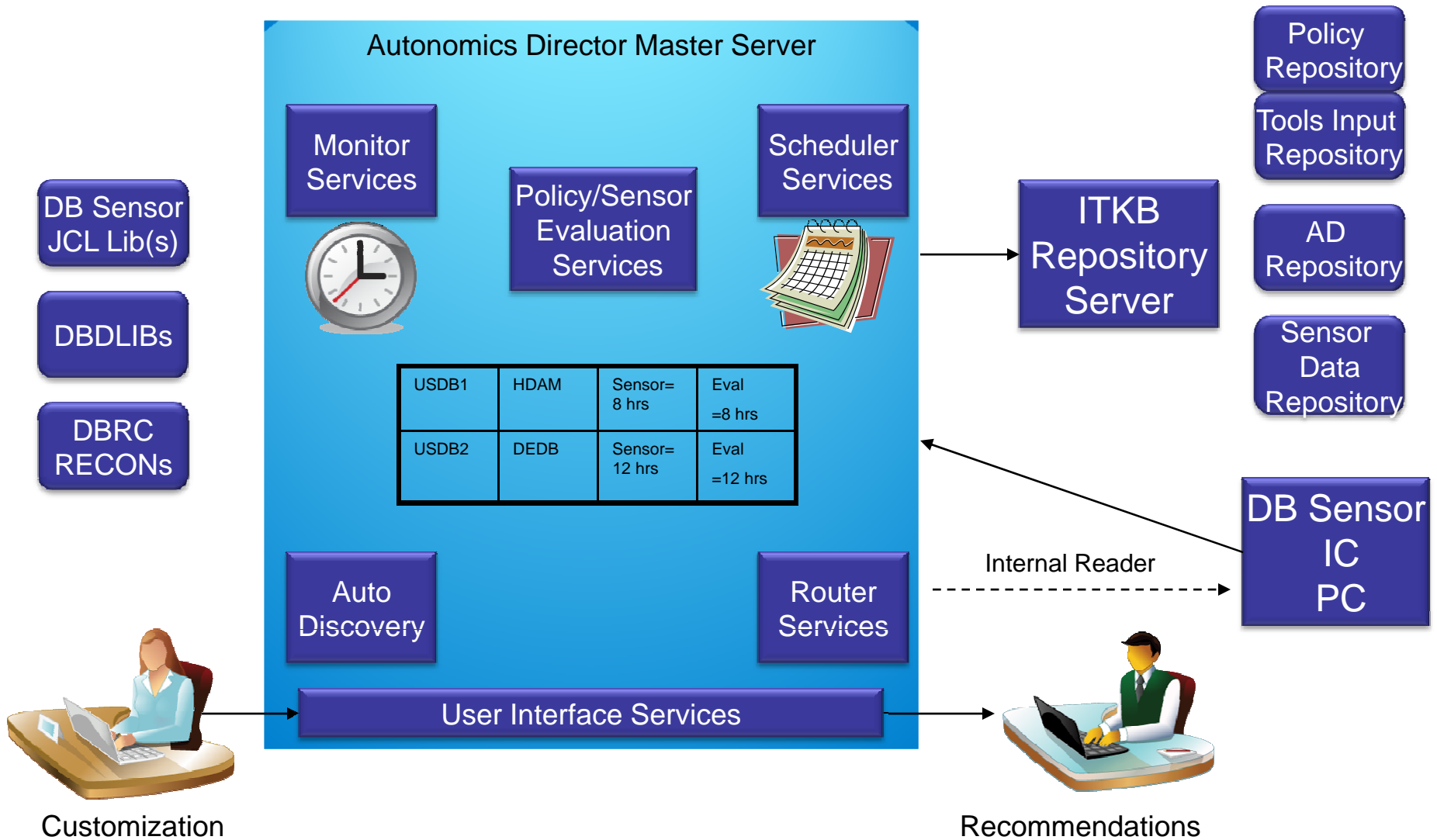


- Works with existing job schedulers
- Exploits the power of IMS sysplex
 - Redundant servers for highest levels of availability
 - Spreads data collection/tools workload based on system capacity and status
- Easily customized for groups or individual databases
 - Auto-discovery of databases and existing database groups
 - User-defined groupings: “These are the databases that I’m responsible for”
 - Group-assigned defaults propagate to individual databases
- Intuitive user interfaces for all users
 - Full ISPF interface
 - Integrates with new IMS Administration Console for viewing database status on the web
- Available with upcoming release of IBM Tools Base Pack
 - No charge product

Autonomics Director Configuration



Autonomics Director Process Flow





Customization Highlights

- Auto-discovery feature simplifies customization
 - Define DBD libraries and DBRC RECONs in Knowledge Base repository
 - Awareness and presentation of databases and DBRC groups
 - Menu and selection list driven from this point
- Individual databases
 - Specify monitoring parameters
 - Evaluation Interval, Sensor Data maximum age, Sensor job stream data set
 - Policy by generic database type, database name, policy name
- Group support
 - All DBRC group types supported
 - HALDB databases and partitions
 - Fast Path DEDBs and areas
 - Group expanded to include all members
 - “Add Group” line command
 - Group parameter specifications are propagated to all defined members

Sensor Data Collection Highlights



- Automatic scheduling
 - Automated or On Demand through Autonomics Director
 - Periodic Basis in days, hours, and minutes
- External scheduling
 - Through job scheduler
 - Manual submission
- Notification
 - Sensors notify Autonomics Director of new sensor data
 - Drives automatic analysis, evaluation, and recommendations

Evaluation Highlights



- Based on user-defined policies
 - IMS Tools Policy Services
 - Policy selection based upon database type, name, or policy name
 - Robust threshold criteria based on key status indicators
- Results and recommendations
 - Retained in repository
 - Historically maintained based on user specifications
 - Accessible via ISPF or web interface
 - Optional email or text alerts

Recommendations

```
Menu View Help
-----
Autonomics Director Monitor List Entries      Row 1 to 9 of 9
Command ==>                                  Scroll ==> PAGE

Locale . . . : $IMSV12          Group type . : DATABASE

Row Actions:  S - View the database attributes
              V - View recommendations
              X - Select a database, partition, area for scheduling on demand
              H - View evaluation history

Action Reorg Sev DBDName  PartName Eval-Date  Eval-Time  Snsr-Date  Snsr-Time
v_      N      C   ORDDB                Sep 23, '11 08:00:03  Sep 23, '11 08:00:02
_       N      C   DBFSAMD3 HOSPIID  Sep 14, '11 20:00:11  Sep 14, '11 20:00:08
        N      C   DBFSAMD3 HOSPIIC  Sep 14, '11 20:00:11  Sep 14, '11 20:00:08
        N      C   DBFSAMD3 HOSPIIB  Sep 14, '11 20:00:11  Sep 14, '11 20:00:08
        N      C   DBFSAMD3 HOSPIIA  Sep 14, '11 20:00:11  Sep 14, '11 20:00:08
        N      C   DBFSAMD2 HOSPITD  Sep 19, '11 19:00:07  Sep 19, '11 19:00:05
        N      C   DBFSAMD2 HOSPITC  Sep 19, '11 19:00:06  Sep 19, '11 19:00:05
        N      C   DBFSAMD2 HOSPITB  Sep 19, '11 19:00:06  Sep 19, '11 19:00:05
        N      C   DBFSAMD2 HOSPITA  Sep 19, '11 19:00:06  Sep 19, '11 19:00:05
***** Bottom of data *****

MA b 14/003
```

Recommendations

```
Autonomics Director Evaluation Run Information
Command ==>

Locale . . . . . : $IMSV12

Enter S to view evaluation run exceptions . . . . S _

Database name . . . . . : ORDDB
Partition name . . . . . :
Database type . . . . . : HDAM
Access method . . . . . : OSAM

Status . . . . . : DB EVALUATION Completed
Return code . . . . . : 00000000
Reason code . . . . . : 00000000
Reorganization needed . . . . . : N
Severity . . . . . : C
Sensor data from date / time . . . . : Sep 23,'11 / 08:00:03
Evaluation run date / time . . . . . : Sep 23,'11 / 08:00:03

Policy by . . . . . : DBTYPE
Policy name . . . . . : SYS.DBDBTYPE.HDAM
```

Recommendations

```
Menu Utilities Compilers Help
-----
BROWSE      USRT002.ECDBT09.IMSAD.CMDOUT1      Line 00000021 Col 001 080
Command ==> _                               Scroll ==> HALF
Exceptions
-----
The number of available extents for a data set of ORDDB is small
  Class: DATA_SET_EXTENTS_AVAILABILITY      Level: CRITICAL
  Rule: G:IBM.DBDS_EXTENTS.10      Threshold Set: HIGH
                                       Action: MESSAGE

Overflow data in ORDDB has increased
  Class: EXCESSIVE_HDAM_OVERFLOW      Level: SEVERE
  Rule: G:IBM.HDAM_OVERFLOW.10      Threshold Set: MED
                                       Action: MESSAGE

The number of roots not in their home blocks in ORDDB has increased
  Class: EXCESSIVE_HDAM_ROOTS_NOT_HOME      Level: CRITICAL
  Rule: G:IBM.ROOTS_NOTHOME.10      Threshold Set: HIGH
                                       Action: MESSAGE

A data set of ORDDB has many pointers that point to other blocks or CIs
  Class: EXCESSIVE_SEGMENT_SCATTERING      Level: CRITICAL
  Rule: G:IBM.SEGM_SPREAD.10      Threshold Set: HIGH
```

Recommendation Alerts

EMAIL - EXCEPTION MESSAGE:

IMS Tools Autonomics Policy Notification

IMS_Tools

to:

User Name

07/25/2011 12:27 PM

Data Base Team

HFP2930I The average number of I/Os per root segment exceeded a threshold in area DEDBDBA1.



IBM Tools Modernization

The screenshot displays the IBM Tools Base Administration Console for z/OS. The interface is divided into several sections:

- Navigation and Search:** Includes a search bar for resources and a sidebar with a tree view of database groups (DBABC001 to DBABC009) and other databases.
- Database Properties:** Shows details for database DBABC002, including DBD Type (HDAM), Segment levels (15), Segment types (255), External DBDs (4), Logical children (5), Data set groups (10), and Access type (VSAM).
- Exceptions:** Lists exceptions as of May 27, 2011, 5:48PM, categorized by severity: Critical (1), Severe (3), Warning (4), and Information (0). Specific exceptions include CLUCA splits, DBDS growth, and Variable length segment splits.
- Reports:** Lists reports for various dates, including December 15, 2011, and December 12, 2011, with details like report names and job IDs.
- Space Usage:** A bar chart titled 'Available Data Set Extents' for CUSTPAB, comparing 'DB NUM AVAIL, EXT 1' (yellow) and 'DB NUM AVAIL, EXT 2' (pink) against a 'Critical Threshold' (red line).
- Optimization:** A line chart titled 'Synonym Roots' showing values over time from 10:00 to 15:00.
- Fragmentation:** A bar chart titled 'Variable Length Segment Splits' showing the percentage of splits for five items (Item 1 to Item 5) against a 'Threshold' (yellow line).

Modernization: Breaking New Ground

- IMS Tools Administration Console
 - Integrates key IMS information into a single, intuitive, web interface
 - Presents exception notifications and recommended resolutions
 - Presents historical data about database space usage, optimization, and fragmentation in interactive, graphical charts
- Customer value
 - Easily manage databases by exception and take action only when necessary
 - Rapidly interpret database statistics to find opportunities for performance tuning
 - Shorten the IMS learning curve for new DBAs



Administration Console Goals

- Provide a holistic view of your IMS databases from a single, easy-to-use web interface
 - Dynamic, interactive graphs and charts provide you with a visual representation of your sensor data
 - Integration with the Autonomics Director provides a list of policy exceptions and recommended resolutions for all of your monitored databases
 - All IMS Tools reports stored in the IMS Tools Knowledge Base can be searched, retrieved, and viewed effortlessly
- Prepare for the next generation of IMS DBAs
 - Uses the latest web technologies for a rich user experience
 - Access from anywhere via the Internet using the most popular web browsers
 - Includes a robust help system that serves as a learning aid for new IMS DBAs.

Overview of IMS Resources with Drill-down

The screenshot displays the IBM Tools Base Administration Console for z/OS. The main content area shows a 'Summary' table for 'Critical Databases'. The table has columns for Resource, Type, Overall, Critical, Severe, Warning, Recommendations, and Reports. A red square icon in the 'Overall' column of the 'Critical Databases' group row indicates a resource with a critical status. A yellow callout box with a black border points to this red icon, containing the text: 'Resource status, errors, and recommendations can be aggregated with an ability to drill down'. The console also features a search bar, a navigation menu, and a status bar at the bottom.

Resource	Type	Overall	Critical	Severe	Warning	Recommendations	Reports
Critical Databases	group		2	1	1	0	440
CUSTD1	database		0	0	0	0	53
CUSTD2	haidb		-	-	-	-	166
CUSTD3	database		2	1	1	0	52
CUSTD4	haidb		-	-	-	-	142
CUSTD5	database		-	-	-	-	14
CUSTD6	database		0	0	0	0	13

Holistic View of IMS Resources

...from Various HP Tools

...from Autonomics Director

...from Auto Discovery

IBM IMS Resource Management Dashboard

Database: CUSTD3

Database type: HDAM

Segment levels: 2

Segment types: 2

External databases: 2

Logical children: 2

Data set groups: 1

Access type: VSAM

Exceptions: 4

- Critical (2)
 - Excessive RAP synonyms
 - Excessive HDAM roots not home
- Severe (1)
- Warning (1)

Reports: 52

- September 14, 2011 (4)
- September 13, 2011 (3)
- August 31, 2011 (1)
- August 30, 2011 (23)
- August 29, 2011 (21)

Space Use: Highest Used and highest Allocated RBA

Optimization: Number of Database Records

Fragmentation: Pointers to Other Blocks or CIs

Finished retrieving child resources

Errors: 0

...from Sensors

Prepare the next generation of IMS DBAs

The screenshot displays the IBM Tools Base Administration Console for z/OS interface. The main content area is divided into several panels:

- Properties:** Shows details for database CUSTD3, including Database type (HDAM), Segment levels (2), Segment types (2), External databases (2), Logical children (2), Data set groups (1), and Access type (VSAM).
- Exceptions:** Lists 4 exceptions as of Tue Sep 13 18:00:38 PDT, including Critical (2), Severe (1), and Warning (1).
- Reports:** Lists 52 reports, including September 14, 2011 (4), September 13, 2011 (3), August 31, 2011 (1), August 30, 2011 (23), and August 29, 2011 (21).
- Space Use:** A bar chart comparing DB RBA HIGH ALLOC and DB RBA HIGH USED for CUSTD3. The Y-axis ranges from 0 to 3,000,000,000. The DB RBA HIGH ALLOC bar is significantly higher than the DB RBA HIGH USED bar.
- Fragmentation:** A chart showing Points to Other Blocks or CIs for CUSTD3.

A yellow callout box with a black border contains the text: "Integrated help educates new and experienced DBAs on database concepts and how to interpret charts". An arrow points from this box to a help icon in the Space Use chart area. Another arrow points from the top of the help icon to the right-hand side of the console, where a help window is open.

The help window is titled "Highest Used and Highest Allocated RBA chart" and contains the following text:

If the highest used relative byte address (RBA) is near or equal to the highest allocated RBA in a data set, the data set might be extended upon data growth. Accessing segments that are stored in extents requires additional I/O processing.

About highest used and highest allocated RBA

The storage space that exists between the highest used RBA and the highest allocated RBA is unformatted space. Unformatted space is space that has been allocated for IMS but that IMS is not currently using for storage. Unformatted space is not managed by IMS and does not contribute to IMS free space. The storage space that exists below the highest used RBA is formatted space. Formatted space is used by IMS for storage and can contain IMS free space.

Note: The space between the highest used and the highest allocated RBA does not represent unformatted space for a VSAM KSDS. See the Unformatted Space chart for this information.

Data elements in this chart

This chart displays the following data elements from sensor data service.

If any of these data elements cross thresholds that are defined with Tools Base Policy Services, an exception notification might be generated.

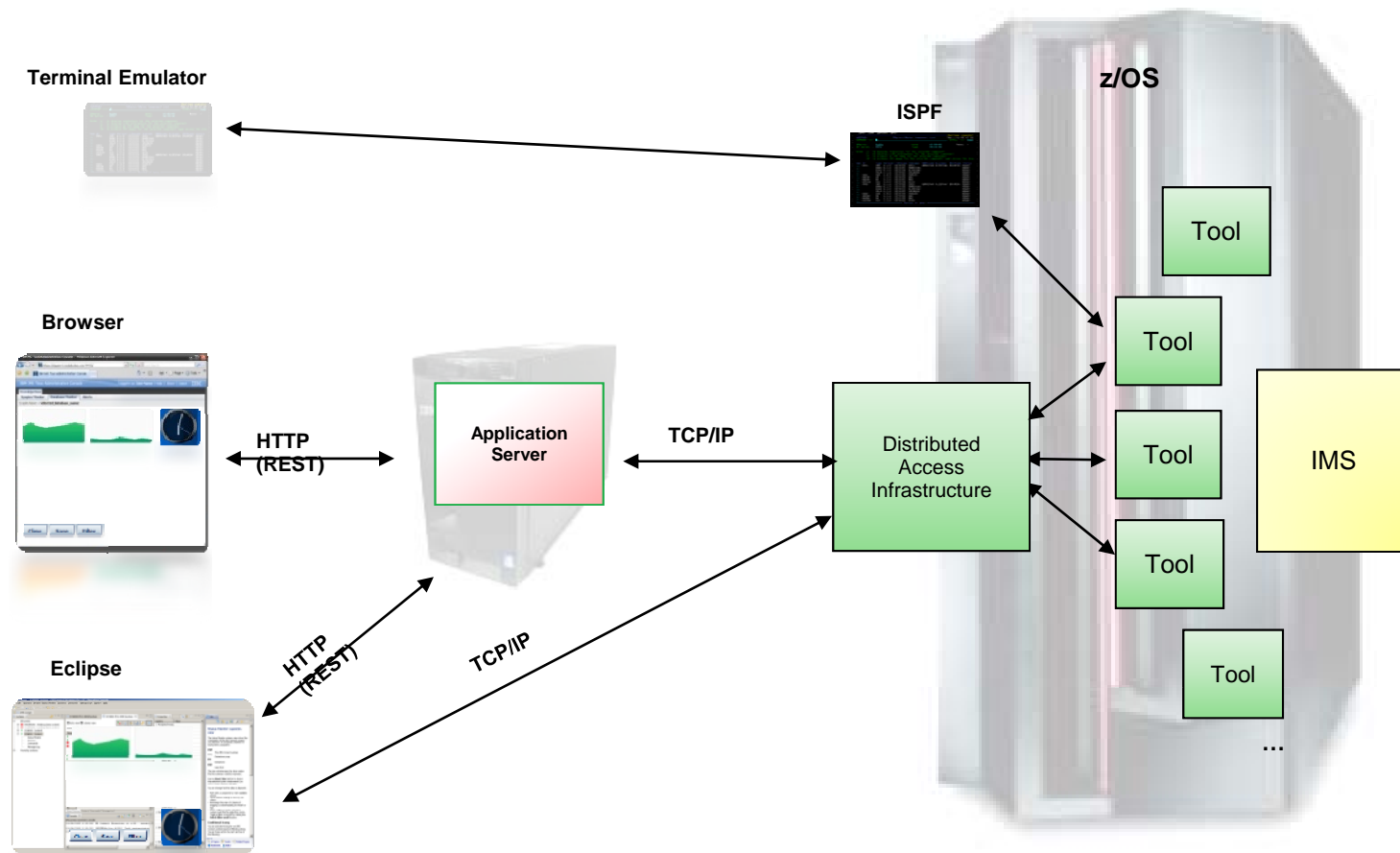
Administration Console Benefits

- Install once, access anywhere via the Internet
 - Single, server-based installation
 - Access through popular web browsers
- Safety and security features are built in
 - Uses SSL and RACF authentication
- Works “out of the box”
 - Immediately view your databases using your existing DBRC groups or Autonomics Director monitor list
- Easily customized
 - Define your own groups of databases to view
- Consolidated information at your fingertips
 - Summary pages provide total counts of warning, severe, and critical exceptions for a database group – drill down to the individual database level from there




Administration Console Installation and Configuration

- Standard SMP/E installation
- Light weight 'mid tier' application server installed using simple InstallAnywhere (.exe)



● IMS Administration Console



The screenshot displays the IBM Tools Base Administration Console for z/OS. The interface is divided into several sections:

- Resource View:** A tree view on the left showing a hierarchy of databases, including DBABC001 through DBABC009, Data Set, and Other Databases.
- Database Properties:** A panel for DBABC002 showing details such as DBD Type (HDAM), Segment levels (15), Segment types (ZSS), External DBDs (4), Logical children (5), Data set groups (10), and Access type (VSAM).
- Exceptions:** A panel showing a list of exceptions for May 27, 2011, 5:48PM, categorized into Critical (1), Severe (3), and Warning (4). Examples include C/CA splits, DBDS growth, and Variable length segment splits.
- Reports:** A panel showing a list of reports for December 15, 2011, including diagnostic reports, free space reports, and record distribution reports.
- Space Usage:** A bar chart titled "Available Data Set Extents" for CUSTPAB, comparing DB NUM AVAIL EXT 1 and DB NUM AVAIL EXT 2 against a Critical Threshold.
- Optimization:** A line chart titled "Synonym Roots" showing the number of synonym roots over time from 10:00 to 15:00.
- Fragmentation:** A bar chart titled "Variable Length Segment Splits" showing the number of splits for five different items (Item 1 to Item 5) against a threshold.

What's Next in Modernization?

- You tell us!
- Usability Sandbox session # 2074
 - IMS Administration Simplification and Modernization
 - Design walkthroughs and requirements gathering
 - Offered 14 times throughout the week



Summary



- We hear your concerns
- IMS Tools Solution Packs provide the important tools help you manage and maintain your IMS full-function and Fast Path databases
 - The latest versions of the IMS Database Solution Pack and the IMS Fast Path Solution Packs are available this December
 - These Packs deliver on a vision of Autonomics and Modernization, taking the burden of IMS maintenance off of the user once and for all
- Our solutions fit any size shop. They provide immediate benefits and position you for offerings still to come
- Let us help you get there!
 - Come to our Ask the Experts panel session (IMS-3687)



IMS Tools at IOD 2011



7 General Sessions:

- IMS-1330 IMS Tools Autonomics and Modernization– Trends and Directions – Joe Sacco, Bob Magid, Chris Holtz, IBM
Tradewinds F - Mon 10/24 – 2:15 pm – 3:15 pm
- IMS-1372 New Backup and Recovery Strategies to Save Money and Reduce Recovery Time for IMS – Ron Bisceglia and Rosemary Shay, Rocket
Tradewinds F - Tues 10/25 – 8:15 am – 9:30 am
- IMS-1378 IMS Coordinated Recovery – DB2 and IMS Recovery Tools Glenn Galler, IBM
Tradewinds F - Mon 10/24 – 3:45 pm – 5:00 pm
- IMS-1431 IMS Batch Terminal Simulator Version 4 What’s New – Yoshiko Yaegashi and Chris Holtz, IBM
Tradewinds F - Tues 10/25 – 1:45 pm – 2:45 pm
- IMS-1432 It’s Now Easier to Pinpoint the Source of Transaction Problems – Jim Martin and John Hancy, Fundi
Tradewinds F - Wed 10/26 – 2:00 pm – 3:00 pm
- IMS-1433 Improving the Manageability of IMS with IMS Configuration Manager – Jim Martin and John Hancy, Fundi
Tradewinds F - Thurs 10/27 – 10:00 am – 11:00 am
- IMS-1434 Fast Path Secondary Index Support – Janet Leblanc, IBM
Tradewinds F - Thurs 10/27 – 3:30 pm – 4:30 pm

2 Usability Sandbox Sessions:

- #2074 (A, B, D-O) IMS Administration Simplification and Modernization – Caroline Law, IBM
Mandalay Bay J (14 sessions during the week)
- #2077 [B-E] IMS Development Simplification and Modernization – Caroline Law, IBM
Mandalay Bay J (4 sessions during the week)

5 Drop in Labs (DILs):

- IMS-1375 Extending the Scope of Traditional Analysis (Transaction Analysis Workbench) – Jim Martin and John Hancy, Fundi
- IMS-1376 The Latest Advances for IMS Database Reorganization Eugene Dong and Andy Nguyen, IBM
- IMS-1377 New Backup and Recovery Strategies to Save Money and Reduce Recovery Time for IMS – Ron Bisceglia and Rosemary Shay, Rocket
- IMS-1435 Coordinated Disaster Recovery for DB2 and IMS – Glenn Galler, and Hennie Mynhardt, IBM and Rosemary Shay, Rocket
- IMS-1440 Managing IMS with IMS Configuration Manager – Jim Martin and John Hancy, Fundi

5 Ask the Experts (panel sessions):

- IMS-3685 Problem Analysis with IMS Tools (Jim Martin and John Hancy, Fundi)
Reef D - Tues 10/25 – 11:15 am – 12:15 pm
- IMS-3686 Coordinated IMS and DB2 Disaster Recovery (Glenn Galler, Hennie Mynhardt, IBM and Ron Bisceglia, Rocket)
Reef B - Tues 10/25 – 10:00 am – 11:00 am
- IMS-3687 Modernizing and Automating IMS Tools (Joe Sacco, Bob Magid, Chris Holtz, and Janet Leblanc)
Reef D - Tues 10/25 – 3:00 pm – 4:00 pm
- IMS-3688 Testing IMS Applications Prior to Production (Yoshiko Yaegashi, Janet Leblanc, and Chris Holtz)
Reef D - Mon 10/24 – 10:15 am – 11:15 am
- IMS-3689 IMS Database Recovery with IMS Recovery Expert (Ron Bisceglia and Rosemary Shay, Rocket Software)
Reef B - Thurs 10/27 – 11:30 am – 12:30 pm

An exclusive Invitation for System z Attendees



ROCK THE MAINFRAME

at the




Music Hall

Wednesday, October 26th 7:00 pm - 10:00 pm

Enjoy a night of southern hospitality with cocktails and cajun hors d'oeuvres.

Keep the party rockin' by taking a turn on the Rock Band video game.

Join your colleagues, conference speakers and key members from your IBM System z team and  **GT Software**

The House of Blues Music Hall is next door to the restaurant on the casino level across from the Mandalay Bay Hotel.

Wear your
IOD badge
and Z pin
to get in





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Questions and Discussion

- Thank you for your time
- Feel free to contact us
 - Chris Holtz holtz@us.ibm.com
 - Bob Magid magid@us.ibm.com
 - Joe Sacco jsacco@us.ibm.com
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