

# Clever Automation with IBM SA z/OS V3.5

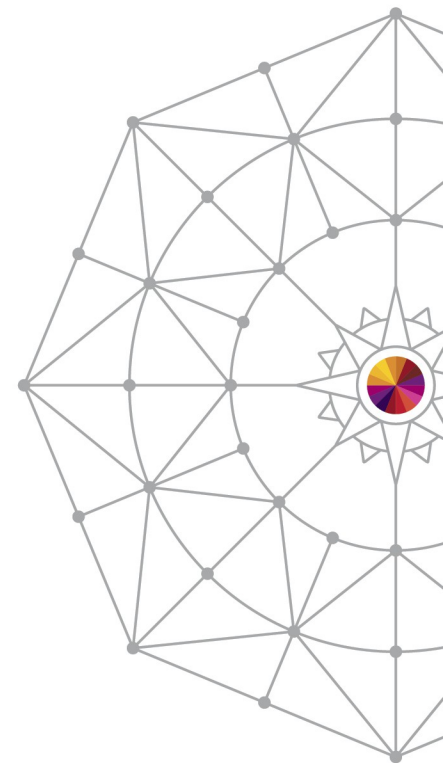
*Ulrike Muench* (<mailto:Umuench@de.ibm.com>)  
*IBM*

*Thursday, August 7, 2014*  
*15641*

[www.SHARE.org](http://www.SHARE.org)



#SHAREorg



# Copyright and Trademarks

© Copyright IBM Corporation 2013

The following names are trademarks of the IBM Corp. in USA and/or other countries and may be used throughout this presentation:

CICS, DB2, IBM, IMS, ITM, NetView, OMEGAMON, RMF, RACF, S/390, Tivoli, VTAM, WebSphere, z/OS, zSeries, System z, Linux on System z

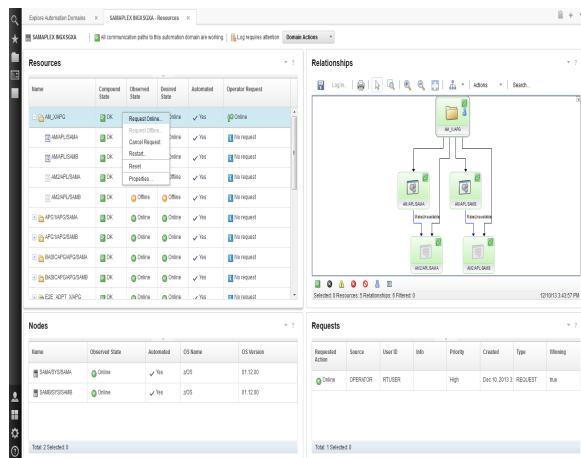
Other company, product and service names may be trademarks or service marks of others.

# Agenda

- Overview
- Integration with Omegamon
  - Immediate Message reporting on TEP
  - Looping Address Space Suppression
- IPL
  - Staged IPL
  - IPL complete notification
- Manage bulk starts / stops using Pacing Gates
- Configuration Assistant
- Extended XCF communication
- Configuration Refresh Indicator

# IBM System Automation family

IBM only vendor to provide end-to-end, cross-platform Automation



**System Automation Application Manager V4.1**

**System Automation  for z/OS V3.5**

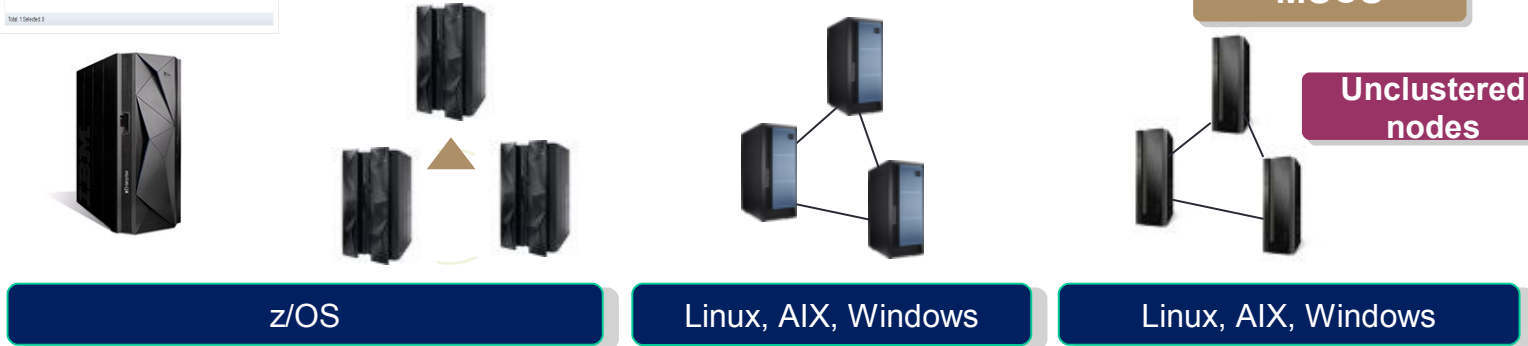
**System Automation for Multiplatforms**

**IBM PowerHA**

**VCS**

**MSCS**

**Unclustered nodes**



# IBM Service Management Suite for z/OS V1.2



**IBM Tivoli  
System  
Automation for  
z/OS V3.5**

**IBM Tivoli  
OMEGAMON Performance  
Management Suite for z/OS  
V5.3**

**IBM Tivoli  
NetView for  
z/OS V6.2.1 \***

**IBM Tivoli Asset  
Discovery for  
z/OS V8.1**

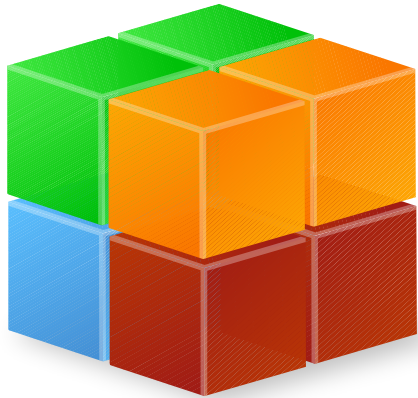


trade up considerations for any  
component products already  
owned

\* OTC



# IBM Service Management Suite for z/OS V1.2

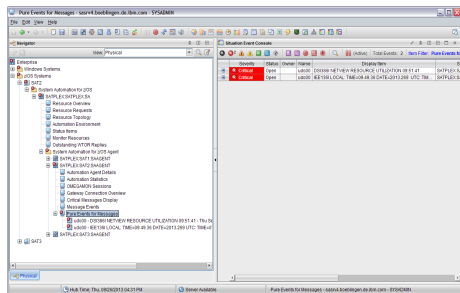


- Improving personnel interaction for better synergy and efficiency
- Reducing meantime to correction of complex problems
- Expanding solution throughout IBM z/OS platform.
- Consolidating views that can allow for quick assessment for the health of your business environment
- Providing management capabilities through automation and monitoring integration for business continuity
- Easily and more intuitively install and customize various components

# Agenda

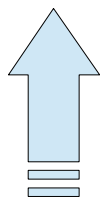
- Overview
- Integration with Omegamon
  - Immediate Message reporting on TEP
  - Looping Address Space Suppression
- IPL
  - Staged IPL
  - IPL complete notification
- Manage bulk starts / stops using Pacing Gates
- Configuration Assistant
- Extended XCF communication
- Configuration Refresh Indicator

# Immediate Message reporting on TEP

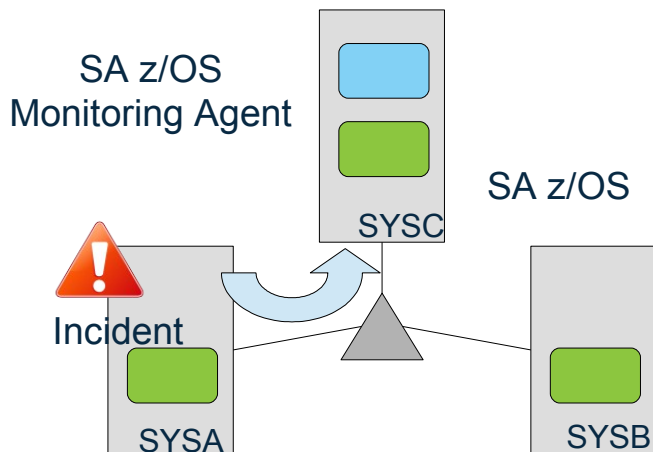


TEP

Short-lived incidents may remain undetected by situation sampling routines and hence are invisible to the operations team



Push in real-time



- SA z/OS exploits ITM pure event situations

- In combination with its Monitoring Agent, SA z/OS allows to send selected exceptional messages immediately to TEP by means of **policy**



# Immediate Message reporting on TEP



## SETUP

- TEP
- Download new System Automation application support CD ([Link to ITM support](#)) and install on all ITM components
  - Define, deploy and activate situations for the new Message Events attribute group.

- SA z/OS
- Install or update SA Monitoring Agent (TEMA) according to Planning and Installation manual
  - Have the TEMA in the automation policy with CATEGORY=ITM and SUBCATEGORY=KAHAGENT
  - Update configuration to use ITM in the Inform List policy of APLs, MTRs, MVC, or XDF

```
Application Information
Entry Type : Application
Entry Name : CANSAH
Category : ITM
Subcategory . . . . . KAHAGENT
```

```
Application Information
Entry Type : Application
Entry Name : LOOPSUPP
Inform List . . . . . SDF ITM
```

# Agenda

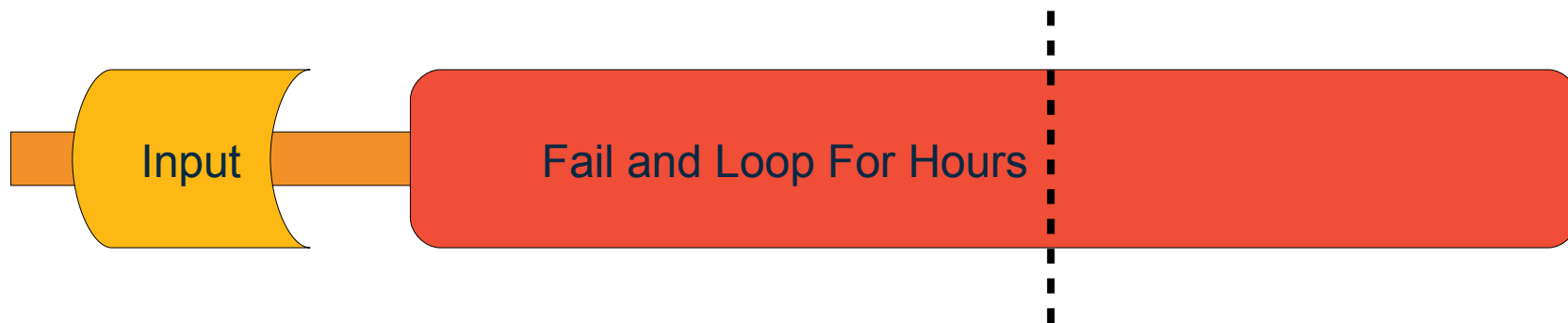
- Overview
- Integration with Omegamon
  - Immediate Message reporting on TEP
  - Looping Address Space Suppression
- IPL
  - Staged IPL
  - IPL complete notification
- Manage bulk starts / stops using Pacing Gates
- Configuration Assistant
- Extended XCF communication
- Configuration Refresh Indicator

# Looping Address Space Suppression

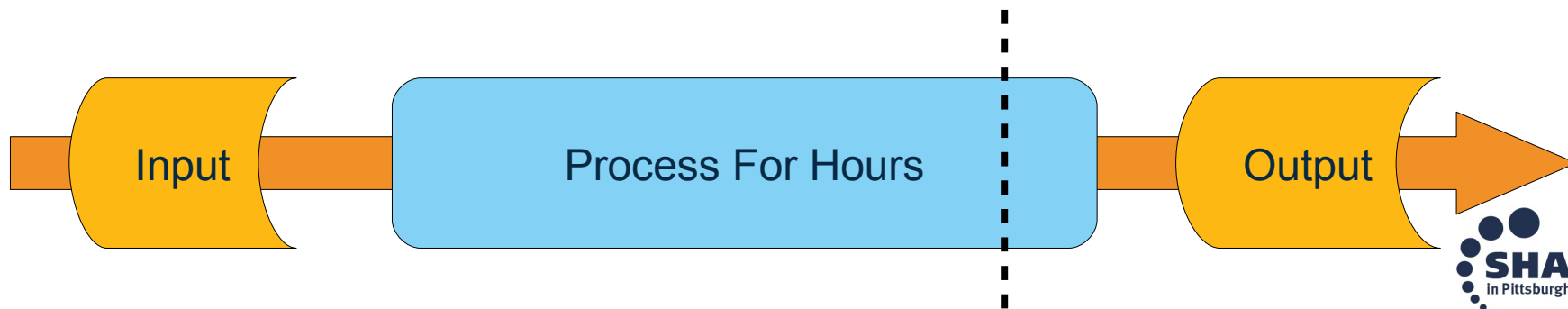
## False Positives

Omegamon cannot distinguish!

A job that loops and consumes CPU unnecessarily



A job that legitimately sits there burning CPU for hours



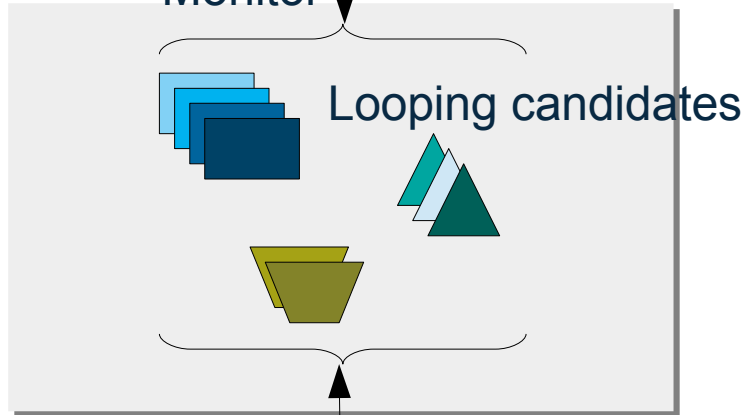
# Looping Address Space Suppression



## Overview

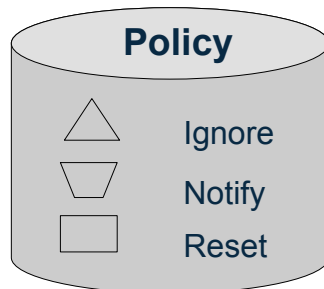
OMEGAMON XE for z/OS

Monitor



Categorize / Recover

SA z/OS



- Detect when started tasks / jobs show abnormally high CPU utilization
- Prevent that these types of work can dominate the system
- SA z/OS can categorize different types of work and allows to define various recovery actions through **policy** – not programming!

# Looping Address Space Suppression

## Best Practices Policy \*ITM

Select Add-on Policy Components

Components of Add-on Policy : \*ITM

Has been completely modernized in SA 3.5

Select one or more components to be added to your Policy Database:

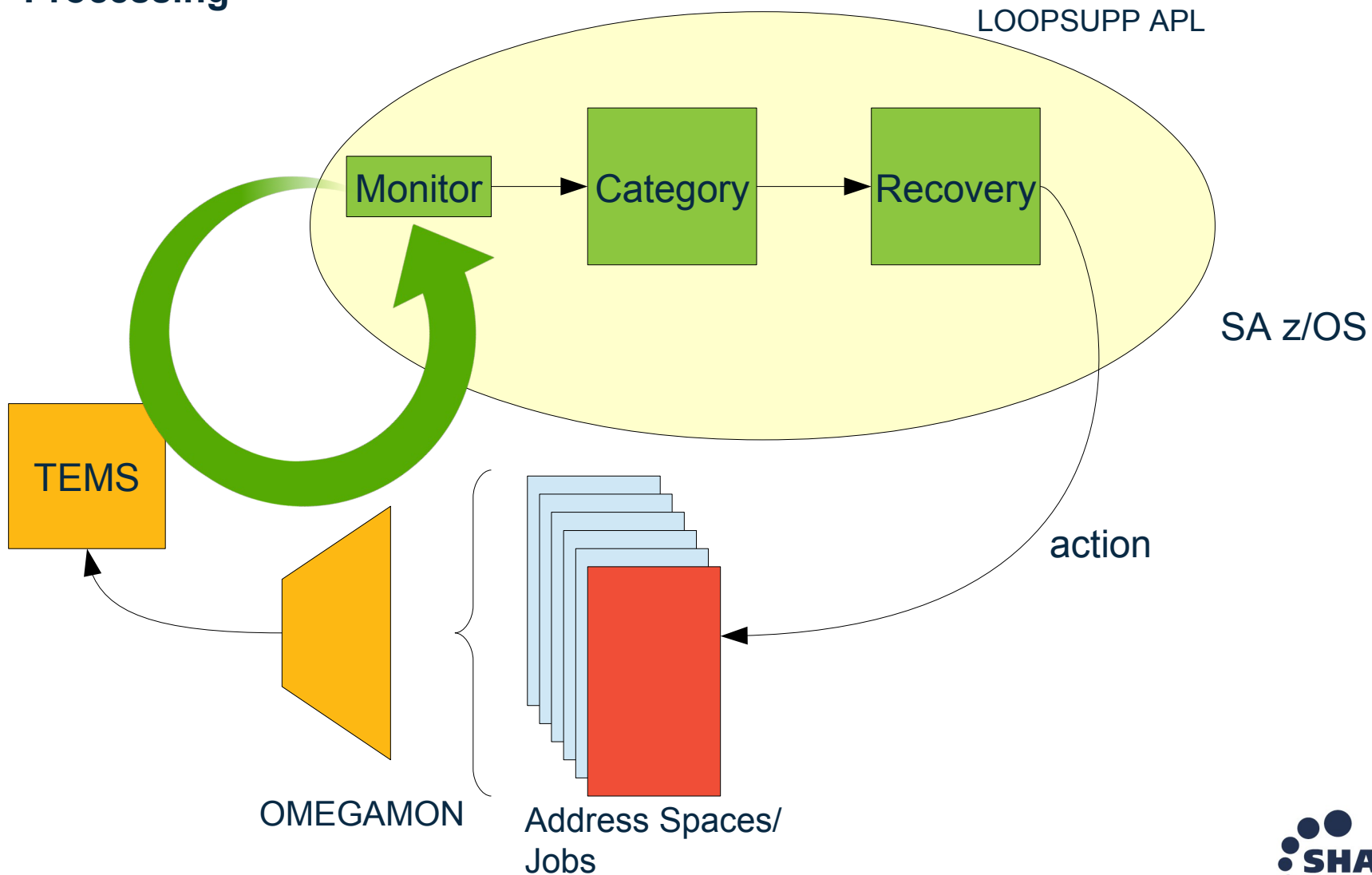
Action Status	Component
	Automation Monitoring Agent (TEMA)
SELECTED	Monitoring Analytic

### Besides Omegamon

- ING\_ANALYTIC                      APG
- C\_LOOPSUPP                        APL
- LOOPSUPP                            APL
- SOAP\_SERVERS                      NTW

# Looping Address Space Suppression

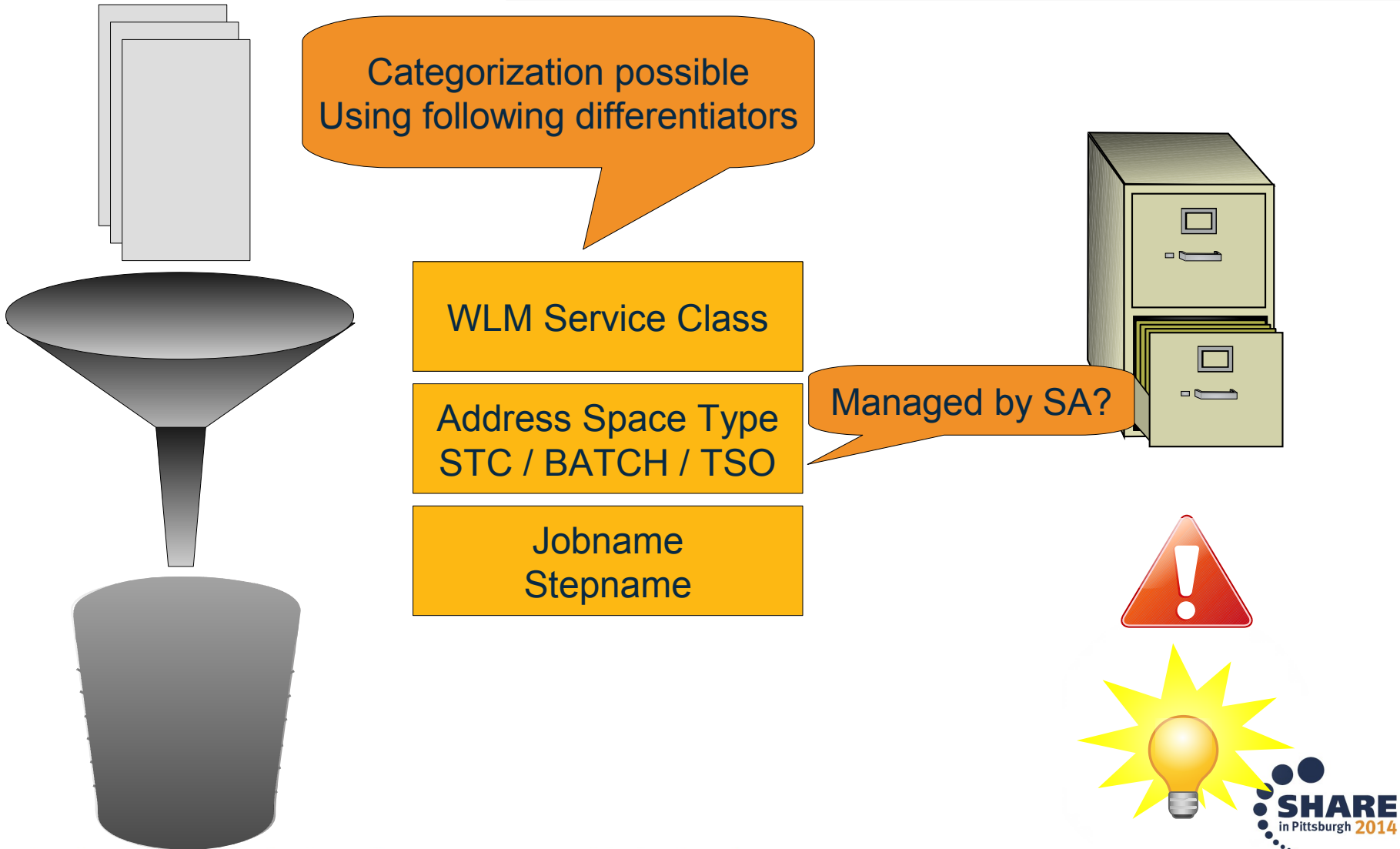
## Processing



# Looping Address Space Suppression

## Categorizing

LOOPSUPP APL MESSAGES / USER DATA INGCATEGORY



Categorization possible  
Using following differentiators

WLM Service Class

Address Space Type  
STC / BATCH / TSO

Jobname  
Stepname

Managed by SA?

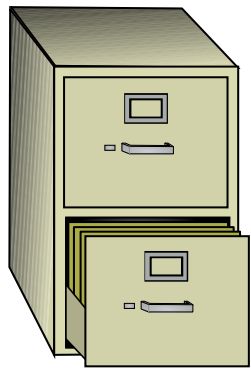


# Looping Address Space Suppression

Recovery action example

Different Recovery actions depending on the pass

LOOPSUPP APL  
MESSAGES/USER DATA INGRECOVERY



- 1. pass    issue warning message
- 2. pass    get diagnostic data
- 3. pass    suspend



- 1. pass    issue warning message
- 2. pass    get diagnostic data and cancel



# Looping Address Space Suppression

## Recovery actions

Non disruptive	WLM	User specific	removal
IGNORE WARN DIAG	SUSPEND RESET_ <i>class</i>	USER_ <i>cmd</i>	STOP CANCEL FORCE - SHUT_ <i>type</i>

parameters:  
asid  
jobname  
jobid  
jobstep  
cpuindex

# Looping Address Space Suppression

## Example DIAG output

ING602I DIAGNOSTICS FOR BUMUSL (ASID 00D8)

Messages from Inspect tool:

KM3IN008I GRANULARITY SET TO 0X00000B40

Requested 1000 samples at 5us intervals

Took 1000 samples of which 1000 were valid.

Program: EXEC

TCB : @ 008E3390 (100.0 JOB)

LMod : IRXINIT @ 0C467000 (100.0 JOB, 100.0 TCB)

CSECT: \*-UNKN-\* @ 0C467000 (100.0 JOB, 100.0 TCB, 100.0 LMOD)

Offset	Percentage
-----	-----
+00000B40	73.3
+00009240	6.6
+00000000	5.1
+00009D80	3.4
+00006540	3.1
+000021C0	2.4
+00007080	2.2
+00001680	1.7
+0000A8C0	1.1
+0000B400	0.7
+00007BC0	0.1

# Looping Address Space Suppression

## Adjust Monitor to your needs

C\_LOOPSUPP APL – **STARTUP** policy

Command Processing : STARTUP

Mixed case . . . NO (YES NO)

Cmd Type	AutoFn/*	Command Text
		INGROMLS START &SUBSAPPL HUBTEMS 00:05:00 

SOAP Server Definition of \*ITM

Monitor Interval; defaults to 5 min

CPU\_Loop\_Index; defaults to 99.0

# Looping Address Space Suppression

## Definition of the SOAP Server

SOAP\_SERVERS NTW – HUBTEMS

Host name. . . . . <i>hubtems.ibm.com</i>	Symbolic host name or IP-address of the SOAP-Server
Port number. . . . . <i>1920</i>	Port number of the SOAP-Server (1-65535)
Protocol . . . . . <i>HTTP</i>	Protocol used for SOAP requests (HTTP or HTTPS)
User ID. . . . .	User ID to log on to SOAP server
Password . . . . .	Password of the logon user or SAFPW
Absolute path. . . . . <i>///cms/soap</i>	Absolute path of the SOAP-Server on that host

User ID and Password fields: SA z/OS 3.5 only

- Need to prime userid  
NETVASIS INGPW USER SOAP INIT=*userid*  
USER is a constant, userid is not
- Need to prime password  
NETVASIS INGPW *userid* SOAP INIT=*password*

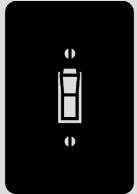
Setup for SA z/OS 3.4

# Looping Address Space Suppression

## Control Monitor execution C\_LOOPSUPP APL – Minor Resources policy

### Minor Resource Definitions

```
Entry Type : Application          PolicyDB Name   : SHARE
Entry Name : C_LOOPSUPP          Enterprise Name : SHARE
```



```
Line Commands: F (Flg), S (Thr), T (Thr), CN (Class Name)
                I, D (insert or delete lines)
```

```
Cmd Minor Resource Name      Thres  - Automation Flags -
MONITOR                      *      A   I   S   R   T   RS
```

Cmd	Flag	Auto
	Automation (A)	
	Initstart (I)	
	Start (S)	
	Recovery (R)	LOG
	Terminate (T)	
	Restart (RS)	

Dynamically changeable via INGAUTO

Default;  
write recovery actions in netlog,  
but don't execute them  
Except nondisruptive ones

# Looping Address Space Suppression

## Sample Monitoring report: **no looping address spaces**

```
ING600I LOOPING ADDRESS SPACE SUPPRESSION
```

```
Called at 7 Jul 2014 17:27:11
```

```
Commands will be LOGGED;
```

```
LOOPSUPP.MONITOR RECOVERY flag set to LOG
```

```
Target Network: HUBTEMS
```

```
Monitoring -
```

```
    address: 9.152.87.246
```

```
    port: 1920
```

```
    path: ///cms/soap
```

```
    protocol: HTTP
```

```
Monitoring threshold: 0300
```

```
Query Successful
```

```
No exceptions found.
```

```
Monitor complete
```

Minor Resource Monitor:  
Recovery flag set to LOG

Used SOAP Server with its definitions

CPU\_Loop\_Index set to value 30

# Looping Address Space Suppression

## Sample Monitoring report: looping address space found

```
...
Exceptions found -
-----
ASID: 0079 Type: STC      CPU Loop Index: 64.7
Job: YBUMUSL ID: YBUMUSL Step: BUMUSL0
WLM Service Class: STCCMD.1
SA Subsystem: YBUMUSL Type -> STC_SA
Categorizing
  Searching: LOOPSUPP INGCATEGORY
  CODE1=STCCMD CODE2=STC_SA CODE3=YBUMUSL.BUMUSL0
=> Found category: BUMUPS
Checking automation flag: LOOPSUPP.BUMUPS.YBUMUSL RECOVERY
=> Recovery Permitted
Finding recovery actions for pass: 1
  Searching LOOPSUPP INGRECOVERY
  CODE1=BUMUPS CODE2=1 CODE3=<blank>
=> Found: WARN SHUT_FORCE
  Cmd: WARN - Message issued
ING601E LOOPING ADDRESS SPACE DETECTED: YBUMUSL BUMUSL0 (ASID 0079)
  Cmd: SHUT_FORCE - INGREQ YBUMUSL/APL/AOC4 REQ=STOP,TYPE=FORCE,OUTMODE=LINE
  Issuing
Monitor complete
```

INGCATEGORY match

Recovery flag check

Pass

INGRECOVERY match

Recovery actions

# Looping Address Space Suppression

Sample Monitoring report: **looping address space found**

## 1) Address space data

ASID: 0079 Type: STC CPU Loop Index: 64.7

Job: YBUMUSL ID: YBUMUSL Step: BUMUSL0

WLM Service Class: STCCMD.1

SA Subsystem: YBUMUSL Type -> STC SA

It is an address space managed by SA!



# Looping Address Space Suppression

## Sample Monitoring report: looping address space found

### 2) Categorization

Categorizing

```
Searching: LOOPSUPP INGCATEGORY  
CODE1=STCCMD CODE2=STC_SA CODE3=YBUMUSL.BUMUSL0
```

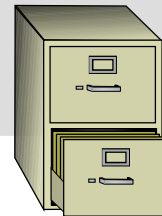
=> Found category: BUMUPS

WLM service class

Address space type

Jobname.stepname

INGCATEGORY result



### 3) Recovery flag checking

```
Checking automation flag: LOOPSUPP.BUMUPS.YBUMUSL  
RECOVERY
```

=> Recovery Permitted

Specific recovery flag check



# Looping Address Space Suppression

## Sample Monitoring report: looping address space found

### 4) Recovery Action from policy

Finding recovery actions for pass: 1

Actual Pass

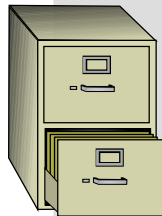
Searching L00PSUPP INGRECOVERY

INGCATEGORY result

CODE1=BUMUPS CODE2=1 CODE3=<blank>

=> Found: WARN SHUT\_FORCE

INGRECOVERY result – action



# Looping Address Space Suppression

## Sample Monitoring report: looping address space found

### 5) Recovery Action execution

```
Cmd: WARN - Message issued
ING601E LOOPING ADDRESS SPACE DETECTED: YBUMUSL
      BUMUSL0 (ASID 0079)
Cmd: SHUT_FORCE - INGREQ YBUMUSL/APL/AOC4
      REQ=STOP,TYPE=FORCE,OUTMODE=LINE
      Issuing
```

Monitor complete

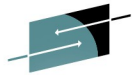


Executing recovery commands

# Agenda

- Overview
- Integration with Omegamon
  - Immediate Message reporting on TEP
  - Looping Address Space Suppression
- IPL
  - Staged IPL
  - IPL complete notification
- Manage bulk starts / stops using Pacing Gates
- Configuration Assistant
- Extended XCF communication
- Configuration Refresh Indicator

# Staged IPL



SHARE  
Educate · Network · Influence



SYS1



Runmode	Applications
BASE_ELEMENT	B1, B2, B3, B4
BUSINESS	B1, B2, B3, B4, A1, A2, A3

At System Start on SYS1 only z/OS **Base** Elements B1, B2, B3 and B4 should come up

➡ Have Runmode set to BASE\_ELEMENT

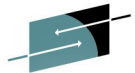
At end of Maintenance all business applications should be started again

➡ Set Runmode to BUSINESS via INGRUN



# Staged IPL

## Runmode and Runtoken Definitions in Policy



SHARE  
Educate · Network · Influence



```
UET Keyword-Data Specification                               Line 00000001 Col 00

Entry: INGRUN                                           Type: MODE
Mixed case . . . NO (YES NO)                       Keyword length. . . 20 (1-64)

Cmd Keyword      Data
-----
BASE_ELEMENT   BASIC
BUSINESS     'BASIC WEBSPHERE IMS CICS DB2'
```

```
Application Information

Entry Type : Application           PolicyDB Name   : BASE_34
Entry Name  : TS0                  Enterprise Name : BASE_34

Runtokens . . . . .
BASIC
```



# Agenda

- Overview
- Integration with Omegamon
  - Immediate Message reporting on TEP
  - Looping Address Space Suppression
- IPL
  - Staged IPL
  - IPL complete notification
- Manage bulk starts / stops using Pacing Gates
- Configuration Assistant
- Extended XCF communication
- Configuration Refresh Indicator

# IPL complete notification



When is an 'IPL' complete?

Mark all applications which should be up to consider 'IPL' complete

Do we need a time limit?

ING313| time: IPL completed within expected time period, elapsed time was duration

ING314| time: IPL not completed within limit: limit. Failing resources: resource

ING315| time: IPL completed after expected time period, elapsed time was duration

AOF\_AAO\_IPL\_COMPLETE\_MSG=COND | ALWAYS



# IPL complete notification



SHARE



## APL – Application Info policy

### Application Information

Line 00000001

Entry Type : Application  
Entry Name : TCPIP

Also available for Application Groups and Monitors

Category . . . . .	(IBM-defined, user-defined or blank, see help)
Subcategory . . . . .	(IBM-defined, user-defined or blank, see help)
Subsystem Name . . . . . TCPIP	
Job Type . . . . .	(MVS NONMVS TRANSIENT)
Job Name . . . . . TCPIP	
Transient Rerun . . . . .	(YES NO)
Scheduling Subsystem . . . . .	(MSTR, JES Subsystem)
JCL Procedure Name . . . . .	
Job Log Monitor Interval . . . . .	(mm:ss NONE)
Captured Messages Limit . . . . .	(0 to 999)
Desired Available . . . . .	(ALWAYS ONDEMAND ASIS)
Restart after IPL . . . . .	(START NOSTART NONE)
Monitor for IPL complete . YES	(YES NO)

# IPL complete notification

## SDF – System Defaults

### System Automation Options

```

Entry Type : System Defaults      PolicyDB Name   : SAMPLE_350
Entry Name  : SDF_DEFAULTS        Enterprise Name : SHARE

Captured Messages Limit. . . 20      (0 to 999)
Exceptional Messages Limit .        (0 to 1020)
Desired Available. . . . .          (ALWAYS ONDEMAND ASIS)
Prepare Move . . . . .              (YES NO)
Move Mode. . . . .                  (PARALLEL SERIAL)
Inform List. . . . . SDF
                                   (SDF NMC IOM SMF EIF TTT ITM USR)
IPL Complete Time Limit. . . 00:30:00 (00:00:00 to 24:00:00)
  
```

If field is left blank – no IPL completeness check

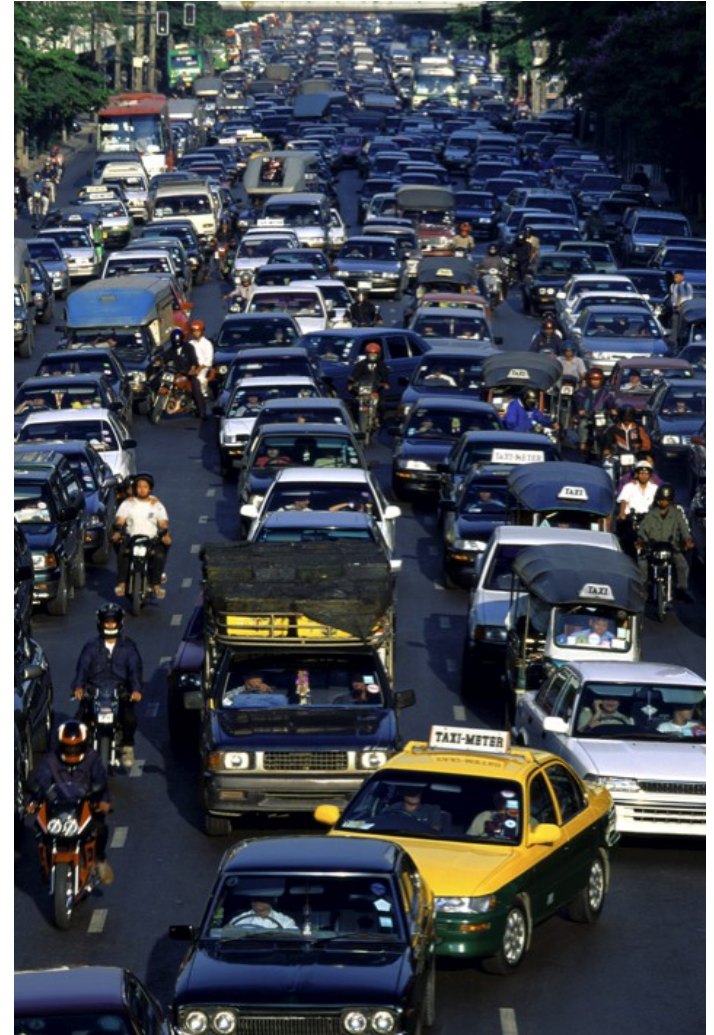
# Agenda

- Overview
- Integration with Omegamon
  - Immediate Message reporting on TEP
  - Looping Address Space Suppression
- IPL
  - Staged IPL
  - IPL complete notification
- **Manage bulk starts / stops using Pacing Gates**
- Configuration Assistant
- Extended XCF communication
- Configuration Refresh Indicator

# Application Pacing

Problem:

CPU peaks occur  
when starting bulk applications e.g. at IPL



# Application Pacing

Introduction of Pacing Gate approach to restrain automation resources

## Gate front-view

“Only  $n$  workloads can pass the gate at a time”

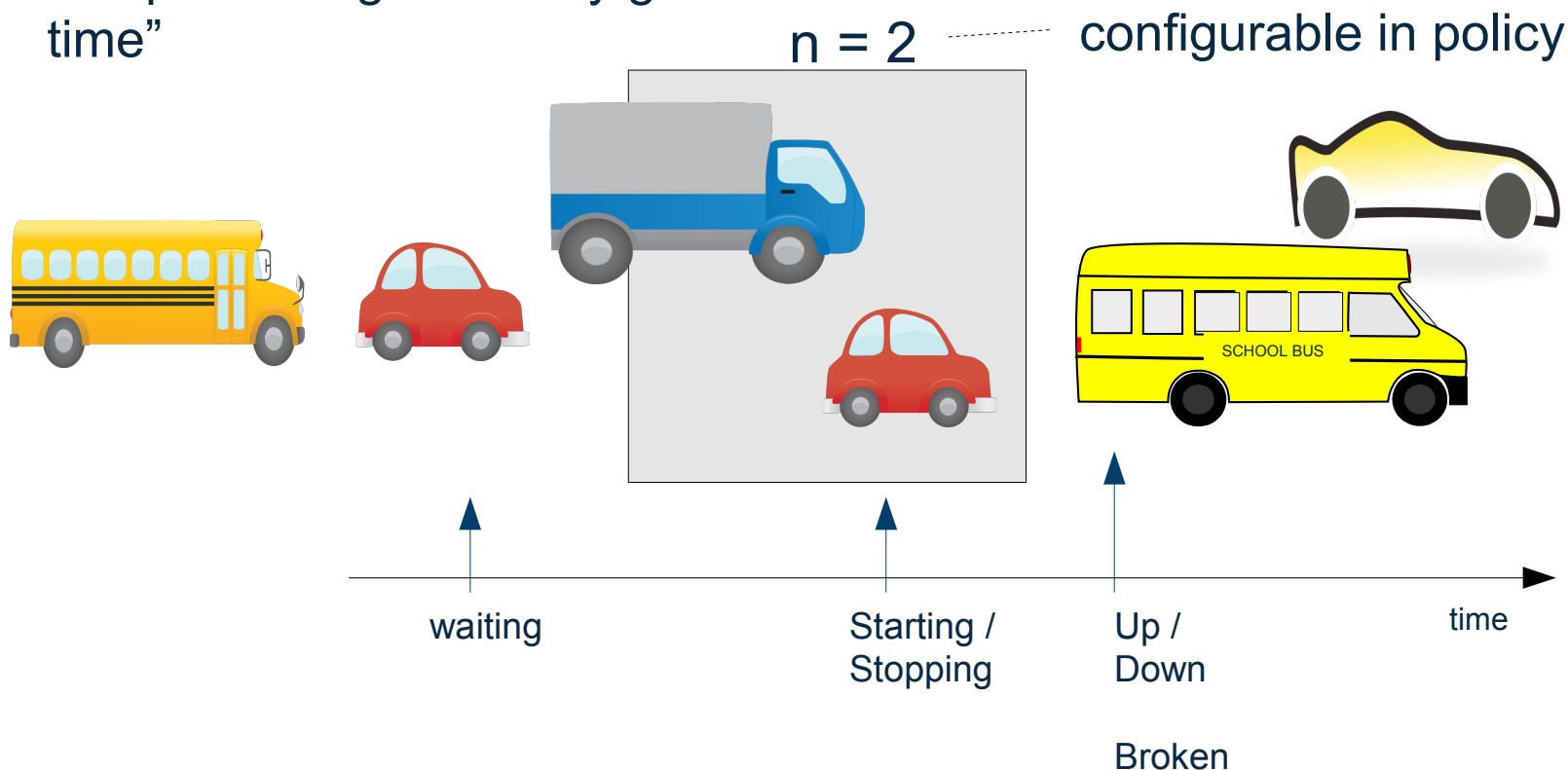
“Others have to queue up behind those passing the gate.”



# Application Pacing

## Pacing Gate side-view

“Gate mechanism ensures that only up to  $n$  automation resources can pass the gate at any given time”



# Application Pacing – Customization Dialog



SHARE

SA z/OS  
V3.5

## New Entry Type

10	PRO	Processors	40	XDF	Sysplex Defaults
11	MTR	Monitor Resources	41	RES	Resident CLISTS
12	ENS	zEnterprise Ensembles	42	SCR	Status Display
13	PAC	Pacing Gates			
20	PRD	Product Automation	99	UET	User E-T Pairs
21	MSG	Messages			

## Define New Entry

Define new entry of type Pacing Gate

Entry name . . . . . WAS\_PAC

Start Concurrency Limit . 10 (0-9999 or NOLIMIT)

Stop Concurrency Limit . 5 (0-9999 or NOLIMIT)

Short Description . . . Pacing gate for Websphere Applications



# Application Pacing – Customization Dialog

## Linkage

### Entry Name Selection

Entry Type : Pacing Gate

PolicyDB Name : SAMPLE\_350

Enterprise Name : SA\_Z\_05\_BB\_LAB

Action

Entry Name

Short Description

PAC\_AOCCLONE

Pacing definition using AOCCLONES

PAC\_20

Pacing definitions of 20

SHARE\_PAC

Pacing example for Share

Linked through APLs  
and not directly to systems

One Application can only be linked to one Pacing Gate



# Application Pacing - Runtime

## New command INGPAC

```

INGKYPA0                SA z/OS - Command Dialogs
Domain Id   : IPUFJ      ----- INGPAC -----
Operator Id : BUMU      Sysplex = /
  
```

CMD: D Details

CMD Pacing Gate	Type	System	Limit	Num Res	Num Wait	Avg Wait
PAC_AOCCLONE	Start	A0C4	444	0	0	-
PAC_AOCCLONE	Start	A0C5	NOLIMIT	0	0	-
PAC_AOCCLONE	Stop	A0C4	555	0	0	-
PAC_AOCCLONE	Stop	A0C5	NOLIMIT	0	0	-
PAC_20	Start	A0C4	20	0	0	-
PAC_20	Stop	A0C4	20	0	0	-
SHARE_PAC	Start	A0C4	2	18	16	48
SHARE_PAC	Start	A0C5	2	0	0	-
SHARE_PAC	Stop	A0C4	NOLIMIT	0	0	-
SHARE_PAC	Stop	A0C5	NOLIMIT	0	0	-

# of applications waiting or transmitting

# of applications waiting

Average time waiting in sec

Further data available either with scrolling or showing details

# Application Pacing - Runtime

## New command INGPAC - detail

```

-----
Command Dialogs
-----
AOC4PLEX
Line 1      of 16
Date . . . : 07/08/14
Time . . . : 16:26:15

Pacing gate  SHARE_PAC      Type: Start      System: AOC4
Description  Pacing example for share  Limit : 2

Wait times [s]      Active times [s]      Number resources
-----
Average:           45      Average:           10      Waiting:           14
Current:           23      Current:            2      Active:            2
Maximum:           93      Maximum:           11      Other:             0

CMD Resource Name      Status      Wait      Active      Total      Req Date
-----
SHARE#13/APL/AOC4      Starting    21         2         23      07/08/14
SHARE#14/APL/AOC4      Starting    21         2         23      07/08/14
SHARE#15/APL/AOC4      Waiting     23         0         23      07/08/14
SHARE#16/APL/AOC4      Waiting     23         0         23      07/08/14

```

Wait time  
in front of the gate

Transition time  
through the gate

Applications currently  
Waiting or passing

# Agenda

- Overview
- Integration with Omegamon
  - Immediate Message reporting on TEP
  - Looping Address Space Suppression
- IPL
  - Staged IPL
  - IPL complete notification
- Manage bulk starts / stops using Pacing Gates
- **Configuration Assistant**
- Extended XCF communication
- Configuration Refresh Indicator

# Traditional Product Configuration

- Read the Installation manual ...

- ... decide which of the many installation steps apply to your z/OS environment.

- Perform those steps by....

- ... adapting all the identified sample files and ...

- ... filling in your environmental data at multiple places spread across the sample files.

- And do all this ... in a consistent way!

**Chapter 7. Installing SA z/OS on Host Systems**

Overview of Installation Tasks	51	Enable the SE API and Set the Community Name	83
Step 1: SMP/E Installation	52	Step 7B: Preparing the SE (Console Workpiece 2.10 and Later Versions)	82
Step 2: Allocate System-Unique Data Sets	55	Step 7C: Installing Capacity Charge API Requests	82
Step 2A: Data Sets for NetView	55	Step 7D: Updating Firewall Information	82
Step 2B: Data Sets for I/O Operations	56	Connection protocol SNMP	82
Step 2C: Data Sets for Automation Agents (Primary Automation Manager and Backups)	57	Step 8A: Setting up the Ensemble Hardware Management Console for use with System Automation for z/OS	82
Step 2D: Data Sets for Automation Managers	57	Step 8B: Setting up AD-TLS for SSL socket connection	83
Step 3: Allocate Data Sets for the SDF Dialog	58	Step 9: Preparing the VM PSM	85
Step 4: Customize SYS1.PARMLIB Members	59	Installing the PSM Custom VM Configuration	86
Step 4B: Update IECAPIPRZ	59	Customizing the PSM	87
Step 4C: Update MPP1STZr	60	SQADRISK DATA	87
Step 4D: Update LPM15Tzr	61	SQAFARM DATA	87
Step 4E: Update LNS1STzr	61	Logger Files	88
Step 4F: Update BESSNzr	62	Step 10: Customizing the Automation Manager	89
Step 4G: Update BESSNzr	63	Step 10A: XCF Characterization	89
Step 4H: Update SMP1PRMzr	63	Step 10B: Customizing J8APRMRzr	89
Step 5: Customize SYS1.PROCLIB Members	63	Step 10C: ADR Instrumentation of the Automation Manager	89
Step 5A: NetView Startup Procedures	63	Step 10D: Security Considerations	90
Step 5B: Startup Procedures Required for System Operations Only	64	Step 11: Customizing the Component Transaction	90
Step 5C: I/O Operations Startup Procedures	65	Step 12: Customizing the System Logger	92
Step 6: Customize NetView	66	Step 13: Install SDF Dialog Panels	92
Step 6A: Customize NetView Alert Information	66	Step 13A: Allocate Libraries for the Dialogs	93
Step 6B: Customize NetView ESQPARM Data Set	66	Alternative 1: Dynamic Allocation using INXENGL	93
Step 6C: Modifying NetView DRSPARM Definitions for an Automation Network	71	Alternative 2: Add to the TSO Logon Procedure	93
ACORPGW Modifications	71	Step 13B: Logging Modifications to Data Set	96
Step 6D: Customize NetView for Processor Operations	71	Step 13C: Invoking the SDF Dialog	96
Step 6E: Customize the NetView Message Translation Table	72	Using INCDLE	97
Step 6F: Add the INXENGLREXX Function Package	72	Using TSO Logon or Your Own Automation Procedure	97
Step 7: Preparing the Hardware	73	Step 13D: Recovered I/O Operations Panel	97
Step 7A: Preparing the HMC (Console Workpiece 2.8 and Earlier Versions)	74	Step 13E: Verify the SDF Dialog Installation	98
Enable the HMC API and Set the Community Name	74	Step 14: Verify the Number of available REXX Environments	98
BCP Internal Interface	74	Step 15: Install Function Packages for NetView and TSO	98
SNMP	74	INXENGLPG must be made known to TSO	98
HMC Object Definition	75	Step 16: Customization of Alert Notification for SA z/OS	99
Step 7B: Preparing the HMC (Console Workpiece 2.9 and Later Versions)	76	Enabling Alert Notification via SA JOM	100
Enable the HMC API and Set SNMP Community Names	76	Pre-to-Pre Firewall	101
BCP Internal Interface	77	Enabling Alert Notification via SDF Events	101
CPC Object Definitions on the HMC	77	Starting the Event Automation Services	101
Step 7C: Preparing the SE (Console Workpiece 2.8 and Earlier Versions)	78	Configuring the Global Initialization File	101
Configure SNMP	78	Configuring the NetView Manage Adapter Service	101
Enable the API and Set the Community Name	79	Enabling Alert Notification via XML	102
Set the Cross-Partition Flags	80		
Step 7D: Preparing the SE (Console Workpiece 2.9 and Later Versions)	80		
© Copyright IBM Corp. 896, 2012	49		

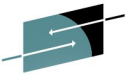
DISKREPT	121	Step 35B: Prepare I/O Operations Startup	137
DUBFMIBM	121	Step 36: Installing Brod Enterprise Portal Support	137
DURGNET	121		

This chapter describes the tasks required to install SA z/OS components on the SA z/OS host systems. This chapter includes information on installing SA z/OS on both local point and target systems. The target system installation does not require some of the steps used for the local point installation. Any installation step that does not apply to the target systems is indicated. Many of the installation steps have corresponding planning activities and explanations in chapters 2 through 6 of this book. Chapter 6 describes installations on workstations.

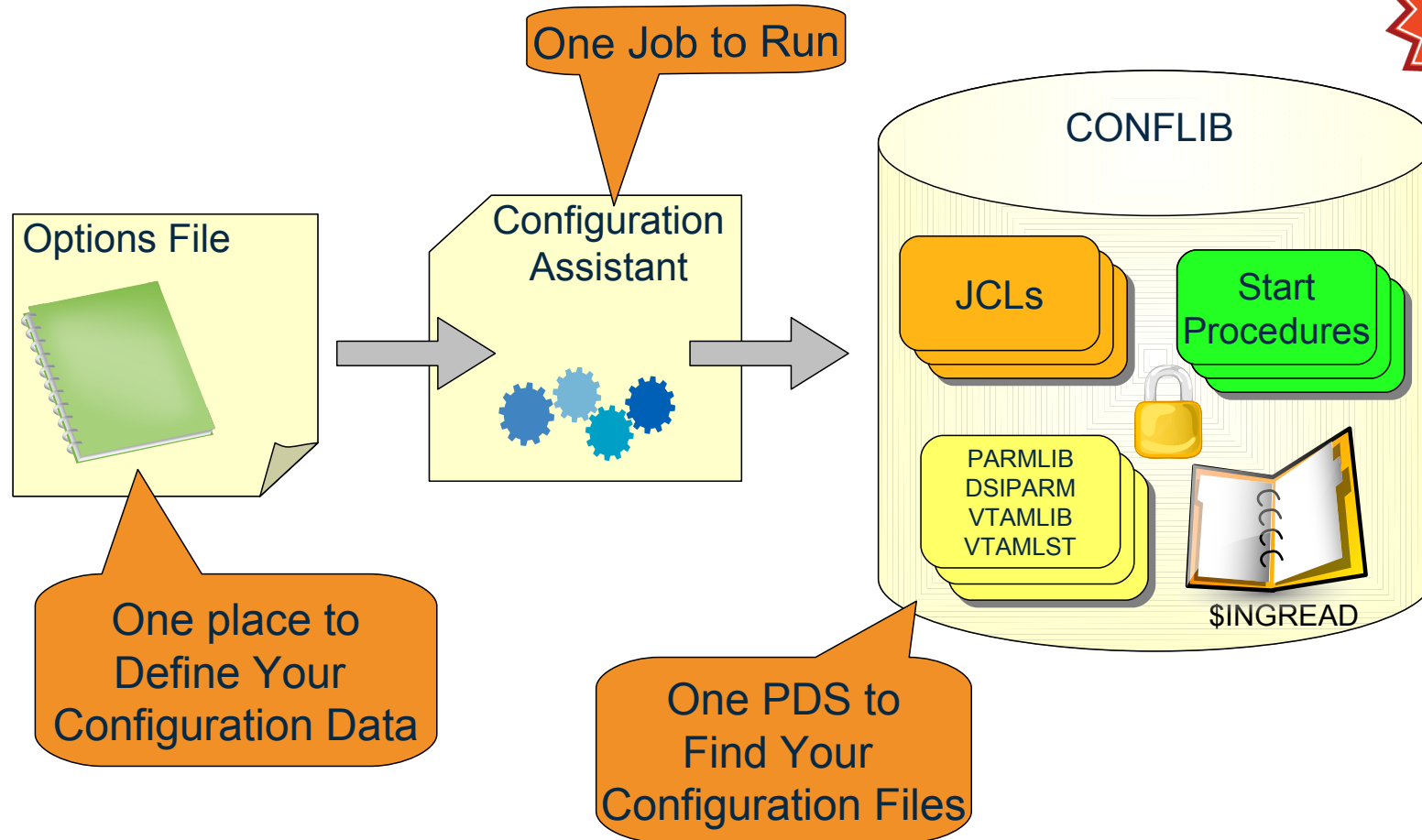
In this chapter, the single installation steps are marked as either being required for all or certain SA z/OS components or as being optional. Optional denotes steps that may or may not need to be performed based on your environment, your system management procedures, and your use of the SA z/OS product. For each of these steps you need to decide whether it is required for your installation.

Each optional step explains why it is optional and describes the circumstances when you will need to perform it.

# Configuration Assistant



SHARE  
Network · Influence



Generating Configuration Files for multiple systems



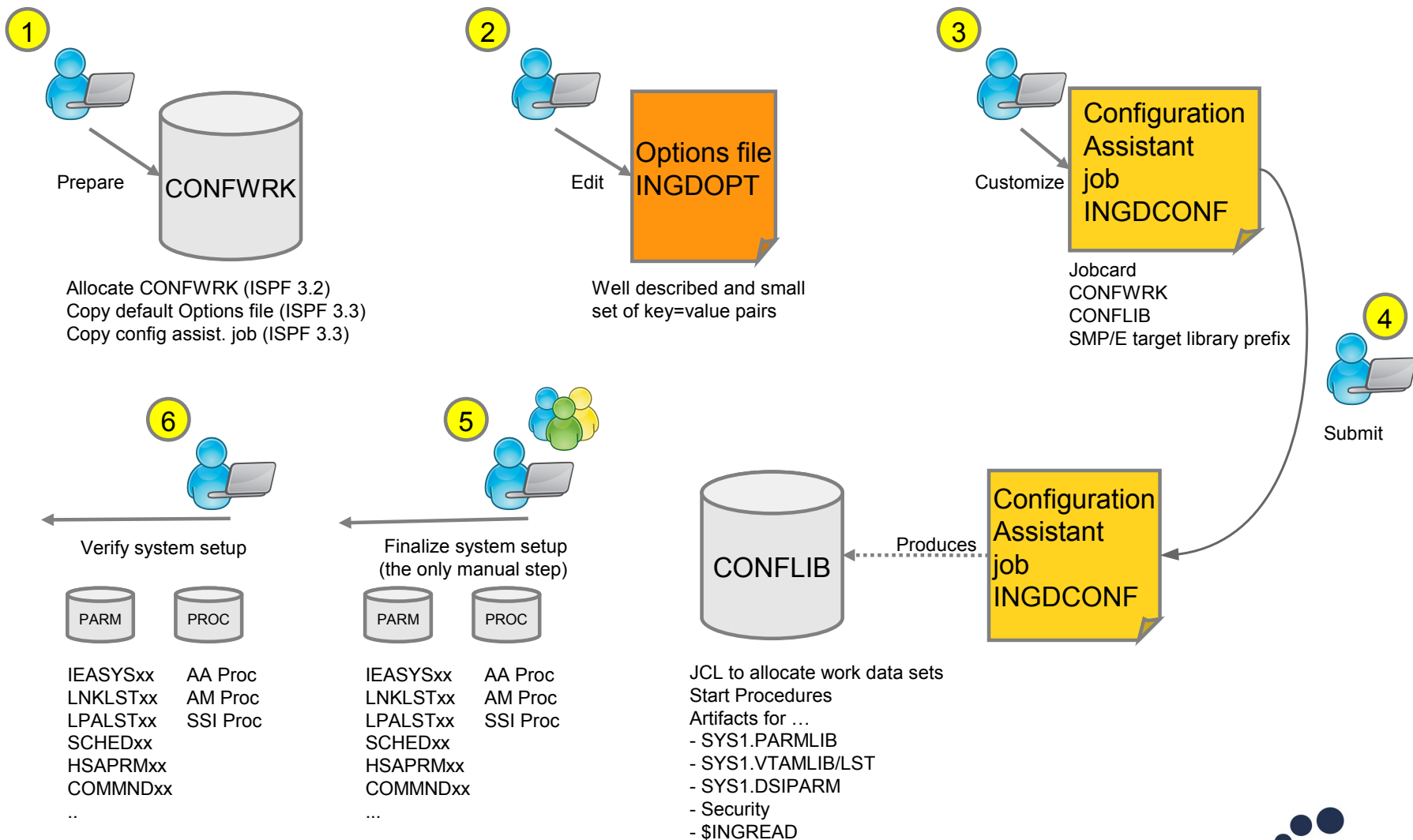
# Configuration Assistant

```
*      ... System Name
*
*      Specify the name of the z/OS system where you plan to run
*      your automation environment.
*
*      Option .....: sys_sysname
*      Required ...: Yes
*      Default  ....: None
*      Example.....: SYS1
*
sys_sysname=&SYSNAME
```

Equal processing available for  
VTAMID and NetView Domain ID

- Customer can run the “deploy step” on multiple target systems
- Based on the JCL with the system symbols
  - Generated from **one Options File**

# Configuration Assistant



# System Authorization Facility (SAF) support

- The configuration assistant creates an SAF configuration:

- User roles (=SAF groups)

- SuperUser
- AutoOperator
- Administrator
- Operator
- User



- Command profiles
- User role-to-Command profile correlation
- User-to-User role correlation
- **Allows you to review and adapt !!!**



# Agenda

- Overview
- Integration with Omegamon
  - Immediate Message reporting on TEP
  - Looping Address Space Suppression
- IPL
  - Staged IPL
  - IPL complete notification
- Manage bulk starts / stops using Pacing Gates
- Configuration Assistant
- Extended XCF communication
- Configuration Refresh Indicator

# Extended XCF Communication



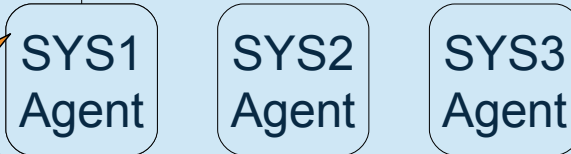
Physical sysplex



SUBPLEX1

XCF GRPID=01  
Automation Manager

Gateway \*



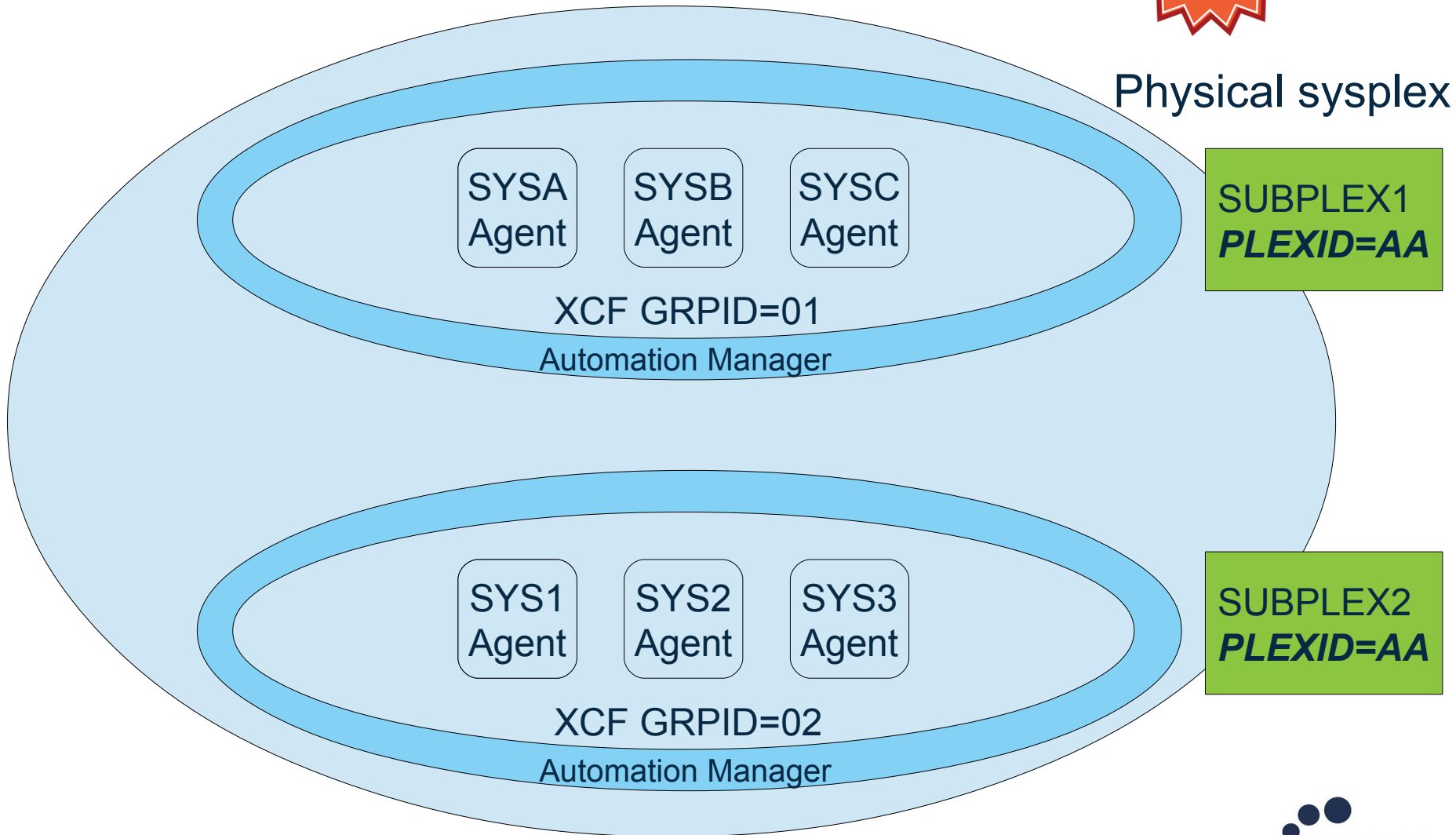
SUBPLEX2

XCF GRPID=02  
Automation Manager

On both systems  
the neighbor  
had to be defined

\* Pre SA 3.5

# Extended XCF Communication



PLEXID is a definition to be made in INGXINIT



# Extended XCF Communication

## INGAMS XSTATUS

Different subplexes within same Physical Sysplex

```

INGKYAM0 SA z/OS - Command Line 1 of 10
Domain Id : IPZFL ----- INGAMS Date : 05/15/14
Operator Id : BUMU Sysplex = TSA1C1 Time : 12:58:48

Cmd: A Manage B Show Details C Refresh Configuration D Diagnostic

CMD System Member Role Status Sysplex XCF Group Release Comm PA
-----
TSA1 TSA1$$$$2 SAM READY TSAPLEX INGXSGA1 V3R5M0 XCF
TSA1 TSA1 AGENT REFRESH TSAPLEX INGXSGA1 V3R5M0 XCF
TSA1 TSA1$$$$1 PAM READY TSAPLEX INGXSGA1 V3R5M0 XCF
TSA2 TSA2$$$$2 SAM READY TSAPLEX INGXSGA2 V3R5M0 XCF
TSA2 TSA2$$$$1 PAM READY TSAPLEX INGXSGA2 V3R5M0 XCF
TSA2 TSA2 AGENT READY TSAPLEX INGXSGA2 V3R5M0 XCF
TSA3 TSA3$$$$1 PAM READY TSAPLEX INGXSGA0 V3R5M0 XCF
TSA3 TSA3 AGENT READY TSAPLEX INGXSGA0 V3R5M0 XCF
TSA4 TSA4$$$$1 SAM READY TSAPLEX INGXSGA0 V3R5M0 XCF
TSA4 TSA4 AGENT READY TSAPLEX INGXSGA0 V3R5M0 XCF
  
```

# Agenda

- Overview
- Integration with Omegamon
  - Immediate Message reporting on TEP
  - Looping Address Space Suppression
- IPL
  - Staged IPL
  - IPL complete notification
- Manage bulk starts / stops using Pacing Gates
- Configuration Assistant
- Extended XCF communication
- Configuration Refresh Indicator

# Configuration Refresh Indication

Problem: how do I know the configuration refresh is performed on each system?

```

INGKYAM0                               SA z/OS - Command Dialogs                               Line 1    of 10
Domain Id . : IP75...
Operator Id : BU...
Cmd:  A Manage      B Show      C Refresh Configuration  D Diagnostic

CMD System  Member      Role  Status      Sysplex  XCF  Group  Release  Comm  PA
-----
TSA1      TSA1$$$$$2  SAM   READY       TSAPLEX  INGXSGA1  V3R5M0  XCF
TSA1      TSA1        AGENT REFRESH     TSAPLEX  INGXSGA1  V3R5M0  XCF
TSA1      TSA1$$$$$1  PAM   READY       TSAPLEX  INGXSGA1  V3R5M0  XCF
TSA2      TSA2$$$$$2  SAM   READY       TSAPLEX  INGXSGA2  V3R5M0  XCF
TSA2      TSA2$$$$$1  PAM   READY       TSAPLEX  INGXSGA2  V3R5M0  XCF
TSA2      TSA2        AGENT READY       TSAPLEX  INGXSGA2  V3R5M0  XCF
TSA3      TSA3$$$$$1  PAM   READY       TSAPLEX  INGXSGA0  V3R5M0  XCF
TSA3      TSA3        AGENT READY       TSAPLEX  INGXSGA0  V3R5M0  XCF
TSA4      TSA4$$$$$1  SAM   READY       TSAPLEX  INGXSGA0  V3R5M0  XCF
TSA4      TSA4        AGENT READY       TSAPLEX  INGXSGA0  V3R5M0  XCF
  
```

Press PF9 repeatedly and check that every Agent refreshed

Or check in every Netlog for completion message  
Or check on every agent with command ACF status

# Configuration Refresh Indication



INGPTOP: added status field with new status component INGCFG

```

SA Z/OS TEST-SYSTEMS

CONFIGURATION  >REFRESH STATUS

KEYAPLEX      KEY1PLEX      SATPLEX      TSAPLEX      A0CPLEX
>KEYA  IPXFG   >KEY1  IPSFM   >SAT1  IPZFA   >TSA1  IPZFL   >A0CA  IPUFA
>KEYB  IPXFH   >KEY2  IPSFN   >SAT2  IPZFB   >TSA2  IPZFM   >A0CB  IPUFB
>KEYC  IPXFI   >KEY3  IPSF0   >SAT3  IPZFC   >TSA3  IPZFN   >A0CC  IPUFC
                >KEY4  IPSFP   >SAT4  IPZFD   >TSA4  IPZF0   >A0CD  IPUFD

          S T A N D A L O N E   S Y S T E M S

>A0C1  IPUFG   >A0C4  IPUFJ   >A0C7  IPUFM
>A0C2  IPUFH   >A0C5  IPUFK   >A0C8  IPUF8
>A0C3  IPUFI   >A0C6  IPUFL   >A0C9  IPUF9

          H A R D W A R E

>PROCESSORS      >ENSEMBLES

06/20/14 17:04

===>
1=HELP 2=DETAIL 3=RETURN 6=ROLL 8=ZOOM/NEXT 12=SHOW SAM/XDR SYSTEMS
    
```



# Configuration Refresh Indication

INGPCFG: new Panel

```

TSA1 Configuration Refresh 06/20/14 17:05:32 1/4(4)
  Susplex  SAplex  System  |  Susplex  SAplex  System
TSAPLEX   TSA1CTL   TSA1
TSAPLEX   TSA2CTL   TSA2
TSAPLEX   TSA3PR0D  TSA3
TSAPLEX   TSA3PR0D  TSA4

===>
1=Help 2=Detail 3=Return 6=Roll 9=Bottom 10=Previous 11=Next 12=Top
24=INGAMS
  
```



# Configuration Refresh Indication

```
4 of 4          ---- Detail Status Display ----          06/20/14 17:06:06

Component . . . : TSA4          System . . . . . :
Color . . . . . : GREEN        Priority . . . . : 650
Date . . . . . : 06/20/14      Time . . . . . : 17:01:47
Reporter . . . . : AUT01       Node . . . . . : IPZF0
Info . . . . . : TSAPLEX TSA3PROD      TSA4
Reference value : TSA3PROD_TSA4      56
A0F031I Configuration Refresh on 'TSA4' is 'COMPLETE'.

===>
1=Help  3=Return 4=Delete  6=Roll 7=Up 8=Down      11=Bottom 12=Top
```

# Configuration Refresh Indication

INGPCFG: new Panel

Configuration Refresh 06/20/14 17:05:32 1/4(4)

SuspLex	SApLex	System	SuspLex	SApLex	System
TSAPLEX	TSA1CTL	TSA1			
TSAPLEX	TSA2CTL	TSA2			
TSAPLEX	TSA3PROD	TSA3			
TSAPLEX	TSA3PROD	TSA4			

Tree structure included in AOFTREE

```

INGTCFG
1 INGCFG
2 &SDFCSaplex.
3 AGENT
    
```

```

INGTCFG
1 INGCFG
2 localSApLex
3 AGENT
1 INGCFG
2 SApLex1
3 AGENT
1 INGCFG
2 SApLex2
3 AGENT ...
    
```

1=Help 2=Detail 3=Return 6=Roll 9=Button

## CNMSTYLE

```

COMMON.AOF_AAO_SDFCSAPLEX.0=2
COMMON.AOF_AAO_SDFCSAPLEX.1=localSApLex
COMMON.AOF_AAO_SDFCSAPLEX.2=SApLex1 SApLex2 ...
    
```

Thank  
You

# IBM System z Service Management critical for moving to Mobile, Big Data and Cloud



IBM continues to improve z/OS environment to support new technologies

- IBM SmartCloud Analytics – Log Analysis z/OS Insight Packs 1.1.0.1
- IBM Service Management Suite for z/OS V1.2
- IBM Tivoli OMEGAMON Performance Management Suite for z/OS V5.3.0
- IBM Tivoli OMEGAMON XE on z/OS 5.3.0, IBM Tivoli OMEGAMON Dashboard Edition on z/OS 5.3.0, IBM Tivoli OMEGAMON XE for Messaging for z/OS 7.3.0, IBM Tivoli OMEGAMON XE for CICS on z/OS 5.3.0, IBM Tivoli OMEGAMON XE for Storage on z/OS 5.3.0
- IBM Tivoli System Automation for z/OS V3.5
- IBM Automation Control for z/OS V1.1.1
- IBM Tivoli NetView for z/OS V6.2.1
- IBM Tivoli NetView Monitoring for GDPS V6.2.1
- IBM Tivoli Workload Scheduler for z/OS V9.2

Learn More: <http://www-01.ibm.com/software/os/systemz/itsm/>

Follow us on Service Management Connect:



<https://www.ibm.com/developerworks/servicemanagement/z/>

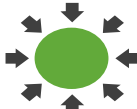



And, Mainframe Insights:

[https://www-304.ibm.com/connections/blogs/systemz/?lang=en\\_us](https://www-304.ibm.com/connections/blogs/systemz/?lang=en_us)

Twitter: @ServMgmtConnect @systemz #mainframe #servicemgmt



<b>IBM Knowledge Center</b> 	<b>Community</b> 
<a href="#">Product documentation</a>	<a href="#">Service Management Community</a>

	<b>Wiki</b> 	<b>Homepage</b> 	<b>Forum</b> 
Tivoli System Automation for z/OS	<a href="#">Wiki SA z/OS</a>	<a href="#">Homepage SA z/OS</a>	<a href="#">Forum SA z/OS on developerWorks</a> <a href="#">Forum SA z/OS on Yahoo</a>
Service Management Suite for z/OS 	<a href="#">Wiki SMSz</a>	<a href="#">Announcement SMSz</a>	<a href="#">Forum SMSz on developerWorks</a>

# Customization Dialog

- PDB Browse
- Activity log
- Startup Policy
  - Refreshstart
  - Anystart
- Shutdown Pass Interval
- Command fields 227
- Mixed case for cmds in Startup and Shutdown
- AT Definitions for every Begin / End block
- Option to add REVISE('Y' AUTOMATE) generally in MRT
- Option to get informed for not automated WTORs
- Support for export and import of Processor data (PRO)

# ProcOps

- zAware support
- SNMPv3 support

# SysOps

- Support of Job Log Monitoring now also for JES3
- INGRDS improvements
- Tailorable 3270 panels which are scrollable
- SDF: support for alphabetical sort order in a body
- Exit AOFEXC25 informs about changes at policy activation