#SHAREorg

SHARE
Technology · Connections · Results

13061: z/OSMF Advanced Functionality

Anuja Deedwaniya

STSM, z/OS Systems Management and Simplification

IBM Poughkeepsie, NY

anujad@us.ibm.com

SHARE in San Francisco 2013

Trademarks

The following are trademarks of the International Business Machines Corporation in the United States and/or other countries.

IBM*
IBM Logo*

* Registered trademarks of IBM Corporation

The following are trademarks or registered trademarks of other companies.

Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.
IT Infrastructure Library is a registered trademark of the Central Computer and Telecommunications Agency which is now part of the Office of Government Commerce.
Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.
Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.
ITIL is a registered trademark, and a registered community trademark of the Office of Government Commerce, and is registered in the U.S. Patent and Trademark Office.
UNIX is a registered trademark of The Open Group in the United States and other countries.
Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.
Cell Broadband Engine is a trademark of Sony Computer Entertainment, Inc. in the United States, other countries, or both and is used under license therefrom.
Linear Tape-Open, LTO, the LTO Logo, Ultrium, and the Ultrium logo are trademarks of HP, IBM Corp. and Quantum in the U.S. and other countries.

* All other products may be trademarks or registered trademarks of their respective companies.

Notes:
Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.
IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply.
All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.
This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area.
All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.
Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.
Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.

Complete your sessions evaluation online at SHARE.org/SFEval

Agenda

- z/OS Jobs REST Interface
- Application Linking
- Adding custom banner
- z/OSMF administration
  - Adding Links
  - z/OSMF security/authorization
- Proposed Enhancements

Complete your sessions evaluation online at SHARE.org/SFEval

z/OS Jobs management

- z/OSMF 1.13 introduced a new RESTful interface to z/OS for submitting and accessing job information.
  - A RESTful web service (also called a RESTful web API, or REST API) is a simple web-based publishing service implemented using HTTP(s).
- This interface is an open API which can be driven locally on a z/OS system or more likely driven from a remote system.
  - The remote system need only support the HTTP(s) protocol.
- The web services would be easily consumable by: web applications (javascript/AJAX, Flex(Flash), etc) and other web service clients, such as Java, PHP, Perl, etc
- The web service will support both JES2 and JES3 as the primary JES subsystem, as well as secondary subsystems
- There is no GUI interface. This item provides the customer a programmatic interface for web applications via z/OSMF.
- User will need to authenticate to z/OSMF, and should be authorized to submit jobs on the z/OS system

Complete your sessions evaluation online at SHARE.org/SFEval

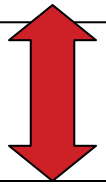
RESTful JOBs interface - z/OS batch modernization

- Today's options:
  - Allocate and open internal reader
  - TSO/ISPF submit,
  - FTP "interface-level2"
  - Java z/OS submit interface

- Complex programming
- Security protocol limitations

- New RESTful HTTPs based API
  - Secure, firewall friendly, text like

- Any web-based, Java, PHP, Perl application, etc. supporting HTTP



Break the barriers of batch

- z/OSMF R13
- z/OS JES2
- z/OS JES3

Submit JCL, get status, retrieve output files, change jobclass, cancel job, purge job

Complete your sessions evaluation online at SHARE.org/SFEval

Restful JOBS APIs

Service	URL	HTTP method
Get job status	***https://host:port/zosmf/restjobs/jobs/***jobname/jobid	***GET***
Get job status for secondary JES	***https://host:port/zosmf/restjobs/jobs/-JESB/***jobname/jobid	***GET***
GET a list of spool files for a job	***https://host:port/zosmf/restjobs/jobs/***jobname/jobid/***files/***	***GET***
GET the contents of a particular spool file for a job	***https://host:port/zosmf/restjobs/jobs/***jobname/jobid/***files/***nnn***/records***	***GET***
GET a list of jobs, optionally based on owner or prefix parameters	***https://host:port/zosmf/restjobs/jobs***	***GET***
Submit a job	***https://host:port/zosmf/restjobs/jobs***	***PUT***
Cancel a job	***https://host:port/zosmf/restjobs/jobs/***jobname/jobid	***DELETE***

Complete your sessions evaluation online at SHARE.org/SFEval

Using the JOBs interface

Resource URLs

- The URLs of the z/OS jobs REST interface have the format:

```
https://{host}:{port}/zosmf/restjobs/jobs[/{resource}][?{parm}]
```

where:

`https://{host}:{port}`
- specifies the target system address and port

`/zosmf/restjobs/jobs`
- identifies the z/OS jobs REST interface; the base resource

`[/{resource}]`
- further qualifies the resource, as needed, such job name and job ID

`[?{parm}]`
- optionally one or more parameters to qualify the request

Complete your sessions evaluation online at SHARE.org/SFEval

Restful JOBs services - security considerations

- *User will need to authenticate to z/OSMF.*
- *Additional system requirements*
  - *To get contents of a spool file for a job, the user must have access to the JESSPOOL profile associated with the spool data set.*
  - *To submit a job, the user must be authorized to run jobs on the system and be able to access any protected resources that the job may require.*
  - *To cancel a job, change a job's class, or purge a job, the user must be authorized to use the Common Information Model (CIM) server and be permitted to the JES2-JES3Jobs CIM provider.*
  - *To cancel a job or purge a job, the user must be authorized to cancel the job.*

Complete your sessions evaluation online at SHARE.org/SFEval

Example

Get status of a job:

GET /zosmf/restjobs/jobs/G1JAVA1B/JOB00023 HTTP/1.1

HTTP/1.1 200 OK
Date: Thu, 13 Jan 2011 05:39:28 +0000GMT
Content-Type: application/json
Connection: close
{
”jobid”:”JOB00023”,”jobname”:”G1JAVA1B”,”subsystem”:null,”owner”:”G1JAVA1”,
”status”:”OUTPUT”,”type”:”JOB”,”class”:”A”,”retcode”:”CC 0000”,
"url":"https:\/\/host:port\/zosmf\/restjobs\/jobs\/G1JAVA1B\/JOB00023",
"files-url":"https:\/\/host:port\/zosmf\/restjobs\/jobs\/G1JAVA1B\/JOB00023\/files"
}

Complete your sessions evaluation online at SHARE.org/SFEval

Recent enhancements

- *z/OSMF V1R13 APAR **PM74502***

- ***Deprecation of non X-IBM- prefixed custom headers***
- ***Access to job JCL***
- ***Submit from data set (including the ability to request a recall of a migrated data set)***
- ***Submit from z/OS UNIX file***
- ***Secondary JES2 subsystem support for cancel a job, change job class, and delete a job (cancel a job and purge its output)***

Custom header deprecation

- *The following custom headers are deprecated (but still honored):*

Record-Range
Requested-Method
Bypass-Status
Actual-Status
Intrdr-Class
Intrdr-Recfm
Intrdr-Lrecl
Intrdr-Mode

- *Replaced with or New Added:*

X-IBM-Record-Range
X-IBM-Requested-Method
X-IBM-Bypass-Status
X-IBM-Actual-Status
X-IBM-Intrdr-Class
X-IBM-Intrdr-Recfm
X-IBM-Intrdr-Lrecl
X-IBM-Intrdr-Mode
X-IBM-JCL-Symbol
X-IBM-JCL-Correlator
X-IBM-Notification-URL

Complete your sessions evaluation online at SHARE.org/SFEval

Access to job JCL

- **The z/OS jobs REST interface to "retrieve the contents of a job spool file" is enhanced to allow access to the JCL used when the job was submitted.**
  - **This is equivalent to the JCL you see when using the SJ command under SDSF (Instream SYSIN data will also be returned if it exists).**
- **User can use the returned JCL to resubmit the job** *(our solution to "resubmit" requirement)*

  GET https://host:port/zosmf/restjobs/jobs/jobname/jobid/files/JCL/records

- ***Example:***

  What SDSF shows on ST panel for logged on user IBMUSER:

  SDSF STATUS DISPLAY ALL CLASSES LINE 1-55 (55)
  NP JOBNAME JobID Owner Prty Queue C Pos SAff ASys Status
  NICKA JOB00065 ZOSMFAD 1 PRINT A 38

  HTTP request:GET
  https://alps1158.pok.ibm.com:32208/zosmf/restjobs/jobs/NICKA/JOB00065/files/JCL/records

  HTTP response:
  //NICKA JOB (),MSGCLASS=H JOB00065
  // EXEC PGM=IEFBR14 00020000

Complete your sessions evaluation online at SHARE.org/SFEval

Submit Job

- ***Submit job from data set or z/OS UNIX***
  - ***Add support to submit a job that resides in a z/OS data set or z/OS UNIX file.***
  - ***greatly increase the flexibility of the submit job interface which currently allows only for submitting a job that is embedded in the HTTP request.***
  - ***This support can be used by customers with either JES2 or JES3.***

Submit from dataset

- ***Submit job from data set***

PUT https://host:port/zosmf/restjobs/jobs/
Content-Type: application/json
X-IBM-Intrdr-Class: A

{"file" : "//'CIMSSRE.SETUP.JCL(IEFBR14)'"}

- ***Example for Submitting job from data set***

HTTP request:PUT https://alps1158.pok.ibm.com:32208/zosmf/restjobs/jobs/
Content-Type: applicaton/json
X-IBM-Intrdr-Class: A
{"file" : "//'CIMSSRE.SETUP.JCL(IEFBR14)'" }

HTTP response includes a JSON Job document:
{"status":"INPUT","owner":"ZOSMFAD","class":"A","jobname":"NICKA","jobid":"JOB00065","files-url":"https:\/\/alps1158.pok.ibm.com:32208\/zosmf\/restjobs\/jobs\/-JES2\/NICKA\/JOB00065\/files","type":"JOB","retcode":null,"url":"https:\/\/alps1158.pok.ibm.com:32208\/zosmf\/restjobs\/jobs\/-JES2\/NICKA\/JOB00065","subsystem":"JES2"}/u/yczhao/zmf/curl>

What SDSF shows on ST panel for logged on user IBMUSER:

SDSF STATUS DISPLAY ALL CLASSES LINE 1-55 (55) NP JOBNAME JobID Owner Prty Queue C Pos SAff ASys
Status NICKA JOB00065 ZOSMFAD 1 PRINT A 38

SHARE in San Francisco 2013

Submit from Unix file

- ***Submit job from UNIX file***

PUT https://host:port/zosmf/restjobs/jobs
Content-Type: application/json
X-IBM-Intrdr-Class: A
X-IBM-Intrdr-Recfm: V
X-IBM-Intrdr-Lrecl: 255
X-IBM-Intrdr-Mode: TEXT

{ "file" : "/u/g1java1/job1" }

Complete your sessions evaluation online at SHARE.org/SFEval

Submit with migrated dataset

- ***Submit job from migrated data set with non-waiting recall***

PUT https://host:port/zosmf/restjobs/jobs/
Content-Type: application/json
X-IBM-Intrdr-Lrecl: 80
X-IBM-Intrdr-Mode: RECORD
{"file" : "//'CIMSSRE.SETUP.JCL(IEFBR14)'", "recall" : "yesnowait"}

Complete your sessions evaluation online at SHARE.org/SFEval

Additional secondary JES2 support

The following operations could be directed to a secondary JES2 subsystem:

- ***Cancel a job***
- ***Change the job class of a job***
- ***Delete a job (cancel a job and purge its output)***

Complete your sessions evaluation online at SHARE.org/SFEval

Coming soon*

In z/OS V2.1 with z/OSMF V2.1, the z/OS Jobs REST Interface is planned to be extended to add support for

- optional asynchronous notification upon job completion,
- passing JCL symbols to a job being submitted, and
- an optional job correlator that is unique across the JES2 spool.

These extensions are intended to make it easier to reuse existing JCL and detect job completion.

* Statements regarding IBM future direction and intent are subject to change or withdrawal, and represents goals and objectives only.

Complete your sessions evaluation online at SHARE.org/SFEval

JCL symbolic*

JCL symbolic:

- ***The user will be able to provide the values in HTTP headers for JCL symbols when submitting a job.***
- ***This support is JES2 specific.***

Example:

- ***Symbol name MBR with value equal to ABC in HTTP request headers:***
  PUT https://host:port/zosmf/restjobs/jobs/
  Content-Type: applicaton/json
  X-IBM-Intrdr-Lrecl: 80
  X-IBM-JCL-Symbol-MBR:ABC
- ***Part of the codes in JCL something like:***
  //MYDD DSN=MY.DATASET(&MBR.),DISP=SHR
- ***When submit the job to JES, ABC substitutes parameter &MBR as the member name***
  //MYDD DSN=MY.DATASET(ABC),DISP=SHR

* Statements regarding IBM future direction and intent are subject to change or withdrawal, and represents goals and objectives only.

Complete your sessions evaluation online at SHARE.org/SFEval

JCL symbolic – example*

- *REST services for the following:*

  HTTP request:

  PUT https://alps1158.pok.ibm.com:32208/zosmf/restjobs/jobs/
  Content-Type: text/plain
  X-IBM-JCL-Symbol-PGM:IKJEFT01
  Content Data
  //ACKOZ2 JOB MSGLEVEL=1,MSGCLASS=A,REGION=0M
  //STEP1 EXEC PGM=&PGM
  //SYSTSPRT DD SYSOUT=*
  //SYSPRINT DD SYSOUT=*
  //SYSTSIN DD *
  /*

  After job submitted, what SDSF shows on ST panel for spool file with DSID=3

1 //ACKOZ2 JOB MSGLEVEL=1,MSGCLASS=A,REGION=0M JOB00071
2 // SET PGM1=IKJEFT01 *GENERATED STATEMENT*
3 //PGM1 EXPORT EXPSET=IKJEFT01 *GENERATED STATEMENT*
4 //STEP1 EXEC PGM=&PGM1
IEFC653I SUBSTITUTION JCL - PGM=IKJEFT01
5 //SYSTSPRT DD SYSOUT=*
6 //SYSPRINT DD SYSOUT=*
7 //SYS

*** Statements regarding IBM future direction and intent are subject to change or withdrawal, and represents goals and objectives only.**

Complete your sessions evaluation online at SHARE.org/SFEval

Job Correlator*

JCL correlator:

- ***Can provide the user portion of the job correlator when submitting a job.***
- ***The job correlator can be used as an alternative to the jobname/jobid combination for identifying a job.***
- ***This support is JES2 specific.***

Example:

- ***Submit a job with user portion job correlator:***

```
PUT https://host:port/zosmf/restjobs/jobs/
Content-Type: application/json
X-IBM-User-Correlator: @234567890ABCDEF2234567890ABCDE4
```

- ***The job correlator is an alternative to the jobname/jobid combination***

21
* Statements regarding IBM future direction and intent are subject to change or withdrawal, and represents goals and objectives only.
Complete your sessions evaluation online at SHARE.org/SFEval
SHARE in San Francisco 2013

Example with Job Correlator*

Example for JCL correlator

HTTP request:

PUT ***https://alps1158.pok.ibm.com:32208/zosmf/restjobs/jobs/***
Content-Type: text/plain
X-IBM-User-Correlator: @123
Content Data
'//ACKOZ JOB (),MSGCLASS=H,CLASS=A
***// EXEC PGM=IEFBR14' ***

HTTP response includes a JSON Job document:

{"jobname":"ACKOZ","retcode":null,"subsystem":"JES2","url":"https:\/
/alps1158.pok.ibm.com:32208\/zosmf\/restjobs\/jobs\/J0000086SY1.....C9D61101....
...%3A%40123","status":"INPUT","owner":"ZOSMFAD","jobid":"JOB00086","class":"A",
"files-url":"https:\/\/alps1158.pok.ibm.com:32208\/zosmf\/restjobs\/jobs\/J00000
86SY1.....C9D61101.......%3A%40123\/files","job-correlator":"J0000086SY1.....C9D
61101.......:@123","type":"JOB","phase":130,"phase-name":"CONVERSION"}

Query the submitted job with correlator

https://alps1158.pok.ibm.com:32208/zosmf/restjobs/jobs/J0000076SY1.....C9D5F491.......:@123

{"jobname":"ACKOZ","retcode":"CC 0000","subsystem":"JES2",
"url":"https:\/\/alps1158.pok.ibm.com:32208\/zosmf\/restjobs\/jobs\/J0000086SY1.....C9D61101.......%3A%40123","status":"OUTPUT","owner":"Z
OSMFAD","jobid":"JOB00086","class":"A","files-
url":"https:\/\/alps1158.pok.ibm.com:32208\/zosmf\/restjobs\/jobs\/J0000086SY1.....C9D61101.......%3A%40123\/files",
"job-correlator":"J0000086SY1.....C9D61101.......:@123","type":"JOB","phase":20,"phase-name":"AWAITING OUTPUT"}

* Statements regarding IBM future direction and intent are subject to change or withdrawal, and represents goals and objectives only.

Asynchronous Notification for Job completion*

- ***The user will be able to provide a URL when submitting the job.***
- ***The URL will be sent an HTTP message when the job has completed.***
- ***This support is JES2 specific.***

Example:

- ***Submit a job with notification URL:***

PUT https://host:port/zosmf/restjobs/jobs/
Content-Type: application/json
X-IBM-Notification-URL:
http://alps4223.pok.ibm.com:32207/UberTestUnsecured/job-complete

- ***Job Completed JSON Object received***

{"abend-code":null,"owner":"ZOSMFAD","class":"A","jobname":"SUBAPI01",
"jobid":"JOB00089","job-correlator":"J0000089SY1.....C9E2C342.....:",
"completion-type":1,"completion-code":0,"retcode":"CC 0000"}

* Statements regarding IBM future direction and intent are subject to change or withdrawal, and represents goals and objectives only.

z/OSMF Application Linking

Application Linking

- **To perform traditional system management tasks in z/OS, you might interact with several different interfaces.**
- **In z/OSMF, it is possible to link or connect some of these tasks and external applications together for a smoother user experience via the Application linking enablement in V1R13.**
- **This is accomplished by enabling Cross application linkage and context sensitive launching between z/OSMF applications and also between z/OSMF applications and external applications**
  - **Context sensitive launching or linking with z/OSMF applications may be within z/OSMF, for example, one task may want to launch to the other in context.**
  - **It can also be from external consoles or applications into z/OSMF, for example, from an ISV app to z/OSMF or vice versa.**

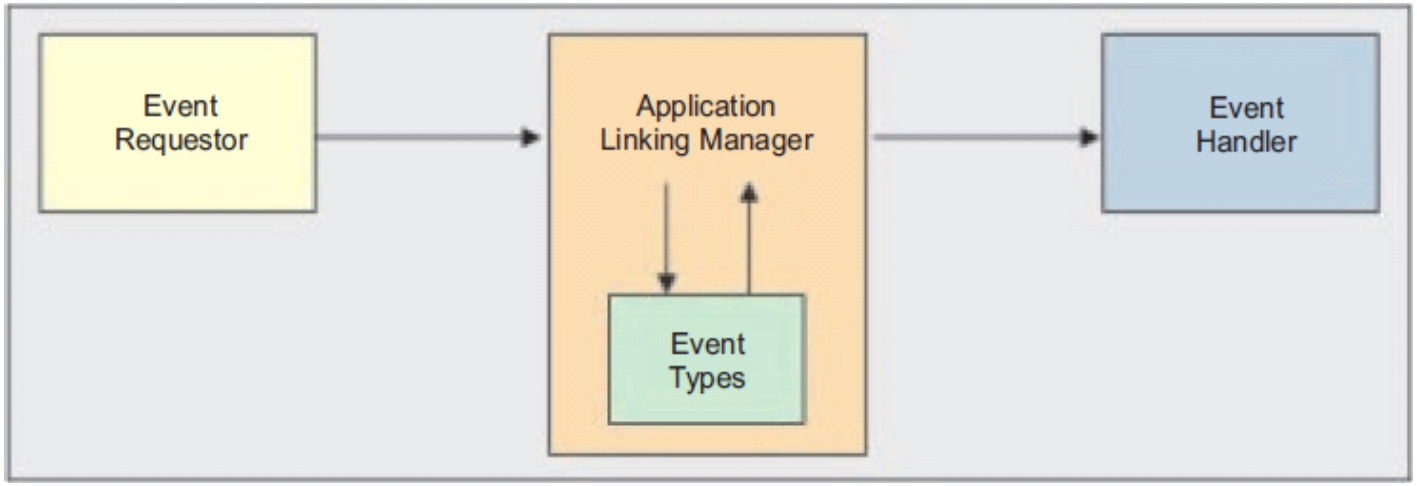
Key components:

- ***Event Requestor:*** ***z/OSMF task or external application***
- ***Event:*** ***Action requested by the event requestor***
- ***Event type :*** ***Object that connects an event requestor to an event handler***
- ***Event handler:*** ***z/OSMF task or external application***

Complete your sessions evaluation online at SHARE.org/SFEval

Application linking Events process

- *The event requestor creates an event and sends it to the Application Linking Manager.*
- *The Application Linking Manager searches the set of known event Types for the type identified by the event*
- *On an Event request it will launch matched events handler to deal with the event request.*



Complete your sessions evaluation online at SHARE.org/SFEval

Use cases

- The major use cases are:
  - **Launching to z/OSMF**
    - **Launching of an internal application from another internal application**
    - **Launching of an internal application from an external application**
  - **Launching from z/OSMF**
    - **Launching of an external application from an internal application**
  - **Launching of an external application from an external application**

Complete your sessions evaluation online at SHARE.org/SFEval

Launching from z/OSMF

- ***When an Event is launched from z/OSMF into an external link definition:***
  - ***The code attempting to launch will supply which Name to be invoked and also the parameters defined by the respective Event to use when launching.***
  - ***The URL will be launched and the parameters will be passed via the POST method***
  - ***Each attempt to launch will launch a new browser window.***
  - ***No identity will be passed (i.e. in a parameter). It is assumed that the launched URL will address prompting for the user for an ID/password and then managing that from that point forward.***

Launching to z/OSMF

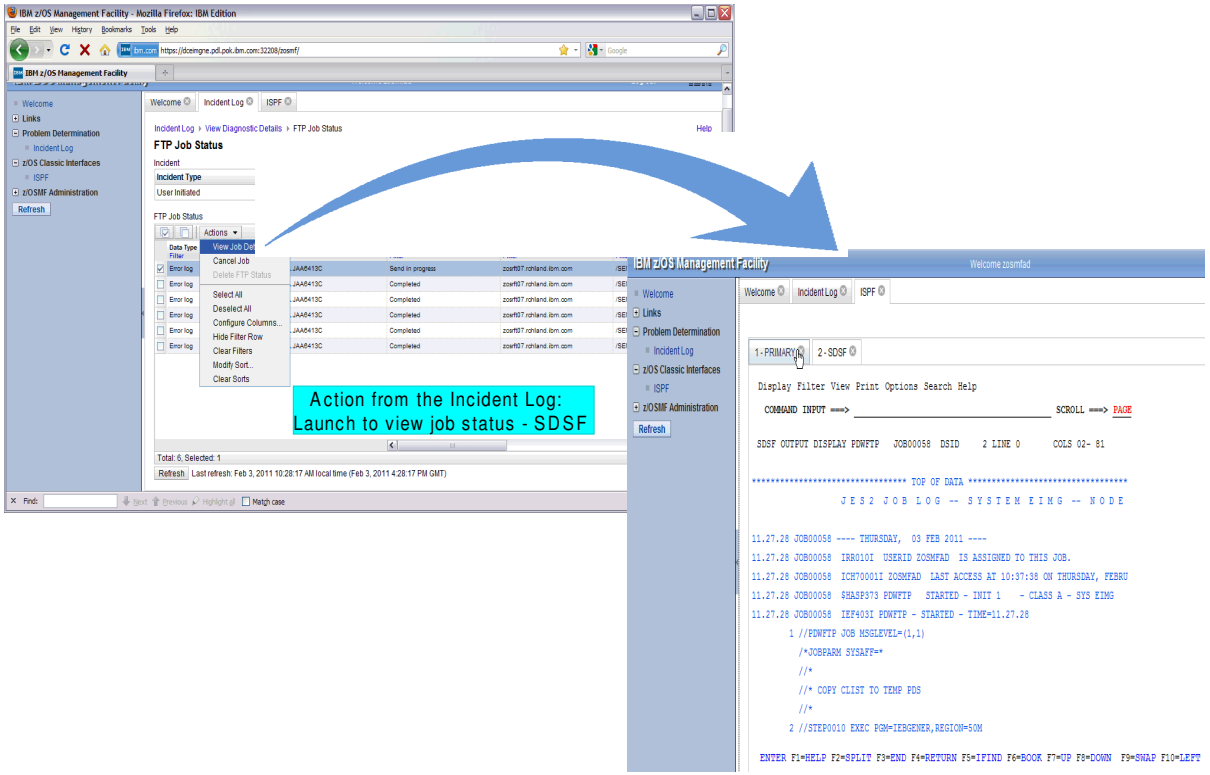
- ***When a z/OSMF provided Link Interface is launched:***
  - ***The parameters to the URL will be: Event type and link parameters.***
    - ***If the browser session has already been authenticated to z/OSMF, the existing identity will be used.***
    - ***If the browser session has not already been authenticated to z/OSMF, a popup dialog will be displayed for the user to provide their user id and password to authenticate to z/OSMF.***
    - ***Once the user is authenticated to z/OSMF, the link will be launched in a tab in the work area. There will be no other tabs open in the work area, however the navigation tree will exist on the left hand side for the user to utilize other functions of z/OSMF which they are authorized to.***

Application Linking (R13)

Example, link Incident Log to SDSF in context

- A more seamless experience when working with z/OS.
- Make your own linkages between z/OSMF apps and even to any web-based apps

- Define an ‘event’ (such as “View Job Status”)
- Then define the ‘event handler’ action and parameters (such as ‘go to ISPF’ with context of the job)

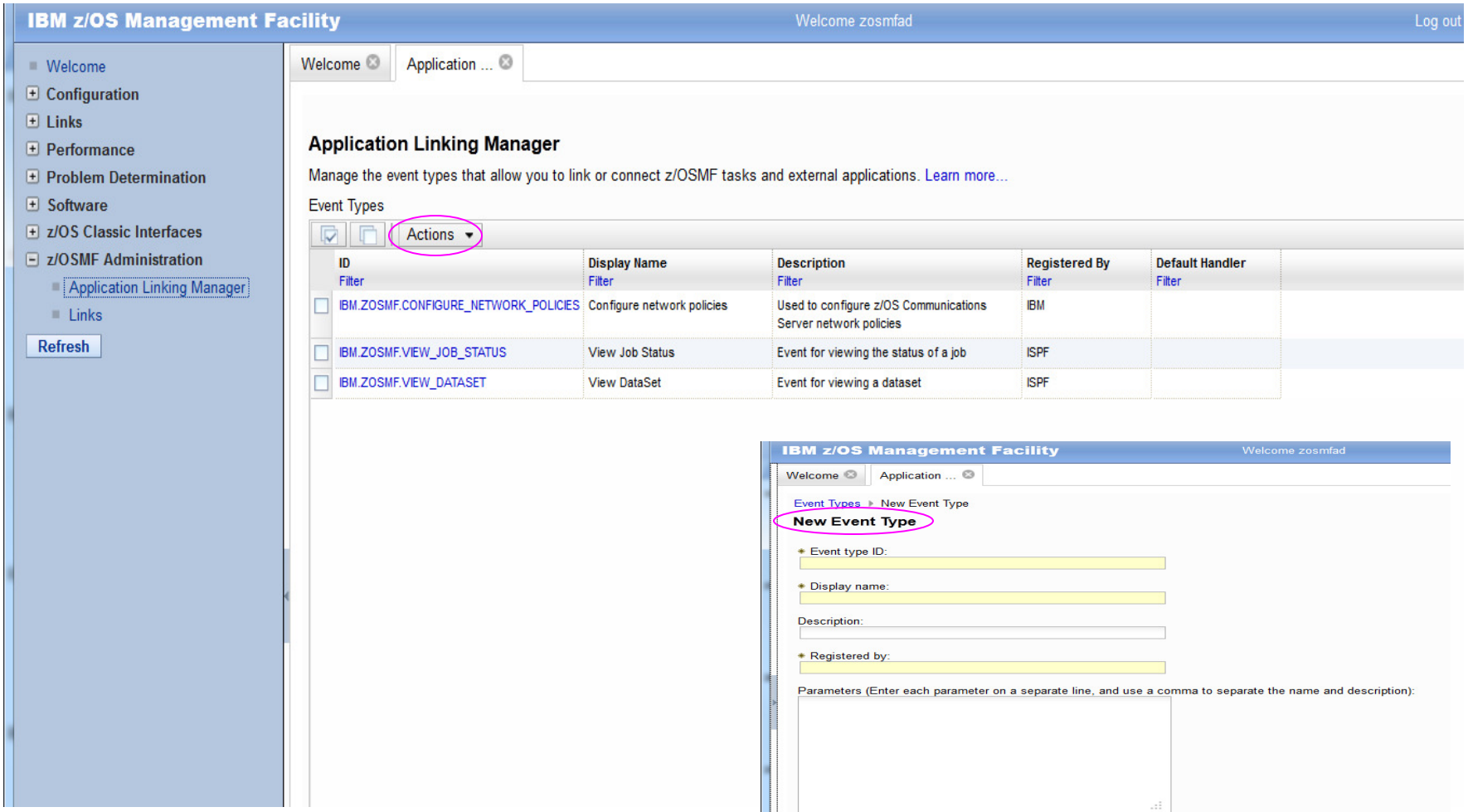


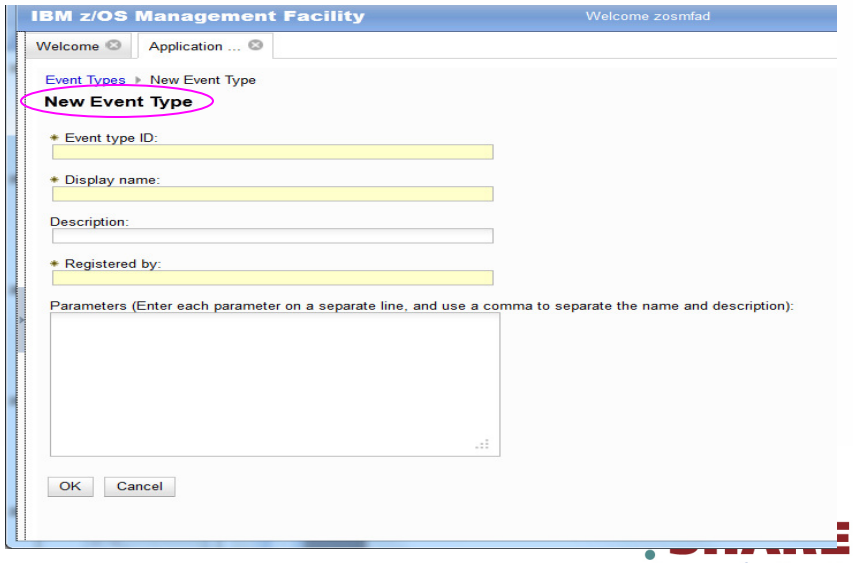
Application linking manager - GUI Interface

- The application linking manager is a task under the z/OSMF Administration category

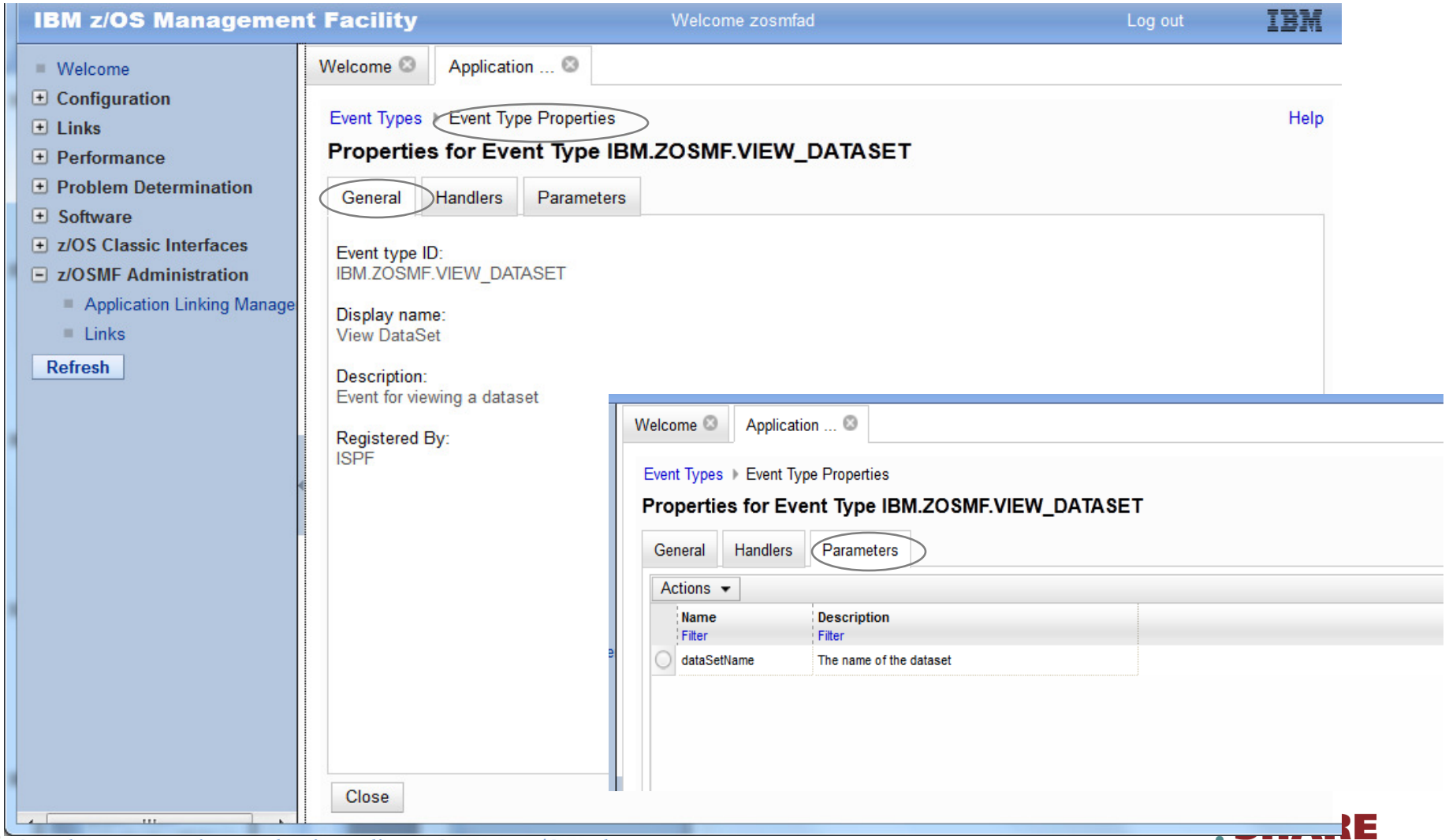
Complete your sessions evaluation online at SHARE.org/SFEval

Application Linking manager – Event types



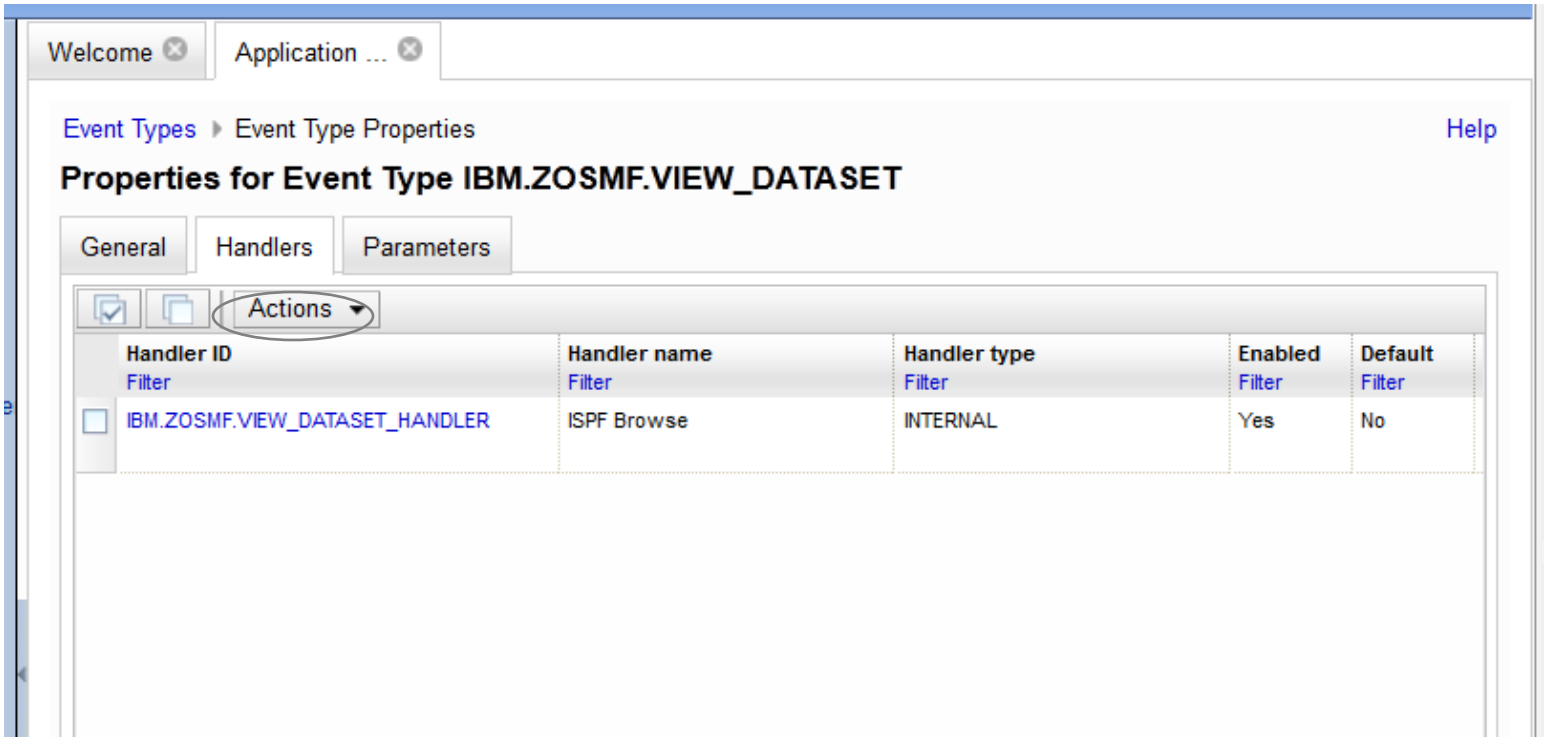


Event type properties



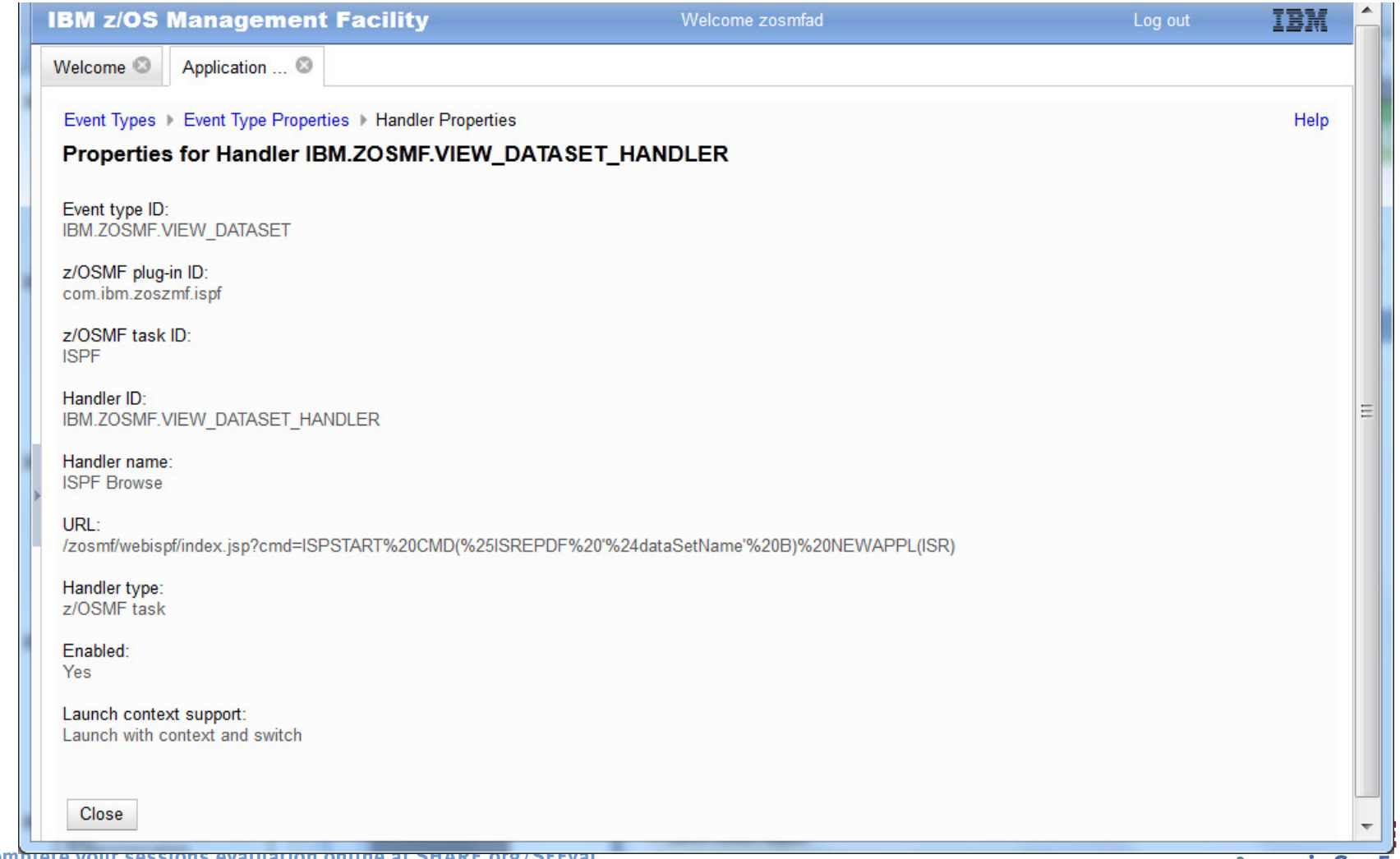
Complete your sessions evaluation online at SHARE.org/SFEval

Event Handlers



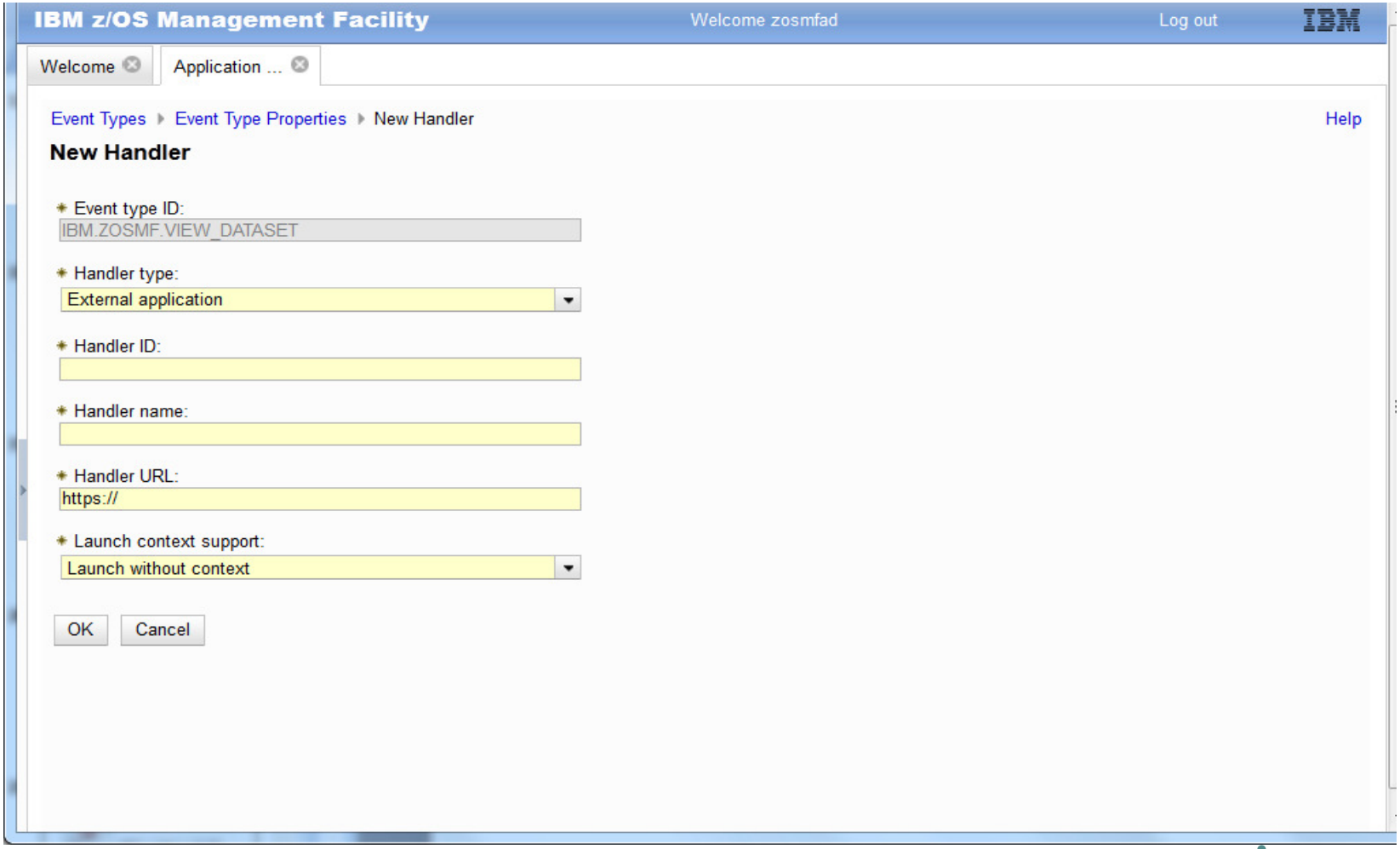
Complete your sessions evaluation online at SHARE.org/SFEval

Handler Properties



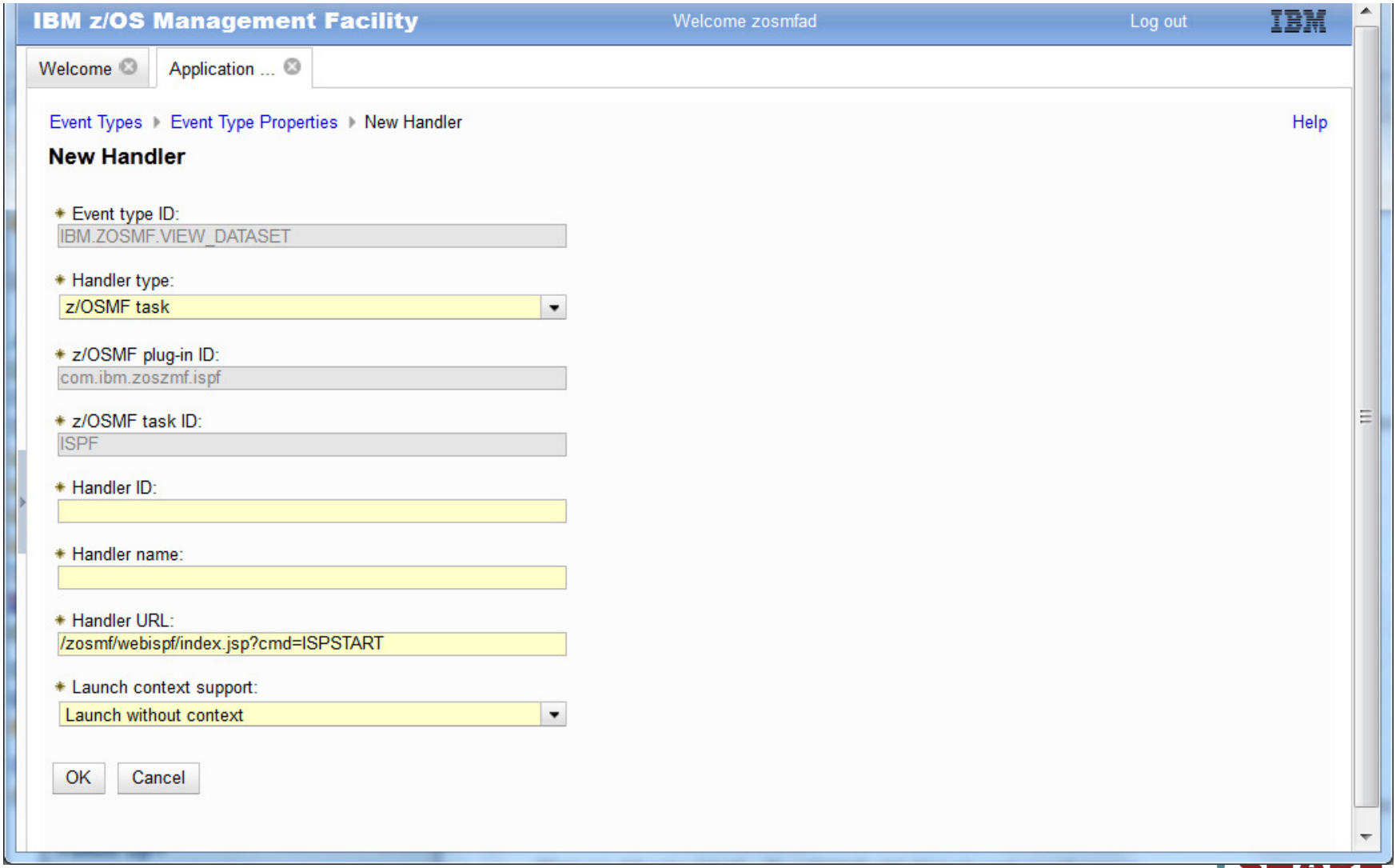
Complete your sessions evaluation online at SHARE.org/SFEval

Event Handlers – defining new



Complete your sessions evaluation online at SHARE.org/SFEval

Defining an ISPF event handler



Complete your sessions evaluation online at SHARE.org/SFEval

Programming Interface

- The Application Linking Manager task provides an application programming interface (API) that you can use to complete the aforementioned actions.

Application Linking - APIs

Method	*•Servlet API Method*		
	•URL	*•HTTP Method*	*•Request Parameters*

registerEventType	***/zosmf/izual/rest/eventtype/<id>***	***POST/***	{
			id: "IBM.ZOSMF.EVENT_TYPE_ID",
			displayName: "Default English name",
			desc: "Default English description",
			bundleFile: "optionalBundleFileName.js",
			bunleUrl: "optional/bundle/url/path",
			owner: "ownerId",
			params: {"key1": "English description of the param"}
			}

registerExternalHandler	***/zosmf/izual/rest/handler/<id>***	***POST***	
getHandlersForEventType	***/zosmf/izual/rest/handler***	***GET***	
unregisterHandler	***/zosmf/izual/rest/handler/<id>***	***DELETE***	
unregisterEventType	***/zosmf/izual/rest/eventtype/<id>***	***DELETE***	

Event types delivered with z/OSMF R13

Event Type ID	Display Name	Description	Parameters Provided	Registered By
IBM.ZOSMF.CONFIGURE_NETWORK_POLICIES	Configure network policies	Used to configure z/OS Communications Server network policies	None.	IBM
IBM.ZOSMF.VIEW_DATA SET	View DataSet	Event for viewing a data set	name: dataSetName description: The name of the data set	ISPF
IBM.ZOSMF.VIEW_JOB_S TATUS	View Job Status	Event for viewing the status of a job	Name: jobName Description: The name of the job to display the status for Name: jobId Description: The ID of the job to display the status for	ISPF

Event handlers delivered with z/OSMF R13

Event Handlers	Description	Supported Event Types	Required parameters	Optional parameters	Expected Output
Configuration Assistant task	Configure TCP/IP policy-based networking functions.	IBM.ZOSMF.CONFIGURE_NETWORK_POLICIES	None	None	Displays the main page in the Configuration Assistant task.
ISPF task	Access traditional ISPF applications.	IBM.ZOSMF.VIEW_DATASET	dataSetName	None	Displays the data set.

Complete your sessions evaluation online at SHARE.org/SFEval

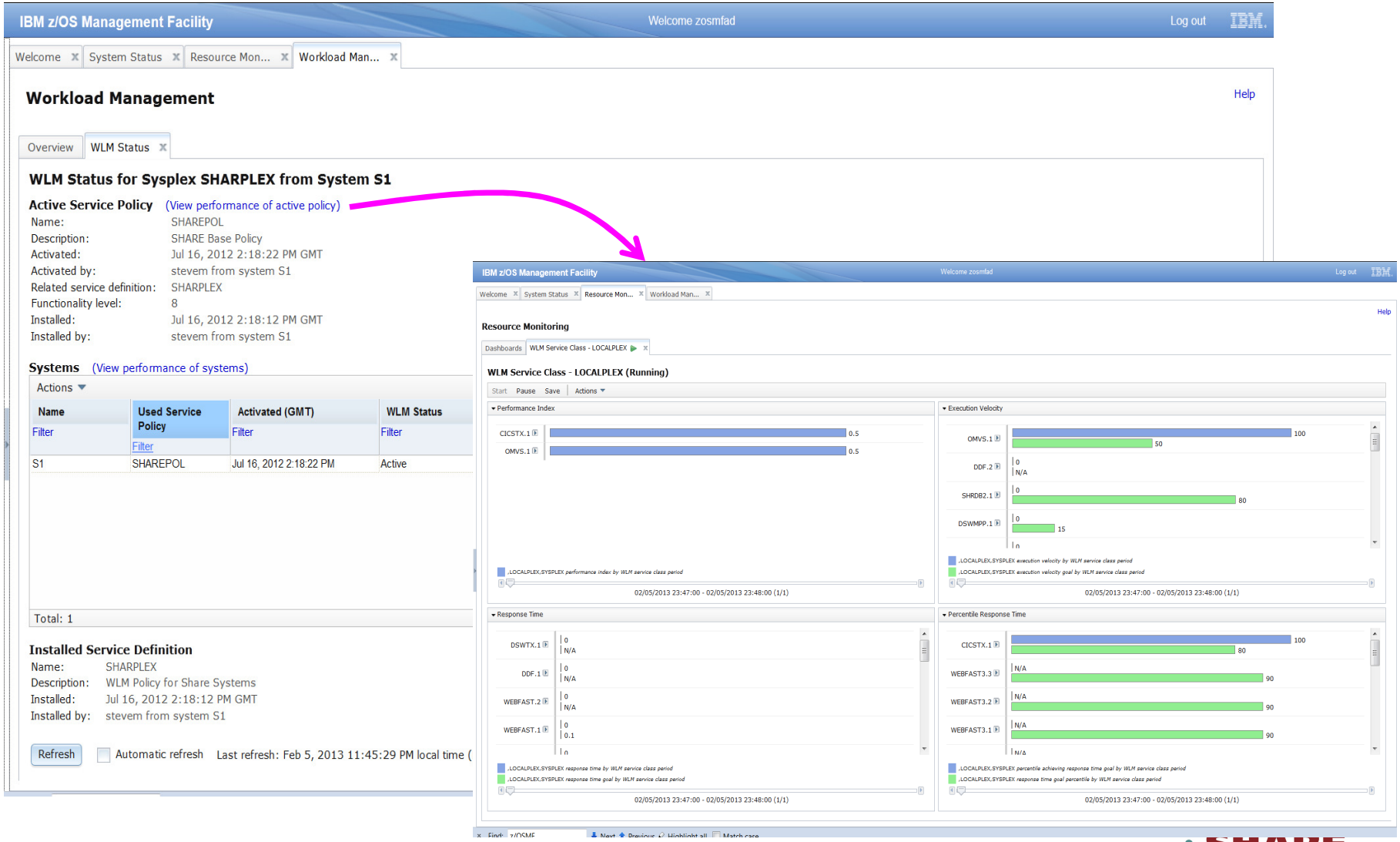
Recent R13 application linking exploitation

With APAR PM74508 and APAR PM74517

- The z/OSMF Resource Monitoring application is linked to the z/OSMF Workload Management application in context, and the z/OSMF Workload Management application is linked to the z/OSMF Resource Monitoring application.
- The System Status task is linked to the Workload Management task such that the active service definition, active service policy, or WLM status can be opened and viewed. The Workload Management task is linked to Resource Monitoring dashboards such that while viewing the active service definition or service policy, resource monitoring dashboards with performance metrics for service classes, workloads, and report classes can be opened and viewed.

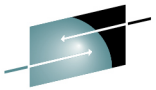
Complete your sessions evaluation online at SHARE.org/SFEval

View performance of Active policy



Complete your sessions evaluation online at SHARE.org/SFEval

View active service definition



Welcome | System Status | Resource Mon... | Workload Man...

System Status

Use this page to quickly assess the performance of the workloads running on the sysplexes in your installation. You can also use this page to define the target systems for the sysplexes and AIX or Linux system c that you want to monitor in the Resource Monitoring task.

Resources

Actions

Resource	System Type	Connectivity	Performance Index Status	Related Service Definition	Active WLM Policy
Filter	Filter	Filter	Filter	Filter	Filter
LOCALPLEX	z/OS	Connected	PI <= 1 for all periods	SHARPLEX	SHAREPOL

Total: 1, Selected: 0

Refresh Last refresh: Feb 6, 2013 12:14:10 AM local ti

Automatic refresh

Welcome | System Status | Resource Mon... | Workload Man...

Workload Management

Help

Overview | WLM Status | View SHARPLEX

This service definition is installed and policy SHAREPOL is active

Notes | Switch To

Service Definition Details

Service definition name:
SHARPLEX

Description:
WLM Policy for Share Systems

Functionality level:
008

Service Coefficients

Central processing unit (CPU):
1.0
Input and output channel (IOC):
0.1
Main storage occupancy (MSO):
0.0000
Service request block (SRB):
1.0

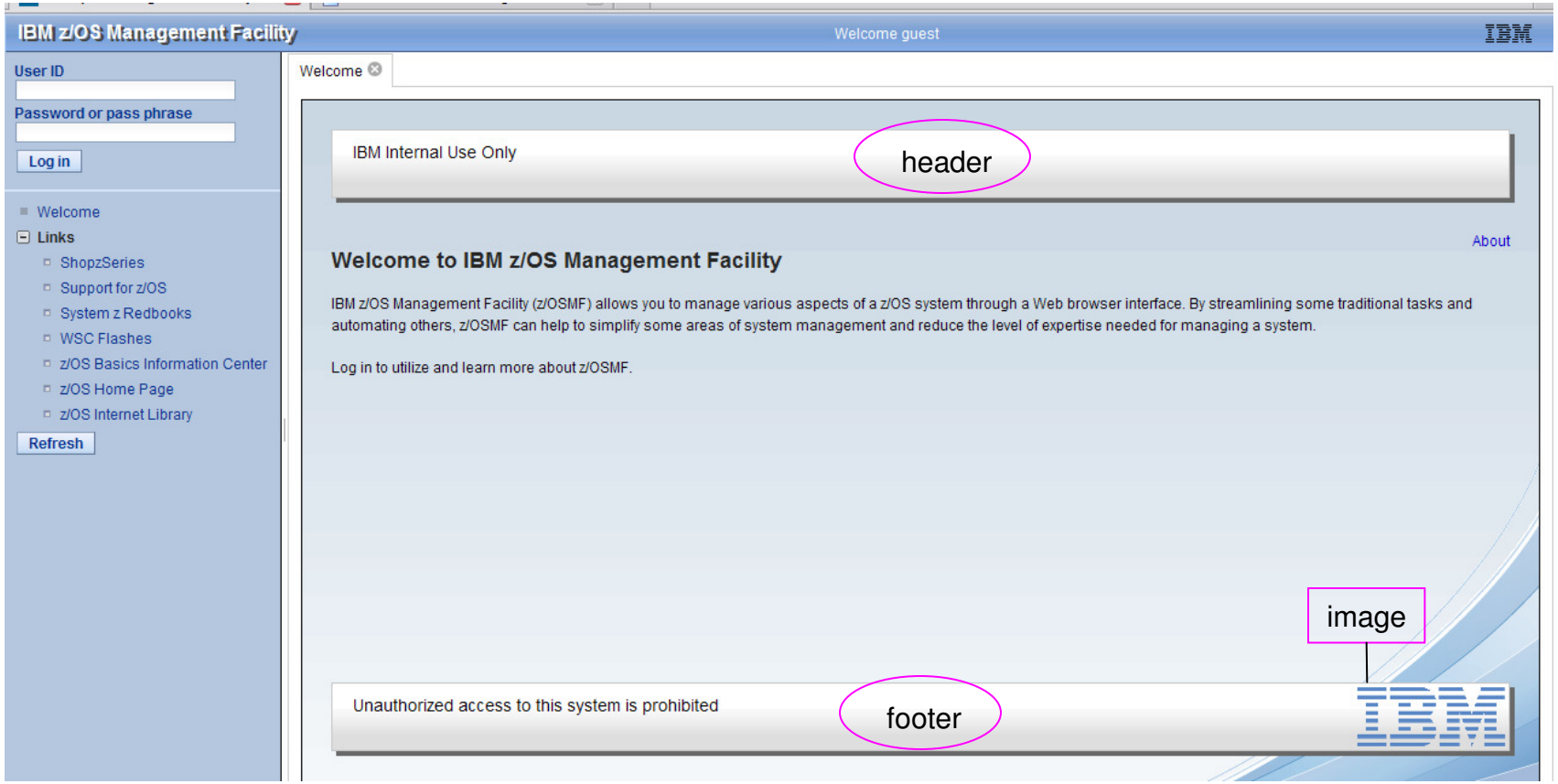
Service Options

Enable I/O priority management:
No
Enable dynamic alias management:
Yes

Guest Platform Management Provider (GPMP) Settings

Enable dynamic GPMP management on each system in the host sysplex:
No
Excluded systems:
N/A

z/OSMF Custom banner



- Customize the content of the z/OSMF Welcome page for non-authenticated guest users.
- Provide users with company specific information before logging in to z/OSMF.
  - Can add a small image or graphic, such as your company logo.
- After the guest user authenticates, the Welcome page is replaced with the standard z/OSMF Welcome page.

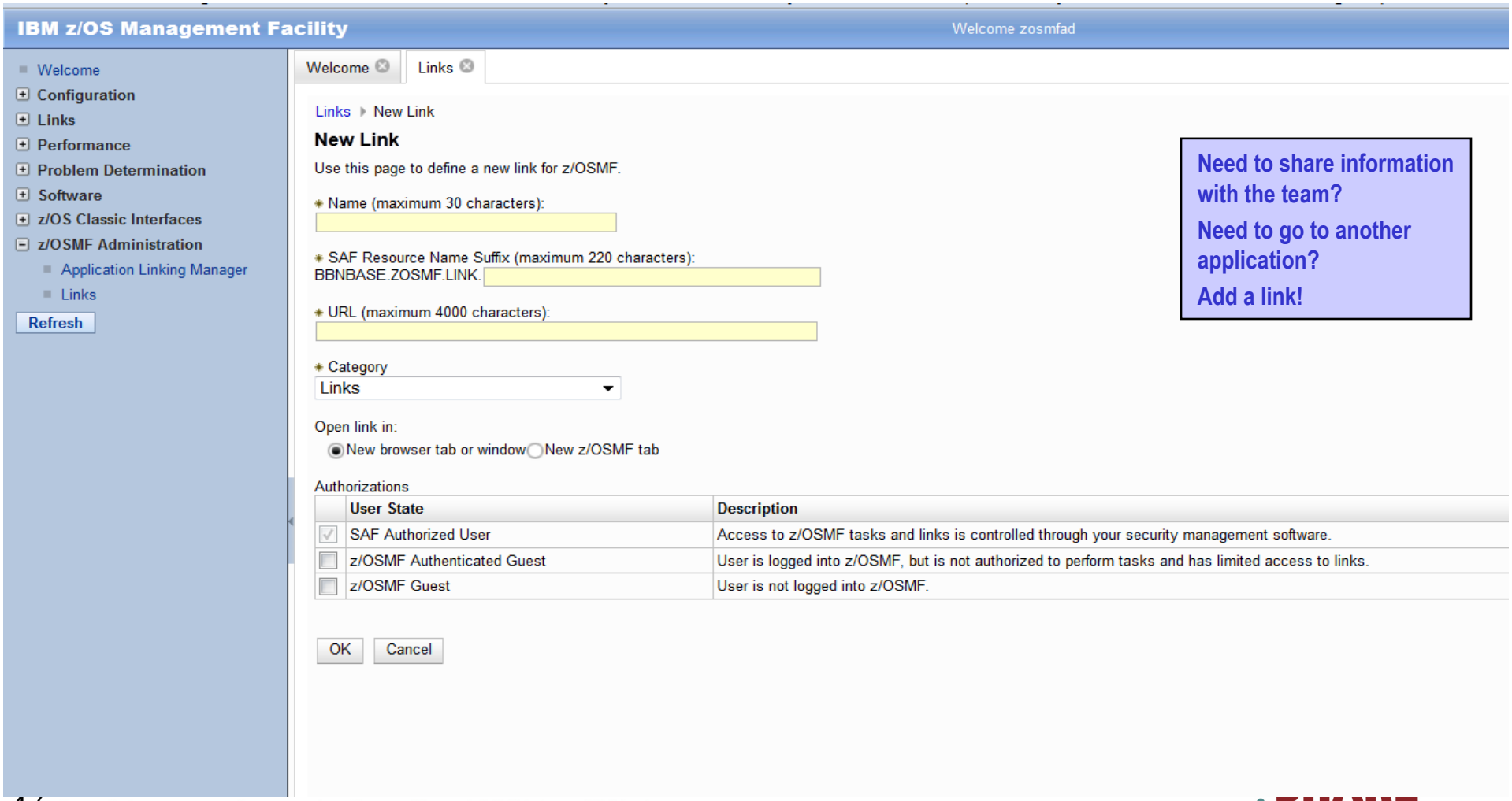
Complete your sessions evaluation online at SHARE.org/SFEval

Adding a customer banner

- A sample Welcome page properties file is supplied with z/OSMF:
  - *<IZU_CODE_ROOT>*/samples/customWelcome.properties
    - where *<IZU_CODE_ROOT>* is the product file system. By default, this is /usr/lpp/zosmf/V1R13.
- Copy the sample Welcome properties file to the z/OSMF data file system directory
  - The Welcome page properties file must be named customWelcome.properties (case sensitive).
- Can include an image file, such as your company logo,
  - it must be named customLogo and have one of the following image formats: .png, .jpeg, .jpg, .gif, or .bmp.

z/OSMF Administration: Adding a link

Allows the administrator to dynamically add links to non-z/OSMF resources, e.g. ISV products, commonly used installation Web sites



Complete your sessions evaluation online at SHARE.org/SFEval

z/OSMF Administration

z/OSMF Authorization – defining users and roles

- The z/OSMF user must have a valid userid on the z/OS system
- The security administrator must authorize the user to the required z/OS stack for the z/OSMF tasks
  - Scripts are provided to perform the end-end authorization
- The z/OSMF administrator must authorize the user to z/OSMF and assign a role in order for the user to start working with z/OSMF tasks (Repository mode)
- Introduced SAF mode in z/OSMF1.13 to have tighter integration with z/OS security management
  - Resource names associated with all z/OSMF tasks and links.
  - Resource class profiles control authorization to z/OSMF managed resources.
  - Use of SAF groups to represent z/OSMF roles
  - Users connected to SAF groups to be authorized
- SAF mode authorizations managed via existing product tools
  - Note: Repository mode authorizations managed via z/OSMF tasks

z/OSMF Authorization – SAF Mode

- **New resource class pair for z/OSMF**
  - **ZMFAPLA resource class**
  - **GZMFAPPA grouping class**
- **Use of SAF groups to represent z/OSMF roles**

- Exploitation of new Resource Classes, profiles, and groups
  - Plug-ins register resource names associated with each of their tasks
  - All task resource names associated with the ZMFAPLA resource class.
  - IBM reserved resources:
    ZOSMF.<plugin-name>.<task-name>.<action-control-qualifier>
    - The plug-in profile will be defined at deployment time.
    - For delayed deployment and activation of plug ins create profiles when plug-in is deployed
  - Definition of SAF Groups and connection of z/OSMF users to these new Groups
  - Groups permitted to z/OSMF resource profiles (in ZMFAPLA) to facilitate z/OSMF Role support

z/OSMF Authorization

- Support for custom roles via creation of additional SAF groups at system programmer's discretion. Granularity of access determined by z/OSMF resource profile permissions for a given group.
- Option to stay with repository mode or convert to SAF mode
  - Can switch to SAF mode at a later time
    - Configuration support for conversion to SAF mode via scripts.
    - Requires activation of ZMFAPLA resource class
      - *Enable for generic profiles if needed.*
  - Ability to switch back to repository mode if needed. Not recommended to switch back and forth repeatedly.
  - SAF mode is the strategic direction.
  - z/OSMF V2.1 supports only SAF Mode*
- Users, Roles (groups) and Task authorization management
  - SAF Mode: via ESM and customer security change control processes.
  - Repository Mode: via z/OSMF Users and Roles tasks

*** Statements regarding IBM future direction and intent are subject to change or withdrawal, and represents goals and objectives only.**

z/OSMF support – New classes

ZMFAPLA	GZMFAPLA
POSIT=592 ID=1 MAXLNTH=246 RACLIST=ALLOWED RACLREQ=NO GENLIST=DISALLOWED DFTRETC=4 DFTUACC=NONE GROUP=GZMFAPLA SLBLREQ=NO OPER=NO PROFDEF=YES FIRST=ANY OTHER=ANY CASE=ASIS	RACLIST=DISALLOWED MEMBER=ZMFAPLA

Complete your sessions evaluation online at SHARE.org/SFEval

z/OSMF V2.1*

- z/OSMF is planned to use the Liberty profile in WebSphere Application Server OEM (WASOEM) for z/OS V8.5.
  - This is expected to provide significant reductions in the resource requirements for z/OSMF and simplify z/OSMF setup considerably.
- A new z/OSMF Workflow Application is planned. This application is designed to allow exploiters to provide configuration assistance for functional setup tasks to simplify z/OS configuration. This application is planned to route tasks among a number of defined people assigned to specific roles, such as "system programmer" and "security administrator," to complete setup tasks.

*** Statements regarding IBM future direction and intent are subject to change or withdrawal, and represents goals and objectives only.**

z/OSMF SHARE Sessions - San Francisco

ID	Day	Time	Title	Presenters	Location
13059	**2/5**	**9:30 – 10:30**	z/OSMF What is it? And why would I want it?	**Anuja Deedwaniya**	**Franciscan B, Ballroom Level**
13052	**2/5**	**12:15 – 1:15**	13052: Engaging Users and Reducing Complexity: z/OSMF Project Usability Discussion	**Geoff Smith**	**Franciscan B, Ballroom Level**
13061	**2/6**	**1:30 – 2:30**	z/OSMF Advanced Functionality	**Anuja Deedwaniya**	**Franciscan B, Ballroom Level**
13048	**2/6**	**6:00 – 7:00**	z/OSMF Roundtable	**Anuja Deedwaniya**	**Franciscan B, Ballroom Level**
13099	**2/6**	**6:00 – 7:00**	Capacity Provisioning Update for z/OS 1.13 and 1.12	**Juergen Baumann**	**Yosemite C, Ballroom Level**
13082	**2/7**	**8:00 – 9:00**	New z/OSMF Software Management Capabilities	**Greg Daynes**	**Franciscan B, Ballroom Level**
13089	**2/7**	**8:00 – 9:00**	RMF: The Latest and Greatest	**Brad Snyder**	**Yosemite C, Ballroom Level**
13100	**2/7**	**9:30 – 10:30**	Manage your Workloads and Performance with z/OSMF	**Juergen Baumann**	**Yosemite C, Ballroom Level**
12752	**2/7**	**11:00 – 12:00**	z/OSMF Hands-On Lab	**Anuja Deedwaniya**	**Union Square 23-24, Fourth Floor**
13040	**2/7**	**4:30 – 5:30**	z/OSMF User Experience	**Doug Henry (US Bank)** **Mary Anne Matyaz (U.S. Customs)** **Anuja Deedwaniya(IBM)**	**Imperial A, Ballroom Level**
12753	**2/8**	**8:00 – 9:00**	z/OSMF Software Deployment Hands-on Lab	**Marna Walle** **Greg Daynes**	**Union Square 23-24, Fourth Floor**
13070	**2/8**	**8:00 – 9:00**	z/OSMF Software Management Hands-on Lab	**Greg Daynes**	**Union Square 23-24, Fourth Floor**

Additional information

- **z/OS Management Facility website**
  - http://ibm.com/systems/z/os/zos/zosmf/
- **IBM z/OS Management Facility education modules in IBM Education Assistant**
  - http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp
  - **Scroll down to z/OS Management Facility**
- **z/OS Hot Topics, Issue 21, 23 and 25:**
  - http://ibm.com/systems/z/os/zos/bkserv/hot_topics.html
- **Program Directory for z/OS Management Facility** GI11-2886
- **IBM z/OS Management Facility User's Guide** SA38-0652
- **IBM WebSphere Application Server OEM Edition for z/OS Configuration Guide, Version 7.0** GA32-0631
- **IBM z/OS Management Facility License Information** GC52-1263

SHARE
Technology • Connections • Results

Thank You!

SHARE
in San Francisco
2013

POST method: Register an event type

- **URL format**

  https://{host}:{port}/zosmf/izual/rest/eventtype

- **Standard headers**

  Content-Type: application/json

- **Custom headers**

None.

- **Request content**

Your request must include a JSON object that describes the event type to be registered, for example:

```
{
id: “IBM.ZOSMF.EVENT_TYPE_ID”,
displayName: “Default English name”,
desc: “Default English description”,
owner: “ownerId”,
params: {“key1”: “English description of the param”}
}
```

- **Expected response**

On completion, the Application Linking Manager interface returns an HTTP response, which includes a status code indicating whether your request completed. Status code 200 indicates success. A status code of 4nn or 5nn indicates that an error has occurred.

POST method: Register an event handler

- **URL format**

  https://{host}:{port}/zosmf/izual/rest/handler?eventTypeId=<eventTypeId>

- **Standard headers**

  Content-Type: application/json

- **Custom headers**

None.

- **Request content**

  Your request must include a JSON object that describes the event handler to be registered.

- **Expected response**

On completion, the Application Linking Manager interface returns an HTTP response, which includes a status code indicating whether your request completed. Status code 200 indicates success. A status code of 4nn or 5nn indicates that an error has occurred.

Complete your sessions evaluation online at SHARE.org/SFEval

GET method: Obtain list of handlers for an event type

- **URL format**

  https://{host}:{port}/zosmf/izual/rest/handler?eventTypeId=<eventTypeId>

- **Standard headers**

  Content-Type: application/json

- **Custom headers**

None.

- **Request content**

  None.

- **Expected response**

On completion, the Application Linking Manager interface returns an HTTP response, which includes a status code indicating whether your request completed. Status code 200 indicates success. A status code of 4nn or 5nn indicates that an error has occurred.

Complete your sessions evaluation online at SHARE.org/SFEval

DELETE method: Unregister an event handler

- **URL format**

  https://{host}:{port}/zosmf/izual/rest/handler/<handerId>?eventTypeId=<eventTypeId>

- **Standard headers**

  Content-Type: application/json

- **Custom headers**

None.

- **Request content**

  None.

- **Expected response**

On completion, the Application Linking Manager interface returns an HTTP response, which includes a status code indicating whether your request completed. Status code 200 indicates success. A status code of 4nn or 5nn indicates that an error has occurred.

Complete your sessions evaluation online at SHARE.org/SFEval

DELETE method: Unregister an event type

- **URL format**

  https://{host}:{port}/zosmf/izual/rest/eventtype/<eventTypeId>

- **Standard headers**

  Content-Type: application/json

- **Custom headers**

None.

- **Request content**

  None.

- **Expected response**

On completion, the Application Linking Manager interface returns an HTTP response, which includes a status code indicating whether your request completed. Status code 200 indicates success. A status code of 4nn or 5nn indicates that an error has occurred.

Complete your sessions evaluation online at SHARE.org/SFEval

New Event types for R13

Event Type ID	Display Name	Description	Parameters Provided	Registered By
IBM.ZOSMF.VIEW_ACTIVE_WLM_SERVICE_DEFINITION	*View Active Service Definition*	*View the active service definition.*	*sysplex Name of the sysplex for which to display The active service definition.* *timestamp Timestamp in milliseconds when the service definition was active.*	*Workload Management plug-in*
IBM.ZOSMF.VIEW_ACTIVE_WLM_SERVICE_DEFINITION.REPORT_CLASS	*View Report Class of Active Service Definition*	*View the report classes that are contained in the active service definition.*	*sysplex Name of the sysplex for which to display the active service definition.* *timestamp Timestamp in milliseconds when the service definition was active.* *reportClass Name of the report class to be viewed.*	*Workload Management plug-in*
IBM.ZOSMF.VIEW_ACTIVE_WLM_SERVICE_DEFINITION.SERVICE_CLASS	*View Service Class of Active Service Definition*	*View the service classes that are contained in the active service definition.*	*Sysplex Name of the sysplex for which to display the active service definition.* *timestamp Timestamp in milliseconds when the service definition was active.* *serviceClass Name of the service class to be viewed.* *period Period in the service class to be viewed.*	*Workload Management plug-in*
IBM.ZOSMF.VIEW_ACTIVE_WLM_SERVICE_DEFINITION.WORKLOAD	*View Workload of Active Service Definition*	*View the workloads that are contained in the active service definition.*	*sysplex Name of the sysplex for which to display the active service definition.* *timestamp Timestamp in milliseconds when the service definition was active.* *workload Name of the workload to be viewed.*	*Workload Management plug-in*

Complete your sessions evaluation online at SHARE.org/SFEval

New Event types for R13(cont)

Event Type ID	Display Name	Description	Parameters Provided	Registered By
IBM.ZOSMF.VIEW_ACTIVE_WLM_SERVICE _POLICY	*View Active Service Policy*	*View the active service policy.*	*sysplex Name of the sysplex for which to display the active service policy.* *timestamp Timestamp in milliseconds when the service policy was active.*	*Workload Management plug-in*
IBM.ZOSMF.VIEW_SYSPLEX _PERF	*View Sysplex Performance*	*View the overall performance of a sysplex.*	*sysplex Name of the sysplex for which to display the performance.*	*Resource Monitoring plug-in*
IBM.ZOSMF.VIEW_SYSPLEX _PERF_INDEX	*View Performance Index Details*	*View the performance index of a sysplex.*	*sysplex Name of the sysplex for which to display the performance index.*	*Resource Monitoring plug-in*
IBM.ZOSMF.VIEW_WLM_REPORT_CLASS_PERF	*View Report Class Performance*	*View the execution velocity and response time metrics for the report classes in a sysplex.*	*sysplex Name of the sysplex for which to display performance metrics.* *reportClass Name of the report class for which to display metrics.*	*Resource Monitoring plug-in*
IBM.ZOSMF.VIEW_WLM_SERVICE_CLASS_PERF	*View Service Class Performance*	*View the performance of active service class periods in a sysplex.*	*sysplex Name of the sysplex for which to display performance metrics.* *serviceClass Name of the service class for which to display metrics.* *period Period in the service class for which to display metrics.*	*Resource Monitoring plug-in*

New Event types for R13(Cont)

Event Type ID	Display Name	Description	Parameters Provided	Registered By
IBM.ZOSMF.VIEW_WLM_STATUS	*View WLM Status*	*Display the status of WLM in the sysplex.*	*sysplex Name of the sysplex for which to display the status of WLM.*	*Workload Management plug-in*
IBM.ZOSMF.VIEW_WLM_WORKLOAD_PERF	*View Workload Performance*	*View the execution velocity and response time metrics for the workloads in a sysplex.*	*sysplex Name of the sysplex for which to display performance metrics.* *workload Name of the workload for which to display metrics.*	*Resource Monitoring plug-in*

* Statements regarding IBM future direction and intent are subject to change or withdrawal, and represents goals and objectives only.

Complete your sessions evaluation online at SHARE.org/SFEval

New Event Handlers for R13

Event Handlers	Description	Supported Event Types	Required parameters	Optional parameters	Expected Output
Resource Monitoring task	*Monitor the performance of the z/OS, AIX®, and Linux systems in your enterprise.*	*IBM.ZOSMF.VIEW_SYSPLEX_PERF_INDEX*	*None*	sysplex *If unspecified, the default value is the z/OSMF host sysplex.*	*Opens a dashboard that contains the performance index for the following items:* ● *Important service class periods* ● *All service class periods* ● *Report class periods*
		IBM.ZOSMF.VIEW_WLM_REPORT_CLASS_PERF	*None*	sysplex *If unspecified, the default value is the z/OSMF host sysplex.* reportClass *If unspecified, the metrics for all report classes are displayed.*	*Opens a dashboard that contains the following metrics for each WLM report class:* ● *Execution velocity* ● *Response time*

New Event Handlers for R13(Cont)

Event Handlers	Description	Supported Event Types	Required parameters	Optional parameters	Expected Output
Resource Monitoring task	*Monitor the performance of the z/OS, AIX®, and Linux systems in your enterprise.*	*IBM.ZOSMF.VIEW_WLM_SERVICE_CLASS_PERF*	*None*	sysplex *if unspecified, the default value is the z/OSMF host sysplex.* serviceClass *If unspecified, the metrics for all service classes are displayed.* period *If unspecified, the metrics for all periods in the specified service class are displayed. This value is used only if a service class is specified*	*Opens a dashboard that contains the following metrics for each WLM service class period:* ● *Performance index* ● *Execution velocity* ● *Execution velocity goal* ● *Response time* ● *Response time goal*
		IBM.ZOSMF.VIEW_WLM_WORKLOAD_PERF	*None*	sysplex *If unspecified, the default value is the z/OSMF host sysplex.* workload *If unspecified, the metrics for all workloads are displayed.*	*Opens a dashboard that contains the following metrics for each WLM workload:* ● *Execution velocity* ● *Response time*

Complete your sessions evaluation online at SHARE.org/SFEval

New Event Handlers for R13(Cont)

Event Handlers	Description	Supported Event Types	Required parameters	Optional parameters	Expected Output
Workload Management task	*Administer and operate WLM, and manage WLM service definitions and policies.*	*IBM.ZOSMF.VIEW_ACTIVE_WLM_SERVICE_DEFINITION*	*None*	sysplex *If unspecified, the default value is the z/OSMF host sysplex.* timestamp *If unspecified, the service definition that is currently active is displayed.*	*Displays the service definition that is active in the sysplex.*
		IBM.ZOSMF.VIEW_ACTIVE_WLM_SERVICE_DEFINITION.REPORT_CLASS	*None*	sysplex *If unspecified, the default value is the z/OSMF host sysplex.* timestamp *If unspecified, the service definition that is currently active is displayed.* reportClass *If unspecified, all the report classes in the service definition are displayed.*	*Displays the specified report class or a list of all the report classes defined in the active service definition.*

New Event Handlers for R13(Cont)

Event Handlers	Description	Supported Event Types	Required parameters	Optional parameters	Expected Output
Workload Management task	*Administer and operate WLM, and manage WLM service definitions and policies.*	*IBM.ZOSMF.VIEW_ACTIVE_WLM_SERVICE_DEFINITION.SERVICE_CLASS*	*None*	Sysplex *If unspecified, the default value is the z/OSMF host sysplex.* timestamp *If unspecified, the service definition that is currently active is displayed.* serviceClass *If unspecified, all the service classes in the service definition are displayed.* period *If unspecified, all the periods in the service class are displayed. This value is used only if a service class is specified.*	*Displays the specified service class and period, or a list of all the service classes defined in the active service definition.*
		IBM.ZOSMF.VIEW_ACTIVE_WLM_SERVICE_DEFINITION.WORKLOAD	*None*	sysplex *If unspecified, the default value is the z/OSMF host sysplex.* timestamp *If unspecified, the service definition that is currently active is displayed.* workload *If unspecified, all the workloads in the service definition are displayed.*	*Displays the specified workload or a list of all the workloads defined in the active service definition.*

67
Complete your sessions evaluation online at SHARE.org/SFEval

New Event Handlers for R13(Cont)

Event Handlers	Description	Supported Event Types	Required parameters	Optional parameters	Expected Output
Workload Management task	*Administer and operate WLM, and manage WLM service definitions and policies.*	*IBM.ZOSMF.VIEW_ACTIVE_WLM_SERVICE_POLICY*	*None*	sysplex *If unspecified, the default value is the z/OSMF host sysplex.* timestamp *If unspecified, the service policy that is currently active is displayed.*	*Displays the service policy that is active in the sysplex.*
		IBM.ZOSMF.VIEW_WLM_STATUS	*None*	sysplex *If unspecified, the default value is the z/OSMF host sysplex.*	*Opens the WLM Status tab.*

Complete your sessions evaluation online at SHARE.org/SFEval