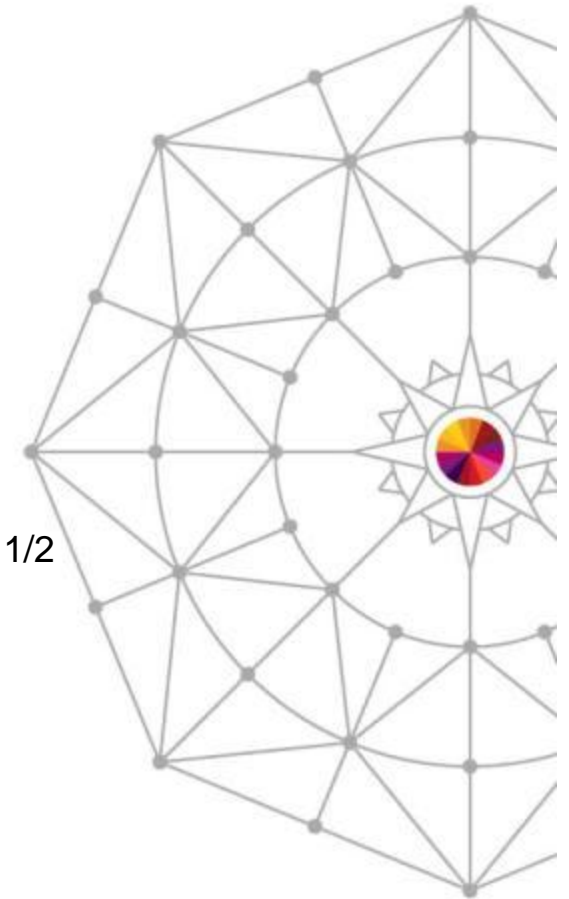# z/OSMF V2R1: Configuration Assistant for z/OS Communications Server

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IBM

Tuesday, March 11, 2014: 12:15 PM - 01:15 PM MA, Gold Key 1/2

Session Number 15196

SHARE in Anaheim

Agenda

- What is the Configuration Assistant and how can it help you (quick introduction)

- Configuration Assistant on Windows no longer provided as a download as of z/OS V2R1

- Configuration Assistant redesigned in V2R1 to improve performance, user experience, and integration with other z/OSMF plug-ins

# Overview of what the Configuration Assistant Provides

- **Tool to simplify configuration of z/OS Communications Server policy-based networking technologies**
  - IP Security – IP Filter rules and VPN tunnels
    - Along with configuration for NSS and DMD daemons
      - Quickly create IP Sec policy to filter traffic to/from the network, or to secure and protect data
  - Application Transport TLS (AT-TLS)
    - Create policies to secure your applications using SSL/TLS. Predefined rules are provided for many IBM z/OS applications!
  - Intrusion Detection Services (IDS)
    - Detect signature events (ex:scans and attacks) that can cause a misuse of system resources.
  - Policy-based Routing (PBR)
    - Create policies to allow TCP/IP to route traffic based upon criteria other than destination IP Address
  - Quality of Service (Qos)
    - Create policies to influence the performance of TCP/IP traffic

Policy administrator using Configuration Assistant
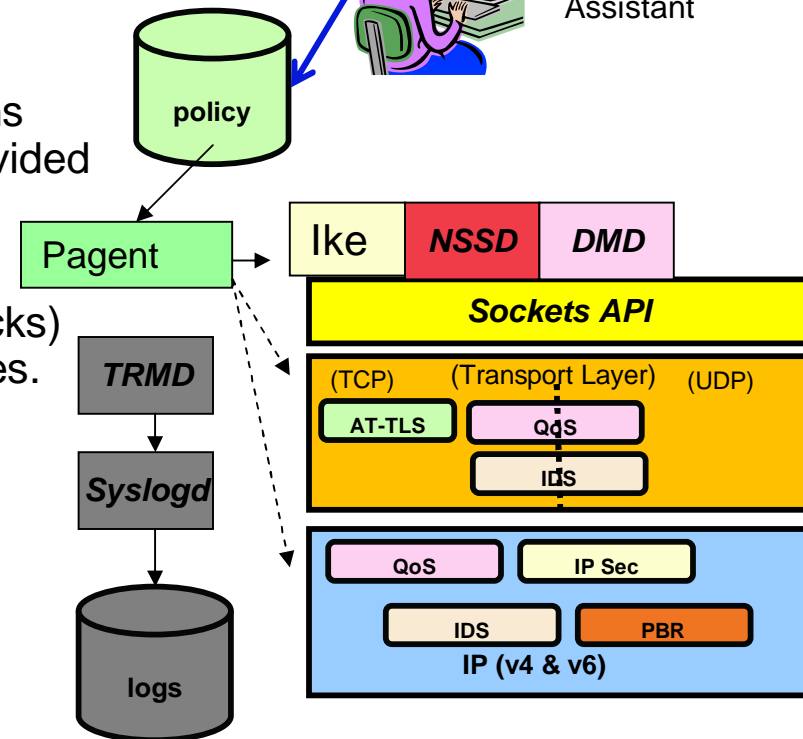
How can the Configuration Assistant Help?

- Simplifies about 6 chapters of publications documentation
  for the Policy-based networking technologies into **"a few clicks"**

- Provides a UI with wizards, helps, and tutorials that guide users through the
  configuration of policy rules providing a task-oriented approach

- Generates correct policy configuration (free from syntax errors)

- Provides health checks for configuration inconsistencies and recommends
  best practices   Ex: "Don't forget filter rules to permit DNS and OMPRoute"

- Supports import of existing policy configuration flat files to get you started

- Also helps with setup of the policy-based networking environment-
  ex: daemons such as Policy Agent, Syslogd, TRMD,etc..
    - Step by step guidance. Sample started procedures and required SAF profiles

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Key Enhancements with the V2R1 Configuration Assistant

- With z/OS V2R1, the Configuration Assistant has been completely redesigned to better integrate with z/OSMF
  - This is the topic of this presentation

- For each new release, the Configuration Assistant supports new function in z/OS Communications Server in support of enhancements to the policy-based networking technologies
  - AT-TLS support for currency with z/OS System SSL
    - TLS V1.2 and new cipher suites
    - Renegotiation options (RFC 5746)
    - Elliptic Curve Cryptography (RFC 4492 and RFC 5480)
  - Details in **What's New** link on Configuration Assistant main page. Also, attend the z/OS Communications Server V2R1 Overview here at Share!

Windows version of the Configuration Assistant is no longer provided

Statement of Direction

z/OS V1R13 is planned to be the final release for which the IBM Configuration Assistant too. that runs on Microsoft Windows will be provided by IBM. This tool is currently available as an as-is, nonwarranted web download. Customers who currently use the Window's-based IBM Configuration Asistant for z/OS Communications Server tool should migrate to the z/OS Management Facility (z/OSMF) Configuration Assistant. The IBM Configuration Assistant for z/OS Communications Server that runs within z/OSMF is part of a supported IBM product and contains all functions supported with the Windows tool.

- As of z/OS V2R1, no longer providing the Microsoft Window's version
- Configuration Assistant has been available with z/OSMF since z/OS V1R11

➤ As of z/OS V2R1, <u>users must migrate</u> to the Configuration Assistant that is a plug-in to z/OSMF.

Recommended for moving to z/OSMF

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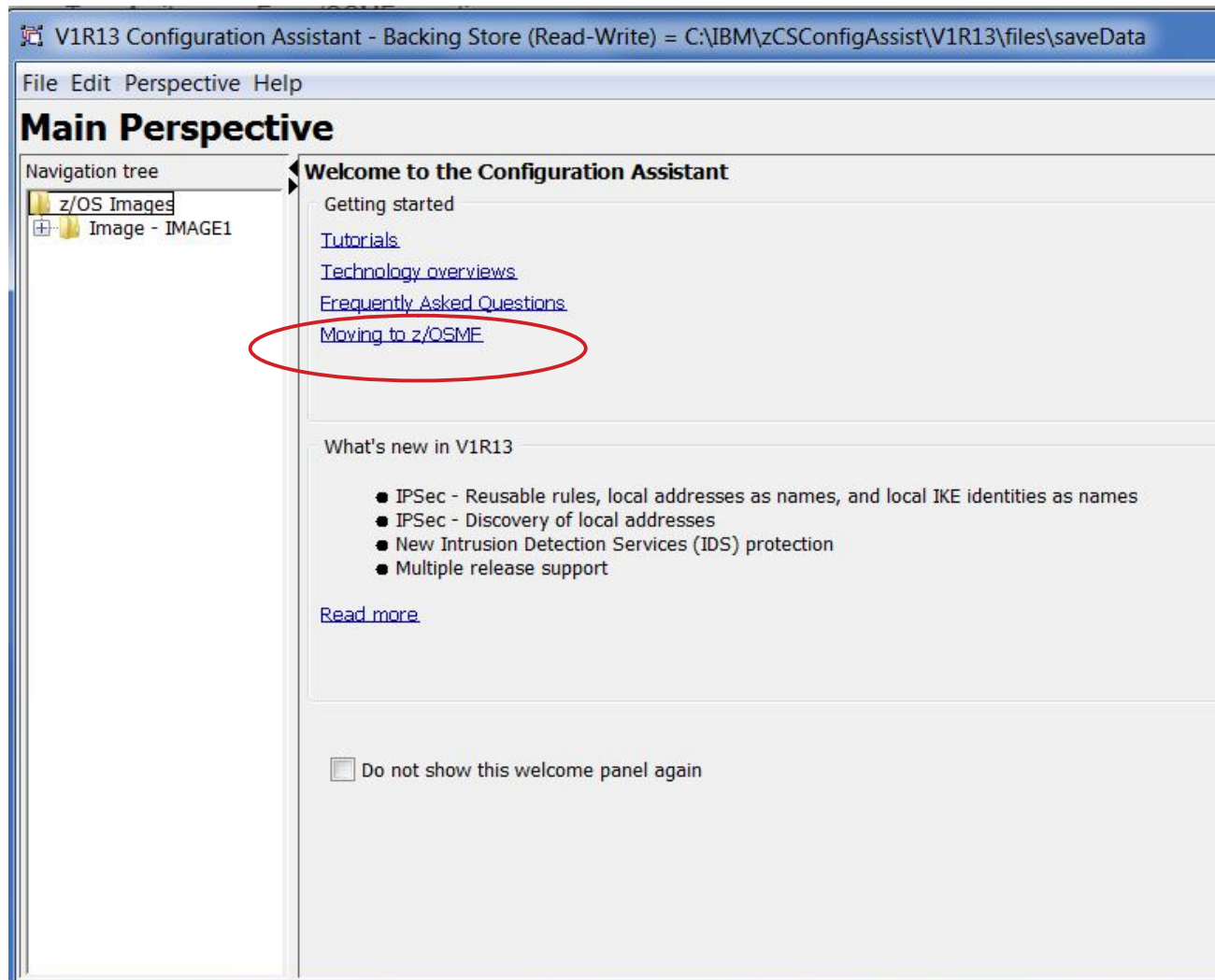
Background: Early integration of the Configuration Assistant with z/OSMF

- **Configuration Assistant has been available with z/OSMF since it was first introduced in the z/OS V1R11 timeframe**
  - Migrating Configuration Assistant from a Windows "fat client" to a web, browser-based application was not that difficult
    - Written in Java and used a UI framework (AUIML) that allowed for rendering the UI using SWING (desktop) **or** HTML (web).

  - Because of these features,it was fairly easy to integrate with z/OSMF
    - In V1R11, the Configuration Assistant was "loosely" integrated with z/OSMF
      - *Did not completely use the z/OSMF framework*

  - ➢ In z/OS V2R1, the Configuration Assistant is fully integrated with z/OSMF

Many benefits to the Configuration Assistant in z/OSMF

- z/OSMF is the new, strategic z/OS systems management console
  - Configuration Assistant provides the systems management function for policy-based network configuration

- Satisfies requirements from many customers to provide the Configuration Assistant as a browser-based application

- Provides the ability to have centralized product access for multiple users vs a "fat client"
  - Rather than downloading and managing several copies across workstations in the enterprise

- Runs on the platform its configuring and allows for centrally managing configuration backing stores
  - Configuration files can be saved locally to the shared file system (may not require FTP)

- Configuration Assistant as an IBM product vs "as-is tool" becomes more important and strategic for enhancing

Many benefits to Configuration Assistant in z/OSMF…continued..

- z/OSMF provides official IBM product with support and delivery through official channels
    - Windows version has been "as-is" and "best-effort" for support

- Allows for easier integration with other z/OSMF plug-ins and applications in the future
    - Cross-product linking to provide value

What is required to use the Configuration Assistant on z/OSMF?

- Recognize that migrating from Windows to z/OSMF is not trivial
  - z/OSMF must be installed and configured (setup) by an administrator
  - Requires administering/maintaining another z/OS application

- As z/OSMF grows, the benefits will out-weigh the start-up pains

- Configuration Assistant has <u>no requirements</u> for the installation of "other" supporting products or applications
  - Once z/OSMF is installed, users can begin using the Configuration Assistant
  - Don't forget to migrate your backing stores!

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What does z/OSMF really provide?

- z/OSMF is a free, fully supported <u>IBM product</u> that provides a browser based UI that is a portal specifically for accessing z/OS systems management functions
  - IBM applications "plug-in" to z/OSMF: these are providers for systems management functions that are geared toward simplification of traditional z/OS tasks
  - Currently only supports approved, IBM-product plug-ins
  - V2R1 is based upon the new light-weight, WebSphere Application Server with Liberty Profile runtime – significantly improved installation, setup, memory consumption, and disk footprint

- z/OSMF provides a <u>common framework</u> for plug-ins (like the Config Assistant) that includes:
  - Provides a user login with authentication (z/OS user Id)

  - A common launch point which is panel with a navigator where applications like the CA can plug-in and be invoked
    - Each plug-in registers as a "task" which defines its invocation link (html or jsp) . This link then appears in the z/OSMF navigator.

System Admins "Log-in" and Access Configuration Assistant

What does z/OSMF really provide? cont..

- Defines common UI resources (panel elements) used across plug-ins to allow for common look and feel, providing consistency
  - Common panel widgets (UI elements) for common look and feel, ex: tables (common column filtering) , breadcrumbs, etc
  - Moving toward use of UI technology and designs that standardize across IBM products

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What does z/OSMF really provide? cont..

- Provides rules for translation. Japanese is currently supported.

- Defines browser products and levels supported.
  - Internet Explorer (IE8), IE9, and FireFox

➢ Key is that z/OSMF provides the framework for the plug-ins to create modern, service-oriented architectures when developing their functions!

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Pre-V2R1 Configuration Assistant did not integrate well

- Pre-V2R1 Config Assistant did not integrate well into z/OSMF
  - Old UI framework used did not perform well (server-side performance)
    - Forced application logic to be tightly bound to UI presentation layer logic (not a good web application design)

  - Not based upon the z/OSMF framework; therefore, presented a different look, feel, and behavior than other z/OSMF plug-ins
    - Use of z/OSMF common UI widgets intended to provide consistency across plug-ins

➢ Pre-VR1 Config Assistant on z/OSMF did not look nor perform well

Configuration Assistant becomes a modern web application

- Redesigned the Configuration Assistant to better integrate with z/OSMF and other plug-ins
  - Removed old UI infrastructure

- Uses a Web 2.0 design based upon "AJAX" (Asynchronous JavaScript and XML) which provides the 3- tier architecture
  1. The client side (browser) provides the UI and is based upon html, javascript, dojo, css, and z/OSMF common widgets
     - Allows for improved performance since much of the logic now executes in the browser

  2. The browser communicates with the server side, using the http protocol and accesses the server side resources through RESTful web services
     - Uses http verbs,ex: GET, POST, DELETE to manage resources defined as URI's

  3. On the server side, the Config Assistant defines and manages resources (ex: rules, traffic descriptors, security levels) which are defined with a URI for accessing throug the services as just described in # 2.
     - Data exchanged over HTTP uses a JSON format instead of XML (lighter than XML)

z/OS

"Server side"

z/OSMF

Configuration Assistant

RESTful Services

WebSphere/Liberty

Backing Stores

Policy flat files

http request

http response

"Client side"

Data transported by services in JSON format

All UI logic (presentation) executes In the browser!

HTTP Requests to server side to get, update, delete resources

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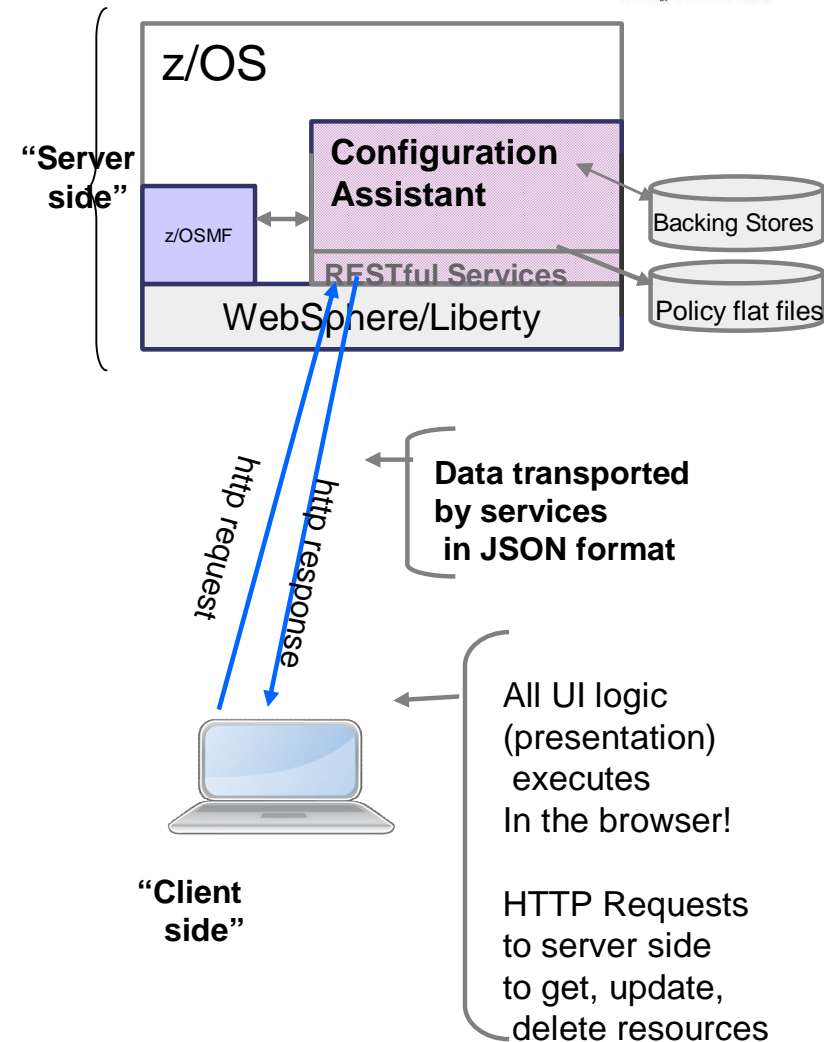
Much improved performance in Lab Testing

- Significantly improved performance vs V1R13 Config Assistant
- The usage model with the Configuration Assistant is not one that results in sustained driving of CPU since there's typically a lot of "think time" between clicks
- Tests conducted : IP Sec Filter Rule creation over 5 minute interval with EC12, 1 CPU, 2GB memory. Results:
  - Rules Created: 16 with V2R1, 6 with V1R13 **(2.6x)**
  - CPU Estimates (avg/rule): **V2R1 8x better than V1R13 (i.e. uses less CPU)**
  - Avg Response Time per Rule: V2R1 is approximately 2.5x better
- Some improvements due to overall improvements in z/OS V2R1, but most improvements due to the new "AJAX" design model.

Disclaimer: Tests conducted in the lab environment may not produce the same results in other environments.

Summary of the Redesigned Configuration Assistant

- Better integration with z/OSMF and improved look and feel

- Much better performance and modern web design

- Provides foundation for expansion aligned with IBM and platform strategies

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V2R1 Configuration Assistant

- The Configuration Assistant has been redesigned, but all existing configuration backing stores for supported releases can be used without change!
  - Supported releases are V2R1, V1R13, and V1R12

- <u>All</u> panels are new; however, the same functions are provided
  - Significant change in the look and feel
  - No loss of function in terms of generating policy configuration for technologies

- A few areas where change is noticeable
  - One example is the Application Setup Tasks. Has been replaced with **Workflow**.
  - No longer have a "Main" perspective
  - Navigation tree for systems and reusable objects

- New function is provided
  - Enhanced backing store management

➢ Tool has been significantly reconstructed and well-tested, but- recommend users <u>save a copy of their existing configuration backing stores!</u>

Repeat! Good place to start if migrating from Windows for the first time!

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Migrating to V2R1 from Windows

1) Locate backing stores
2) FTP to z/OS (Unix file)

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Migrating to V2R1 from Windows continued…

3. In the <u>V2R1</u> Configuration Assistant go to Manage Backing Stores to access the backing store FTP'd from Windows

4. The Transfer Action will transfer the backing store into the Config Assistant

Specify the location of the file that was FTP'd

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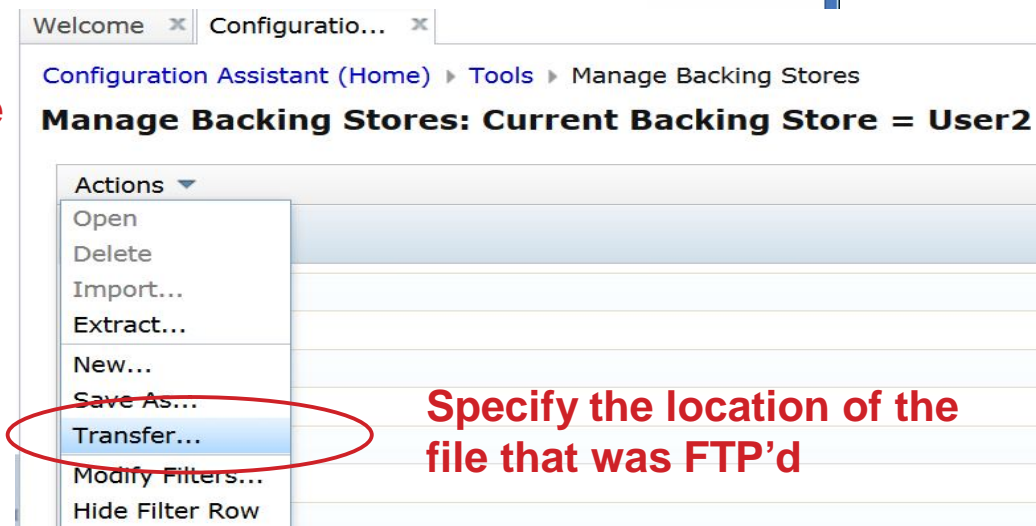
Comparing Pre V2R1 and V2R1 Configuration Assistant

A quick overview of some key differences

PRE V2R1

Discussion Features:
1) **Systems Navigation Tree**
2) **Perspectives**
3) **Main Perspective**

System Navigation Tree

V2R1

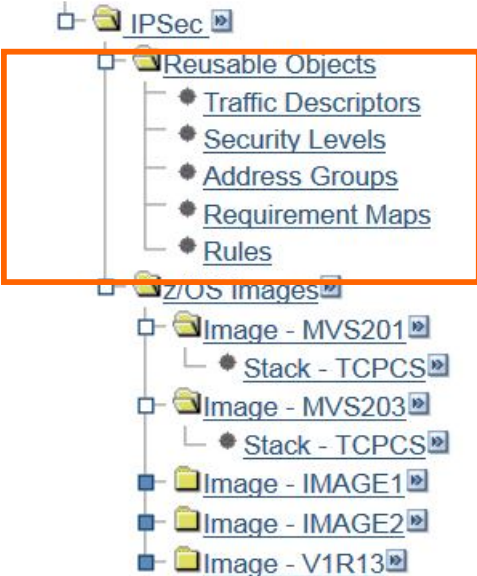## Pre V2R1

No "Main Perspective"

Pre V2R1

Discussion Features:
1) The Technology Perspective's Reusable Objects
2) Same objects for each technology in V2R1!
   - Displayed and accessed differently

V2R1   **Reusable Objects Tabs**   **Pre V2R1**

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Backing Store Management

Discussion Features:
1) **Backing store management is a hodge-podge**
2) **In V2R1, much improved!**

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V2R1 Improved Backing Store Management

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V2R1 Manage Backing Stores Details

Welcome ✕ | Configuratio... ✕

Configuration Assistant (Home) ▸ Tools ▸ Manage Backing Stores

Manage Backing Stores: Current Backing Store = CADemo

"Locked" could be another status

Status is "moment in time".
Use the "Refresh" button to update.

Actions ▼

	Name ▲ Filter	Status Filter	Time Last Updated Filter	
◉	CADemo	Current	2013-01-24 15:50:52	
○	CADemoAKT	Available	2013-01-24 15:50:52	
○	CATestIPSec	Available	2013-07-25 08:26:27	
○	DianeBS_ATTLS_FF	Available	2013-01-24 15:50:53	
○	DianeBS_ATTLS_IE8	Available	2013-04-01 12:52:18	
○	DianeBS_ATTLS_IE9	Available	2013-01-24 15:50:54	
○	DianeBS_DMD_FF	Available	2013-01-24 15:50:54	
○	DianeBS_DMD_IE8	Available	2013-01-24 15:50:54	
○	DianeBS_DMD_IE9	Available	2013-01-24 15:50:55	
○	DianeBS_IPSEC_LAN_FF	Available	2013-01-24 15:50:56	
○	DianeBS_IPSEC_LAN_IE8	Available	2013-01-24 15:50:58	
○	DianeBS_IPSEC_LAN_IE9	Available	2013-01-24 15:50:58	
○	DianeBS_testswing	Available	2013-01-24 15:50:59	
○	DianeBS_testswing2	Available	2013-01-24 15:50:59	

Total: 69, Selected: 1

Refresh   Last refresh: Jul 30, 2013 2:18:36 PM local time (Jul 30, 2013 6:18:36 PM GMT)

Close

V2R1 Backing Store Management Actions

Welcome ✕ | Configuratio... ✕

Configuration Assistant (Home) ▸ Tools ▸ Manage Backing Stores

V2R1 Current Backing Store = xyz

Actions ▼		▲	Status Filter	Time Last Updated Filter
Open				
Delete				
Import...	_IE8		Available	2013-01-24 15:51:15
Extract...	_IE9		Available	2013-01-24 15:51:15
New...	re		Available	2013-01-24 15:51:15
Save As...			Available	2013-01-24 15:51:16
Transfer...			Available	2013-05-02 15:41:14
Modify Filters...			Available	2013-01-24 15:51:16
Hide Filter Row			Available	2013-01-24 15:51:16
Clear Filters			Available	2013-01-24 15:51:16
Modify Sort...			Available	2013-01-24 15:51:17
Clear Sorts			Available	2013-01-24 15:51:17
○ R8Store			Available	2013-01-24 15:51:17
○ R9Store			Available	2013-01-24 15:51:17
○ rft			Available	2013-01-24 15:51:18
○ saveData			Available	2013-04-23 22:41:47
○ TEST			Available	2013-01-24 15:51:18

Total: 71, Selected: 1

Refresh Last refresh: Jul 30, 2013 2:38:01 PM local time (Jul 30, 2013 6:38:01 PM GMT)

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Pre-V2R1 Message Popups for Errors

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V2R1 Messages are Inline (part of panel)

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Application Setup Tasks now Integrated with z/OSMF Workflow Plug-in

- Removed Application Setup Tasks from the Configuration Assistant plug-in and moved to the Workflow plug-in

- Application Setup Tasks are associated with each Configuration Assistant technology at the Image level
  - Help with setup of the Policy-based networking environment: Step by step instructions for SAF profile and configuration file setup, etc.., for the policy agent and other required daemons (syslogd, TRMD, IKE, etc)
  - Targeted toward new policy users or new technologies
  - In many cases, tasks are repeated for each Image (repetitive)

- Workflow provides a common place for setup tasks that can be tailored for each system where needed.
  - Upon entering the workflow task, users must "create" a new workflow
  - Create the Configuration Assistant workflows

- Workflows consist of a set of steps which are like instructions. Once the workflow is created, the workflow engine drives the user through the workflow steps using a wizard (best viewed with a quick demo).

Application Setup Tasks Refresher

Application Setup Tasks Refresher cont..

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Application Setup Tasks Refresher cont..

RACF Directives for Policy Agent startup

Before starting the Policy Agent daemon, you must authorize Policy Agent to access appropriate system resources.

Before you begin

1. The sample setup specifies 'PAGENT' as the user name defined to run the Policy Agent application. If a diffe occurrences where 'PAGENT' is used as a user name.
2. Review the instructions for the Policy Agent Startup task. Once Policy Agent is started, it will start and moni IKED, SYSLOGD, and TRMD.

Install the sample job

Included below is a RACF job that you can use to prepare for Policy Agent execution.

1. Select Install to deliver the RACF job to the target system. The name of the file on that system will be - **/etc/**
2. The first portion of the job defines a RACF user of PAGENT.
3. The next portion of the job permits PAGENT to the BPX.DAEMON facility. The BPX.DAEMON facility is o needed.
4. The next portion of the job grants users the ability to control Policy Agent. Change the ID parameter of the P or stop Policy Agent.
5. The next portion of the job defines a SERVAUTH profile INITSTACK that allows applications to open a soc PAGENT and OMPROUTE are permitted to this profile.
6. Add a valid JOB card to the beginning of the job and submit it for execution.

```
//RPAGENT JOB RPAGENT,CLASS=A,NOTIFY=&SYSUID
//* Configuration Assistant, 2014.03.08 09:47:45
//* RACF Directives for Pagent startup
//* 1. Define user PAGENT to the STARTED class
//* 2. Permit user PAGENT to the BPX.DAEMON facility
//*    Note that BPX.DAEMON is optional and the PERMIT
```

Required JCL

Help for using the Workflow Engine Plug-in

Workflows ✕ | Configuratio... ✕

Welcome to V2R1 Configuration Assistant for z/OS Communications Server

Use this task to create and manage configuration for z/OS Communications Server policy-based networking functions.

Select a backing store for configuration:

saveData ▾ | Open

Learn more about Configuration Assistant:

What's New	See what is new in this release.
Getting Started	First time users can learn about Configuration Assistant.
Migrating to z/OSMF	Migrate backing stores from Windows to z/OSMF.
Application Setup Tasks	Workflows to guide the setup of required applications.
Tutorials	Link to tutorials.
FAQs	Link to Frequently Asked Questions.

From Tutorial: Finding the List of Workflows

Create Workflow

Type or select a workflow definition file to use for creating a new workflow.
For a z/OS data set, specify a fully qualified name, with no quotes.

＊ Workflow definition file:

`/usr/lpp/zosmf/V2R1/workflow/plugins/izuca/ezb_pagent_setup_wizard.xml`
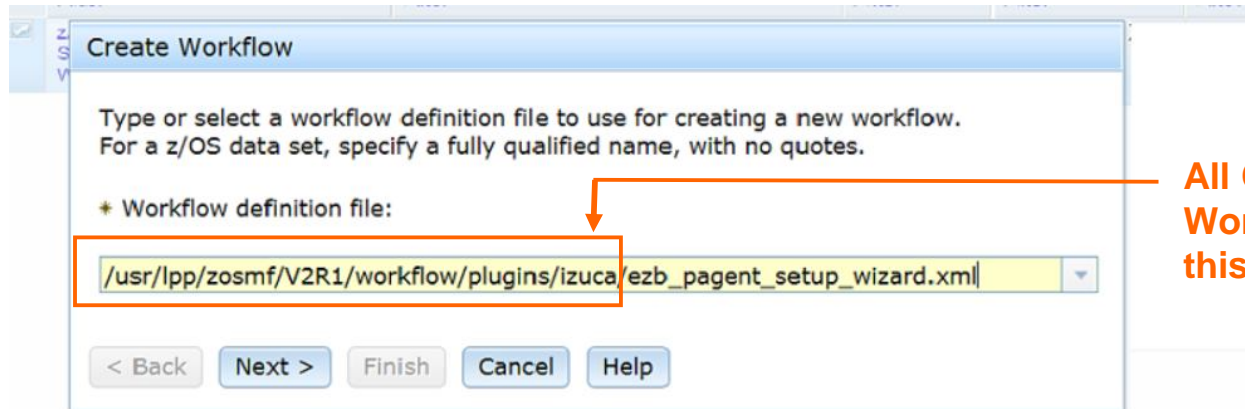
All Configuration Assistant Workflows are in this directory.

[< Back] [Next >] [Finish] [Cancel] [Help]

Workflows for Policy-based Networking

- **ezb_pagent_setup_wizard.xml** - This workflow provides the setups for setting up the Policy Agent (Pagent). Pagent is required for all of the policy-based networking technologies: IPSec, AT-TLS, IDS, PBR, and QoS. Pagent uses syslod for logging.
- **ezb_dmd_setup_wizard.xml** - This workflow provides the steps for setting up the Defense Manager Daemon (DMD). DMD also uses TRMD and Syslogd for logging.
- **ezb_ike_setup_wizard.xml** - This workflow provides the steps for setting up to run the IKE daemon (iked). The IKE daemon uses syslogd for logging.
- **ezb_nss_setup_wizard.xml** - This workflow provides the steps for setting up the Network Security Services (NSS) daemon. The NSS daemon uses syslogd for logging.
- **ezb_trmd_setup_wizard.xml** - This workflow provides the steps for setting up the Traffic Regulation Management Daemon (TRMD). This is used with IPSec, DMD, and IDS techologies for logging. It works in conjuction with Syslogd to provide logging.
- **ezb_syslogd_setup_wizard.xml** - This workflow provides the steps for setting up Syslogd.
- **ezb_tcpip_profile_sample_wizard.xml** - This workflow provides a sample Tcp/Ip profile which contains common statements required to enable AT-TLS and IP Security, and additionally includes port reservation statements for running daemons.

z/OSMF Workflow Plug-In

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Create the workflows

IBM z/OS Management Facility   Welcome user1

Workflows ✕

Workflows

1. **Use the "Create Workflow" in the Actions menu**

Simplifies tasks through guided step-based workflows, and provides administrative functions for assigning workflow responsibilities and tracking progress.

Actions ▼

Workflow Name	Description	Version	Vendor	Owner	System	Percent Complete
Filter	Filter	Filter	Filter	Filter	Filter	
z/OS Communications Server: Setup to run Traffic Regulation Management Daemon (TRMD) - Workflow_0	z/OS Communications Server: Setup to run Traffic Regulation Management Daemon (TRMD)	1.0	IBM	user1	XESDEV.MVS160 (MVS160_001)	0%
z/OS Communications Server: Setup for Syslogd - Workflow_0	z/OS Communications Syslogd				_001)	0%
Setting up to run IP Defensive Filters with Defense Manager Daemon (DMD) - Workflow_0	Setting up to run IP De Defense Manager Dae				_001)	0%
Set up to run Network Security Services (NSS) - Workflow_0	Set up to run Network (NSS)				_001)	0%
z/OS Communications Server: IP Security with IKE - Workflow_0	z/OS Communications with IKE					11%
z/OS Communications Server: Install Sample Profiles for TCP/IP Components - Workflow_0	z/OS Communications Server: Install Sample Profiles for TCP/IP Components	1.0	IBM	user1	XESDEV.MVS160 (MVS160)	0%
z/OS Communications Server: Setup to run Policy Agent - Workflow_0	z/OS Communications Server: Setup to run Policy Agent	1.0	IBM	user1	XESDEV.MVS160 (MVS160)	0%

Create Workflow

Type or select a workflow definition file to use for creating a new workflow.
For a z/OS data set, specify a fully qualified name, with no quotes.

✳ Workflow definition file:

/usr/lpp/zosmf/V2R1/workflow/plugins/izuca/ezb_pagent_setup_wizard.xml ▼

[< Back] [Next >] [Finish] [Cancel] [Help]

Total: 7, Selected: 0

[Refresh] Last refresh: Aug 9, 2013 9:56:38 AM local time (Aug 9, 2013 1:56:38 PM GMT)

Configuration Assistant-Provided Workflows

Workflows

Simplifies tasks through guided step-based workflows, and provides administra

☑ ☐	Actions ▼		
	Workflow Name Filter	**Description** Filter	**V** F
☐	z/OS Communications Server: Setup to run Traffic Regulation Management Daemon (TRMD) - Workflow_0	z/OS Communications Server: Setup to run Traffic Regulation Management Daemon (TRMD)	1
☐	z/OS Communications Server: Setup for Syslogd - Workflow_0	z/OS Communications Server: Setup for Syslogd	1
☐	Setting up to run IP Defensive Filters with Defense Manager Daemon (DMD) - Workflow_0	Setting up to run IP Defensive Filters with Defense Manager Daemon (DMD)	1
☐	Set up to run Network Security Services (NSS) - Workflow_0	Set up to run Network Security Services (NSS)	1
☐	z/OS Communications Server: IP Security with IKE - Workflow_0	z/OS Communications Server: IP Security with IKE	1
☐	z/OS Communications Server: Install Sample Profiles for TCP/IP Components - Workflow_0	z/OS Communications Server: Install Sample Profiles for TCP/IP Components	1
☐	z/OS Communications Server: Setup to run Policy Agent - Workflow_0	z/OS Communications Server: Setup to run Policy Agent	1

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Thank You

For more information

URL	Content
http://www.twitter.com/IBM_Commserver	IBM z/OS Communications Server Twitter Feed
http://www.facebook.com/IBMCommserver	IBM z/OS Communications Server Facebook Page
https://www.ibm.com/developerworks/mydeveloperworks/blogs/IBMCommserver/?lang=en	IBM z/OS Communications Server Blog
http://www.ibm.com/systems/z/	IBM System z in general
http://www.ibm.com/systems/z/hardware/networking/	IBM Mainframe System z networking
http://www.ibm.com/software/network/commserver/	IBM Software Communications Server products
http://www.ibm.com/software/network/commserver/zos/	IBM z/OS Communications Server
http://www.redbooks.ibm.com	ITSO Redbooks
http://www.ibm.com/software/network/commserver/zos/support/	IBM z/OS Communications Server technical Support – including TechNotes from service
http://www.ibm.com/support/techdocs/atsmastr.nsf/Web/TechDocs	Technical support documentation from Washington Systems Center (techdocs, flashes, presentations, white papers, etc.)
http://www.rfc-editor.org/rfcsearch.html	Request For Comments (RFC)
http://www.ibm.com/systems/z/os/zos/bkserv/	IBM z/OS Internet library – PDF files of all z/OS manuals including Communications Server
http://www.ibm.com/developerworks/rfe/?PROD_ID=498	RFE Community for z/OS Communications Server
https://www.ibm.com/developerworks/rfe/execute?use_case=tutorials	RFE Community Tutorials

For pleasant reading ….

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