z/OS V2R3 – z/OSMF
October 2017

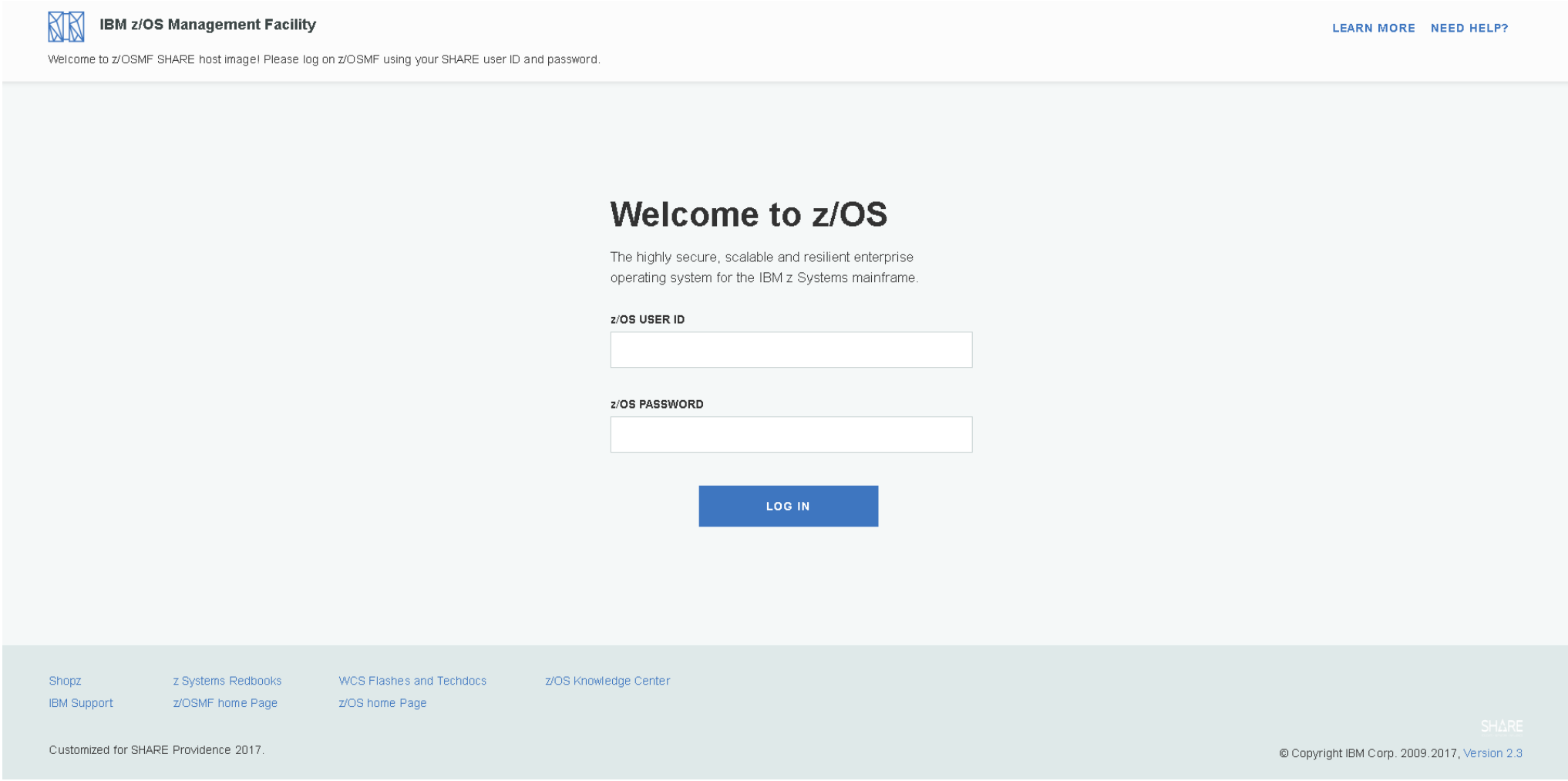
Agenda

- Trademarks
- Overview
- Usage & Invocation
- Interactions & Dependencies
- Migration & Coexistence Considerations
- Installation
- Session Summary
- Appendix

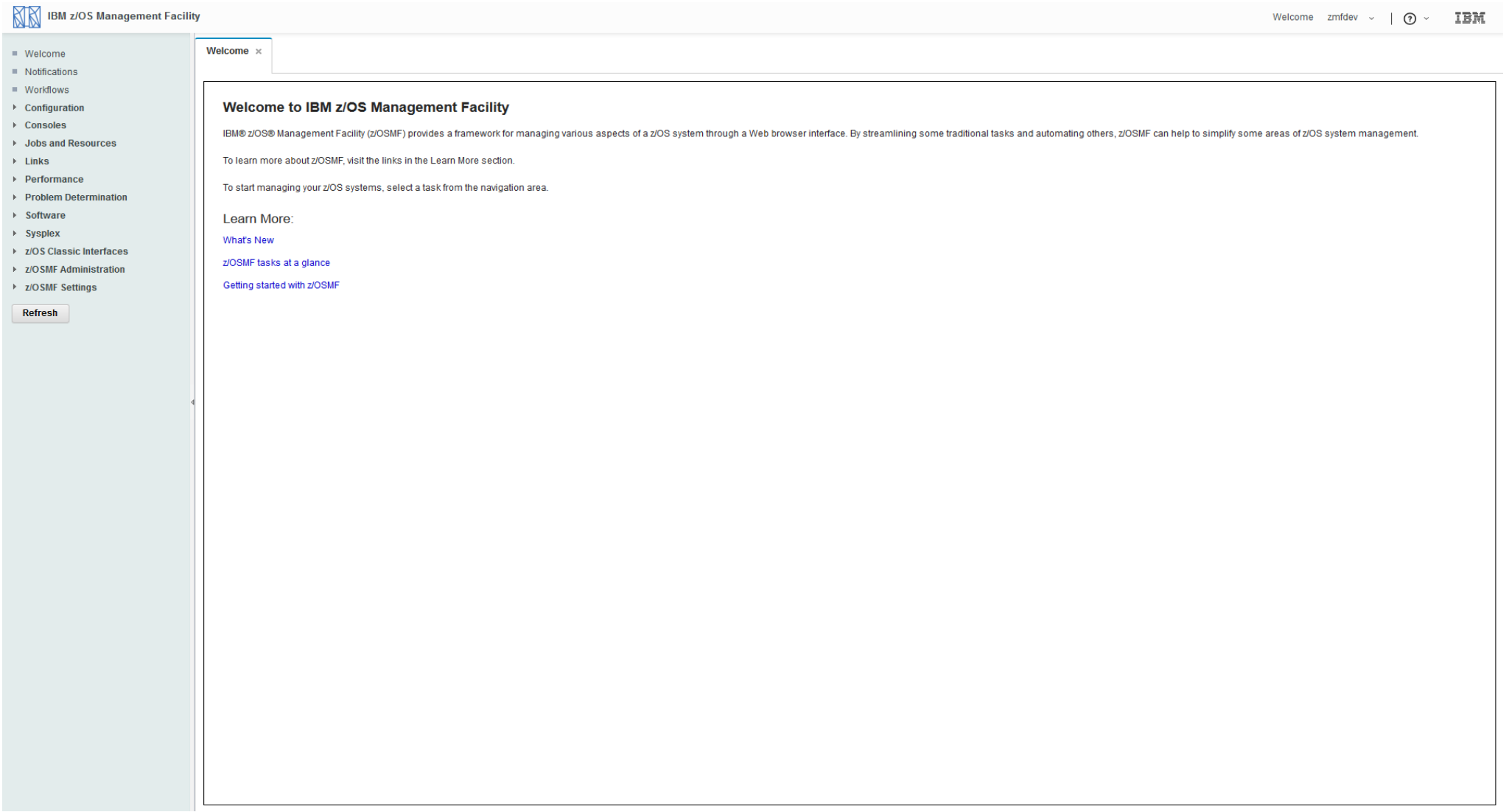
Trademarks

- See url http://www.ibm.com/legal/copytrade.shtml for a list of trademarks.
- Additional Trademarks:
  - None.

z/OSMF V2R3 welcome page before logon



z/OSMF V2R3 welcome page after logon



Console Services and Application

- Problem Statement / Need Addressed:
  - Users can use REST API to issue system command and get command response
  - Users can work with z/OS Operator console from z/OSMF window in browser
- z/OSMF V2R3 provides a new task named “z/OS Operator Consoles” which provides:
  - REST APIs allow user to issue z/OS system command, get command response and monitor unsolicited messages *
  - Modernized UI allows user to work with z/OS operator console from browser

* This function was also available on V2R2 through PI67211

Console Services and Application

- REST API – Issue command (1/3)
  - API definition
    - URL

      PUT /zosmf/restconsoles/consoles/consolename OR PUT /zosmf/restconsoles/consoles/defcn
    - Request body

Field name	Required or Optional	Description
cmd	Required	Specifies the command to issue.
sol-key	Optional	Specifies a keyword that you want to detect in solicited messages, that is, the command response. Case is not significant.
unsol-key	Optional	Specifies a keyword that you want to detect in unsolicited messages. Case is not significant.
detect-time	Optional	Indicates how long the console attempts to detect the value of unsol-key in the unsolicited messages. The unit is seconds. For example, if the value of detect-time is 10, the console checks the unsolicited messages for 10 seconds. The default is 30 seconds.
async	Optional	Indicates the method of issuing the command: **Y** Asynchronously **N** Synchronously. This is the default.
system	Optional	Name of the system in the same sysplex that the command is routed to. The default is the local system.
unsol-detect-sync	Optional	Indicates how to detect the keyword that is specified with the unsol-key field from unsolicited messages: **Y** Synchronously detect the keyword from unsolicited messages. The request is not returned until the unsol-detect-timeout value has elapsed or the detection result is complete. **N** Asynchronously detect the keyword from unsolicited messages. The request is returned immediately with the detection-url. The client application must invoke the value of detection-url to poll the result of the detection asynchronously. This is the default is the field is not specified.
unsol-detect-timeout	Optional	Indicates how long, in seconds, the request is blocked when the value for unsol-detect-sync is Y and the detection result has not been completed. The default value, 20 seconds, is used when this field is not specified and the value for unsol-detect-sync is Y.

Console Services and Application

- REST API – Issue command (2/3)
  - API example
    - Issue the system command “d a,PEGASUS” synchronously, and attempt to detect PEGASUS in the command response

Http request:

```
PUT https://pev076.pok.ibm.com/zosmf/restconsoles/consoles/ibmusecn

{"cmd":"d a,PEGASUS","sol-key":"PEGASUS"}
```

Http response:


```
{"cmd-response": "IEE115I 07.30.59 2016.011 ACTIVITY 070\r JOBS  MVS   TS USERS   SYSAS   INITS  ACTIVEVMAX
VTAM   OAS\r 00003  00013   00002   00032  00011   00001\V00020   00015\r PEGASUS NOT FOUND",
"sol-key-detected":true, "cmd-response-uri":"\/zosmf\/restconsoles\/consoles\/ibmusecn\/solmsgs\/C005291",
"cmd-response-url":"https:\/\/pev076.pok.ibm.com:443\/zosmf\/restconsoles\/consoles\/ibmusecn\/solmsgs\/C005291",
"cmd-response-key":"C005291"}
```

Console Services and Application

- REST API – Issue command (3/3)
  - API example
    - Issue an “s PEGASUS” command synchronously, using the default console, and detect keyword “PEGASUS” in the unsolicited messages synchronously.

Http request:

```
PUT https://pev061.pok.ibm.com/zosmf/restconsoles/consoles/defcn

{"cmd":"s PEGASUS","unsol-key":"PEGASUS","unsol-detect-sync":"Y"}
```

Http response:

```
{"status":"detected","cmd-response":"BPXM023I (ZOSMFAD) CFZ02300I: Configuration property
httpAuthType is not supported. Setting ignored.","msg":"$HASP100 PEGASUS ON STCINRDR"
```

Console Services and Application

- REST API – Get command response (1/2)
  - API usage

    Use this operation to get the response to a command that was issued asynchronously with the Issue Command service.
  - API definition
    - URL

      GET /zosmf/restconsoles/consoles/console-name/solmsgs/Ckey-number

      GET /zosmf/restconsoles/consoles/defcn/solmsgs/Ckey-number

Console Services and Application

- REST API – Get command response (2/2)
  - API example

    HTTP request:

```
GET https://pev061.pok.ibm.com:443/zosmf/restconsoles/consoles/ibmusecn/solmsgs/C508135
```

    Http response:

```
{"cmd-response":"IEE215I 07.36.34 2016.011 PARMLIB DISPLAY 513\R PARMLIB DATA SETS SPECIFIED\R AT IPL\R ENTRY FLAGS
VOLUME DATA SET\R 1  S  PEVTS3 CIMSSRE.R22ONLY.PARMLIB\r  2  S  PEVTS3
CIMSSRE.R14ONLY.PARMLIB\r  3  S  PEVTS3 CIMSSRE.R13ONLY.PARMLIB\r  4  S PEVTS3
CIMSSRE.R12ONLY.PARMLIB\r  5  S  PEVTS3 CIMSSRE.PARMLIB\r  6  S  PEVTST HDENNIS..ZOS17.PARMLIB\r
7  S  CTTPAK XESCT.PARMLIB\r  8  S  CTTPAK SYS1.PARMLIB\r  9  S  SDR22 SYS1.PARMLIB.POK\r
S  SDR22 SYS1.PARMLIB.INSTALL"}
```

Console Services and Application

- REST API – Get the detect result for unsolicited messages (1/2)
  - API usage

    Use this operation to get the result for detecting a keyword in unsolicited messages after an Issue Command request. The command must have been issued with the unsol-key field.
  - API definition
    - URL

      GET /zosmf/restconsoles/consoles/consolename/detections/Dkey-number

      GET /zosmf/restconsoles/consoles/defcn/detections/Dkey-number

Console Services and Application

- REST API – Get the detect result for unsolicited messages (1/2)
  - API example

    HTTP request:

```
GET https://pev076.pok.ibm.com/zosmf/restconsole/consoles/defcn/detections/D122033
```

    Http response:

    If the specified keyword has not been detected from unsolicited messages:

```
{"status":"waiting","msg":""}
```

    If the specified keyword has been detected from unsolicited messages:

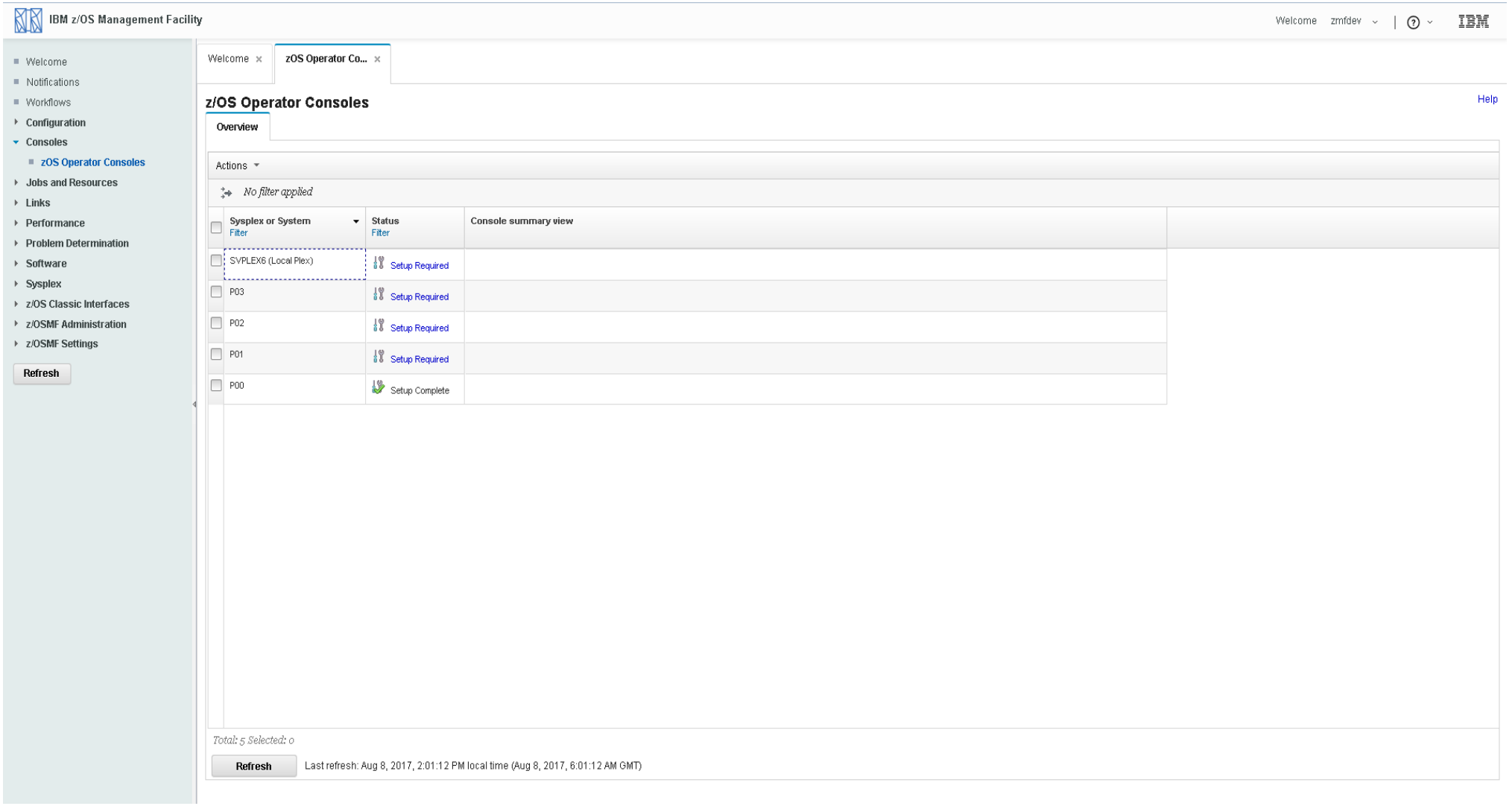
```
{"status":"detected","msg":"BPXM023I (ZOSMFAD)\r CFZ12584W: CIM Runtime Environment Userid currently only has READ\r access to
BPX.SERVER. It is recommended to have either UPDATE access\r to BPX.SERVER or has to be UID 0."}
```

Console Services and Application

- Browser based “z/OS Operator Consoles” task provides
  - Console overview of local sysplex
  - Console summary view and Console view
  - Issue command and get command response
  - Search
  - Filter
  - Automatically retrieve message help
  - Retrieve historic messages from OPERLOG or SYSLOG
  -

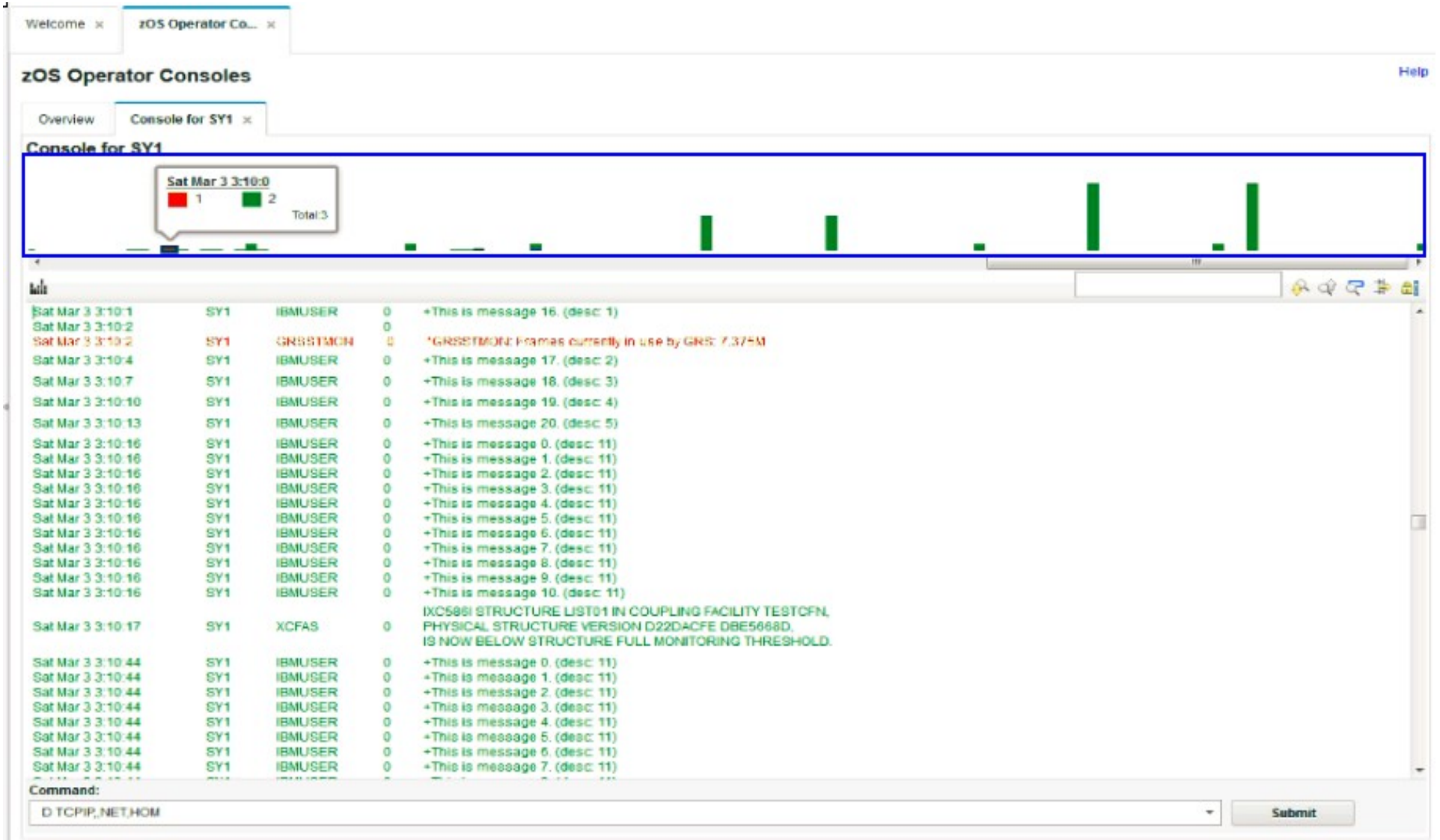
Console Services and Application

- Console overview of local sysplex



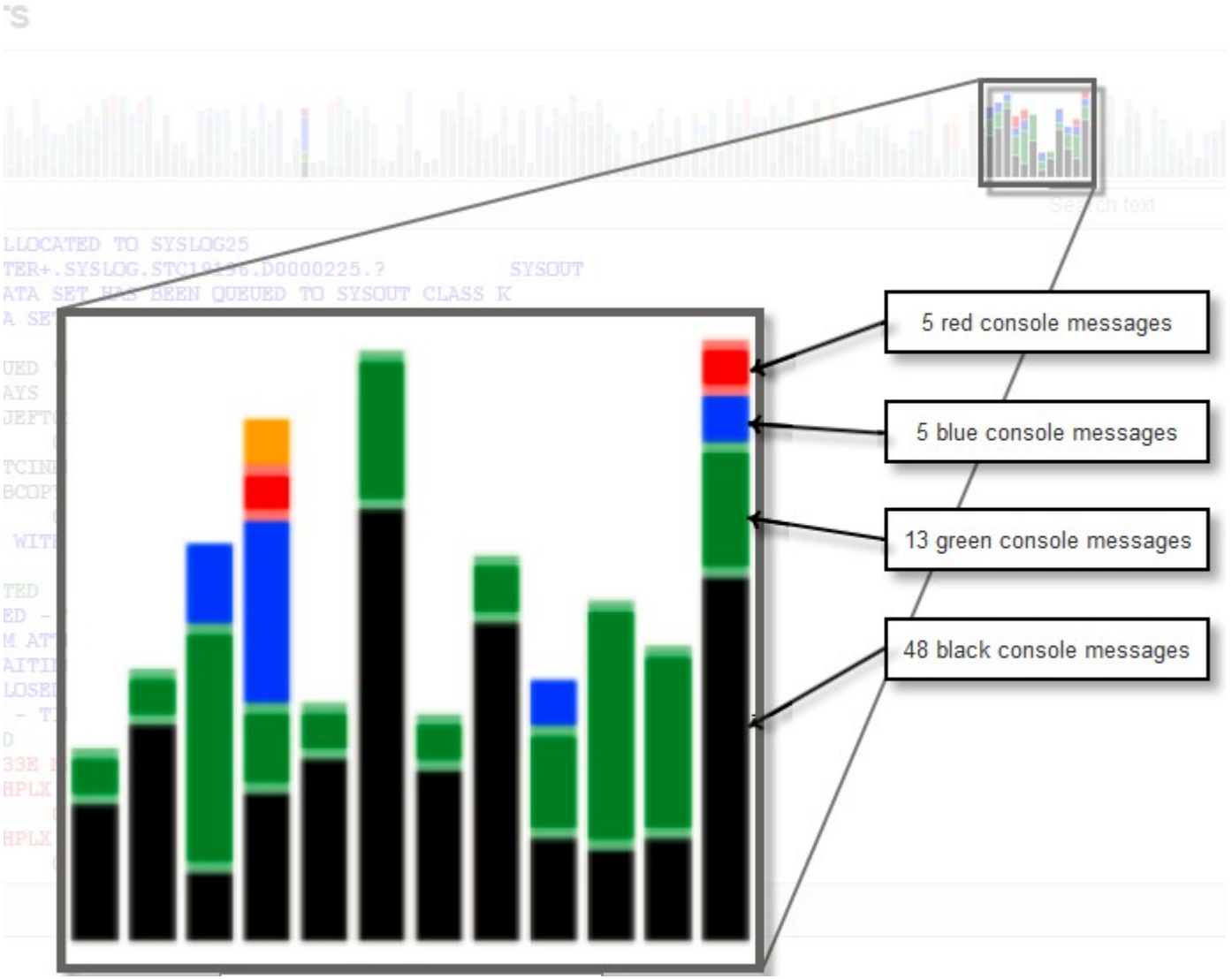
Console Services and Application

- Console summary view (1/2)



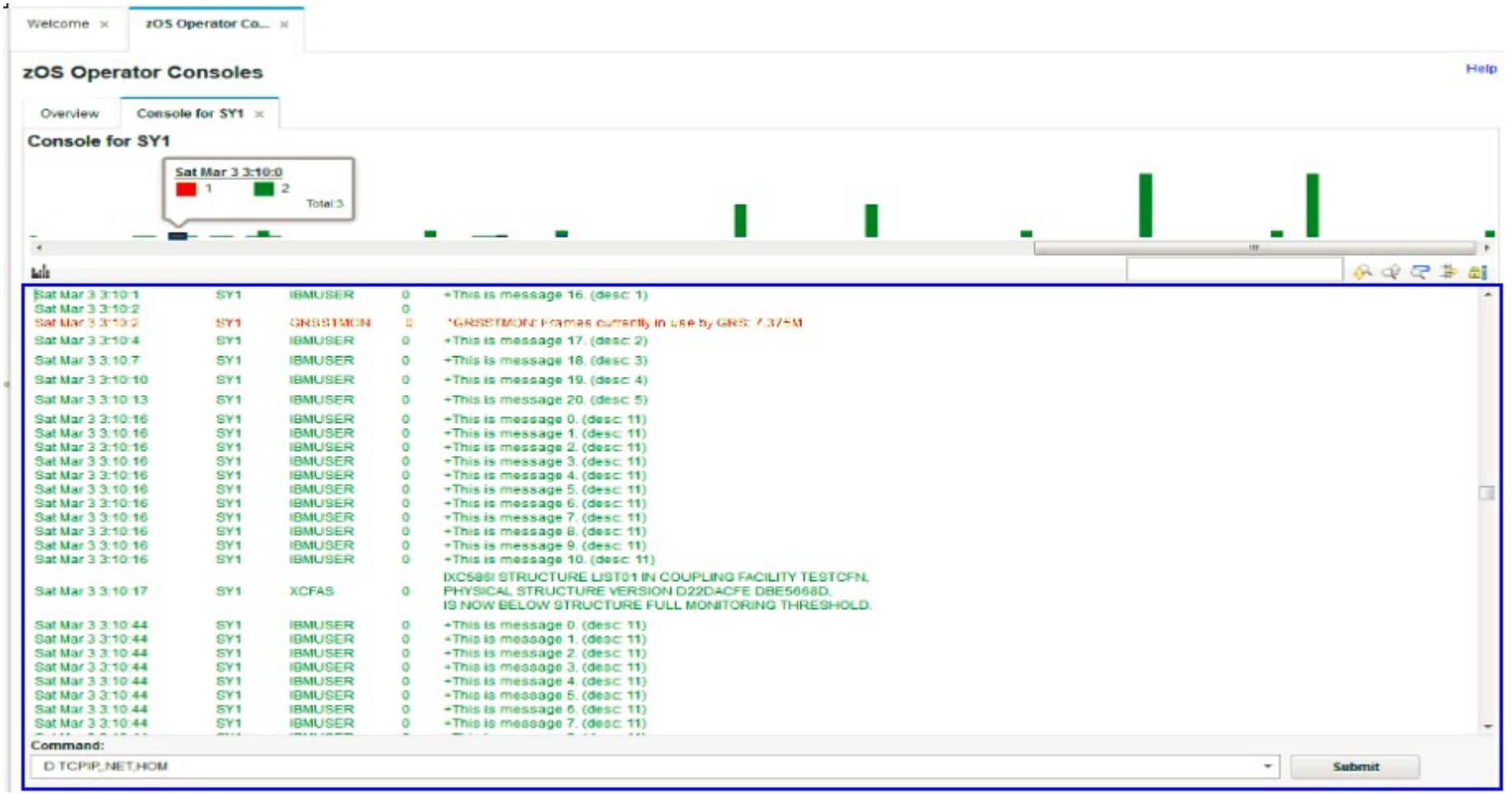
Console Services and Application

- Console summary view (2/2)



Console Services and Application

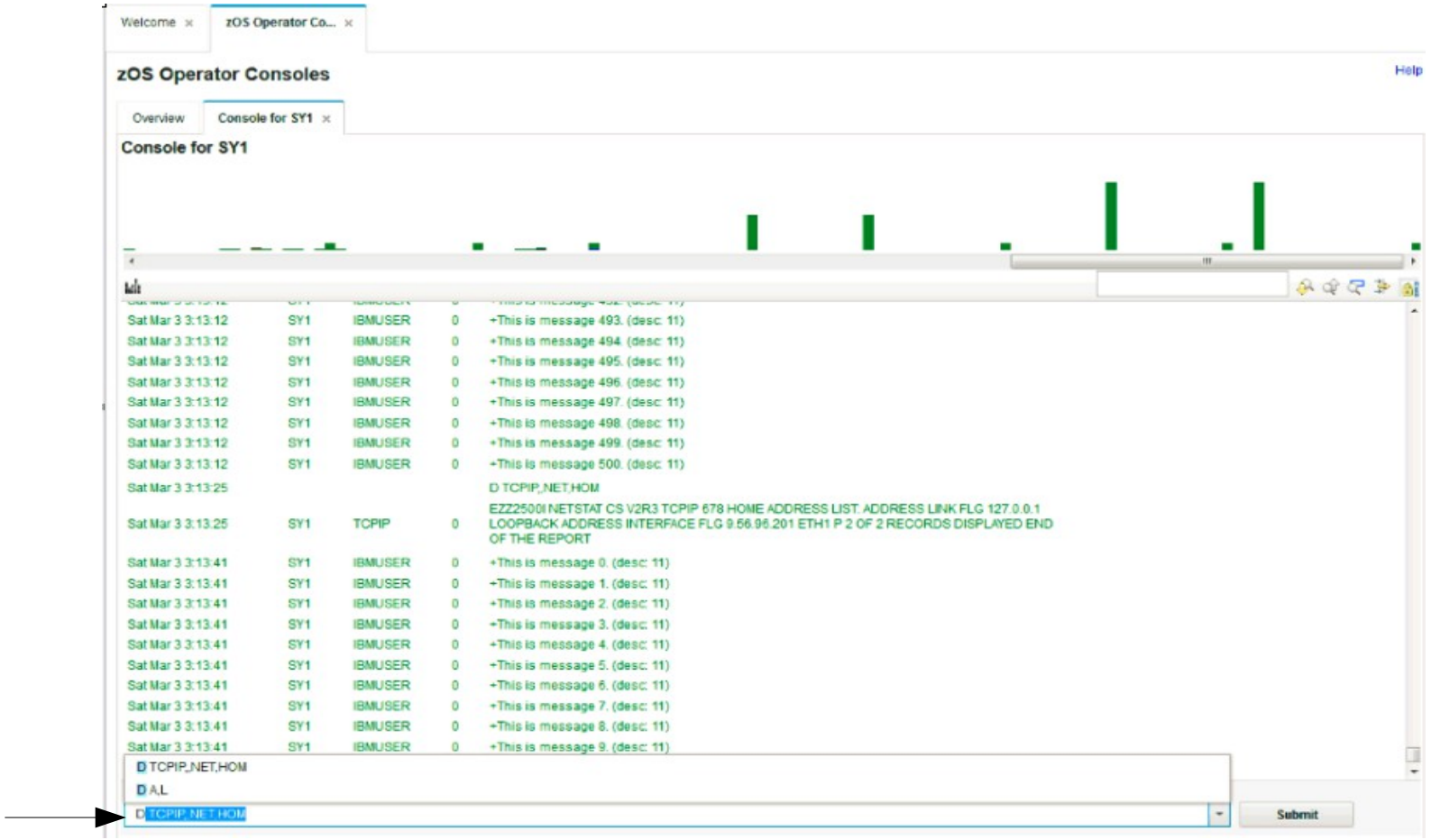
- Console view



Console view supports scrolling

Console Services and Application

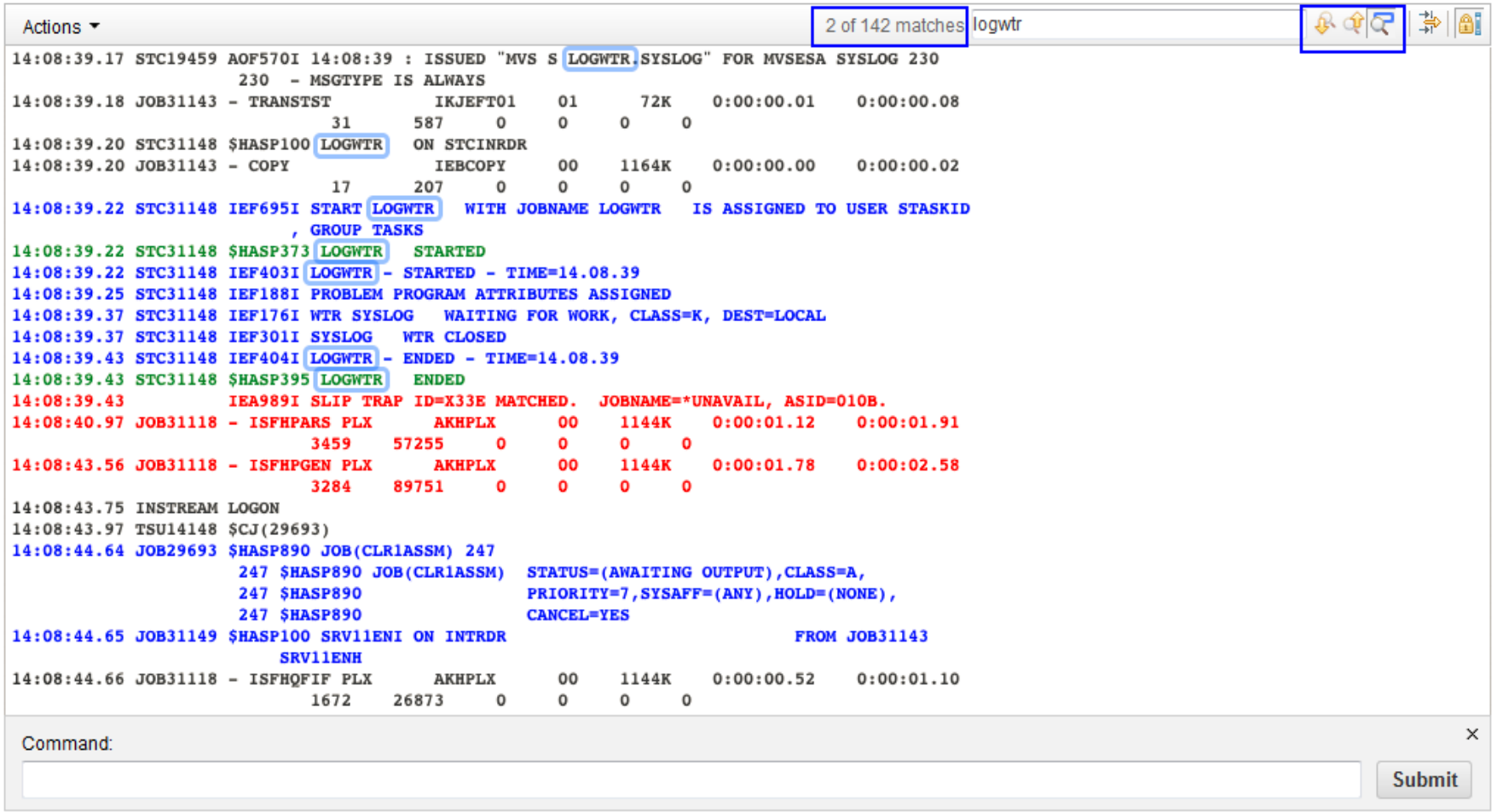
- Issue command and get command response



- Max 100 history commands per user could be saved
- Type association is supported

Console Services and Application

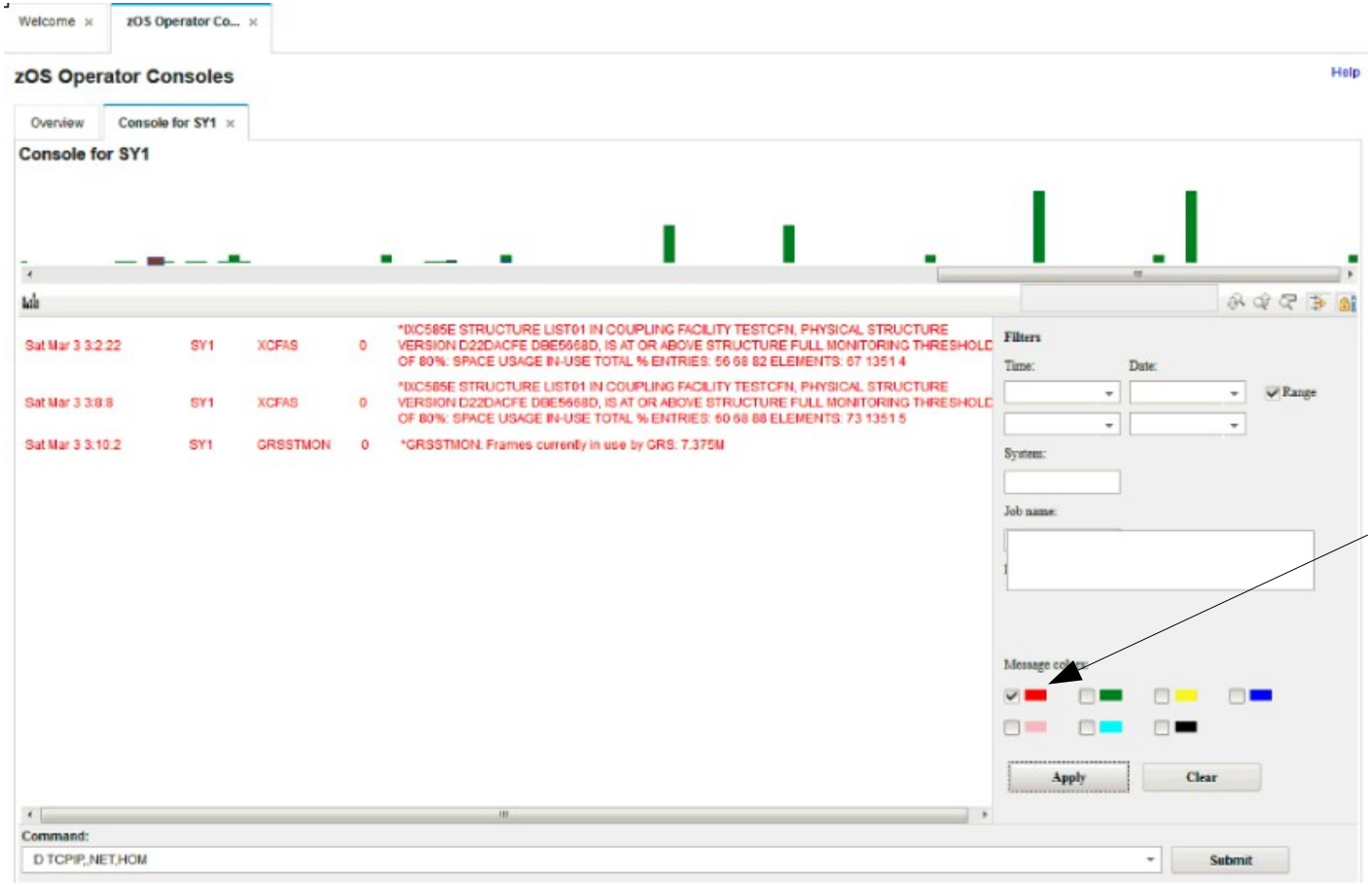
- Search



- When search is used, the Console View will automatically stop updating messages
- User could highlight all occurrences

Console Services and Application

- Filter

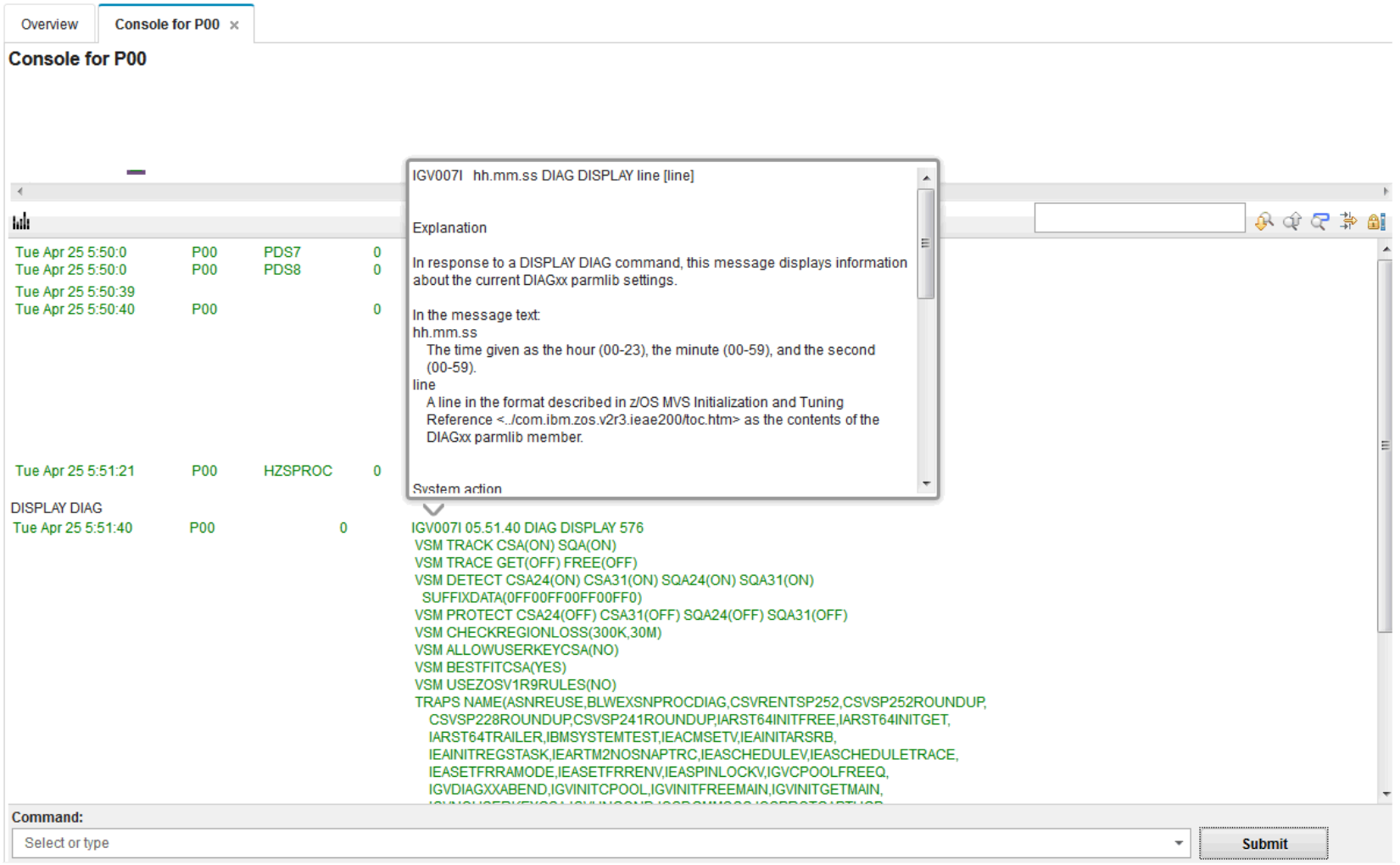


Supports below kinds of filters:

- Time
- System name
- Job name
- Message content
- Message color

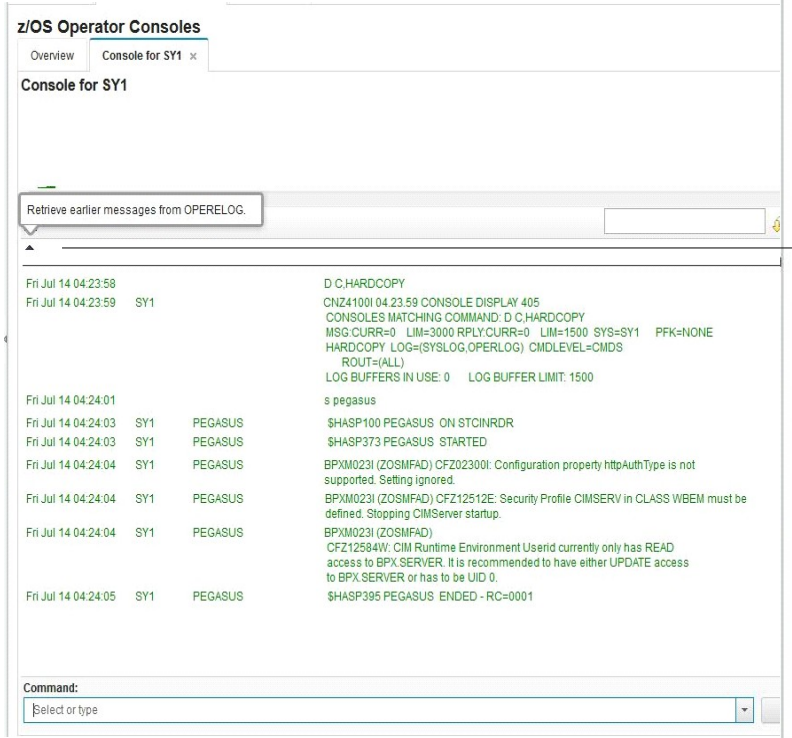
Console Services and Application

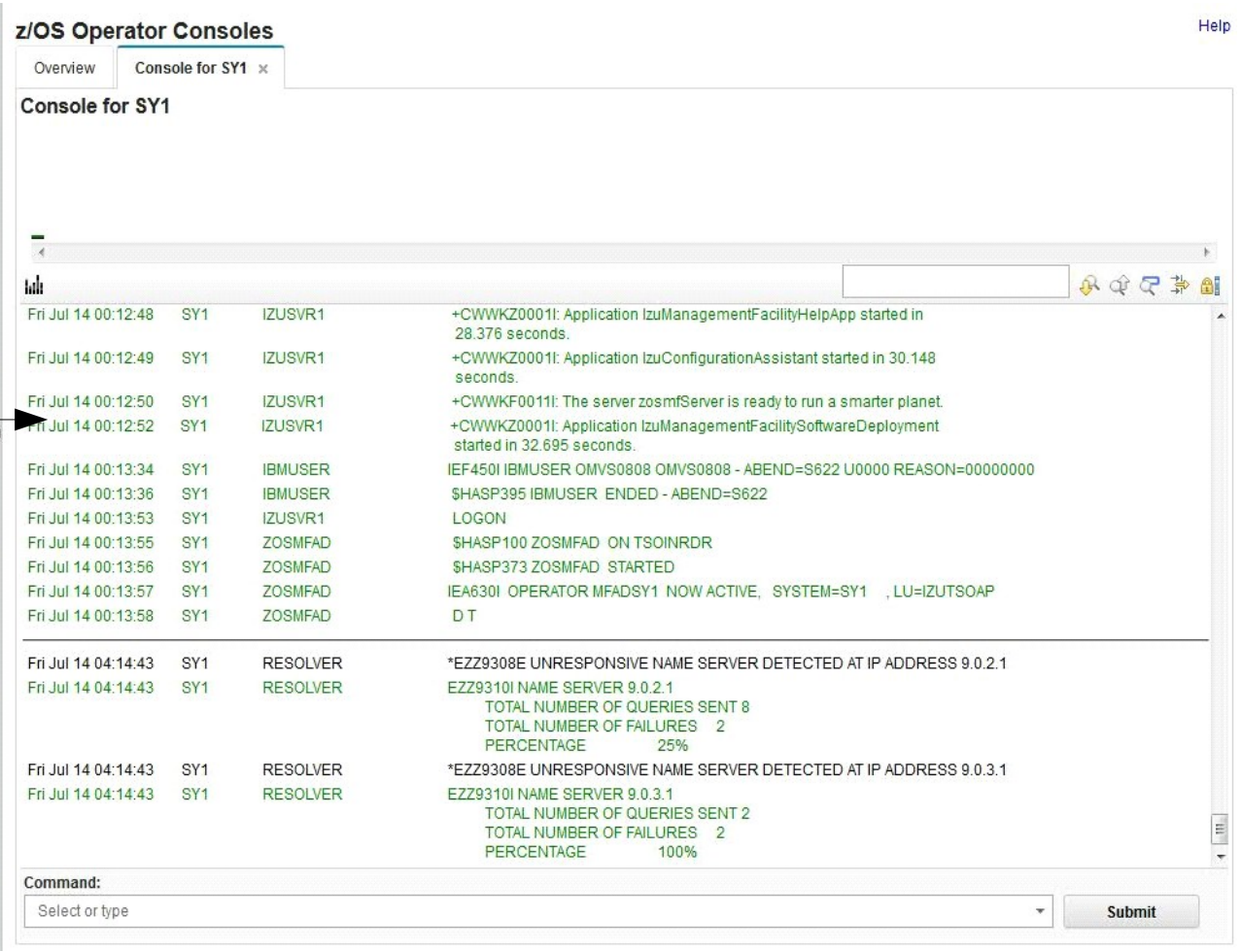
- Automatically retrieve message help (depends on KC4z LookAt function)



Console Services and Application

- Retrieve historic messages from OPERLOG or SYSLOG





Interactions & Dependencies

- Software Dependencies
  - CEA
- Hardware Dependencies
  - NONE
- Exploiters
  - IBM Cloud Provisioning and Management for z/OS

Migration & Coexistence Considerations

- Migration: N/A because V2R3 is the first release introduce “z/OS Operator Consoles” task
- Coexistence: N/A

Installation

"z/OS Operator Consoles" is started together with z/OSMF Core FMID HSMA230.

- To be able to see "z/OS Operator Consoles", user must have READ access to SAF profile <SAF_PREFIX>.ZOSMF.CONSOLES.ZOSCONSOLES in class "ZMFAPLA".

  <SAF_PREFIX> should be replaced by the value of zOSMF parmlib option "SAF_PREFIX". By default, it's "IZUDFLT"

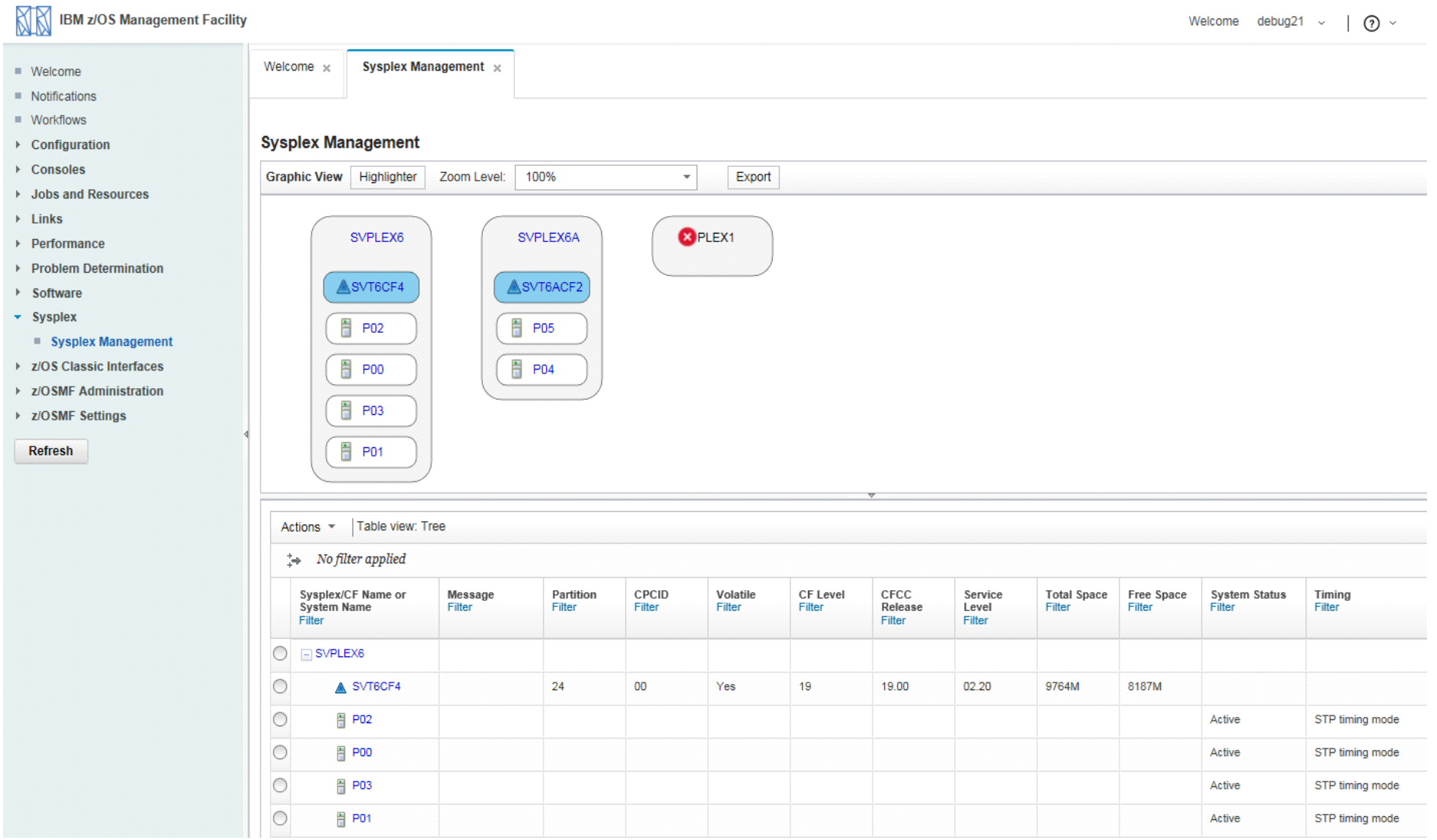
- Start of "z/OS Operator Consoles" doesn't start any EMCS console in the back end. Instead, user has to execute a few SAF commands in order to be able to start console view for specific system.

  Please refer to "SYS1.SAMPLIB(IZUGCSEC)" about what needs to be setup in backend for a specific system.

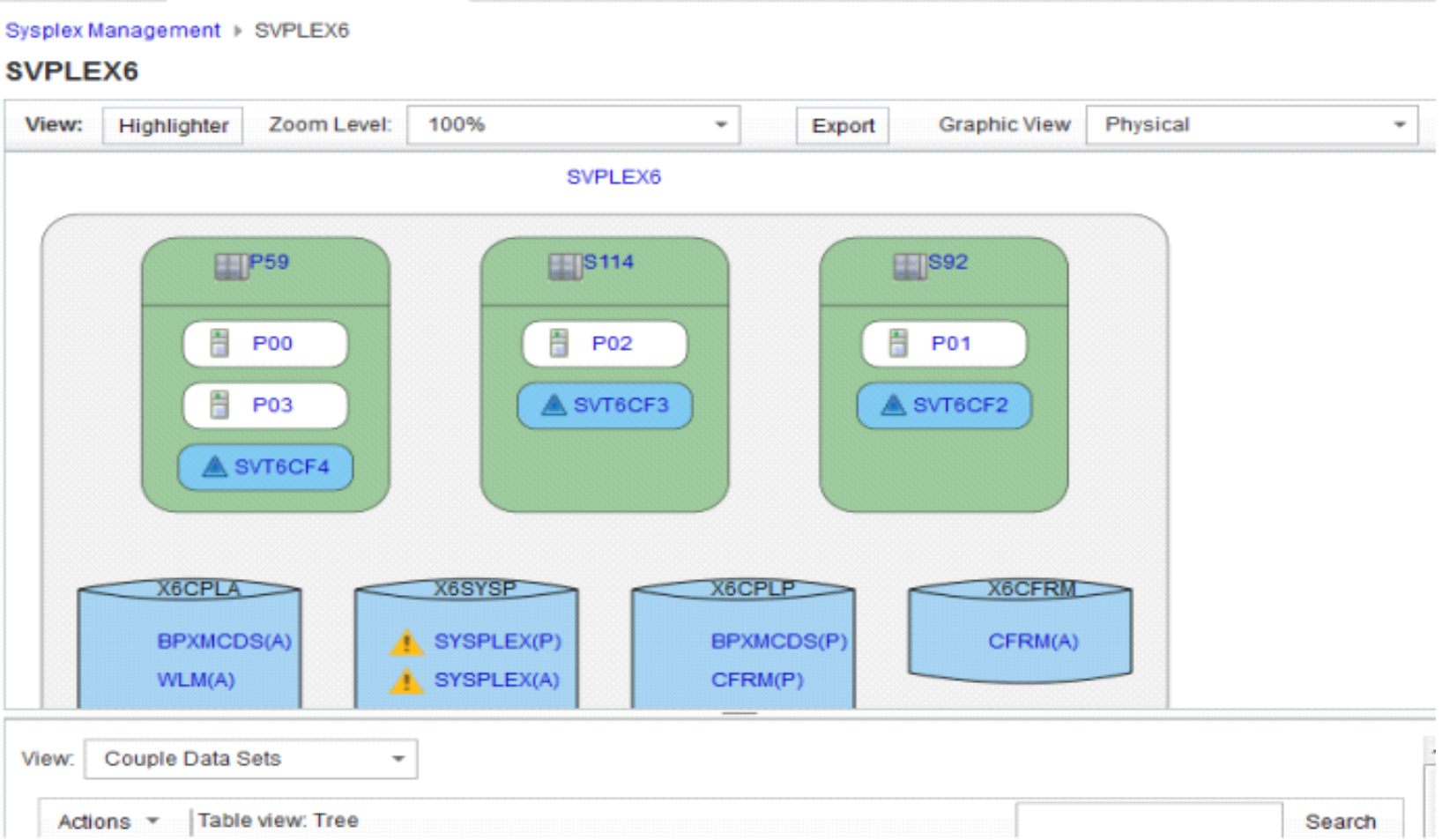
Sysplex Management

- Problem Statement / Need Addressed
  - Users need to manage physical configurations and logical resources of a sysplex.
  - Users need to manage sysplexes in the whole enterprise.
  - User need a modern, task oriented and web GUI to simplify their daily work for current Command Line way is hard to use..
  - Users need to query sysplex resources more quickly and easily on z/OS for current management method is time consuming.
- Solution
  - A new z/OSMF Sysplex Management task is provided in z/OSMF V2R3, providing query functions for physical and logical resources of sysplexes in the enterprise scope.
- Benefit / Value
  - z/OSMF Sysplex Management application provides attractive graphic view of Sysplex infrastructure, and best practices to simplify Sysplex resource management greatly.

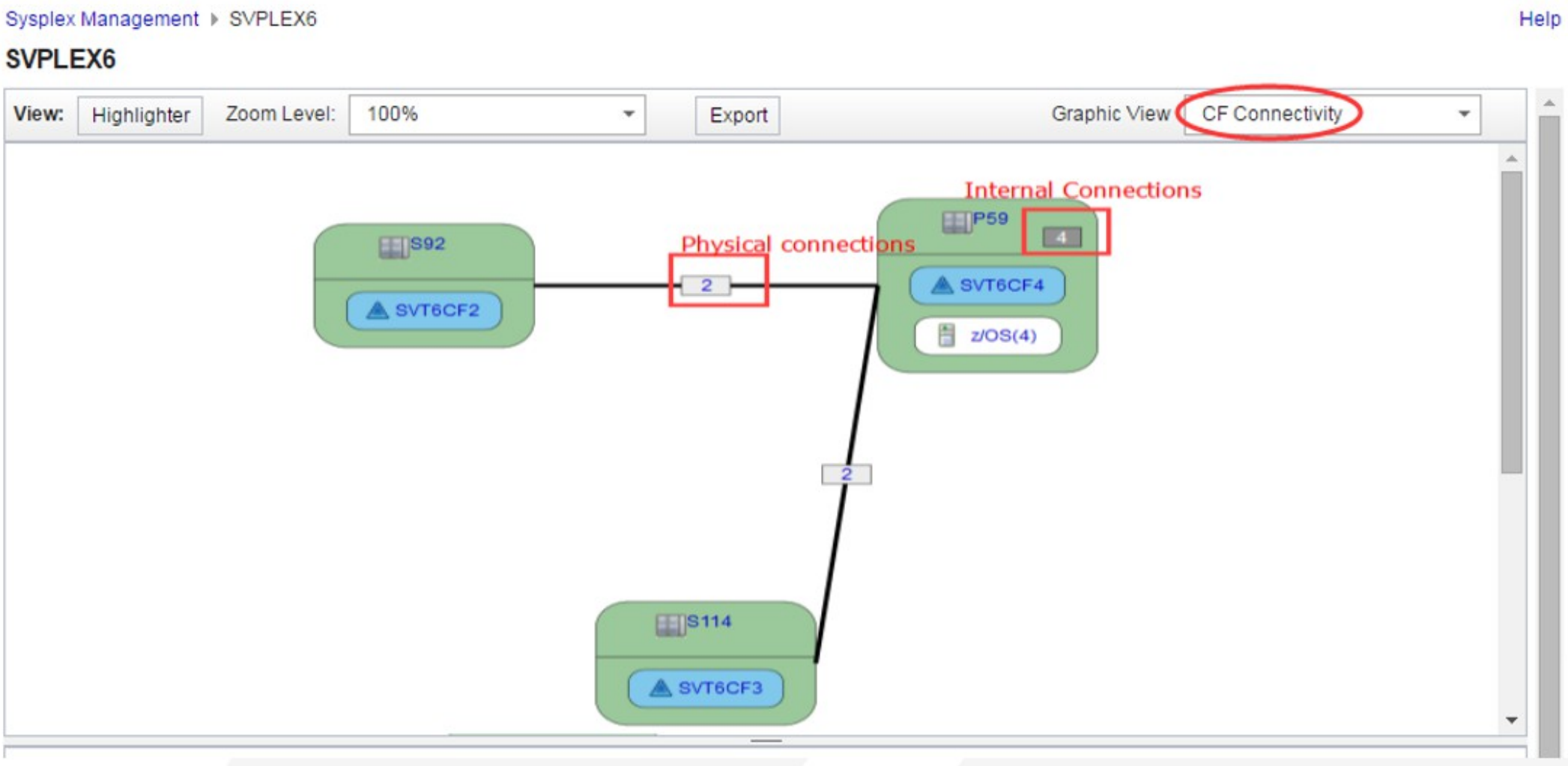
Sysplex Management – Topology View



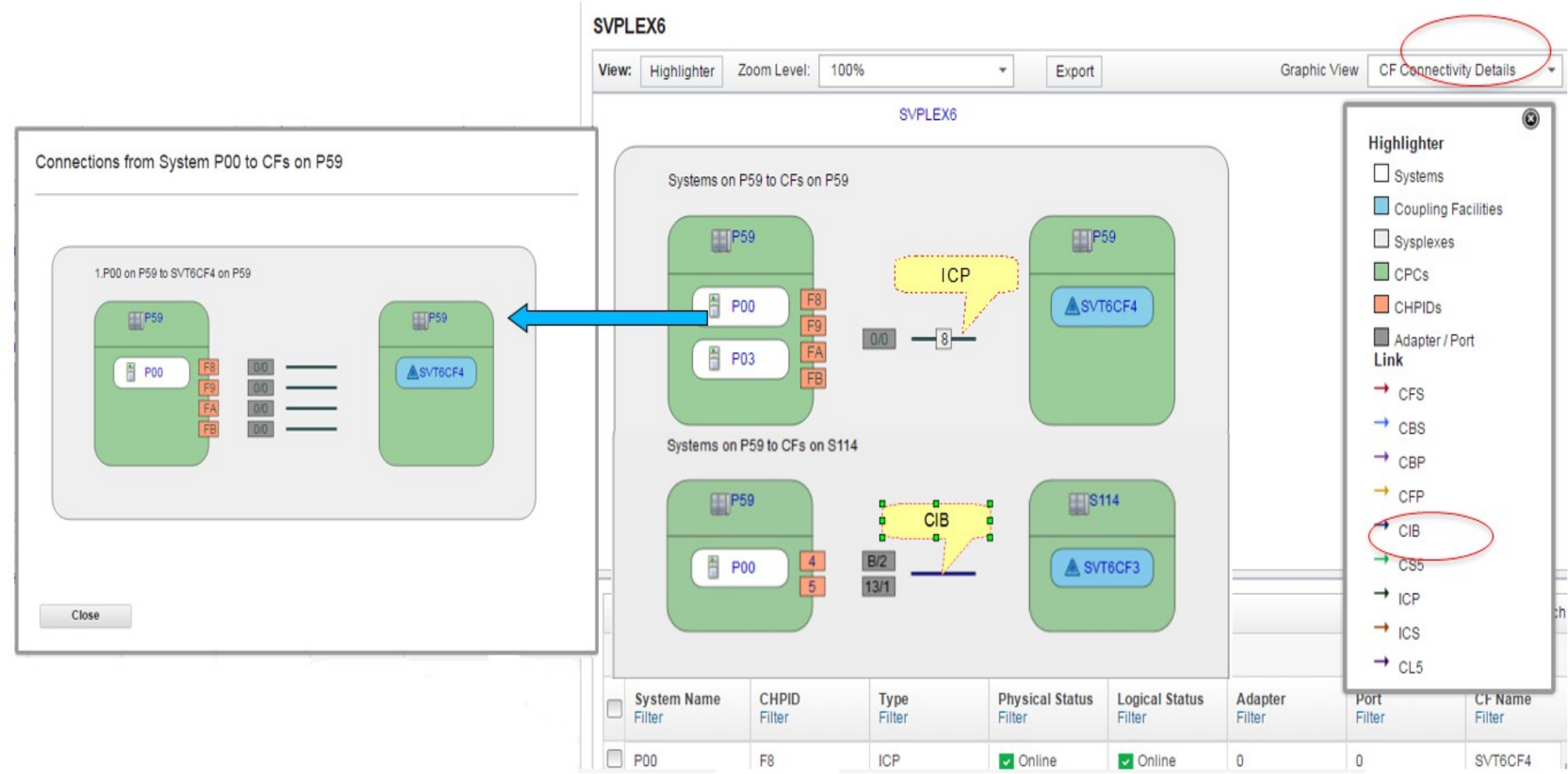
Sysplex Management - Physical View



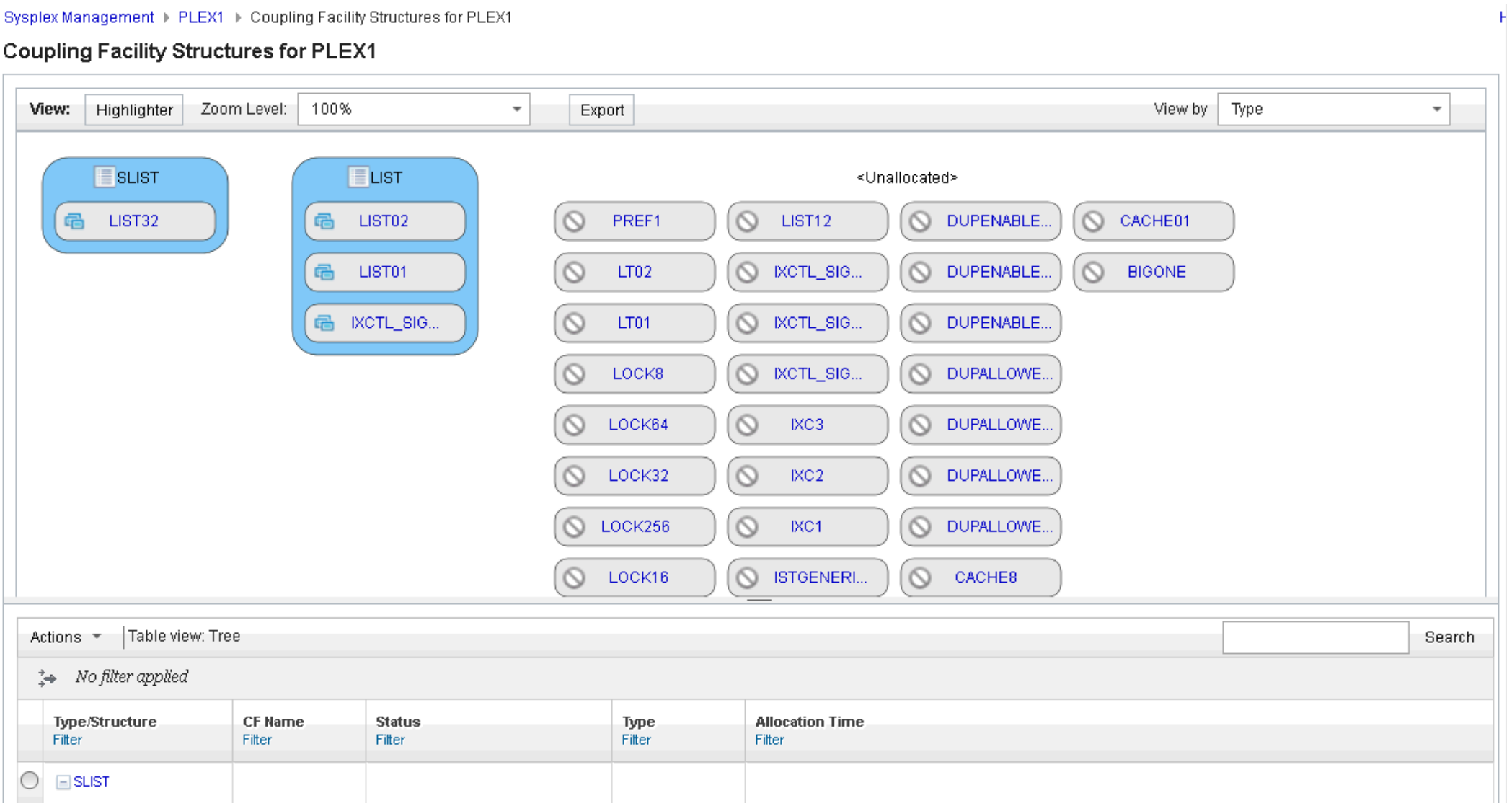
Sysplex Management – Connectivity View



Sysplex Management – Connectivity Details View



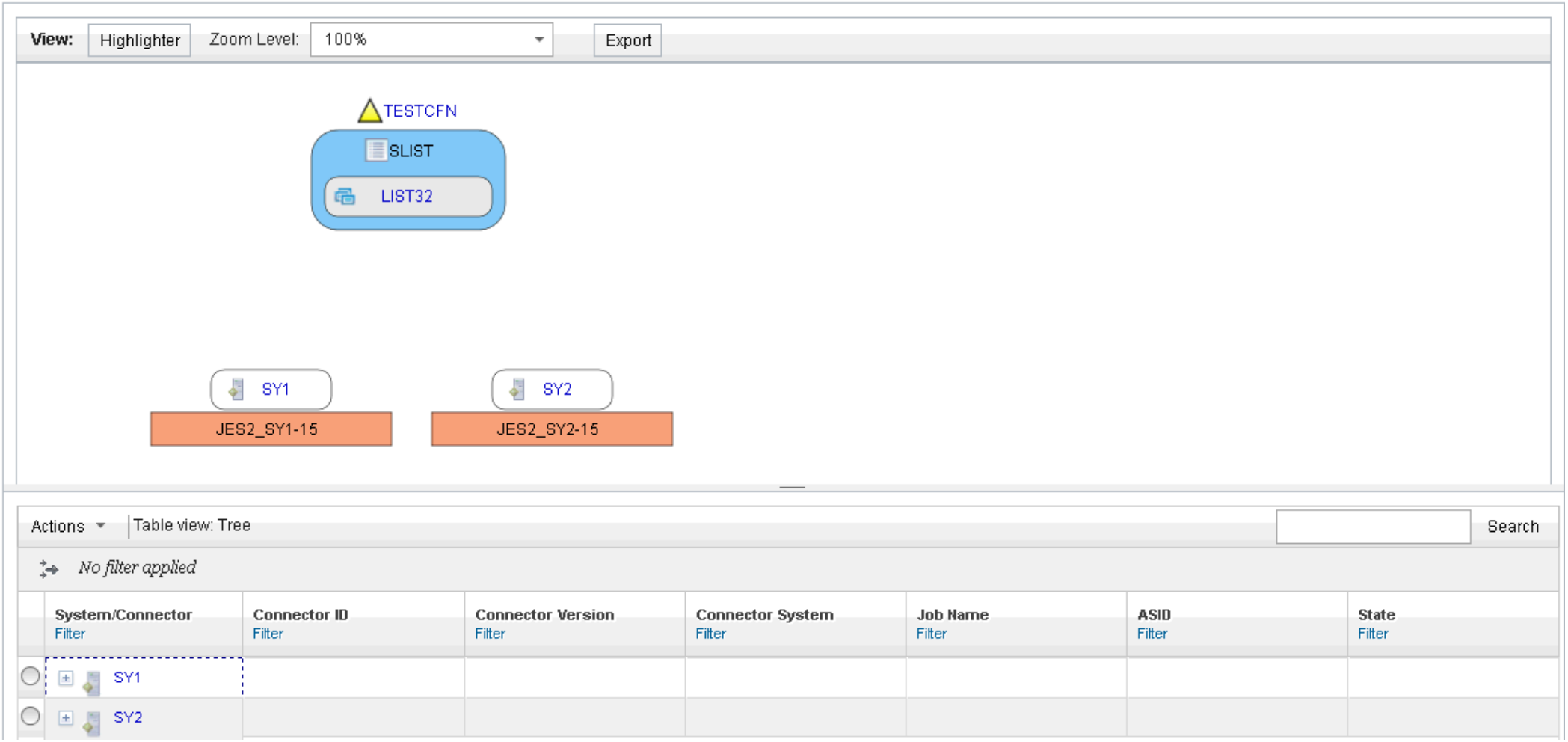
Sysplex Management – Structures View



Sysplex Management – Structure Connectors

Sysplex Management ▸ PLEX1 ▸ Coupling Facility Structures for PLEX1 ▸ CF Structure LIST32

CF Structure LIST32



Sysplex Management – Sysplex Properties

Sysplex Management ▸ SVPLEX6 ▸ View Sysplex

View Sysplex SVPLEX6

Sysplex name:
SVPLEX6

Initialization time(UTC):
05/22/2017 03:23:35.819743

Active Policies

Name	Type	Date Activated(UTC)
IXCPOLX6	CFRM	06/06/2017 07:09:24
IXCSFMX6	SFM	10/21/2008 22:02:50

Total: 2

Couple Data Sets

Name	Type	Usage	Volume Serial
UTCXCF.SVPLEX6.F	SYSPLEX	Primary	X6SYSP
UTCXCF.SVPLEX6.F	SYSPLEX	Alternate	X6SYSP
UTCXCF.SVPLEX6.O	BPXMCDS	Primary	X6CPLP
UTCXCF.SVPLEX6.O	BPXMCDS	Alternate	X6CPLA
UTCXCF.SVPLEX6.C	CFRM	Primary	X6CPLP
UTCXCF.SVPLEX6.C	CFRM	Alternate	X6CFRM
UTCXCF.SVPLEX6.W	WLM	Primary	X6CPLP

Total: 14

Systems

Name
P02
P00
P03
P01

Coupling Facilities

Name	Partition	CPC
SVT6CF3	29	00
SVT6CF4	24	00

Sysplex Management – CF Properties

Sysplex Management ▸ SVPLEX6 ▸ View Coupling Facility

View Coupling Facility SVT6CF4

Coupling facility name:
SVT6CF4

Sequence Number:
0000000D7406

CPC ID:
00

Partition:
24

CF level:
19

Standalone:
No

CFCC release:
19.00

Service level:
02.20

Built on(UTC):
08/15/2016 08:59:00

Volatile:
Yes

Storage increment size:
1024K

Storage-class memory increment size:
1024K

Shared processors:
0

Dedicated processors:
1

Coupling thin interrupts:
Not Enabled

Dynamic CF dispatching:
Off

Coupling Facility Space Utilization

Name	Space
Structures	1332M
Dump Space	6144K
Free Space	8426M
Total	9764M

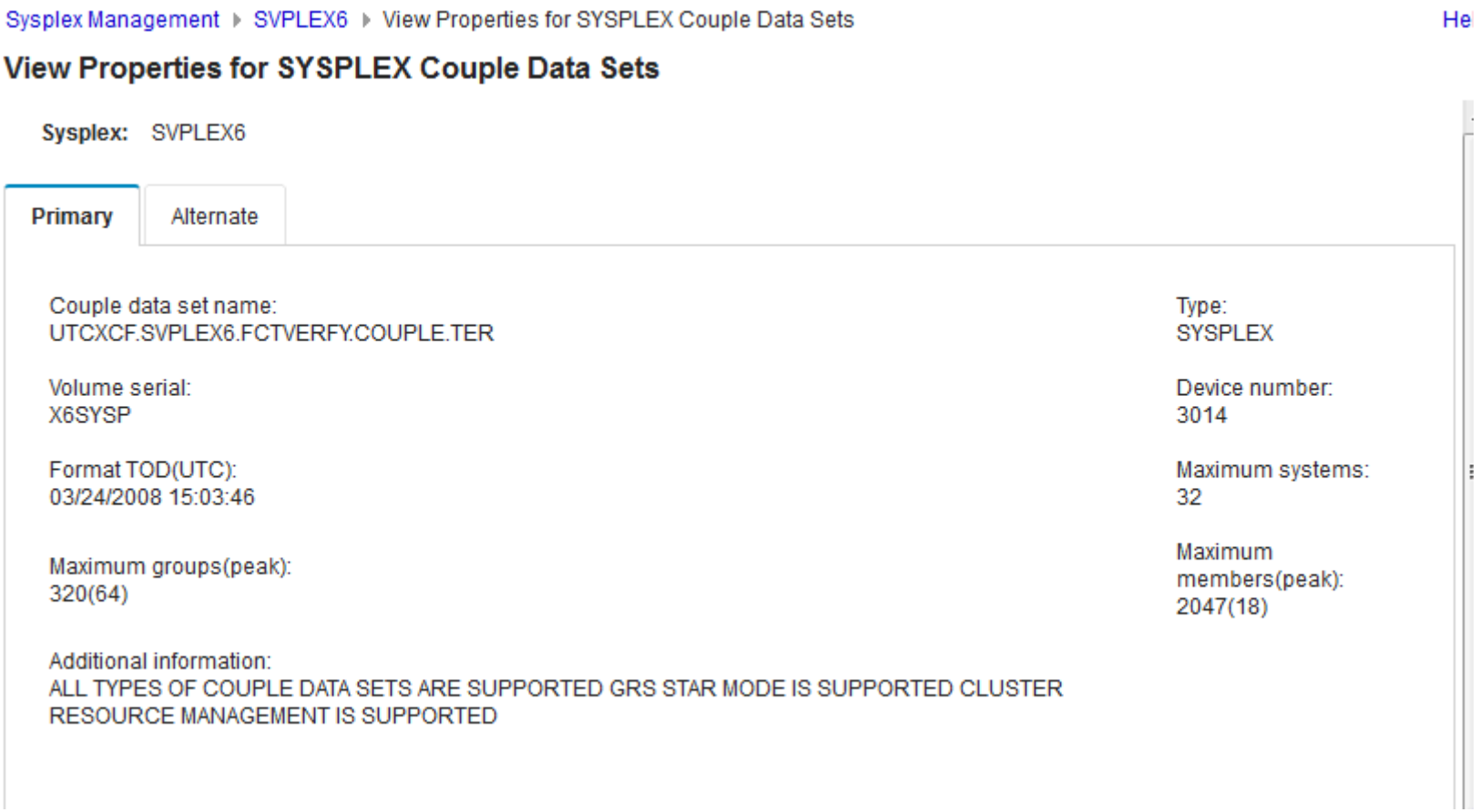
Name	Space
Structures dump tables	0
Max requested dump Spaces	0
Free dump Space	6144K
Total	6144K

Storage Configuration

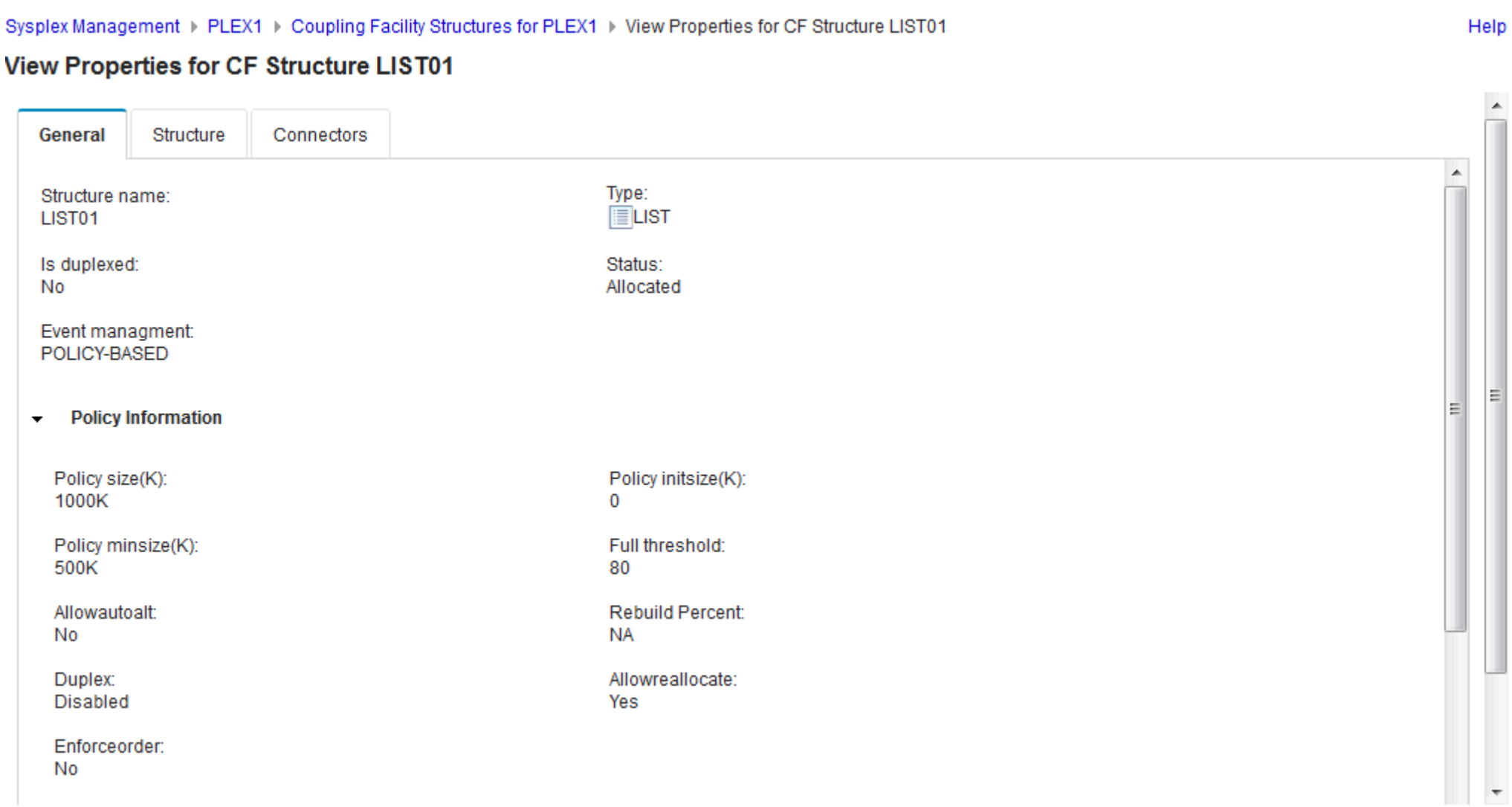
Name	Control Space	Non-control Space	Storage-class memory
Allocated	1338M	0	0
Free Space	8426M	0	0
Total	9764M	0	0

Sysplex Management – System Properties

Sysplex Management – CDS Properties



Sysplex Management – Structure Properties



Interactions & Dependencies

- Software Dependencies
  - z/OS Sysplex component
  - CEA
  - BCPii (better to have)
- Hardware Dependencies
  - NONE
- Exploiters
  - z/OS Sysplex users

Migration & Coexistence Considerations

- Migration: z/OSMF Core Systems table should be migrated.
- Coexistence: None.

Installation

z/OSMF Sysplex Management is an optional component of z/OSMF Core HSMA230.

- Customer has Sysplex environment setup.
- z/OS CEA need be setup and running

z/OSMF Autostart

- Problem Statement / Need Addressed:
  - Vendors or customers can not build their own application based on z/OSMF REST APIs because they don't know if z/OSMF is there.
  - Users complained that it's difficult for them to find where to start when they open z/OSMF welcome page
  - Administrators have to setup z/OSMF header, footer and company logo outside of z/OSMF UI
  - Administrators have to go to backend to collect z/OSMF diagnostic data
  - z/OSMF provides sample jobs which contain sample RACF commands needed by z/OSMF. Administrators who use other security products than RACF complained that they can not refer to those sample jobs because only RACF commands are included.

- Solutions
  - z/OSMF V2R3 will be automatically started during IPL such that vendor or customers' application can find z/OSMF
  - z/OSMF REST Notification API will be enhanced to allow email address as the target.
  - z/OSMF welcome page will be updated to allow users easily know where to start
  - z/OSMF V2R3 will provide UI allows administrator to customize header, footer and company logo.
  - z/OSMF V2R3 will provide UI allows administrator to collect diagnostic data for z/OSMF
  - z/OSMF V2R3 will provide a stand alone utility which is able to translate general security definition needed by z/OSMF to security commands which adapt the exact security product used by customer. As the input to the utility, z/OSMF will also provide sample “general security definition”.

z/OSMF Autostart

- Benefit / Value:
  - Vendors or customers can build their own application based on z/OSMF REST APIs without manually starting z/OSMF.
  - Users can easily know where to start on z/OSMF welcome page.
  - Administrators can setup z/OSMF header, footer and company logo in z/OSMF UI.
  - Administrators can collect z/OSMF diagnostic data in z/OSMF UI.
  - z/OSMF provides stand alone utility and sample general security definition to support for RACF and other security products used by customers.

z/OSMF Autostart

- z/OSMF V2R3 will be automatically started during IPL - Terms
  - AUTOSTART z/OSMF
    - “AUTOSTART z/OSMF” is the z/OSMF which exploiters of z/OSMF should be connected to. When it's UP and DOWN, it will issue ENF83 signal with QUAL(80000000) such that exploiters know primary z/OSMF is UP or DOWN. Please refer to SYS1.MACLIB(IZUENF83) for the content of this signal. The status and URI of “primary z/OSMF” will also be written into memory (mapped by SYS1.MACLIB(IZUENF83) which is referenced by ECVTIZUGSP in ECVT)
    - It is specified during start of z/OSMF, such as
      start IZUSVR1,server=AUTOSTART
      “AUTOSTART” is the default value if “server” is not specified
    - Each system can only have one active AUTOSTART z/OSMF.
    - User can have multiple active AUTOSTART z/OSMF in a sysplex.
    - The z/OSMF started during IPL is always AUTOSTART z/OSMF
  - STANDALONE z/OSMF
    - “STANDALONE z/OSMF” could be started for any reason. It does not require AUTOSTART z/OSMF exist or not.
    - It is specified during start of z/OSMF, such as
      start IZUSVR1,server=STANDALONE
    - There is no limitation in terms of how many STANDALONE z/OSMF you can have in one system or one sysplex

z/OSMF Autostart

- z/OSMF V2R3 will be automatically started during IPL – parmlib
  - New parmlib options for AUTOSTART z/OSMF
    - AUTOSTART(LOCAL|CONNECT)
      User could determine how to start AUTOSTART z/OSMF by specifying the value of "AUTOSTART" option in zOSMF parmlib IZUPRMxx
      - LOCAL means the AUTOSTART z/OSMF will be started during IPL.
      - CONNECT means the system will use a remote AUTOSTART z/OSMF as its primary z/OSMF. Hence, there will be no "AUTOSTART z/OSMF" started on the system which specifies "AUTOSTART(CONNECT)" in z/OSMF parmlib

      LOCAL will be the default value if "AUTOSTART" is not specified in parmlib.

    - AUTOSTART_GROUP(IZUDFLT|*name*)
      - AUTOSTART_GROUP is used to uniquely identify a AUTOSTART z/OSMF in sysplex scope.
        - When AUTOSTART(LOCAL) is specified, the AUTOSTART z/OSMF which will be started during IPL will be identified by the value of "AUTOSTART_GROUP".
        - When AUTOSTART(CONNECT) is specified, the CONNECT z/OSMF this system is going to use will be identified by the value of "AUTOSTART_GROUP"
      - The default value of AUTOSTART_GROUP is DEFAULT.
      - Change of value of AUTOSTART_GROUP requires IPL:
        E.g. if AUTOSTART z/OSMF was started during IPL with AUTOSTART_GROUP(ZOSMF_1), when ZOSMF_1 was down, you can restart AUTOSTART z/OSMF but you can not change the value of AUTOSTART_GROUP
      - It's not allowed to have two AUTOSTART z/OSMF using same value of "AUTOSTART_GROUP" in the sysplex scope. Therefore, if multiple systems didn't specify "AUTOSTART" (leads to "LOCAL") and "AUTOSTART_GROUP" (leads to "IZUDFLT"), there will only be one system gets AUTOSTART z/OSMF with identifier "IZUDFLT" started. The rest of systems will be transit to "CONNECT" mode.

z/OSMF Autostart

- z/OSMF V2R3 will be automatically started during IPL - parmlib
  - New parmlib options for both AUTOSTART z/OSMF and STANDALONE z/OSMF
    - USER_DIR(*directorypath*)
      - Previously, this is specified as “USERDIR” in z/OSMF server proc “IZUSVR1” or passed in the command line of start IZUSVR1 (E.g. start IZUSVR1,USERDIR='/var/zosmf'). From V2R3, user should specify USER_DIR in zOSMF parmlib. The default value is “/var/zosmf”.
    - USER_DIR is ignored during IPL when AUTOSTART(CONNECT) is specified.

z/OSMF Autostart

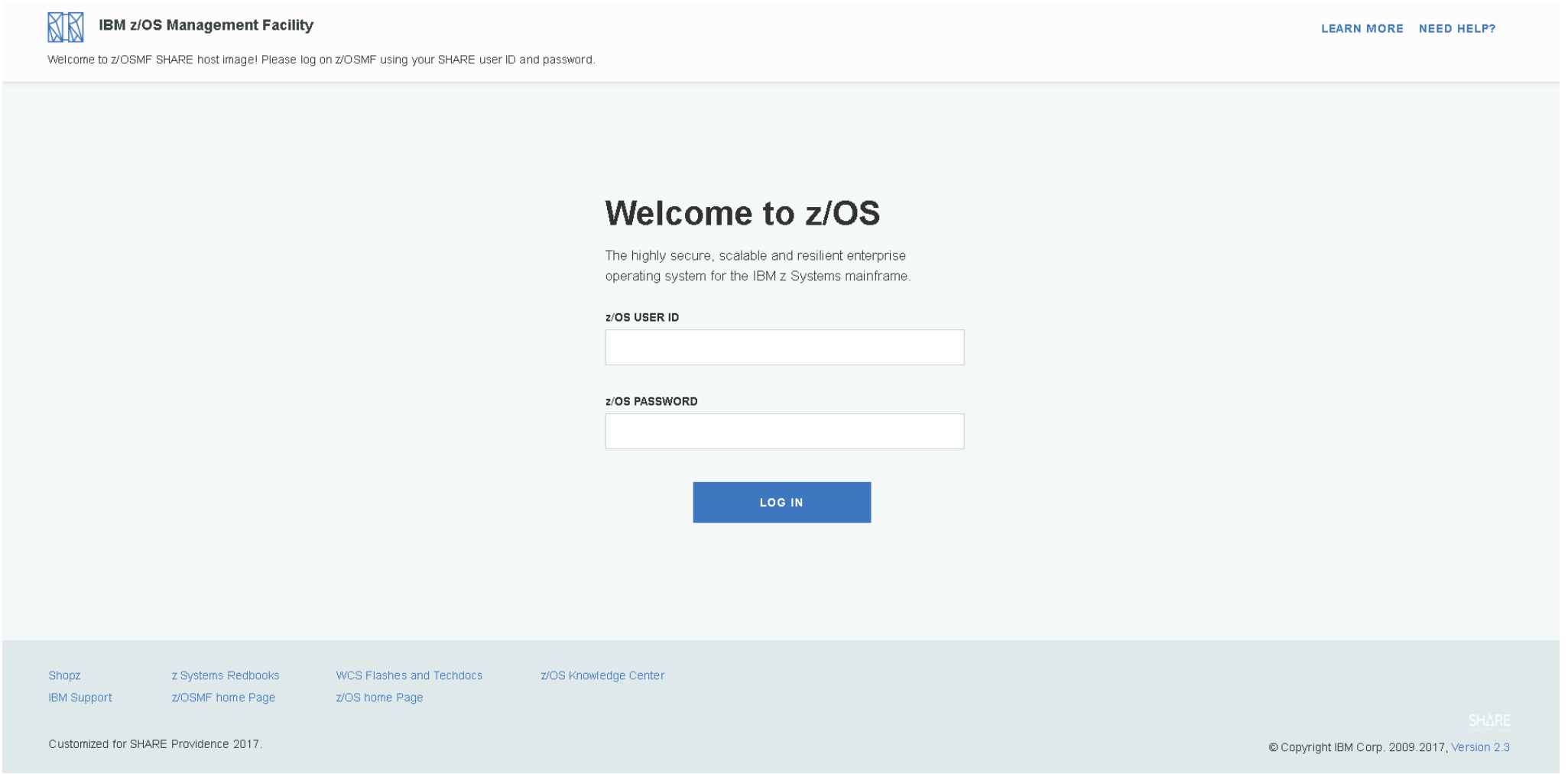
- z/OSMF V2R3 will be automatically started during IPL - parmlib
  - Specify z/OSMF parmlib member for AUTOSTART z/OSMF to start during IPL:
    - User needs to specify “IZU” in IEASYSxx. E.g.
      IZU=01
      means AUTOSTART z/OSMF will be started with parmlib member IZUPRM01
    - If user does not specify value for “IZU” in IEASYSxx, the default value of zOSMF parmlib will be used.

z/OSMF Autostart

- z/OSMF V2R3 will be automatically started during IPL - Exploiters
  - Consideration for exploiters:
    - When exploiters are started, they could go to IZUGSP area (mapped by SYS1.MACLIB(IZUGSP) which is referenced by ECVTIZUGSP) to find out if primary z/OSMF which exploiter should connect to is valid or invalid. If it's valid, the URI is also saved in IZUGSP for exploiter's use.
    - Exploiters should listen for ENF83 QUAL('80000000'x) (mapped by SYS1.MACLIB(IZUENF83))which is the signal of AUTOSTART z/OSMF UP and DOWN.
    - If AUTOSTART z/OSMF is DOWN, exploiters will receive the event ENF83 QUAL('80000000'x) which tells zOSMF is invalid.
    - If AUTOSTART z/OSMF is UP, exploiters will receive the event ENF83 QUAL('80000000'x) which tells zOSMF is valid.

z/OSMF Autostart

- z/OSMF V2R3 provides new welcome page



z/OSMF Autostart

- REST Notification API supports email address as target
  - “Assignee” in request body previously supported user id and user group. Now, it also supports email address
  - API example:

POST **https://**{host}:{port}**/zosmf/notifications/new**

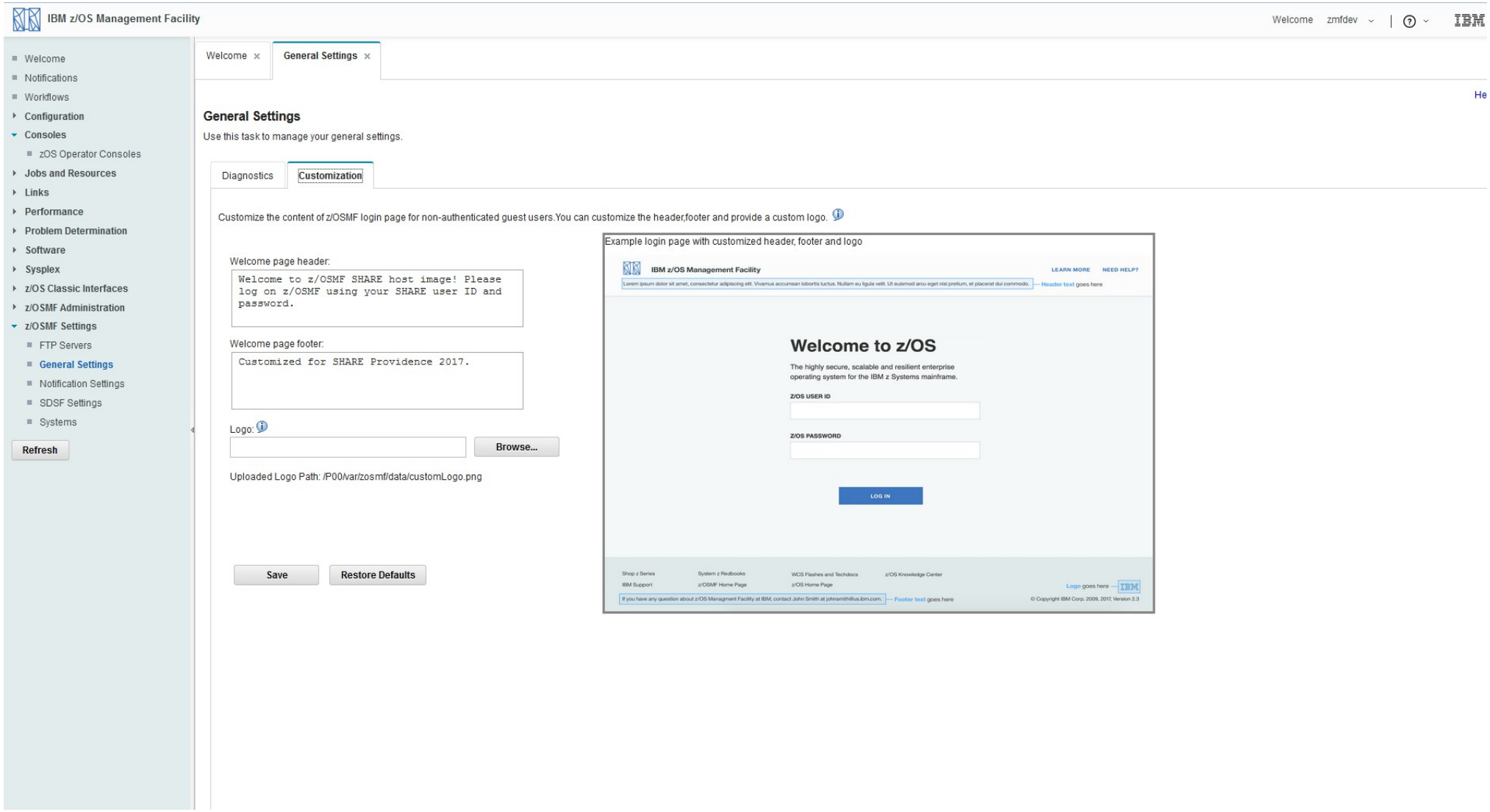
```
{"subject":"Test Notification Framework",
 "content":"This is a test.",
 "assignees":"user1@abc.com,zosmfad,user2@abc.com",
"sendTo":"mail"}
```

Response

```
{"result":{"mail":{"rc":"Ok","messages":
{}}},"apiVersion":"1.0"}
```

z/OSMF Autostart

- UI for customizing header, footer and company logo



z/OSMF Autostart

- Security configuration utility
  - z/OSMF V2R3 will provide a stand alone utility named “IZUGUTSE” which will reside in SYS1. SIEALNKE. It could translate general security definition to specific security product's commands and even execute the generated commands.
  - A sample JCL like below could be used to invoke IZUGUTSE
    ```
    //IZUGUTSE JOB MSGLEVEL=1,MSGCLASS=A,REGION=0M,NOTIFY=&SYSUID
    //IZUGUTSE EXEC PGM=IZUGUTSE,
    //      PARM='opt=0001,in=/usr/lpp/zosmf/samples/IZUSEC.xml,out=/tmp/output.xml‘
    ```
  - Input of IZUXSEC is a xml format of general security definition. z/OSMF V2R3 will provide two samples reside in <z/OSMF code root>/samples. <z/OSMF code root> is “/usr/lpp/zosmf” by default. Those two samples are:
    - IZUSEC.xml contains general security definitions needed by z/OSMF Core
    - IZUAUTH.xml contains general security definitions needed for authorize new user to z/OSMF.
  - Output of IZUGUTSE is also in XML format. The content of output xml depends on the value of input parameter “opt”. E.g. “opt=0001” means generate the security commands and execute them. So the output xml will contain the generated commands as well as execution result. Thus, user has the chance to validate the generated commands. For detailed value “opt” supports, please refer to <z/OS Management Facility Configuration Guide>

Interactions & Dependencies

- Software Dependencies

In order for z/OSMF to be started during IPL, below components should be available:

  - USS
  - TCP/IP
  - CEA

- Hardware Dependencies
  - NONE
- Exploiters
  - NONE

Migration & Coexistence Considerations

- Migration:

- Security change: there are two new profiles added for the function.

The resource 'CEA.SIGNAL.ENF83' is used to allow z/OSMF server to signal ENF83 event via CEA.

```
RDEFINE SERVAUTH CEA.SIGNAL.* UACC(NONE)
PERMIT CEA.SIGNAL.* CLASS(SERVAUTH) ID(IZUSVR) ACCESS(READ)
SETROPTS RACLIST(SERVAUTH) REFRESH
```

The procedure IZUINSTP is used to detect if USS and TCPIP are woken up during IPL if z/OSMF is selected to be automatically started in IPL.

RDEFINE STARTED IZUINSTP.* UACC(NONE) STDATA(USER(IZUSVR) GROUP(IZUADMIN) PRIVILEGED(NO) TRUSTED(NO) TRACE(YES))

- Change of PROC IZUSVR1:

The default value of IZUPRM is changed to 'PREV' which indicates the z/OSMF PARMLIB suffixes of previous z/OSMF instance will be used to start z/OSMF server. With the change, if customer ever customize the parameter with specific z/OSMF PARMLIB suffixes, customer could either specify the customized z/OSMF PARMLIB suffixes on IZU in IEASYSxx or replace 'PREV' with specify the customized z/OSMF PARMLIB suffixes.

Migration & Coexistence Considerations

A new parameter SERVER is added to specify the attribute of z/OSMF server. Customer can specify 'AUTOSTART' or 'STANDALONE' to the parameter.

```
//IZUSVR1  PROC PARMS='zosmfServer',     /* Server parms */
//           IZUPRM='PREV',          /* Parmlib suffixes or NONE */
//           SERVER='AUTOSTART',        /* Server attribute */
```

- Coexistence:
- z/OSMF V2R3 could be coexist with N-2 older version of z/OSMF

Installation

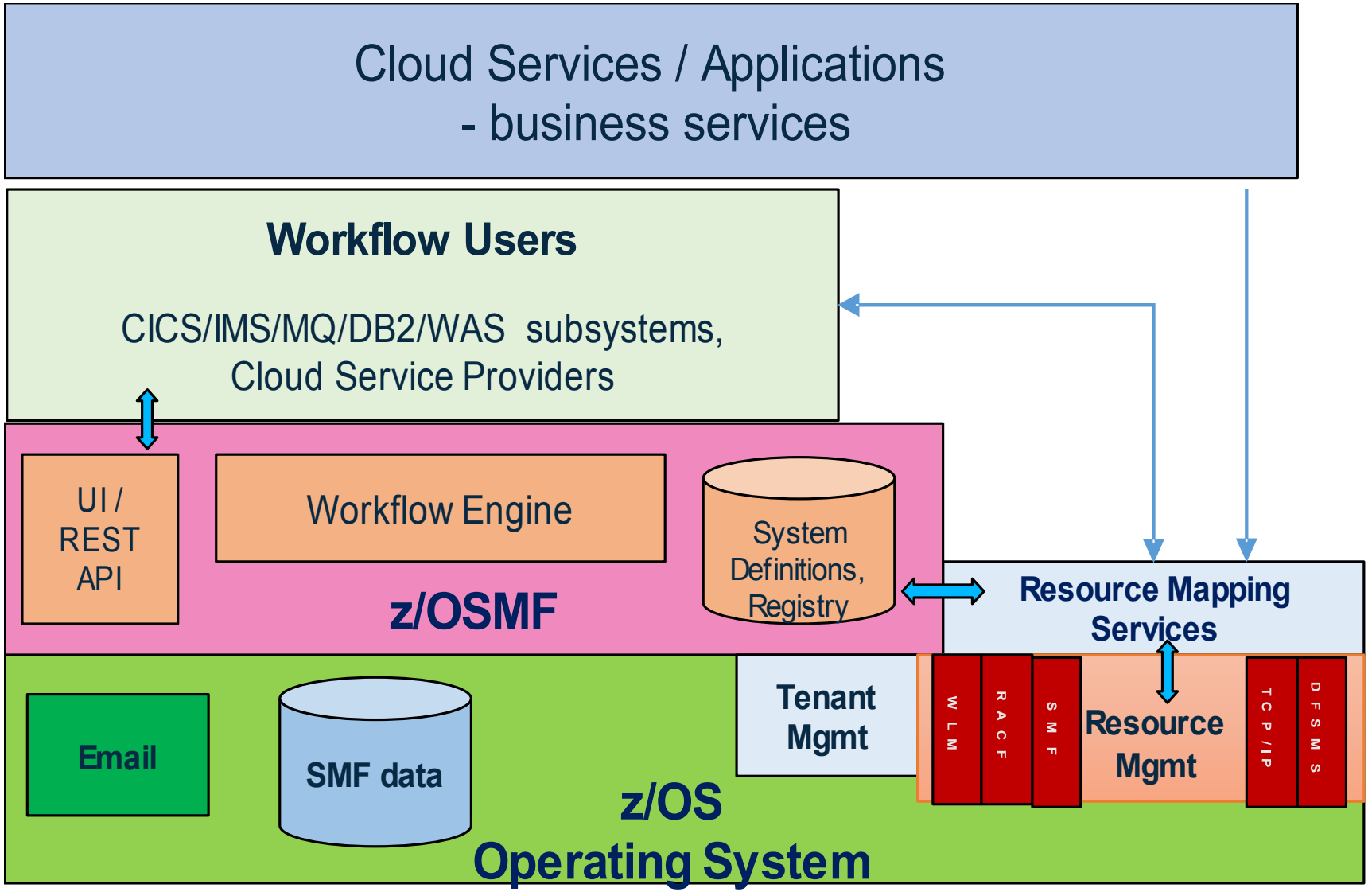
- LOAD MODULEs:

IZUINSTR is the mainline program to start pair of address spaces of z/OSMF. The load module is shipped at SYS1.LINKLIB(IZUINSTR).

IZUINST0 is to detect if USS and TCPIP are woken up. The load module is shipped at SYS1.LINKLIB(IZUINST0)

IZUENFEP is ENF83 event process program which is shipped at SYS1.LPALIB(IZUENFEP)

z/OS Cloud Provisioning and Management



Workflow enhancements

- Enhance workflow security control
- Provide the support to execute the script file (TSO-REXX, TSO-Unix-REXX and TSO-Unix-shell) immediately.
- Allow workflow author to get the feedback of the workflow template from different workflow users.
- Allow workflow author to predefine JOB name of each step.
- Allow workflow user to archive workflow instance and manage the archived instances.
- Multiple sysplex support - Provide the support to perform workflow steps in remote sysplex.

Workflow multiple sysplex support

- Problem Statements / Need Addressed:

  Nowadays, the workflow users can only create workflow instance and execute JCL or immediate REXX/shell script on the systems of local sysplex.

- Solution:

  z/OSMF V2R3 will provide the support that workflow user can create workflow instance and execute JCL or immediate REXX/shell script on the systems of remote sysplex.

- Benefit / Value:
  - Users can create and perform workflows across multiple sysplexes from one single z/OSMF host.

Workflow multiple sysplex support

Systems

View systems by: Sysplex

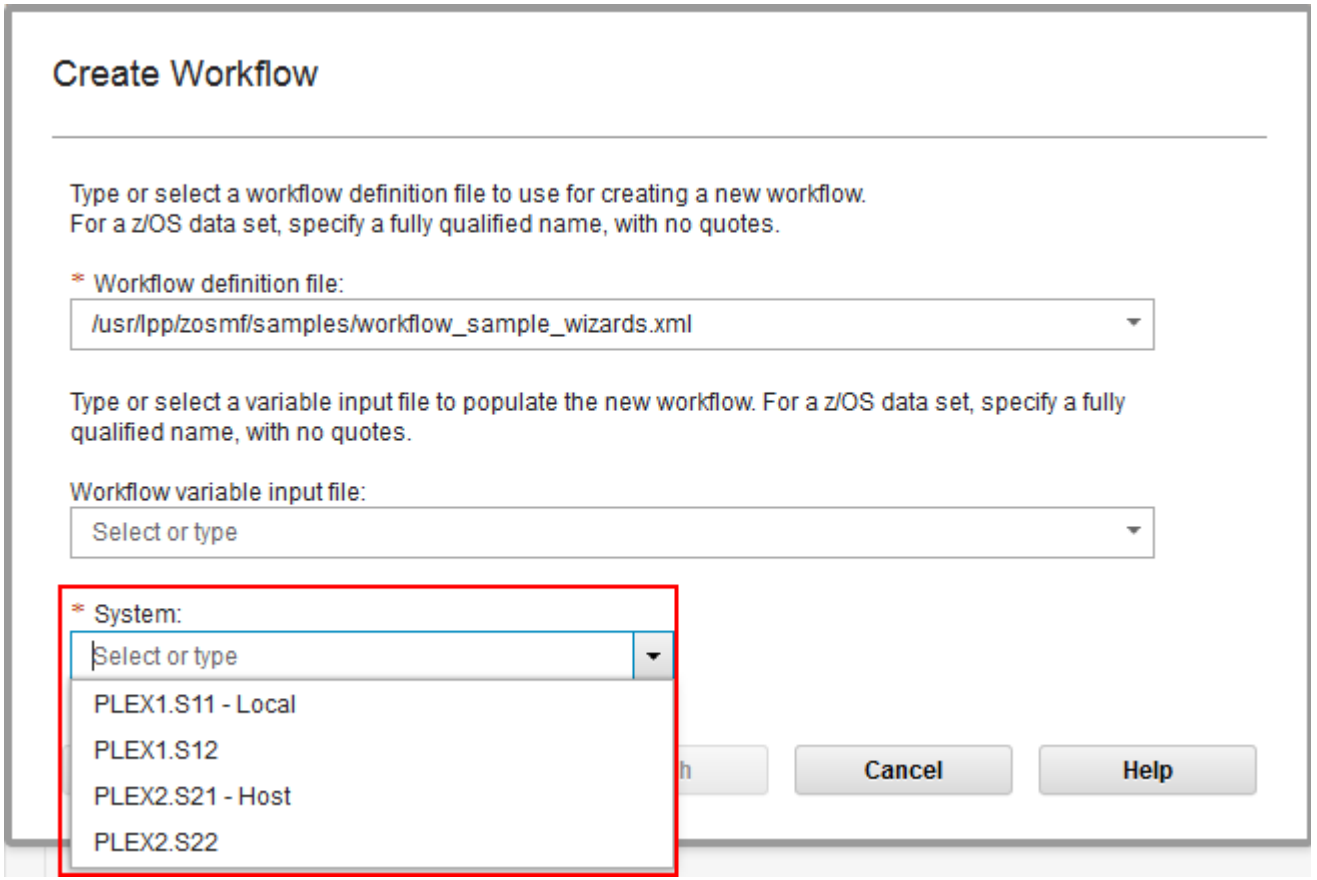
Actions | Table view: Tree

No filter applied

Sysplex/System Name Filter	Nickname Filter	Description Filter	z/OSMF Host Name Filter	URL Filter	JES Member Name Filter	JES Type Filter	Single Sign-on Status Filter
PLEX1							
S12	S12		S11		S12	JES2	
S11	S11			https://pev218.pok.ibm.com:443/zosmf	S11	JES2	
PLEX2							
S21	S21			https://pev179.pok.ibm.com:443/zosmf/	S21	JES2	Single sign-on enabled
S22	S22		S21		S22	JES2	

- Step1: If the target system does not have z/OSMF running, set the z/OSMF Host System so that it can be managed by z/OSMF host properly.
- Step2: Enable single sign-on with the z/OSMF host system in remote sysplex.

Workflow multiple sysplex support



- Step3: When creating a workflow, the target system can be set to any system in both local and remote sysplex.
  - The z/OSMF host system in local sysplex is followed by “- Local”
  - The z/OSMF host system in remote sysplex is followed by “- Host”

Workflow multiple sysplex support

- Step4: Once a workflow is created on the target system, all the steps are performed on the target system, including JCL submission, TSO-REXX, TSO-Unix-REXX, TSO-Unix-shell and Restful API calls.

  (* The TSO-REXX, TSO-Unix-REXX and TSO-Unix-shell can only be performed on z/OSMF host system on either local or remote sysplex)

Interactions & Dependencies

- Software Dependencies
  - None.
- Hardware Dependencies
  - None.
- Exploiters
  - z/OSMF Configuration Workflow, z/OS Migration Workflow, z/OS Provisioning Toolkit, DB2, CICS, WAS, MQ and etc.

Migration & Coexistence Considerations

- None.

Installation

- None.

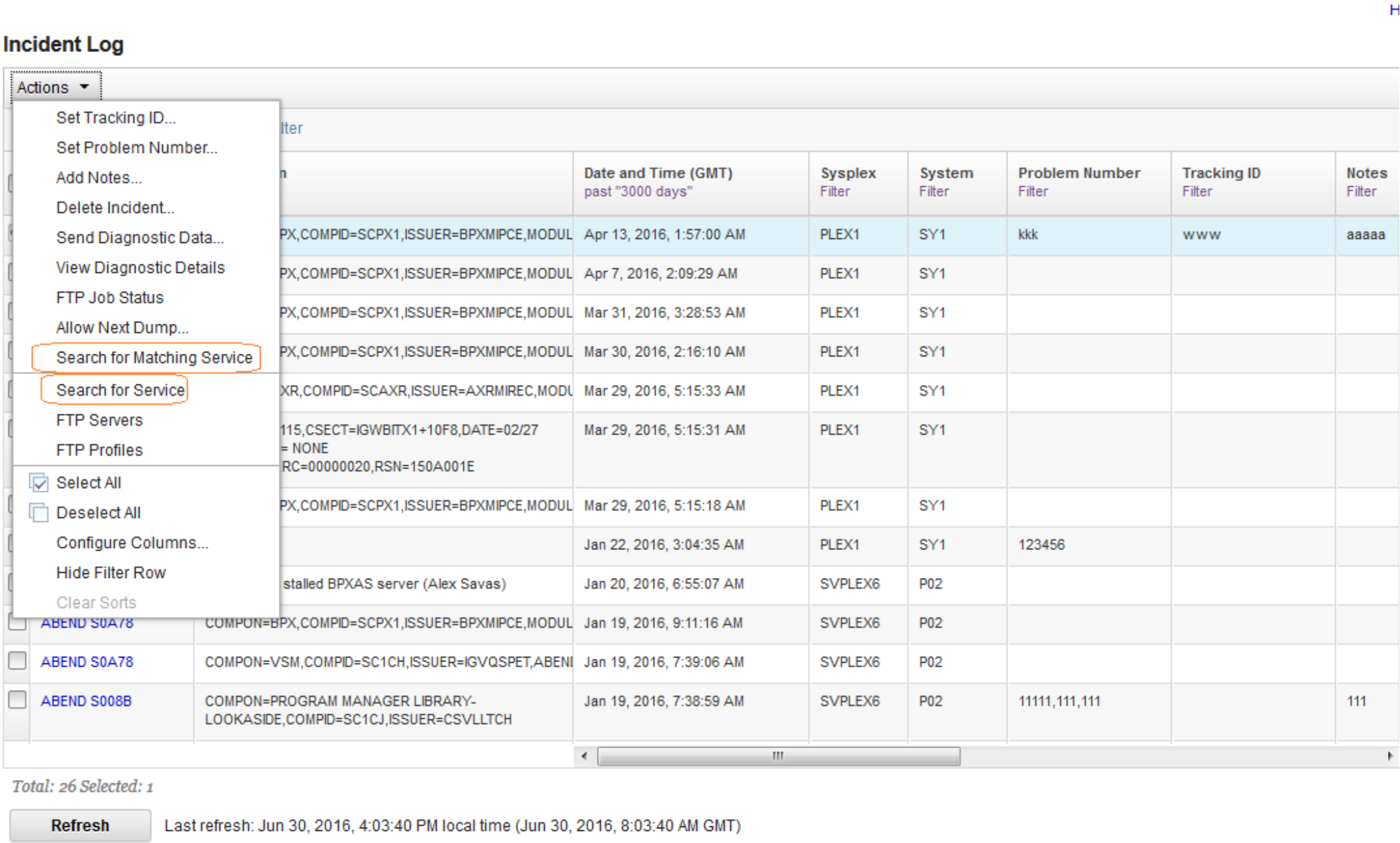
Software Management enhancements

- Support for non-SMP/e Software Instances
  - Support software instance without global zone.
- Support for exporting and importing Software Instance
  - Software Management is extended to create a portable form for a software instance, including the SMPCSI data sets, all associated SMP/E managed target and distribution libraries, non-SMP/E managed data sets, and meta-data required to describe the software instance. The portable form of a software instance is called a “portable software instance”.
  - Deployment operations is extended to support deploying a portable software instance.

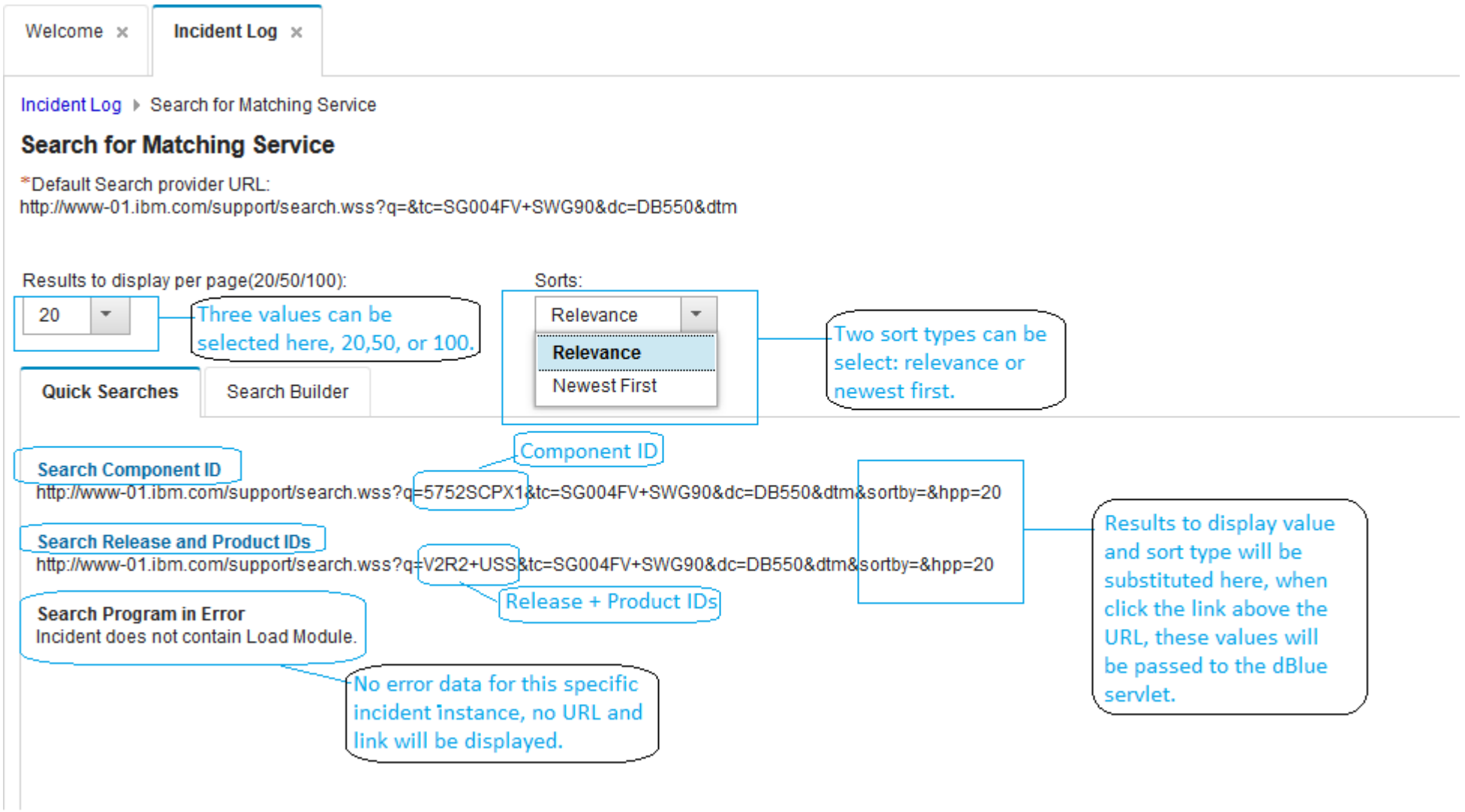
Incident Log enhancements

- Support to attach PDS(E) and PDS(E) members in Incident Log.
- Support to search for matching APARs in Incident Log
- Manually Created Incident
  - Allow Incident Log user to manually create incident with or without an existing dump file.
  - The attachments of the manually created incident can be persisted.

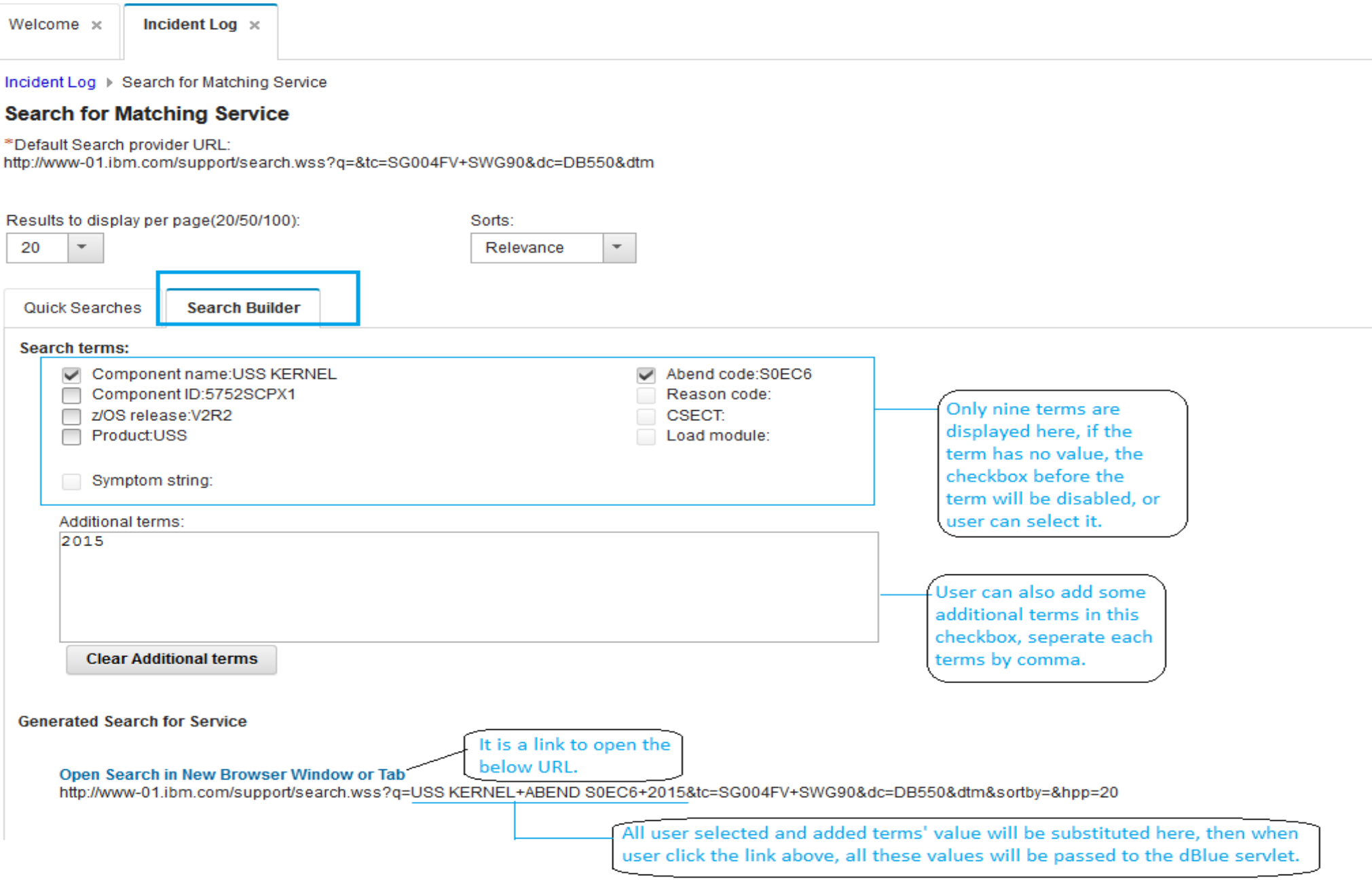
New Actions



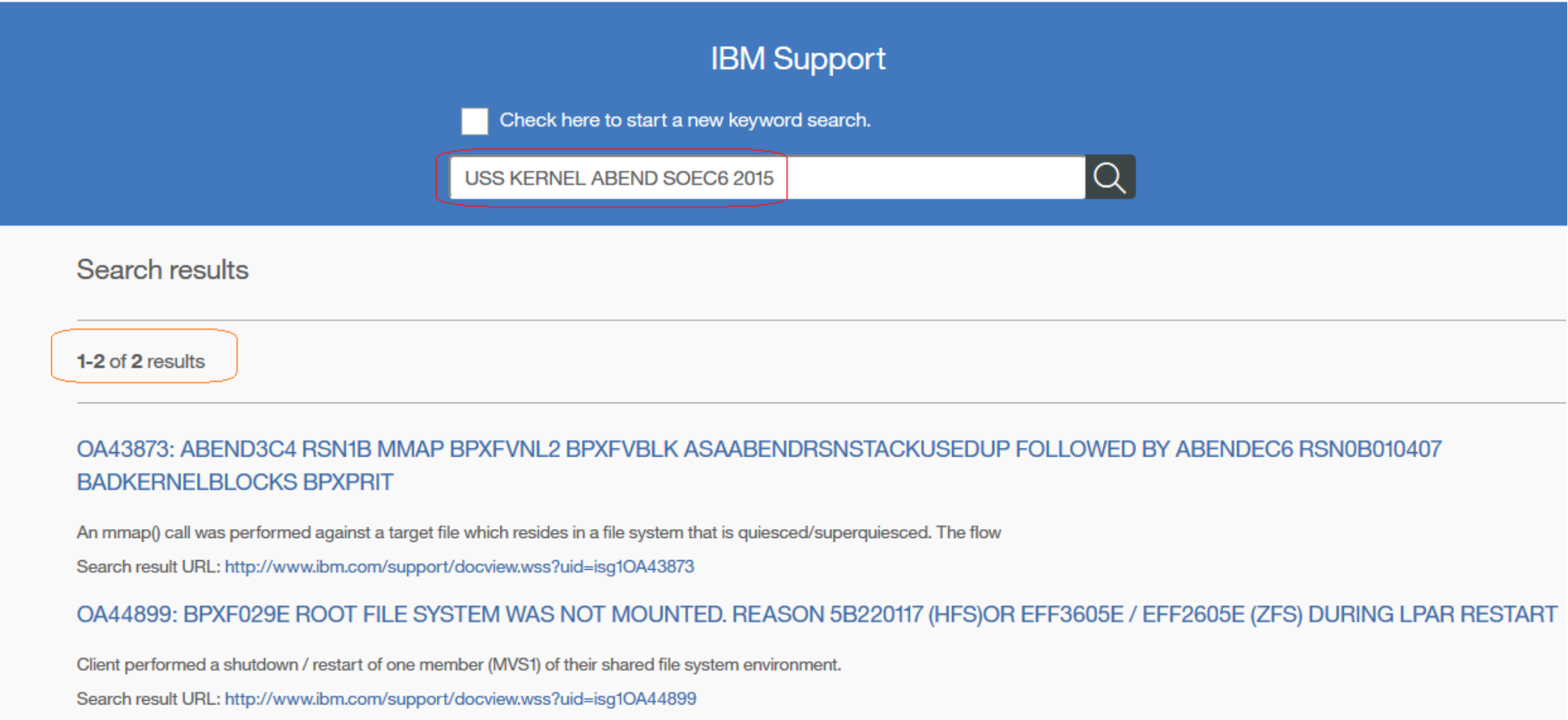
Search for Matching Service – Quick Searches



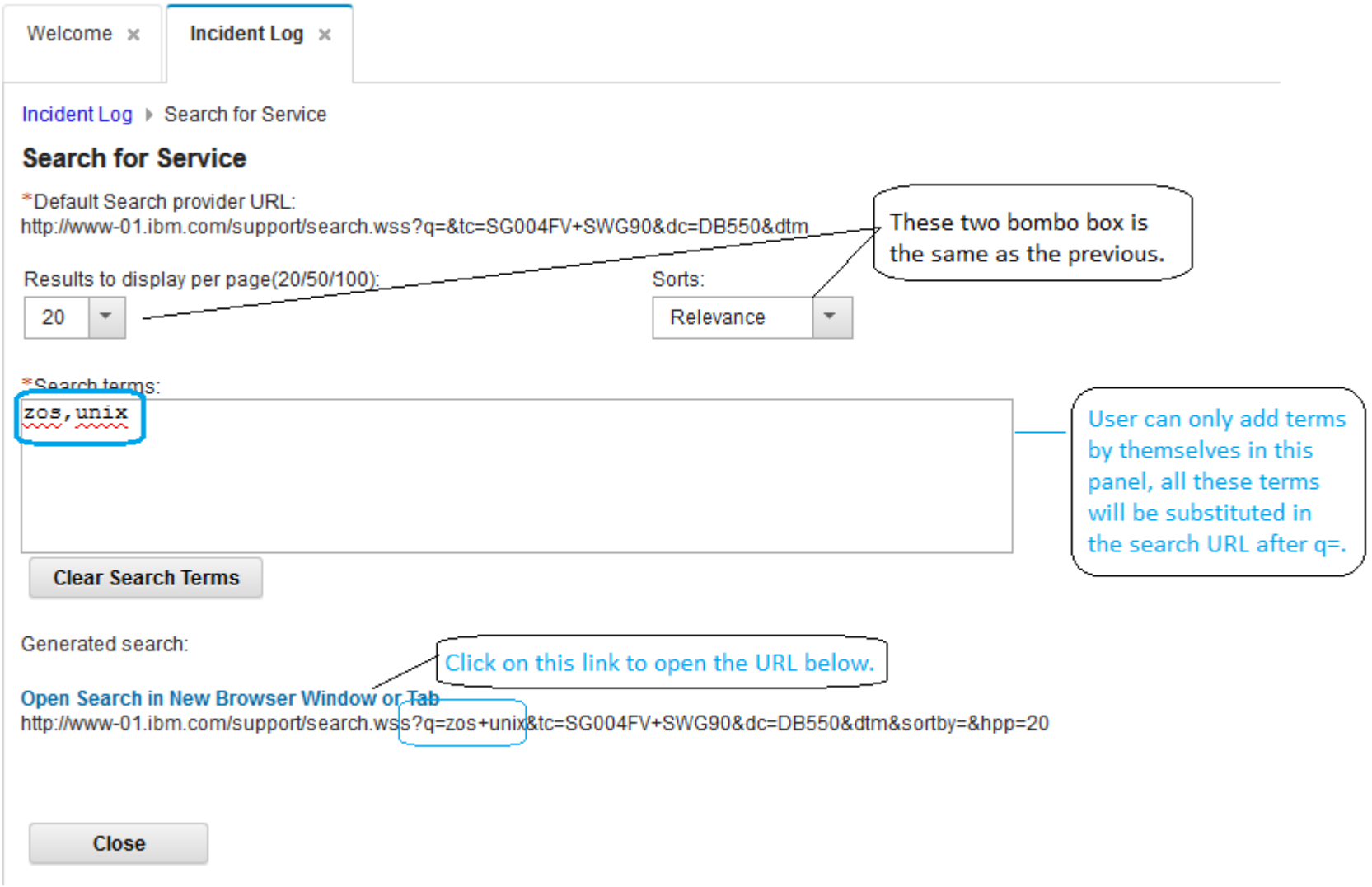
Search for Matching Service – Search Builder



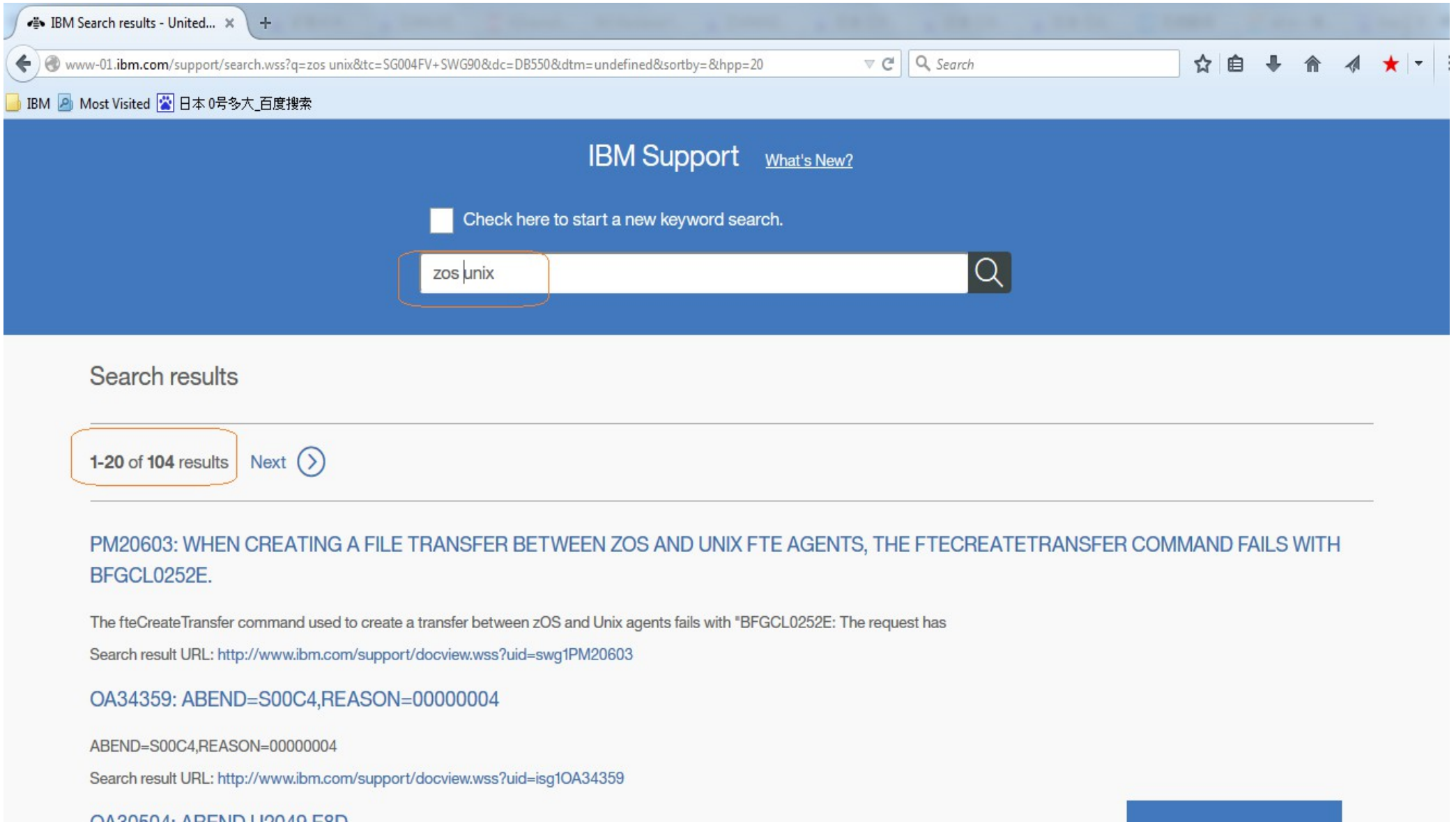
Search for Matching Service – dBlue Page



Search for Service



Search for Service – dBlue Page



Interactions & Dependencies

- Software Dependencies
  - IBM dBlue search service.
- Hardware Dependencies
  - None.
- Exploiters
  - z/OSMF users.

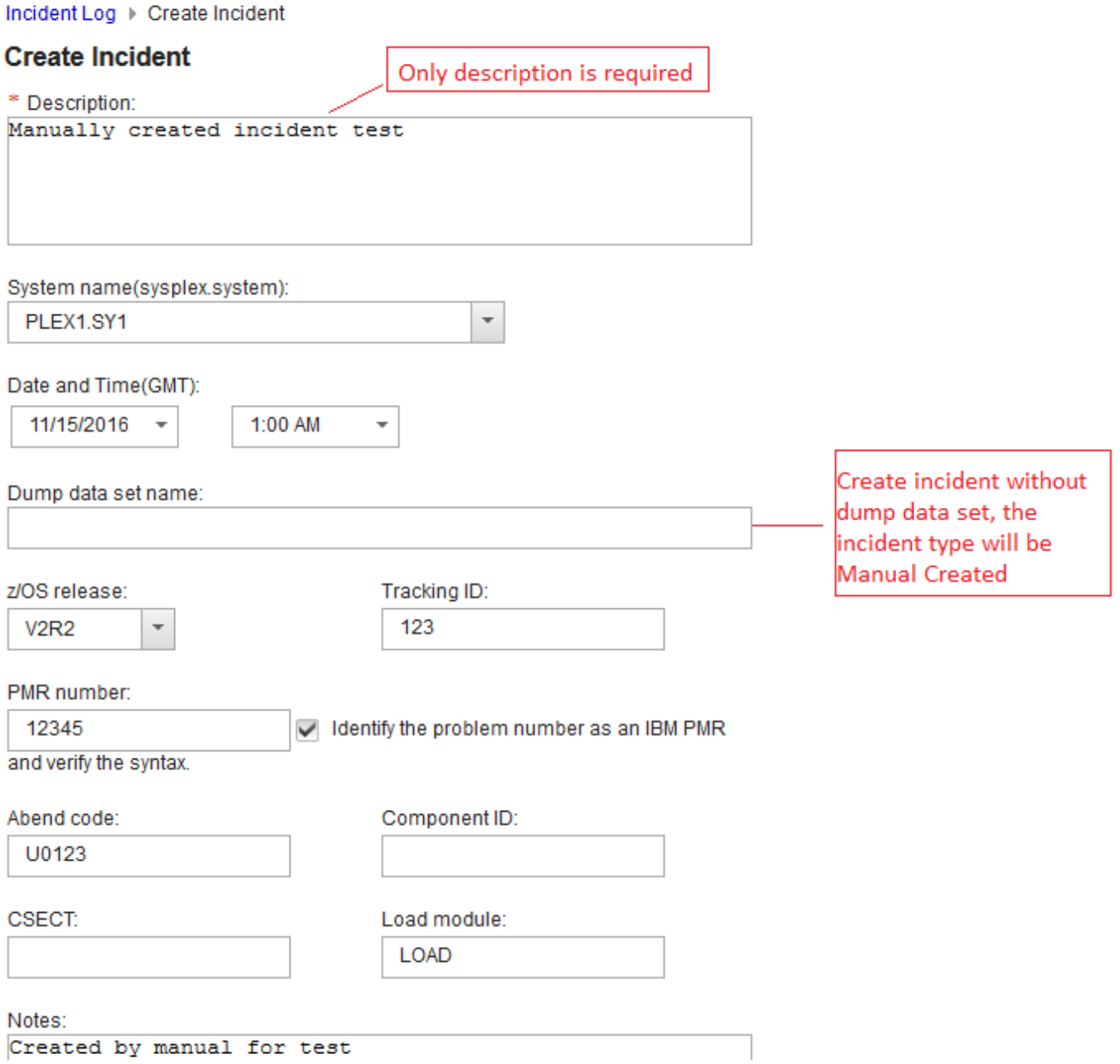
Migration & Coexistence Considerations

- None.

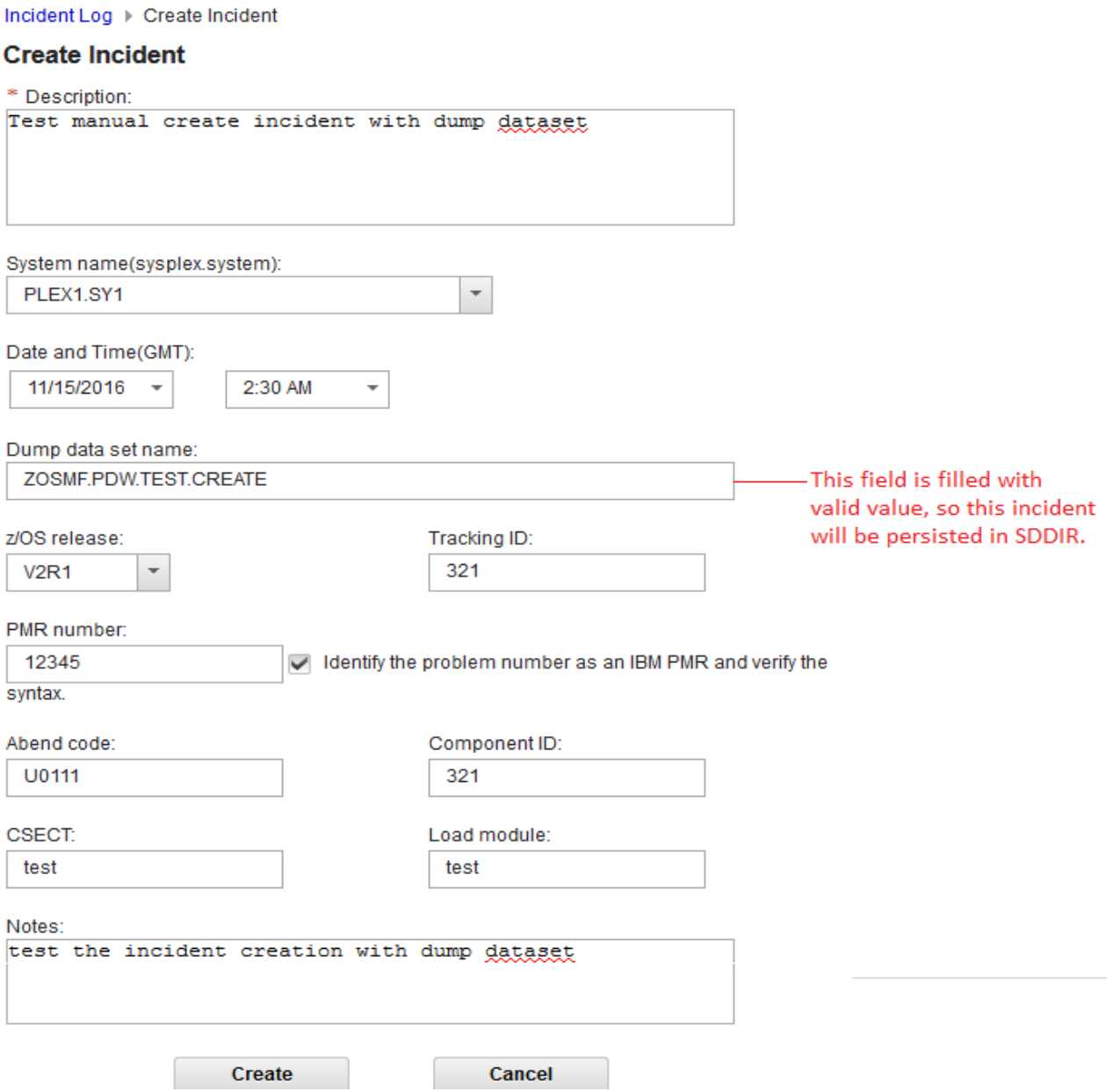
Installation

- None.

Create incident without dump dataset



Create incident with dump dataset



Interactions & Dependencies

- Software Dependencies
  - CIM and CEA, these two dependencies exist in z/OS V2R2 and V2R3.
- Hardware Dependencies
  - None.
- Exploiters
  - z/OSMF users.

Migration & Coexistence Considerations

- None.

Installation

- None.

File and Dataset API enhancements

- Problem Statement / Need Addressed

 - Being able to display and manipulate files and data sets is a fundamental function for managing a system, plugins within z/OSMF are starting to require this function,and we imagine that vendors and customers will need these functions as well.
 - Today z/OS supports an interface to transfer dataset/file via FTP. Unfortunately it is considered by many to be insecure for use on modern production servers, and thus not widely used. For example the VISA security standards require that no FTP interfaces could be opened on servers that are storing credit card numbers.
 - Most of z/OS services are locked up in assembler interfaces where most application developers may only know C/C++ or Java APIs of a non-z/OS platforms.

- Solution

 - In V2R2 1Q2016 D-APAR, we delivered the Create/Delete and Mount/Unmount functions. In V2R2 4Q2016 D-APAR, we continue to deliver the Copy/Move/Rename functions; Plus, the enhancements of List/Edit/Browse,and operations for zFS file system.
All of these services are provided with REST way with which it is much easier to build out applications on top of z/OS and z/OSMF comparing with traditional interfaces.

- Benefit/Value

 - This work is intended to make z/OS more approachable.
 - The ability to drive remote requests similar to FTP from HTTP(s) to provide a secure and functionally rich interface to retrieve or manipulate dataset/file information and contents.

File and Dataset API enhancements

Operation	Method
List data sets on a z/OS system according to specified pattern	GET
List the members of a PDS or PDSE according to specified pattern	GET
List the files and directories in a UNIX file path on a z/OS system.	GET
Retrieve the contents of a sequential data set, or a member of a PDS or PDSE or an Unix file	GET
Write data to a sequential data set or a member of a PDS or PDSE or an Unix file	PUT
Allocate sequential and partitioned data set	POST
Delete sequential and partitioned data set or member	DELETE
Mount/ Unmount Unix file system	PUT
Create Unix file or directory	POST
Delete Unix file or directory	DELETE
z/OS UNIX file Utilities	PUT
z/OS Data set and PDS Member Utilities	PUT
List z/OS UNIX Filesystem	GET
Create z/OS UNIX zFS Filesystem	POST
Delete z/OS UNIX zFS Filesystem	DELETE
IDCAMS Access Methods Services	PUT

Interactions & Dependencies

- Software Dependencies
  - Common Event Adapter
  - ISPF Service
  - z/OS Language Environment
- Hardware Dependencies
  - None.
- Exploiters
  - z/OSMF users.

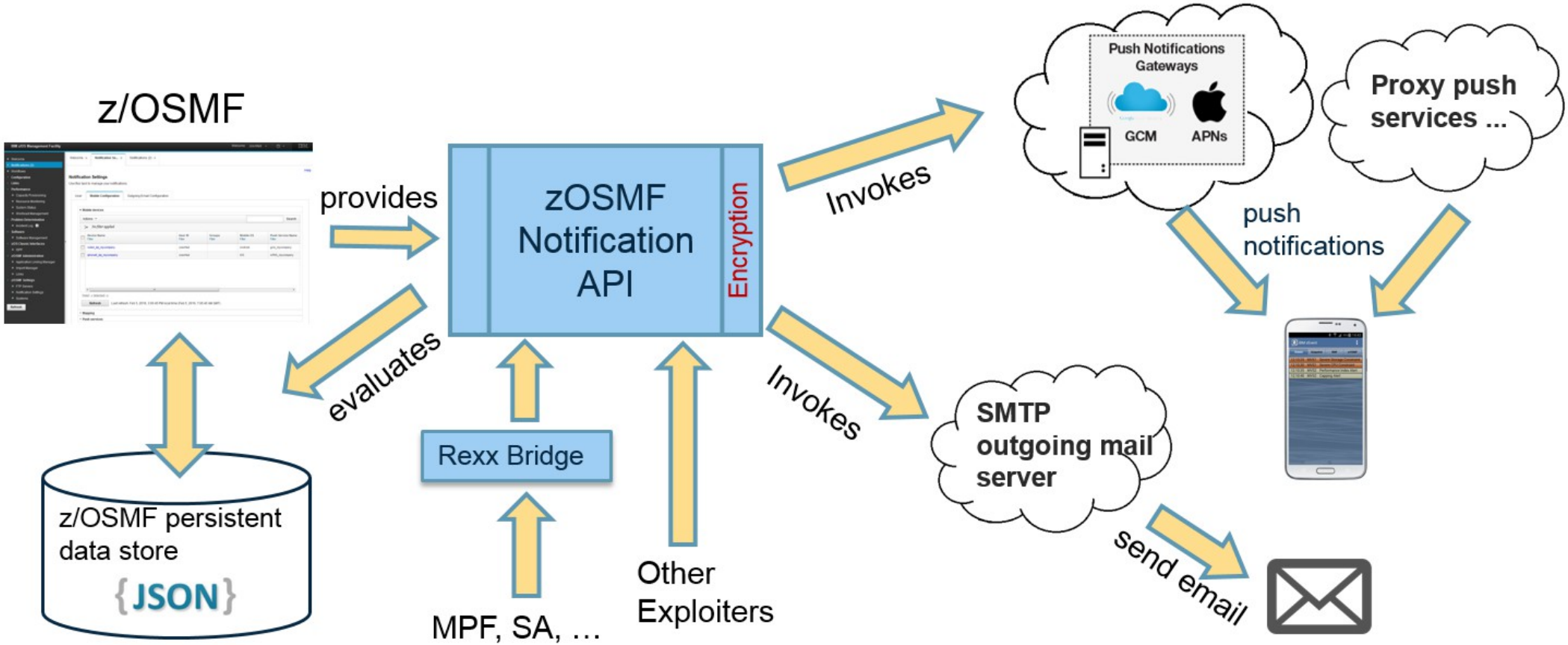
Migration & Coexistence Considerations

- None.

Installation

- None.

Mobile and Email Notification Support



Support new browser levels

- The below browsers and platforms are formally tested and supported in V2R3.

	Windows 7	Windows 8 Pro, Desktop	Windows 10 Pro, Desktop
Internet Explorer 11	Yes	Yes	No
Edge	No	No	Yes
Firefox ESR 52	Yes	Yes	Yes

Capacity Provisioning enhancements

- Stay current with the changes of z/OS CP V2.3 which includes functional enhancement and message update.
- Extend policy and domain configuration editing capabilities by listing CPCs, Records.

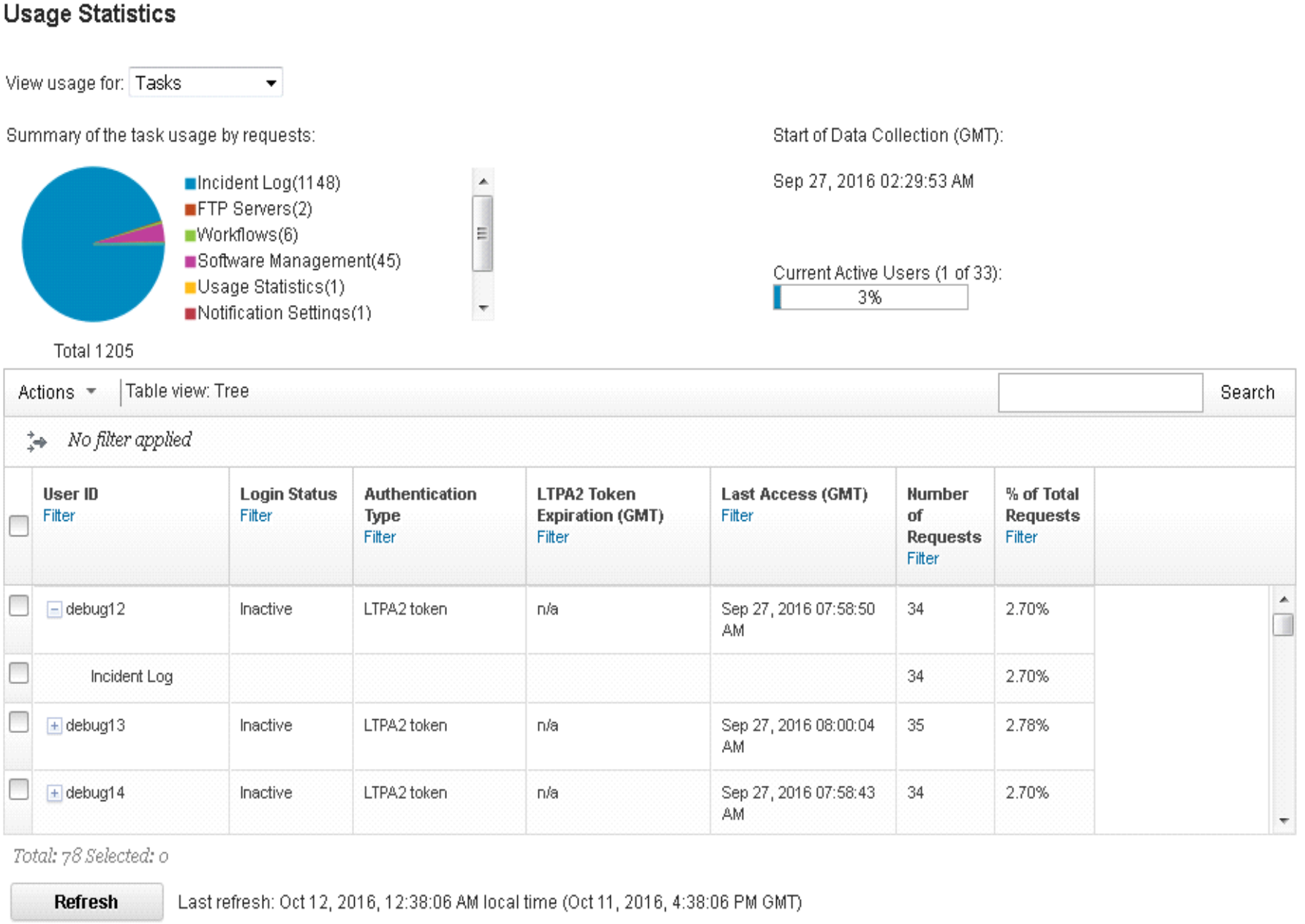
WLM enhancements

- Support for shorter response time goal.
- Enhancements for mobile pricing.
- Allow WLM elements to be utilized in the z/OS Cloud context. This feature will provides user some REST API interfaces to provision/deprovision WLM elements, dynamically construct a new service definition and install. One new resource element WLM Resource Pooling (WRP) is introduced which will associate cloud information with WLM elements(report classes, classification rules).
- Introduce z/OSMF WLM Specialty Engines Containment also known as HonorPriority by service class and Memory capping by resource group in support of SPARK and zCloud work.

RMF enhancements

- Makes z/OSMF RMF automatically supports z/OS RMF future enhancements.
- Support for sharing systems resources across users.

UI for who is using the server



Session Summary

- z/OSMF V2R3 delivers a modernized UI and a set of Restful APIs for console operations.
- z/OSMF V2R3 introduces a new Sysplex Management task to support for querying sysplex resources in graphic view.
- z/OSMF V2R3 can be automatically started during IPL.
- A new z/OS Cloud Provisioning and Resource Management task is provided for middleware provisioning.
- A few z/OSMF tasks and Restful services are enhanced to provide more functionality.

Appendix – publications

- IBM z/OS Management Facility Configuration Guide Version 2 Release 3
  - SC27-8419-30
- IBM z/OS Management Facility Programming Guide Version 2 Release 3
  - SC27-8420-30