



IBM Tivoli System Automation for z/OS

# System Automation for z/OS goes on Tivoli Enterprise Portal

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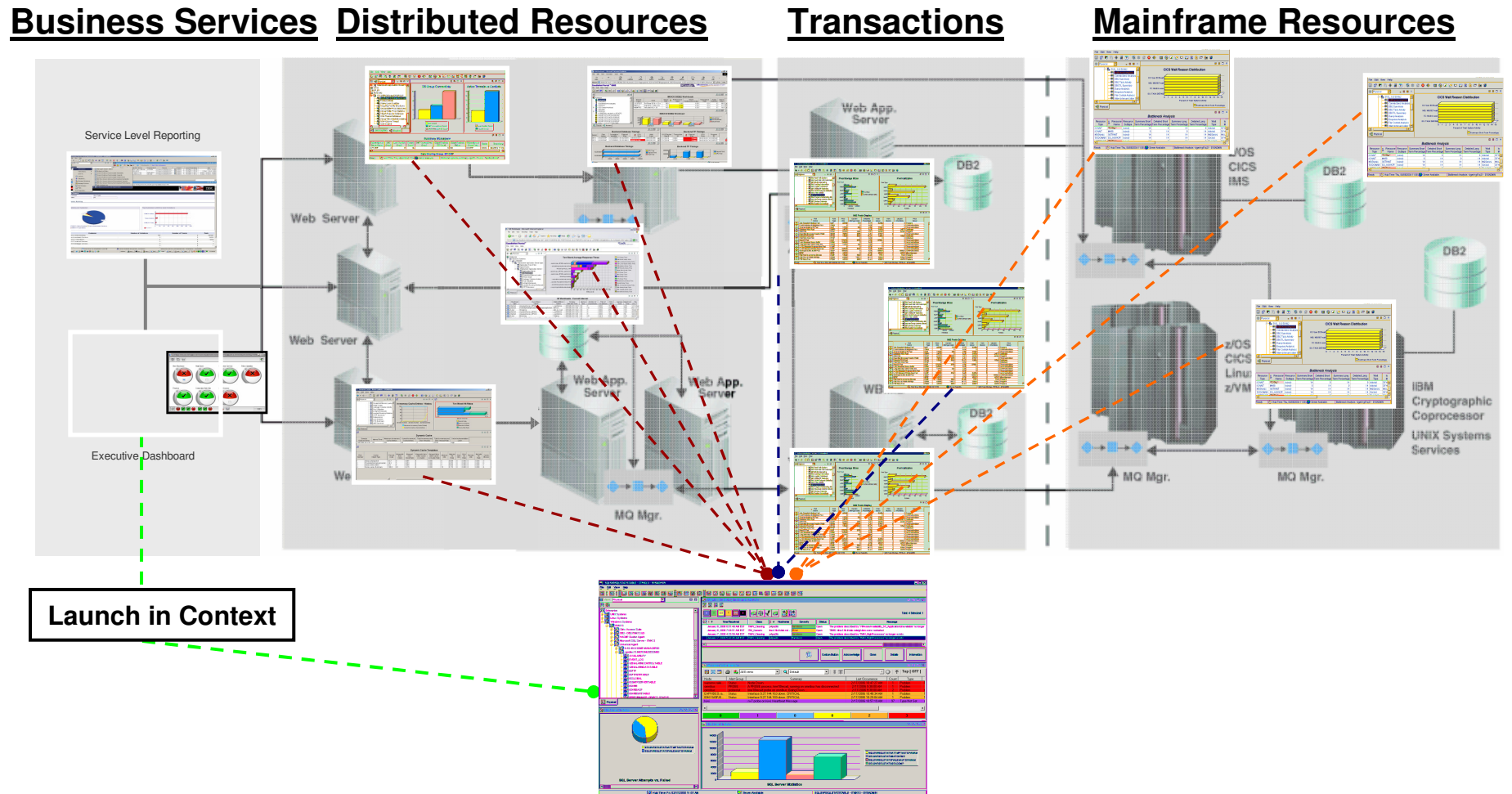
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# Agenda

- Introduction
- TEP Workspaces
- Situations
- Status Items
- Component Overview and Configuration

# A Complete View on IT Infrastructure Performance

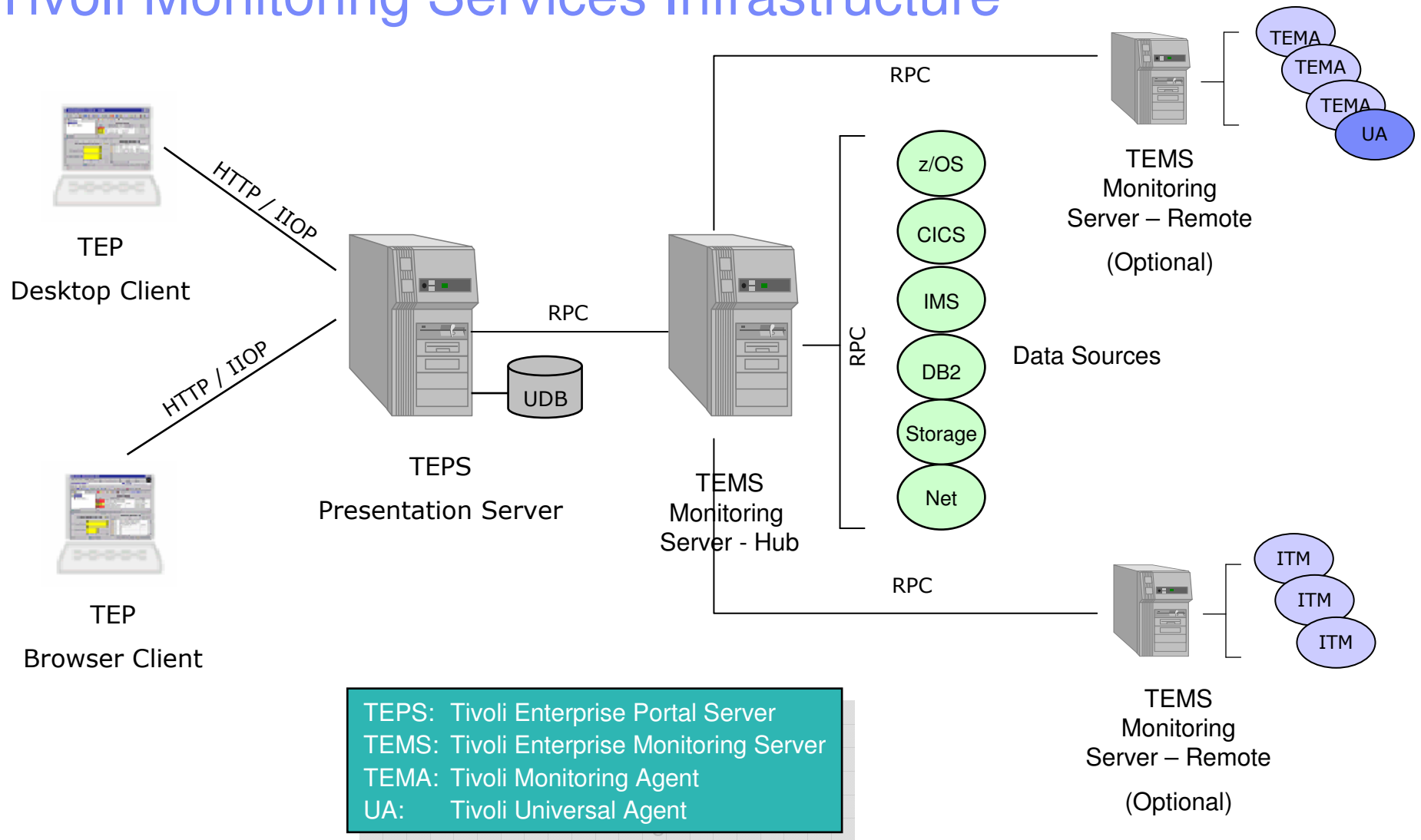
*A single portal to monitor the overall health of the infrastructure*



## Objective

- An integrated monitoring environment that spans an IT-organization from End-to-End is an important building block in the IBM service management strategy
- The Tivoli Enterprise Portal (TEP) fulfills the needs for a user interface that provides these integration capabilities including today
  - IBM Tivoli Monitoring V5
  - IBM Tivoli Monitoring V6
  - OMEGAMON
  - IBM Tivoli Composite Application Management
- To take the integration to the next level and adding operational tasks to the TEP, automation views must be integrated as well
- System Automation for z/OS will add an initial set of views providing details about the state of automation on a system, in the sysplex, and within the enterprise
- Support is shipped as extension to SA z/OS V3.1 in OA18415

# Tivoli Monitoring Services Infrastructure



## SA z/OS Extensions to ITMS Infrastructure

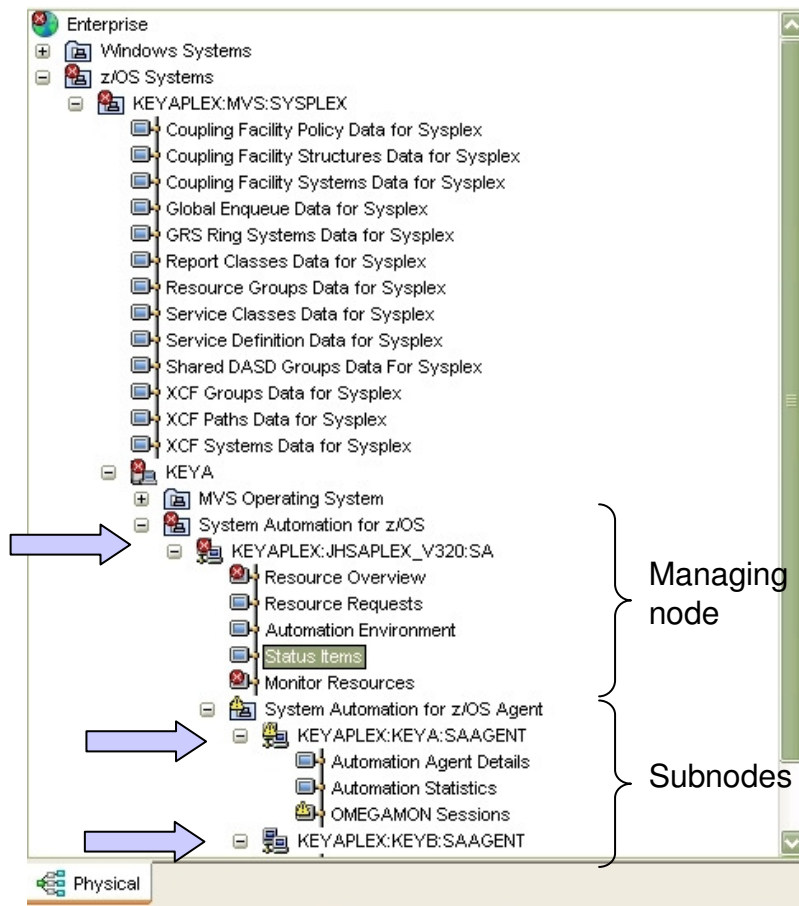
- With OA18415, SA z/OS introduces the following extensions to the ITMS infrastructure
  - A new monitoring agent (TEMA) collecting data for queries and situations
  - Application support for the TEP desktop / browser client
- SA z/OS Agent
  - The TEMA registers the System Automation for z/OS application
  - It registers one or more System Automation for z/OS Agent sub-nodes, one for each system with SA/NetView running
  - It provides sample routines invoked by the ITMS infrastructure on behalf of queries or situations
  - The monitoring agent interfaces with NetView via the Program-to-Program Interface (PPI)
- SA z/OS application support consisting of
  - A set of default queries
  - A set of default workspaces containing one or more views based on the default queries
  - Links associated with workspaces to allow the user to navigate between different levels of detail
  - Situations that allow the user to monitor the health of the automated environment

# Agenda

- Introduction
- ▶ **TEP Workspaces**
- Situations
- Status Items
- Component Overview and Configuration

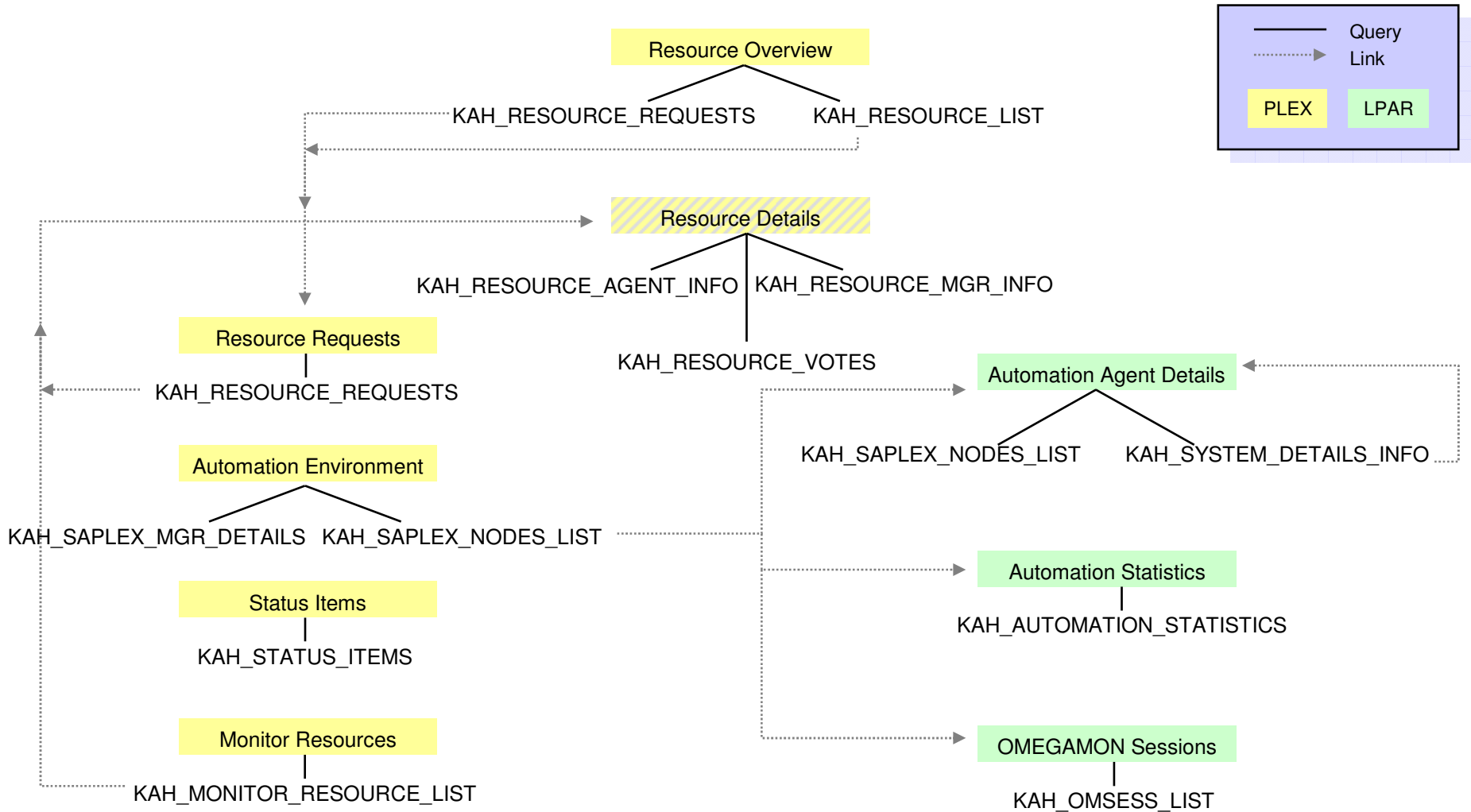


## System Automation in the TEP Navigator



- SA z/OS appears in the z/OS Systems subtree
- The TEMA registers at the TEMS using the sysplex name, the SA sysplex group name and the constant “SA”, e.g.
  - KEYAPLEX:JHSAPLEX\_V310:SA
- The node is shown on the system the TEMA is running on, here system KEYA
- Each system detected in the automation environment by the TEMA causes an additional subnode to be registered at the TEMS using the sysplex name, the SMF ID, and the constant “SAAGENT”, e.g.
  - KEYAPLEX:KEYA:SAAGENT
  - KEYAPLEX:KEYB:SAAGENT
- The existence of subnodes depends on the status of the automation agent

# Workspaces and Queries



# Resource Overview

**Any Requests from Operators?**

**All Resources in Desired State?**

**Resource List**

| Resource Name | Resource Type | System | Compound Status | Observed Status | Desired Status | Health Status | Automation Status | Automation Flag | Hold Flag | Description                         |
|---------------|---------------|--------|-----------------|-----------------|----------------|---------------|-------------------|-----------------|-----------|-------------------------------------|
| MYRANDOM      | MTR           | KEYB   | Degraded        | Available       | Available      | Warning       | Idle              | Yes             | No        | random monitor                      |
| MYRANDOM      | MTR           | KEYA   | Problem         | HardDown        | Available      | NA            | Idle              | Yes             | No        | random monitor                      |
| KEYA          | SYS           | KEYA   | Satisfactory    | Available       | Available      | NA            | Idle              | Yes             | No        | Primary system in JHSAPLEX          |
| KEYB          | SYS           | KEYB   | Satisfactory    | Available       | Available      | NA            | Idle              | Yes             | No        | Secondary system in JHSAPLEX        |
| ABANKAPL      | APL           | KEYA   | Satisfactory    | SoftDown        | Unavailable    | NA            | Idle              | Yes             | No        | Banking Application (Single System) |
| AM1           | APL           | KEYA   | Satisfactory    | Available       | Available      | NA            | Idle              | Yes             | No        | Automation Manager                  |
| AM2           | APL           | KEYB   | Problem         | HardDown        | Unavailable    | NA            | Idle              | Yes             | No        | Automation Manager                  |
| AM2           | APL           | KEYA   | Problem         | HardDown        | Unavailable    | NA            | Idle              | Yes             | No        | Automation Manager                  |
| APPC          | APL           | KEYA   | Satisfactory    | Available       | Available      | NA            | Idle              | Yes             | No        |                                     |
| APPC          | APL           | KEYB   | Satisfactory    | Available       | Available      | NA            | Idle              | Yes             | No        |                                     |
| ASCH          | APL           | KEYA   | Satisfactory    | Available       | Available      | NA            | Idle              | Yes             | No        |                                     |
| ASCH          | APL           | KEYB   | Satisfactory    | Available       | Available      | NA            | Idle              | Yes             | No        |                                     |
| BLSJPRMI      | APL           | KEYA   | Satisfactory    | Available       | Available      | NA            | Idle              | Yes             | No        |                                     |

**Legend for Compound Status:**  
 CS Problem (Red)  
 CS Degraded (Yellow)  
 CS Denied (Orange)  
 CS Inhibited (Light Blue)  
 CS Awaiting (Light Green)  
 CS Inauto (Dark Green)  
 CS Satisfactory (Dark Green)

**Legend for Requests:**  
 Winning (Yellow)  
 Losing (Blue)  
 Pending (Green)

**Callout:** List of all resources in your automation environment incl. status

# Resource Details

The screenshot displays the Tivoli Enterprise Portal interface. On the left, a tree view shows the hierarchy: XCF Groups Data for Sysplex, XCF Paths Data for Sysplex, XCF Systems Data for Sysplex, KEYA, MVS Operating System, KEYAPLEX:KEYA:MVSSYS, System Automation for z/OS, KEYAPLEX:JHSAPLEX:SA, Resource Overview, Resource Requests, Automation Environment, Status Items, and Monitor Resources. The main window is titled 'Resource Votes for ABANKAPL/APL/KEYA' and contains a table with the following data:

| Action | Win       | Type    | From Action        | From Resource      | Creation Times    | Usage |           |
|--------|-----------|---------|--------------------|--------------------|-------------------|-------|-----------|
| STOP   | Yes       | Vote    | MakeUnAvailable    | ABANKCOMP/APG/KEYA | 04/04/07 13:44:58 | 1     | GROUP ABA |
| STOP   | N/A       | Request | MakeUnAvailable    | ABANKAPL/APL/KEYA  | 04/04/07 13:46:33 | 1     | OPER_JMH  |
| START  | Propagate | Vote    | MakeAvailable Only | DAYSHIFT/SVP       | 04/04/07 07:00:00 | 1     | SCHEDULE  |

Below the table, two panels provide further details:

- Manager Information about ABANKAPL/APL/KEYA:**
  - Resource : ABANKAPL/APL/KEYA
  - Description : A Banking Application (Single System)
  - Owner : http://w3.ibm.com/w3odw/spg/marketreportfull.html
  - Status...
    - > Observed Status : SOFTDOWN
    - > Desired Status : UNAVAILABLE
    - > Automation Status : IDLE
    - > Startable Status : YES
    - > Compound Status : SATISFACTORY
    - > Health Status : N/A
  - Dependencies...
    - > PreStart : Satisfied
- Agent Information about ABANKAPL/APL/KEYA:**
  - Subsystem : ABANKAPL on System : KEYA
  - Description : A Banking Application (Single System)
  - Owner : http://w3.ibm.com/w3odw/spg/marketreportfull.html
  - Class : ABANK\_CLASS
  - Job Name : ABANK01
  - Procedure : AAAZSSEM
  - Job Type : MVS
  - Current status : AUTODOWN

Three callout boxes highlight specific areas: 'Details from the automation manager perspective' points to the Manager Information panel; 'Details from the automation agent perspective' points to the Agent Information panel; and 'All votes affecting this resource' points to the Resource Votes table.

# Resource Requests

**Request Summary**

Overall request status

| Resource Name          | Resource Type | System | Action             | Creation Time     | Priority | Priority Class | Source          | User | Status | Timeout Option | Overrides | Comment | Appl Params |
|------------------------|---------------|--------|--------------------|-------------------|----------|----------------|-----------------|------|--------|----------------|-----------|---------|-------------|
| ABANKAPL               | APL           | KEYA   | MakeUnAvailable    | 04/04/07 13:46:33 | 01720000 | Low            | OPER_JMH(JMH)   | JMH  | P      | N/A            | NO        |         |             |
| ABANKCOMP              | APG           | KEYA   | MakeUnAvailable    | 03/15/07 12:16:27 | 01720000 | Low            | OPER_JMH(JMH)   | JMH  | WWS    | N/A            | NO        |         |             |
| Link to Resource Votes | VP            |        | MakeAvailable Only | 04/04/07 07:00:00 | 01140000 | Low            | SCHEDULE        |      | W      | N/A            |           |         |             |
|                        | TR            | KEYA   | MakeAvailable Only | 04/04/07 13:00:57 | 01740000 | Low            | OPER_SIHE(SIHE) | SIHE | WU     | N/A            | NO        |         |             |

List of all requests and their sources in your automation environment



# Monitor Resources

Is your system "well"?

| Monitor Name                     | System Name | Status | Health   | Last Monitored    | Status Message                   |
|----------------------------------|-------------|--------|----------|-------------------|----------------------------------|
| JES2MON                          | KEYA        | Active | Unknown  | 03/29/07 08:23:07 | Monitor started                  |
| MARANDOM                         | KEYA        | Active | Critical | 04/04/07 14:01:01 |                                  |
| MBRANDOM                         | KEYA        | Active | Normal   | 04/04/07 14:01:18 |                                  |
| Link to Monitor Resource Details |             | Broken | Unknown  | 04/04/07 12:33:12 | Could not invoke monitor command |
|                                  |             | Broken | Unknown  | 03/29/07 08:23:07 | Could not invoke monitor command |
| JESZMON                          | KEYB        | Active | Unknown  | 04/04/07 13:29:24 | Monitor started                  |
| MARANDOM                         | KEYB        | Active | Warning  | 04/04/07 14:01:31 | NONE                             |
| MBRANDOM                         | KEYB        | Active | Normal   | 04/04/07 14:01:28 | NONE                             |
| MYBROKEN                         | KEYB        | Broken | Unknown  | 04/04/07 13:29:23 | Could not invoke monitor command |
| MYRANDOM                         | KEYB        | Active | Normal   | 04/04/07 13:59:26 | NONE                             |

List of all Monitor Resources (MTR) and their status

# Automation Environment

The screenshot displays the Tivoli Enterprise Portal interface. The left pane shows a tree view of system components, including 'KEYA', 'MVS Operating System', and 'System Automation for z/OS'. The main pane is divided into two sections:

**Automation Manager Details**

```

Automation Manager : KEYA$$$$2      running on system : KEYA
Operation mode    : PAM              Job name         : AML
Status           : READY             Start type      : HOT
XCF-Groupname    : INGXSJH
Start time       : 29 MAR 2007 08:21:21
PAM selected time : 29 MAR 2007 08:21:24
Config refresh time : 04 APR 2007 13:10:39

Takeover file    : BHOL.JHSAPLEX.HSATKOV
Status           : ENABLED

Logic Deck ...
Release         : V3R1M0
Date built      : 16 Jan 2007
Time built      : 17:19:53
Last APAR       : 0A19532
    
```

**Automation Environment Members**

| System Name | Member Name   | Role  | Status | Sysplex Name | XCF Group Name | Product Release | Comm Method | E2E Focal Point | SID  |
|-------------|---------------|-------|--------|--------------|----------------|-----------------|-------------|-----------------|------|
| KEYA        | KEYA          | Agent | Ready  | KEYAPLEX     | INGXSJH        | V3R1M0          | XCF         | No              | KEYA |
| KEYA        | KEYA\$\$\$\$2 | Pam   | Ready  | KEYAPLEX     | INGXSJH        | V3R1M0          | XCF         | No              |      |
| KEYB        | KEYB          | Agent | Ready  | KEYAPLEX     | INGXSJH        | V3R2M0          | XCF         | No              | KEYB |

At the bottom of the interface, the status bar shows: Hub Time: MI, 04/04/2007 02:01 PM, Server Available, and Automation Environment - localhost - JMH.

# Automation Agent Details

The screenshot displays the Tivoli Enterprise Portal interface. On the left, a tree view shows the navigation structure, with 'Automation Agent Details' selected under 'System Automation for z/OS Agent'. The main area is divided into two panes. The top pane, titled 'Automation Agents', contains a table listing agents. The bottom pane, titled 'Automation Agent Details', shows the configuration for the selected agent (KEYA).

| System Name | Member Name | Role  | Status | Sysplex Name | XCF Group Name | Product Release | Comm Method | E2E Focal Point | SID  |
|-------------|-------------|-------|--------|--------------|----------------|-----------------|-------------|-----------------|------|
| KEYA        | KEYA        | Agent | Ready  | KEYAPLEX     | INGXSGJH       | V3R1M0          | XCF         | No              | KEYA |
| KEYB        | KEYB        | Agent | Ready  | KEYAPLEX     | INGXSGJH       | V3R2M0          | XCF         | No              | KEYB |

**Automation Agent Details (KEYA):**

```

Text
System      : KEYA      in Sysplex : KEYAPLEX
Domain     : IPXNG
Sysplex Group : JHSAPLEX
XCF Group name : INGXSGJH

Software
> Operating System : z/OS 01.07.01
> NetView         : Tivoli NetView for z/OS V5R2
> Tower(s)       : SA
> System Automation : V3R1M0
> Tower(s)       : SYSOPS

Configuration
> Data set      : SIHE.JHSAPLEX.V310.ACF(ACFZ999)
> Built by     : SIHE 04/04/07 13:09:44
> Activated    : 04/04/07 13:10:44
    
```

Other automation agents

Agent details such as NetView level, automation configuration (ACF) loaded, captured messages and many more...



# OMEGAMON Sessions

How effective are your OMEGAMON sessions?

Which OMEGAMON sessions are used and what's their status?

| Session Name | Session Type | Session Status | Application ID | Fixed LU Name | Source LU Name | Session Data | User ID | Managed Password | Authentication Group | Session Operator | Timeout | Request Count | Command Count | Trap Count | Ex |
|--------------|--------------|----------------|----------------|---------------|----------------|--------------|---------|------------------|----------------------|------------------|---------|---------------|---------------|------------|----|
| OMMVSA       | MVS          | Active         | IPXGM2RC       |               | TFNG#0...      |              | BHOL    | Yes              |                      | AOFSES01         | 29      | 86            | 13            | 73         |    |
| OMMVSA4      | MVS          | Maintenance    | IPSPM2RC       |               |                |              |         | No               |                      | AOFSES02         | 29      | 61            | 28            | 33         |    |

# Automation Statistics

The screenshot displays the Tivoli Enterprise Portal interface. On the left is a tree view showing the hierarchy of resources, including 'System Automation for z/OS Agent' and 'Automation Agent Details'. The main area contains three charts and two tables.

**Autom. Agent Activity** (Bar Chart): Shows counts for Command Count (yellow), Messages Count (blue), Shutdown Command Count (red), and Startup Command Count (green). The Startup Command Count is the highest, around 14.

**Autom. Manager Activity** (Bar Chart): Shows Workitems Per Hour (yellow) and Orders Per Hour (blue). Workitems Per Hour is approximately 126.

**Messages and Commands** (Bar Chart): Shows Messages Per Hour (yellow) and Commands Per Hour (blue). Messages Per Hour is approximately 0.20.

**Automation Statistics Table:**

| Statistics Begin  | Statistics End    | Statistics Interval | CPU Time | Resource Count | Managed Resource Count | Monitor Count | Workitem Count | Timeout Count | Order Count | System Count | SAPlex Resource Count | SAPlex Application Count | SAPlex Application Group Count | SAPlex Monitor Resource Count |
|-------------------|-------------------|---------------------|----------|----------------|------------------------|---------------|----------------|---------------|-------------|--------------|-----------------------|--------------------------|--------------------------------|-------------------------------|
| 03/29/07 08:22:51 | 04/04/07 14:03:11 | 149:41              | 5591,70  | 26             | 14                     | 5             | 18874          | 0             | 200         | 2            | 94                    | 51                       | 16                             | 10                            |

**KEYAPLEX:KEYA:SAGENT**

**More Statistics Table:**

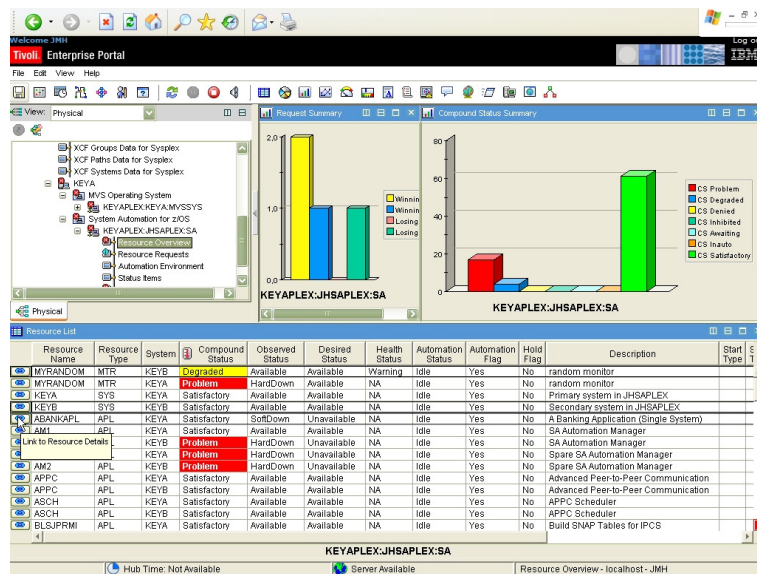
| Messages Count | Command Count | Startup Command Count | Shutdown Command Count | Messages Per Hour | Commands Per Hour | Workitems Per Hour | Orders Per Hour | Average Waittime | Maximum Waittime |
|----------------|---------------|-----------------------|------------------------|-------------------|-------------------|--------------------|-----------------|------------------|------------------|
| 0              | 0             | 15                    | 2                      | 0,00              | 0,00              | 126,10             | 1,30            | 0,20             | 3,20             |

Callouts from yellow boxes point to the charts and the 'More Statistics' table, with the following text:

- "Absolute Automation Agent Activity" points to the Autom. Agent Activity chart.
- "How much work does your Automation Manager get?" points to the Autom. Manager Activity chart.
- "How much work does your Automation Agent get?" points to the Messages and Commands chart.
- "Detailed automation statistics" points to the More Statistics table.

# Future Additional Workspaces

## From ESP-Feedback and Additional Ideas

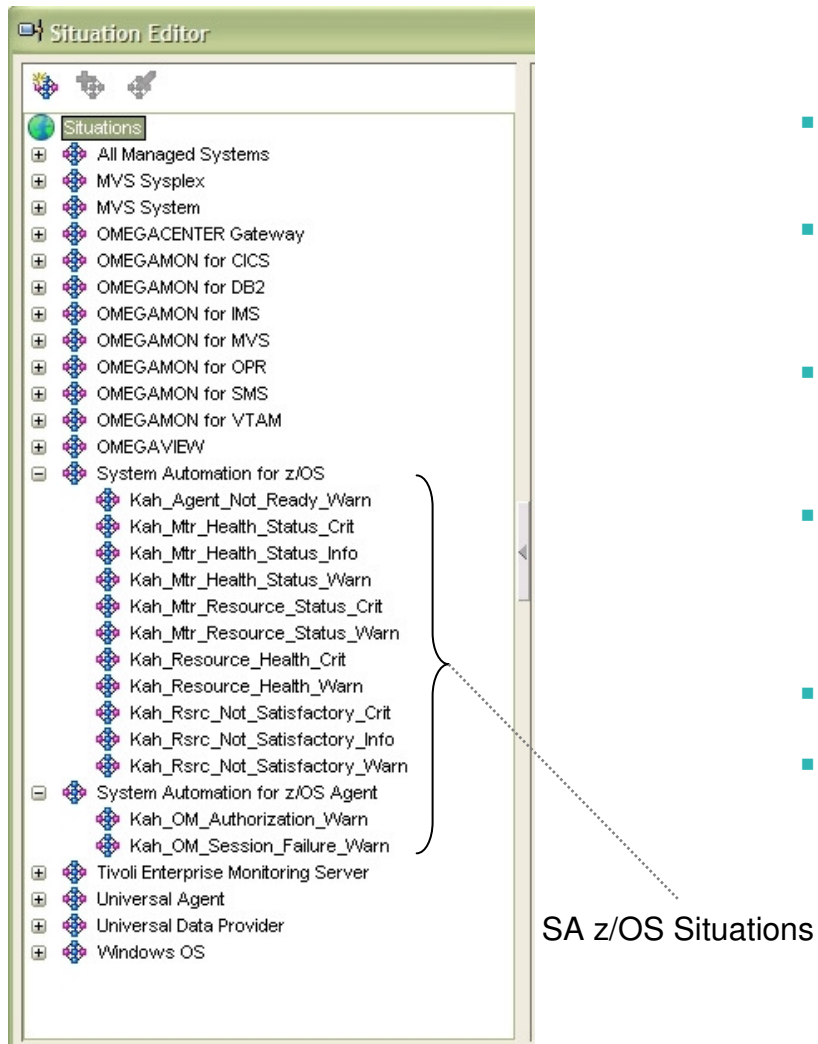


- Automation Flags
- Critical messages
- Historical analysis
- Job details
- Gateway status information
- Outstanding replies
- IPL data
- Processor Operations: Partitions, options and status
- I/O Operations: Connections
- Combined workspaces with other monitoring products

# Agenda

- Introduction
- TEP Workspaces
- ▶ **Situations**
- Status Items
- Component Overview and Configuration

## Situations Provided by SA z/OS



- The initial set of situations provided by the product is listed on the left-hand side
- All situations start with the prefix “Kah\_” which is the new product prefix assigned to the monitoring agent
- Most situations are based on data associated with the managing node called System Automation for z/OS
- Only OMEGAMON session-related situations are associated with the System Automation for z/OS Agent subnode
- The situations are active by default
- The user can use or modify the product provided situations but can also add new situations if required

# Situation Example

Color of most severe situation in this node or the underlying subtree

| Severity      | Situation Name             | Node                      | Date/Time         |
|---------------|----------------------------|---------------------------|-------------------|
| CRITICAL      | Kah_Mtr_Health_Status_Crit | KEYAPLEX:JHSAPLEX_V320:SA | 12/08/06 13:51:18 |
| WARNING       | Kah_Mtr_Health_Status_Warn | KEYAPLEX:JHSAPLEX_V320:SA | 12/08/06 13:51:18 |
| WARNING       | Kah_Mtr_Health_Status_Warn | KEYAPLEX:JHSAPLEX_V320:SA | 12/08/06 13:51:18 |
| WARNING       | Kah_Mtr_Health_Status_Warn | KEYAPLEX:JHSAPLEX_V320:SA | 12/08/06 13:51:18 |
| WARNING       | Kah_Mtr_Health_Status_Warn | KEYAPLEX:JHSAPLEX_V320:SA | 12/08/06 13:51:18 |
| WARNING       | Kah_Mtr_Health_Status_Warn | KEYAPLEX:JHSAPLEX_V320:SA | 12/08/06 13:51:18 |
| INFORMATIONAL | Kah_Mtr_Health_Status_Info | KEYAPLEX:JHSAPLEX_V320:SA | 12/08/06 13:51:18 |
| INFORMATIONAL | Kah_Mtr_Health_Status_Info | KEYAPLEX:JHSAPLEX_V320:SA | 12/08/06 13:51:18 |
| INFORMATIONAL | Kah_Mtr_Health_Status_Info | KEYAPLEX:JHSAPLEX_V320:SA | 12/08/06 13:51:18 |
| INFORMATIONAL | Kah_Mtr_Health_Status_Info | KEYAPLEX:JHSAPLEX_V320:SA | 12/08/06 13:51:18 |
| INFORMATIONAL | Kah_Mtr_Health_Status_Info | KEYAPLEX:JHSAPLEX_V320:SA | 12/08/06 13:51:18 |
| INFORMATIONAL | Kah_Mtr_Health_Status_Info | KEYAPLEX:JHSAPLEX_V320:SA | 12/07/06 08:51:18 |

Situation name, node, and date/time

Display item setup with the situation

- When a situation is true, the icon of the workspace it is associated with changes to the color corresponding to the situation's severity
  - Critical situations are shown in red
  - Warning situations are shown in yellow
  - Informational situations are shown in turquoise
- When the mouse hovers above such an icon, a popup panel like shown on the left side appears
- On the panel, the individual situation is listed
- A link is provided that guides you to detailed information



# Agenda

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- ▶ **Status Items**
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## Status Items

- Status items are generic resources not otherwise tied to resources in the automation configuration
- They are created, updated, and deleted by installation defined routines
- Each status item consists basically of a
  - Identifier, optionally divided in a group part and name part
  - Description
  - Transient text describing the current status
  - Value representing the current status
- Status items can be persistent, i.e. their status survives in the automation manager's takeover file until a cold start is made, however, the default lifetime is that of a NetView session
- Status items are anchored at a particular system in the SA sysplex



# Installation-Defined Status Items

The screenshot displays the Tivoli Enterprise Portal interface. On the left is a tree view of system components. The main window is divided into two panes. The top pane, titled 'Status Items', contains a table with the following data:

| System | Group     | Name   | Value | Description            | Transient Text | Change Time       | Persistence |
|--------|-----------|--------|-------|------------------------|----------------|-------------------|-------------|
| KEYA   | JES2Inits | ClassA | 27    | Initiators in jobclass | Jobclass A     | 04/04/07 10:45:09 | No          |
| KEYA   | JES2Inits | ClassB | 13    | Initiators in jobclass | Jobclass       |                   |             |
| KEYA   | JES2Inits | ClassC | 12    | Initiators in jobclass | Jobclass       |                   |             |
| KEYA   | JES2Inits | ClassD | 11    | Initiators in jobclass | Jobclass       |                   |             |
| KEYA   | JES2Inits | ClassE | 10    | Initiators in jobclass | Jobclass E     | 04/04/07 10:45:11 | No          |
| KEYA   | JES2Inits | ClassF | 9     | Initiators in jobclass | Jobclass F     | 04/04/07 10:45:11 | No          |
| KEYA   | JES2Inits | ClassG | 8     | Initiators in jobclass | Jobclass G     | 04/04/07 10:45:11 | No          |
| KEYA   | JES2Inits | ClassH | 1     | Initiators in jobclass | Jobclass H     | 04/04/07 10:45:12 | No          |
| KEYA   | JES2Inits | ClassI | 0     | Initiators in jobclass | Jobclass I     | 04/04/07 10:45:12 | No          |
| KEYA   | JES2Inits | ClassJ | 0     | Initiators in jobclass | Jobclass J     | 04/04/07 10:45:13 | No          |

The bottom pane, titled 'Initiator Distribution by Jobclass', shows a horizontal bar chart with the following data:

| Class  | Value |
|--------|-------|
| ClassY | 1     |
| ClassW | 6     |
| ClassU | 1     |
| ClassS | 1     |
| ClassQ | 6     |
| ClassD | 6     |
| ClassM | 1     |
| ClassK | 1     |
| ClassI | 1     |
| ClassG | 8     |
| ClassE | 10    |
| ClassC | 12    |
| ClassA | 27    |

Annotations in the image include:

- A yellow callout box pointing to the table: "List of installation-defined status items with value and descriptive text".
- A yellow callout box pointing to the 'Transient Text' column: "Status item text that can be set by the user to store transient text information."
- A yellow callout box pointing to the bar chart: "Your own summary!".

# Example: JES3 Workspace

The screenshot displays the JES3 Workspace interface with the following components:

- Tree View (Left):** A hierarchical tree structure showing system components like PLEX ALL, PLEX A, PLEX B, PLEX D, Automation, Active Jobs, Online, Storage/DASD, Sysplex, USS, z/OS, and JES3.
- JES3 Spool:**

| Origin Node | Current State | Transient Text |
|-------------|---------------|----------------|
| S11STM      | OK            | 34%            |
- JES3 Main Queue:**

| Origin Node | Current State | Description             |
|-------------|---------------|-------------------------|
| S11RSM      | OK            | ANZJOBS IN MAINQUEUE: 0 |
- JES3 Verify Queue:**

| Origin Node | Current State | Description                  | Transient Text |
|-------------|---------------|------------------------------|----------------|
| S11RSM      | OK            | 10:56:03 JOBS VERIFYQUEUE: 0 | 0              |
- JES3 Allocation Queue:**

| Origin Node | Current State | Description                 | Transient Text |
|-------------|---------------|-----------------------------|----------------|
| S11RSM      | OK            | 10:56:02 JOBS ALLOCQUEUE: 0 | 0              |
- JES3 S11 Jobs in Allocation Queue:**

| Origin Node | Current State | Description                 |
|-------------|---------------|-----------------------------|
| S11RSM      | OK            | 10:56:02 JOBS ALLOCQUEUE: 0 |
- Active Jobs in the System:**

| Session Name | Current State | Description          | Transient Text |
|--------------|---------------|----------------------|----------------|
| S11          | OK            | Active Jobs 10:57:36 | 5              |
| S12          | OK            | Active Jobs 10:57:36 | 8              |
| S13          | OK            | Active Jobs 10:57:36 | 7              |
| S14          | OK            | Active Jobs 10:57:36 | 12             |
- JES3 DSP Status:**

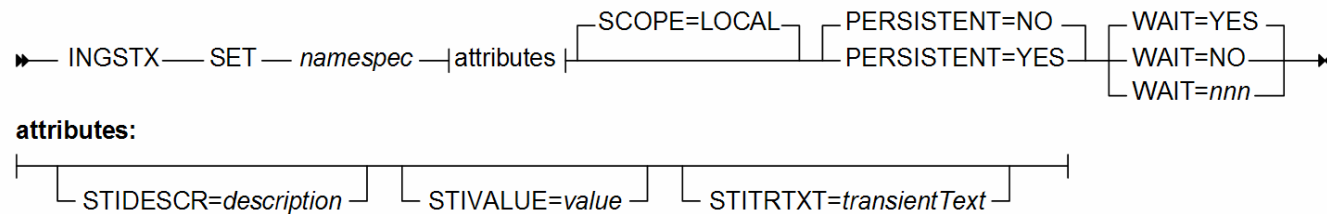
| Origin Node | Current State | Description                  |
|-------------|---------------|------------------------------|
| S11STM      | OK            | DSP CI ACTIVE=00000000       |
| S11STM      | OK            | DSP DEADLINE ACTIVE=00000001 |
| S11STM      | OK            | DSP NJE ACTIVE=00000012      |
| S11STM      | OK            | DSP OUTSERV ACTIVE=00009581  |
- JES3 DS (Data Set) Status:**

| Origin Node | Current State | Description         |
|-------------|---------------|---------------------|
| S11RSM      | OK            | NJE LINE01 ACTIVE   |
| S11RSM      | OK            | NJE LINE012 ACTIVE  |
| S11RSM      | OK            | NJE LINER41 ACTIVE  |
| S11RSM      | OK            | NJE LINER412 ACTIVE |
| S11RSM      | OK            | NJE LINEGT ACTIVE   |
| S11RSM      | OK            | NJE LINEGA ACTIVE   |
| S11RSM      | OK            | NJE LINE26 ACTIVE   |
| S11RSM      | OK            | NJE LINE262 ACTIVE  |
| S11RSM      | OK            | NJE LINE41 ACTIVE   |
| S11RSM      | OK            | NJE LINE412 ACTIVE  |
| S11RSM      | OK            | NJE LINE61 ACTIVE   |
| S11RSM      | OK            | NJE LINE612 ACTIVE  |
- JES3 Events on Plex A:** A table with columns: Status, Situation Name, Display Item, Source, Impact, Opened, Age, Local Timestamp, Type.

Based on generic installation-defined status items  
Powered by SA z/OS

## Creating and Updating Status Items ...

- Status items are created by means of the INGSTX SET command
- The syntax is



- Note that INGSTX is case sensitive
  - Entered without the NetView command NETVASIS, the identifier and all attributes are translated to uppercase
  - When using the NetView command NETVASIS, the identifier is used as-is and the case of attributes is preserved when you enclose them in single or double quotes or in parenthesis
- When the status item does not yet exist, it is created
  - Only at creation time, the persistence of the status item can be set
- When the status item does already exist, it is updated
  - Attributes specified override existing attributes

## Creating Status Items *(cont.)*

- The status item belongs to the system where INGSTX is invoked
- The following example creates a non-persistent status item My.StatusItem with an initial value of 20:

Case is preserved!

"My" is the group, "StatusItem" is the name

```
NETVASIS INGSTX SET My.StatusItem STIVALUE=20  
STIDESCR="Description" STITRTXT="Initial value"
```

- Here is an example that updates the status item AnotherStatusItem to set a new value:

```
INGSTX SET AnotherStatusItem STIVALUE=10 STITRTXT="New Value"
```

The status item is really called "ANOTHERSTATUSITEM"

The transient text will be "NEW VALUE"

## Querying Status Items

- Status items are queried by means of the INGSTX QUERY command
- The syntax is

►— INGSTX— QUERY — *namespec* —  $\left\{ \begin{array}{l} \text{SCOPE=LOCAL} \\ \text{SCOPE=SYSPLEX} \end{array} \right.$  —  $\left\{ \begin{array}{l} \text{WAIT=YES} \\ \text{WAIT=nnn} \end{array} \right.$  —►

- Status items are queried SA sysplex wide
  - To query just the local status items, use SCOPE=LOCAL
- The following example queries all status items that begin with “My”:

```
NETVASIS INGSTX QUERY My*
```

## Deleting Status Items

- Status items are deleted by means of the INGSTX DELETE command
- The syntax is

►— INGSTX — DELETE — *namespec* —  $\left\{ \begin{array}{l} \text{SCOPE=LOCAL} \\ \text{SCOPE=SYSPLEX} \end{array} \right.$  —  $\left\{ \begin{array}{l} \text{WAIT=YES} \\ \text{WAIT=NO} \\ \text{WAIT=nnn} \end{array} \right.$  — ►

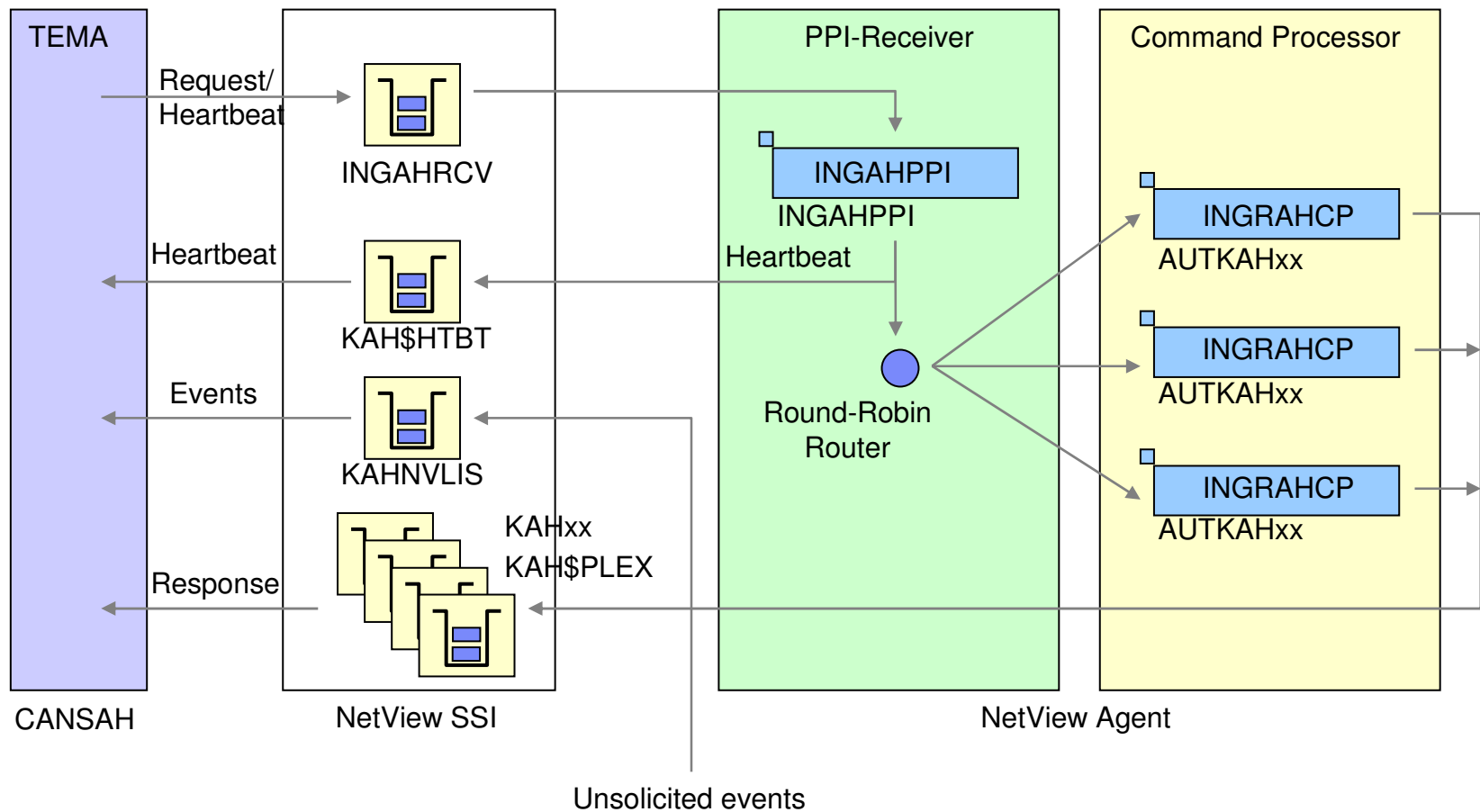
- Status items are deleted SA sysplex wide
  - To delete just the local status items, use SCOPE=LOCAL
- The following example deletes all status items that begin with “My”:

```
NETVASIS INGSTX DELETE My*
```

# Agenda

- Introduction
- TEP Workspaces
- Situations
- Status Items
- Fixed Source LU for OMEGAMON sessions
- ▶ **Component Overview and Configuration**

# Component Overview





## NetView Configuration...

- KAH operators must be configured in the automation policy
  - AOP entry must be created with automation functions starting with prefix AOFKAH
  - Each KAH operator must be assigned a task
- Tasks must be defined for the KAH operators
  - Member AOFOPFSO included in DSIOPF already contains tasks AUTKAH01 to AUTKAH03
- PPI receiver task may be defined and started through CNMSTYLE
  - Sample member AOFSTYLE contains task definition statements in comments
  - For automatic start, set INIT=YES
- PPI receiver task may be defined as an application in the automation policy
  - Start and stop of that task is controlled by SA z/OS
  - Task is defined with job type NONMVS and monitor routine AOFATMON
  - Start command: `START TASK=&SUBSJOB,MOD=INGAHPPI[,MEM=member]`
  - Stop command: `STOP TASK=&SUBSJOB`

## NetView Configuration (cont.)

- The PPI-receiver task reads the PPI-configuration from the initialization member passed upon start of the task
- The initialization member located in DSIPARM library specifies
  - KAH\_PPI\_RECEIVER, default value is INGAHRCV
  - KAH\_PPI\_LISTENER, default value is KAHNVLIS
  - PPI\_BUFFER\_SIZE, default value is 512 bytes
  - TIMEOUT, default value is 45 seconds
- Refresh automation policy and validate PPI status after PPI-receiver task was started using the NCCF DISPPI command

```

CNMKWIND OUTPUT FROM  DISPPI RCVRID=INGAHCV  LINE 0 OF 5
*----- Top of Data -----*
DW0948I RECEIVER  RECEIVER  BUFFER  QUEUED  TOTAL  STORAGE  RCVR
DW0949I IDENTITY  STATUS    LIMIT   BUFFERS  BUFFERS  ALLOCATED  ASID
DW0950I -----
DW0951I INGAHRCV  ACTIVE      1000      0      9710      0 003C
DW0968I END OF DISPLAY
*----- Bottom of Data -----*

```

## TEMA Configuration...

- The monitoring agent is configured through ICAT
- Decision points
  - Configuring the monitoring agent in its own address space (recommended) vs. in an existing ITMS address space, for example a remote TEMS
  - Creating a Full Run-Time-Environment (RTE) vs. Sharing RTE
  - Communication protocols (IP vs. IPv6 vs. SNA vs. UDP and combinations)
- Pre-requisite Configuration
  - Before the SA z/OS monitoring agent can be configured, a TEMS must be configured in the same or in a different RTE, or on another platform
  - The SA z/OS monitoring agent must support at least one communication protocol that is also supported by the TEMS it connects to

## TEMA Configuration (*cont.*)

- Monitoring agent specific parameters set through dialog

| KAHENV variable name    | Meaning   |
|-------------------------|---|
| KAH_PPI_RECEIVER        | Name of the SA z/OS PPI receiver in the automation agent.                     |
| KAH_PPI_LISTENER        | Name of the TEMA PPI receiver listening for events from the automation agent. |
| KAH_PPI_BUFFER_SIZE     | Size of output buffer.  |
| KAH_PPI_TIMEOUT         | Timeout after which a request is terminated if no data is returned.           |
| KAH_PPI_HEARTBEAT_INTVL | Time between validations that connection is still up.                         |
| KAH_PPI_CHECK_UP_INTVL  | Time between validations that connection is still down.                       |

- Run-time datasets
  - *&rhilev.RKANPARU* contains the KAHENV member with the application specific configuration options set during ICAT processing
  - *&rhilev.RKANPARU* also contains other parameter members that reflect the configuration settings done with ICAT
  - *&rhilev.RKANCMDU* contains members KAHAGST and KAHOPST used to startup the monitoring agent
  - *&rhilev.RKANSAMU* contains procedures and VTAM definitions that must be copied into PROCLIB and VTAMLST datasets for use

## TEMA Configuration (cont.)

- Start monitoring agent through procedure name specified in ICAT
  - Procedure must be copied into PROCLIB before use
  - Example: S CANSAH
  
- Validate PPI status after monitoring agent was started using the NCCF DISPPI command

```

CNMKWIND OUTPUT FROM PIPE (END %) NETV DISPPI | SEPARATE | LINE 0 OF 18
*----- Top of Data -----*
DWO948I RECEIVER RECEIVER BUFFER QUEUED TOTAL STORAGE RCVR
DWO949I IDENTITY STATUS LIMIT BUFFERS BUFFERS ALLOCATED ASID
DWO950I -----
DWO951I KAHA00 ACTIVE 1000 0 8 0 00A0
DWO951I KAHA01 ACTIVE 1000 0 5622 0 00A0
DWO951I KAHA02 ACTIVE 1000 0 2250 0 00A0
DWO951I KAHA03 ACTIVE 1000 0 1129 0 00A0
DWO951I KAHA04 ACTIVE 1000 0 8 0 00A0
DWO951I KAHA05 ACTIVE 1000 0 29 0 00A0
DWO951I KAHA06 ACTIVE 1000 0 1156 0 00A0
DWO951I KAHA07 ACTIVE 1000 0 45960 0 00A0
DWO951I KAHA08 ACTIVE 1000 0 411 0 00A0
DWO951I KAHA09 ACTIVE 1000 0 9 0 00A0
DWO951I KAHA10 ACTIVE 1000 0 15 0 00A0
DWO951I KAHA11 ACTIVE 1000 0 4 0 00A0
DWO951I KAH$PLEX ACTIVE 1000 0 5 0 00A0
DWO951I KAH$HTBT ACTIVE 1000 0 5605 0 00A0
DWO951I KAHNVLIS ACTIVE 1000 0 4 0 00A0
*----- Bottom of Data -----*

```

# Bibliography



- Related Documentation
  - ITM V610 Administrator's Guide (SC32-9408)
  - ITM V610 User's Guide (SC32-9409)
  - ITM V610 Configuring Tivoli Enterprise Monitoring Server on z/OS (SC32-9463)
  - SA z/OS V3.1 Monitoring Component Configuration and User's Guide (SC33-8337)
  
- Other
  - **CCR2 Article:** Bringing System Automation for z/OS into the Tivoli Enterprise Portal (<http://www-306.ibm.com/software/tivoli/features/ccr2/ccr2-2007-05/enterprise-portal.html>)
  - **z/OS Hot Topics Newsletter 17:** System Automation for z/OS and the Tivoli Enterprise Portal ([http://www-03.ibm.com/servers/eserver/zseries/zos/bkserv/hot\\_topics.html](http://www-03.ibm.com/servers/eserver/zseries/zos/bkserv/hot_topics.html))
  - **STE Web Seminar:** System Automation for z/OS goes Tivoli Enterprise Portal June 19, 2007 ([http://www-306.ibm.com/software/sysmgmt/products/support/supp\\_tech\\_exch.html](http://www-306.ibm.com/software/sysmgmt/products/support/supp_tech_exch.html))

## End of Presentation



Thank you very much for your attention

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