

# Bit Bucket x'37'

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SHARE 130  
Session 21788  
Sacramento, CA  
16 Mar 2018





OSA ICC TLS EIEIO  
(Mary Anne Matyaz)

# GOALS

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- The Goal:
- Update your MVS Consoles to use TLS



# Quick Guide to OSA ICC TLS Implementation

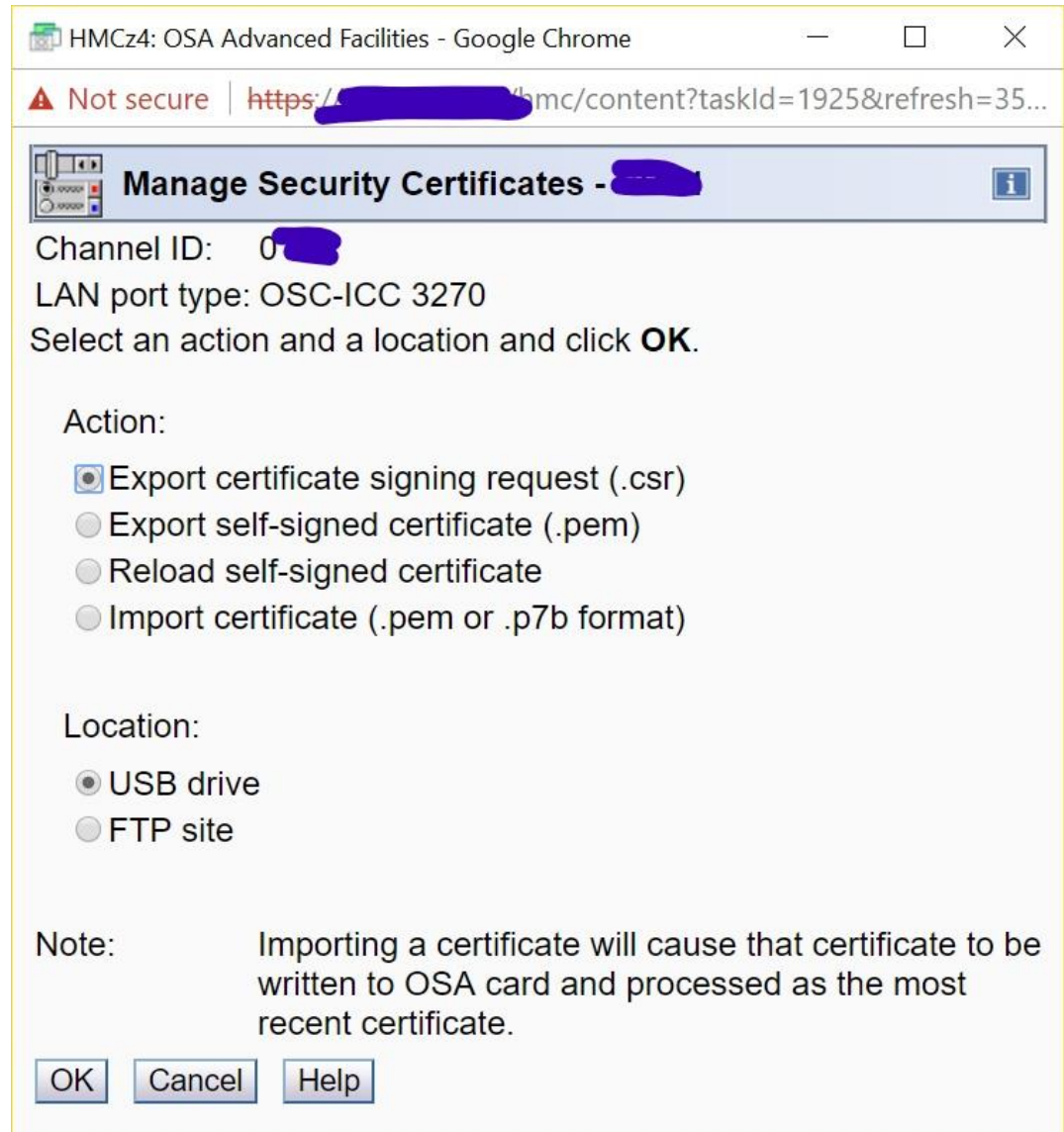
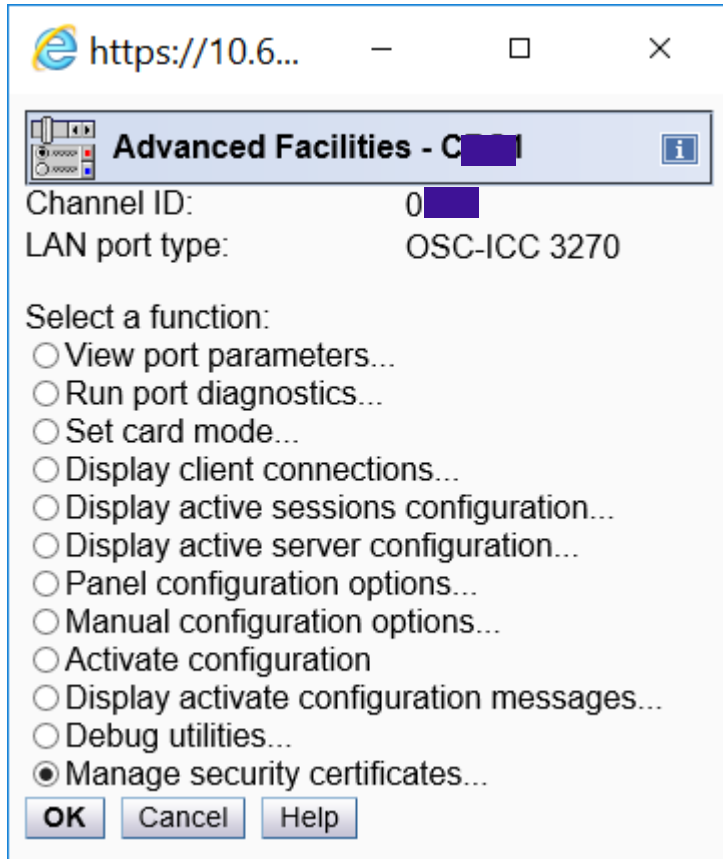
- Assumptions:
- You have a z13 or better CEC with Driver/MCL's for Driver 27 that include the TLS support.
- Firewall Request to open your port (We used 2048, IBM uses 4000 in the doc). So our req had 2048-2058 just for some extras. (You never know)
- Schedule the OSA ICC to be configured offline/online after Driver 27.
- Update the OSA config and activate, then offline/online.
- Pull the certificate out of the HMC and put it on your desktop.
- Modify your emulator session for TLS

## 30,000 Feet



- Add the Secureport to the OSA Config
- Validate and Activate the OSA Config
- Config the OSA offline and back online
- Request a Certificate for the pchid via hmc
- Download the certificate to your workstation (USB from HMC or FTP)
- Import the certificate into your Trusted Root Certs
- Update your emulator settings
- Connect!

# After the MCL's...



# Add the port in the ICC Config:

- **PORT= 1024** (You have a port now)
- **SECUREPORT=2048** (You add the new port)

https://10.66.2.2/?taskId=208&refresh=568 - HMC OSA Advanced Facilities - Internet Expl...

**Edit Server Configuration - Channel 0**

Channel ID: 0  
LAN port type: OSC-ICC 3270

*Physical Port 0*

Server name: OSC19CX  
Host IP address: 10.43.69.38  
TCP port (1-65535): 1024  
Secure TCP port (1-65535): 0  
Subnet mask: 255.255.254.0  
MTU size(B): 576 (256-1492)  
Changing host IP address or port will cause dropping of any currently connected clients.

*Physical Port 1*

Server name:  
Host IP address: 0.0.0.0  
TCP port (1-65535): 0  
Secure TCP port (1-65535): 0  
Subnet mask: 0.0.0.0  
MTU size(B): 1492 (256-1492)  
Changing host IP address or port will cause dropping of any currently connected clients.

Default gateway: 10.43.69.33

OK Cancel Help

# OSA Configuration



<OSC\_SERVER>

<OSC\_PHYSICAL\_PORT0>

HOST\_IP= 10.43.69.37

SUBNET\_MASK= 255.255.254.0

PORT= 1024

SECUREPORT=2048

ETHERNET\_FRAME= DIX

MTU= 576

NAME= OSC192X

</OSC\_PHYSICAL\_PORT0>

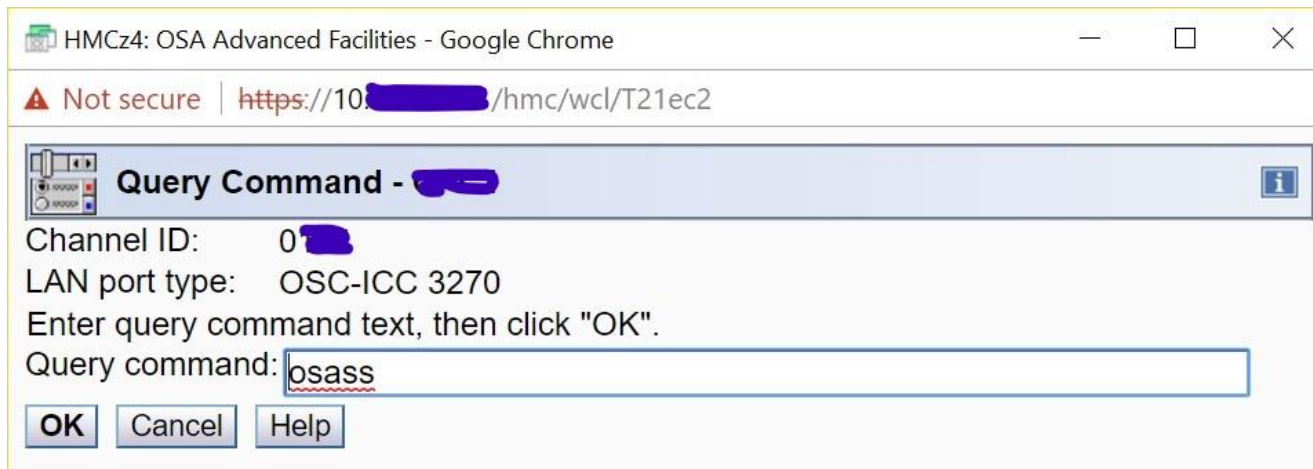
DEFAULT\_GATEWAY= 10.43.69.33

</OSC\_SERVER>



# Activate

- Validate and Activate the OSA Config
- We had to config the chpid offline after this. None of the doc seems to say that. Maybe it should have been self explanatory. We could not get it to listen on port 2048 without a bounce. To see what ports it's listening to, go to OSA advanced facilities, Select Debug Actions, then Query, then type in OSASS



The screenshot shows a web browser window titled "HMCz4: OSA Advanced Facilities - Google Chrome". The address bar shows a "Not secure" warning and the URL "https://10.10.10.10/hmc/wcl/T21ec2". The main content area displays a "Query Command" dialog box. The dialog box has a title bar with a close button and an information icon. It contains the following text: "Channel ID: 0", "LAN port type: OSC-ICC 3270", and "Enter query command text, then click 'OK'.". Below this text is a text input field with the value "osass". At the bottom of the dialog box are three buttons: "OK", "Cancel", and "Help".

HMCz4: OSA Advanced Facilities - Google Chrome

Not secure | https://10.10.10.10/hmc/wcl/T21ec2

**Query Command -**

Channel ID: 0

LAN port type: OSC-ICC 3270

Enter query command text, then click "OK".

Query command:

OK Cancel Help

# Notice only 1024 is listening, not 2048.

HMCz4: OSA Advanced Facilities - Google Chrome

Not secure | [https://\[redacted\]/hmc/content?taskId=1925&refresh=3554](https://[redacted]/hmc/content?taskId=1925&refresh=3554)

**Query Command - [redacted]**

Channel ID: 0[redacted]  
LAN port type: OSC-ICC 3270

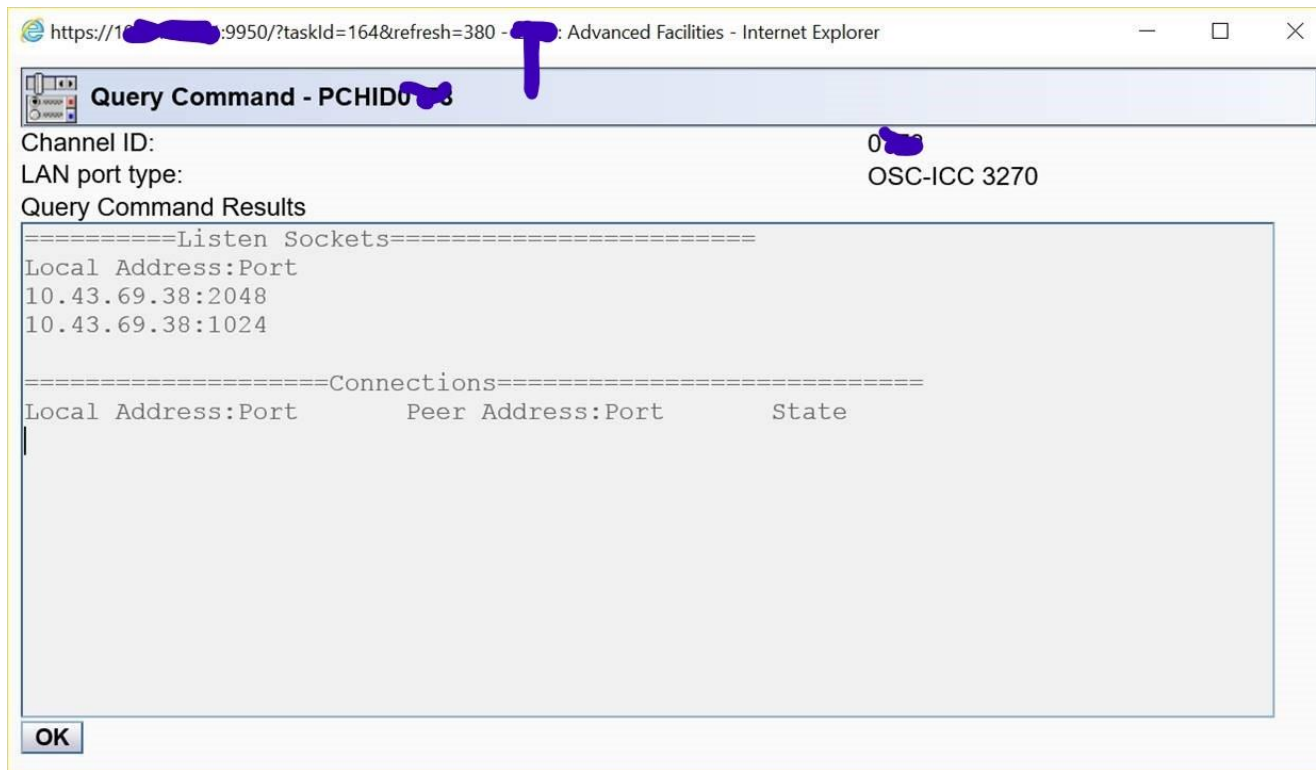
Query Command Results

```
=====Listen Sockets=====
Local Address:Port
10.43.69.37:1024 ←
```

```
=====Connections=====
Local Address:Port      Peer Address:Port      State
10.43.69.37:1024        10.43.69.12.18:1049     ESTABLISHED
10.43.69.37:1024        10.43.69.149.55580      ESTABLISHED
10.43.69.37:1024        10.43.69.12.121:1071    ESTABLISHED
10.43.69.37:1024        10.43.69.149.40704      ESTABLISHED
10.43.69.37:1024        10.43.69.149.58179      ESTABLISHED
10.43.69.37:1024        10.43.69.149.40361      ESTABLISHED
10.43.69.37:1024        10.43.69.12.34:41360    ESTABLISHED
10.43.69.37:1024        10.43.69.149.39841      ESTABLISHED
10.43.69.37:1024        10.43.69.12.20:34768    ESTABLISHED
10.43.69.37:1024        10.43.69.149.40206      ESTABLISHED
10.43.69.37:1024        10.43.69.12.36:48766    ESTABLISHED
```

OK

- After configuring the chpid offline and back online (this does drop your sessions) we see both ports:



# After everyone is back and connected:

HMCz4: OSA Advanced Facilities - Google Chrome

Not secure | <https://10.10.10.10/hmc/content?taskId=1925&refresh=3557>

**Query Command - [REDACTED]**

Channel ID: 0[REDACTED]  
LAN port type: OSC-ICC 3270

Query Command Results

```
=====Listen Sockets=====
Local Address:Port
10.43.69.38:2048
10.43.69.38:1024

=====Connections=====
Local Address:Port      Peer Address:Port      State
10.43.69.38:1024       10.10.10.154:44120     ESTABLISHED
10.43.69.38:1024       10.10.10.154:38565     ESTABLISHED
10.43.69.38:1024       10.10.10.2.19:1139     ESTABLISHED
10.43.69.38:1024       10.10.10.154:44801     ESTABLISHED
10.43.69.38:1024       10.10.10.154:44108     ESTABLISHED
10.43.69.38:1024       10.10.10.154:44622     ESTABLISHED
10.43.69.38:1024       10.10.10.149:41494     ESTABLISHED
10.43.69.38:1024       10.10.10.2.123:1043    ESTABLISHED
10.43.69.38:1024       10.10.10.154:38574     ESTABLISHED
10.43.69.38:1024       10.10.10.2.35:1126     ESTABLISHED
```

OK

# Emulator Session



- Now open an emulator session, likely the one that you use for the normal port, and make the following changes: (We use Reflections).
- Change Port from 1024 to 2048
- Select 'Use SSL/TLS Security
- Select SSL/TLS Version: TLS 1.2
- Import your certificate (Different levels, companies, etc, do this differently)

# Importing the Cert to your Desktop

Click on the Windows 10 Search application from your Windows 10 taskbar

As your Search Criteria, type in cert

Select Manage user certificates

Click, on the left side, Trusted Root Certification Authority and Click on the subfolder, Certificates to open it on the right side:

Click the Action button on the task bar, select All Tasks and finally click Import... and you will get the "Welcome to the Certificate Import Wizard"


Click Next

Specify the location of the .PEM file to import, use the Browse button if needed.

Click Open and then, in the next window "File to Import" click Next

Continue with the Import until you see the "File Import Successful" or an equivalent message.

You are done!!!

Configure Connection Settings

Connection

Host name / IP address:  
10.43.69.38

Port:  
2048

☐ Use ID Management

Set up ID Management...

Device name:  
TD119CA

Host Connection Options

☒ Use Telnet Extended

☒ Automatically connect to the host

When connection is terminated:  
Reconnect automatically

Text Display

Terminal / Device type:  
IBM-3278-8M

OKCancel

Security Properties

?

×

ProxySSL/TLS

☒ Use SSL/TLS security

Configure PKI...

Encryption strength: Default

SSL/TLS version: TLS Version 1.2

☐ Use Reflection security proxy

Security proxy server

Security proxy:

Proxy port:

☒ Implicit SSL/TLS Connection

Reflection Certificate Manager

?

×

PersonalTrusted Certification AuthoritiesLDAPOCSPPKCS #11

Certificates:

Friendly ...	Issued to	Issued by	Expiration Date
OsalccTL...	CN=OsalccTLSServer	CN=OsalccTLSServer	9/4/2020

Import...RemoveView...

☐ Store trusted certificates in the common application data folder.

System Certificate Store

☐ Use System Certificate Store for SSH connections

☒ Use System Certificate Store for SSL/TLS connections

Downloaded Intermediate CA Policies

☐ Allow MD5 signed certificates

☐ Allow MD2 signed certificates

Close

PKI Configuration

?

×

PKI (Public Key Infrastructure) is a system that uses digital certificates signed by a trusted Certification Authority (CA) to authenticate two parties wishing to communicate securely.

A certificate contains the authenticating party's public key and relevant identifying information.

☐ Certificate host name must match host being contacted

Certificate Revocation

☐ Use OCSP

☐ Use CRL

Client Authentication

☒ Find certificate for authentication

☐ Use selected certificate for authentication

Select...

Reflection Certificate Manager...View System Certificates...

OKCancel

Certificate

General Details Certification Path

Show: <All>

Field	Value
Version	V3
Serial number	00 8e ce 4c 1f 24 d4 cf 08
Signature algorithm	sha256RSA
Signature hash algorithm	sha256
Issuer	OsaIccTLSServer
Valid from	Tuesday, September 05, 2017...
Valid to	Friday, September 04, 2020 1...
Subject	OsaIccTLSServer

Edit Properties... Copy to File...

OK

Certificate

General Details Certification Path

Show: <All>

Field	Value
Public key	RSA (2048 Bits)
Public key parameters	05 00
Subject Key Identifier	ae f6 a4 cb dc d4 dc 7a b1 33 ...
Authority Key Identifier	KeyID=ae f6 a4 cb dc d4 dc 7...
Basic Constraints	Subject Type=CA, Path Lengt...
Thumbprint algorithm	sha1
Thumbprint	f1 3d 4b 40 2a 37 56 cb f1 7d ...

Edit Properties... Copy to File...

OK



## Display Client Connections - [redacted]



Channel ID: 0178  
AN port type: OSC-ICC 3270

Session Index	Status	Physical Port Identifier	MAC	Clients IP	TCP Port	Socket Number	LT Index	Connect Rule	Disable Logo
002	Connected	0	00:00:00:00:BF:FF	10.[redacted]4	44108	17	101	LU Only	No
003	Connected	0	00:00:00:00:BF:FF	10.[redacted]	44622	19	102	LU Only	No
004	TLSConnected	0	00:00:00:00:BF:FF	10.[redacted]	57913	146	103	LU Only	No
005	Connected	0	00:00:00:00:BF:FF	10.[redacted]2	1140	22	104	LU Only	No
006	Def Error	0	00:00:00:00:00:00	0.0.0.0	0	0	65535	Unknown	No
007	Def Error	0	00:00:00:00:00:00	0.0.0.0	0	0	65535	Unknown	No
008	Def Error	0	00:00:00:00:00:00	0.0.0.0	0	0	65535	Unknown	No
009	Available	0	00:00:00:00:00:00	0.0.0.0	0	0	105	Unknown	No
010	Available	0	00:00:00:00:00:00	0.0.0.0	0	0	106	Unknown	No
011	Available	0	00:00:00:00:00:00	0.0.0.0	0	0	107	Unknown	No
012	Available	0	00:00:00:00:00:00	0.0.0.0	0	0	108	Unknown	No
013	Available	0	00:00:00:00:00:00	0.0.0.0	0	0	109	Unknown	No
014	Available	0	00:00:00:00:00:00	0.0.0.0	0	0	110	Unknown	No
015	Available	0	00:00:00:00:00:00	0.0.0.0	0	0	111	Unknown	No
016	Available	0	00:00:00:00:00:00	0.0.0.0	0	0	112	Unknown	No

OK Help



# Moral Support

(Ed Jaffe)

# Mainframe Support Offerings in 2018

- **IBM Services Announcement 617-002, from Aug 8, 2017, announced significant changes!**

## Overview

Effective November 16, 2017, IBM will withdraw the following service products from marketing.

## Withdrawn products

Withdrawn product	Withdrawal from marketing date
SoftwareXcel enterprise edition for zSeries (6942-77E)	November 16, 2017
SoftwareXcel basic edition for zSeries (6942-77G)	November 16, 2017
Alert for zSeries (6942-16D)	November 16, 2017
Resolve for zSeries (6942-23D)	November 16, 2017

## Replacement products

Withdrawn product	Replacement product	For information
SoftwareXcel enterprise edition for zSeries (6942-77E)	z Systems Premier Software Care (6950-07W)	See Services Announcement <a href="#">617-002</a> , dated August 8, 2017.
SoftwareXcel basic edition for zSeries (6942-77G)	z Systems Premier Software Care (6950-07W)	See Services Announcement <a href="#">617-002</a> , dated August 8, 2017.
Alert for zSeries (6942-16D)	z Systems Premier Software Care - alert and resolve for z Systems (6948-53Z)	See Services Announcement <a href="#">617-002</a> , dated August 8, 2017.
Resolve for zSeries (6942-23D)	z Systems Premier Software Care - alert and resolve for z Systems (6948-53Z)	See Services Announcement <a href="#">617-002</a> , dated August 8, 2017.

# Mainframe Support Offerings in 2018

- Existing contracts continue to be honored until they come up for renewal. So, these changes might not have affected you yet.
- We had “Resolve for zSeries” with a single userid.
- Our contract was up for renewal Jan 27, 2018! I asked for a quote and was told that IBM would not quote the replacement offering until our contract was nearing expiration. No sooner than Jan 1, 2018.
- Meanwhile I discussed this issue on IBM-MAIN. As you might imagine, I am fundamentally opposed to customers paying additional fees for the “privilege” of reporting bugs and downloading fixes to software for which hefty license fees are already being paid.

# My Needs are Simple; I'm Easily Amused ☺

- A long, long time ago in a galaxy far, far away if you didn't have at least SoftwareXcel Basic Edition, you could not **search for fixes**, you could not **open PMRs electronically** (you had L1 voice only), and you could not **download PTFs electronically** (you had tape only).
- I knew APAR search was possible through Google and other Internet-based search engines. However:
  - RFE 95334 "Public Internet Search Access to Open APARs," submitted by Brian Petersen as a SHARE requirement in October 2016, ranked 31<sup>st</sup> on SHARE's Top 80 Requirements list at the end of 2016.
  - It was declined (rejected) by IBM last year!
- I was concerned the other two features we want might be unavailable without a support contract.
- On IBM-MAIN, Timothy Sipples (IBM) asserted that all three features are now freely available.

# IBM-MAIN Suggestions from Timothy Sipples

## <Sipples Suggestions>

You wrote that it's important to be able to report bugs. IBM agrees. SoftwareXcel has never been required to open PMRs by telephone (or fax), to my knowledge. Moreover, you should be able to open PMRs electronically (if you prefer) from this Web page, also at no additional charge:

<https://www.ibm.com/support/servicerequest/>

Click on the "New service request" button to get started. Please give it a try, stopping short of actual submission if you don't have a real PMR, and please correct me if I'm mistaken. It's working for me, though. Moreover, in some countries it's possible to open PMRs via e-mail. (I don't recommend e-mail, though, especially for higher severity issues, since you can't easily check whether and when IBM received your e-mail. But it's available in some countries, with that understanding.)

ShopZ is available at no additional charge for electronic PTF and new release/update deliveries. Electronic delivery is the preferred option. (Earlier this year IBM eliminated the Single Version Charge (SVC) limitation, in favor of Multi-Version Measurement (MVM). In short, that means you should electronically order new versions and releases. You shouldn't even have to think about it.)

You can search for APARs here:

<https://www.ibm.com/support/customercare/psearch/search?domain=gapar>

This search interface ("Granular APAR Search for Z") was first introduced in 2014.

</Sipples Suggestions>

# My Take After Reviewing the Offerings

- See <http://www.vm.ibm.com/service/zmatrix.pdf>
- ETR - Replaced by SR
- SIS - replaced by Granular APAR Search for Z and ordinary Internet search (Google et al)
- AST - No free replacement, but easy to roll your own
- PSP - Only really needed for CBPDO orders, which will be completely gone soon. For driving systems, we have FIXCATs, Migration Health Checks, etc.
- PCR - never used that in my life.
- SRD - Replaced by ShopZ and SMP/E RECEIVE ORDER
- SoftwareXcel Enterprise Edition and Alert Only
  - Alerts - these days HOLDDATA can be RECEIVED daily
- SoftwareXcel Enterprise Edition Only
  - Voice "usage" Q&A is an optional priced feature
  - Premium (one-hour) response to defects during prime shift
  - Monthly Management Reports
  - Remote Screen Viewing (RSV)

# Comparison of Existing Support Offerings

OFFERING ELEMENT	SoftwareXcel enterprise edition	SoftwareXcel basic edition	Resolve for zSeries	Alert for zSeries
Voice “usage” Q&A (Question and Answer) – prime shift	Optional feature			
Voice “usage” Q&A (Question and Answer) – full shift	Optional feature			
<b>Electronic Technical Response (ETR)</b>	X	X	X	
Electronic “usage” Q&A with Severity	X	X		
Defect Problem submission	X	X	X	
Voice Contact request “defect only”	X	X	X	
Problem Listing by Account	X	X	X	
Premium Response (1-hr Response for defect calls during prime shift)	X			
<b>Alerts- PEs/HIPERs/PE Fixes via ASAP (Automatic Software Alert Process)</b>	X			X
HOLDDATA History	X			X
Report on Products tracked	X			X
Enhanced HOLDDATA	X			X



# Comparison of Existing Support Offerings

OFFERING ELEMENT	SoftwareXcel enterprise edition	SoftwareXcel basic edition	Resolve for zSeries	Alert for zSeries
Notification by hardware device - 2105 Enterprise Storage Server (Shark)	X			X
<b>Automatic Status Tracking (AST)</b>	X	X	X	
Notification Reason	X	X	X	
<b>Database Query via SIS (Search Information Service)</b>	X	X	X	
Hardware Microcode Library	X	X	X	
APAR (Authorized Problem Analysis Report) Libraries	X	X	X	
PTF (Program Temporary Fix) Libraries	X	X	X	
eSupport Knowledge Base, includes Redbooks, Newsletters, Technotes, and white papers	X	X	X	
Q&A Library	X	X	X	
PDDb (Problem Diagnosis Data Base) Library	X	X	X	
<b>Preventive Service Planning (PSP)</b>	X	X	X	X
Installation Product Planning Info	X	X	X	X

# Comparison of Existing Support Offerings

OFFERING ELEMENT	SoftwareXcel enterprise edition	SoftwareXcel basic edition	Resolve for zSeries	Alert for zSeries
Order all PTFs listed in subset	X	X	X	X
<b>Product Cross Reference (PCR)</b>	X	X	X	X
<b>Fix Delivery via SRD (Service Request and Delivery)</b>	X	X	X	X
Electronic Delivery - Multiple PTFs	X	X	X	X
Inclusion of Pre/CO Reqs/PE fixes	X	X	X	X
Inclusion of If Reqs and Supersedes	X	X	X	X
Ordering of ESO/RSU (Expanded Service Option or Recommended Service Update)	X			X
Ordering of customized preventive package on installed fix inventory	X			
Ordering of customized PTF package based on installed fix inventory	X			
Ordering of toleration/coexistence service	X			
HIPER/PE (High Impact or Pervasive APAR/ PTF in error) check on installed service inventory	X			
Request physical media delivery	X	X	X	X
Inquiry of PTF requisite list	X	X	X	X

# Comparison of Existing Support Offerings

OFFERING ELEMENT	SoftwareXcel enterprise edition	SoftwareXcel basic edition	Resolve for zSeries	Alert for zSeries
Health Check on currency	X			
Electronic Package limit	10 Meg 5G - Web	10 Meg 5G - Web	10 Meg 5G - Web	10 Meg 5G - Web
Monthly Management Reports	X			
Remote Screen Viewing (RSV)	X			
AOS	X			
RSV-XCEL (requires lease line)	X			

# My Subsequent Response to our Account Rep

Brian,

I have been discussing this issue on IBM-MAIN.

It used to be (back in the "day") that if you didn't have at least SoftwareXcel Basic Edition, you could not search for fixes, you could not open PMRs electronically (you had L1 voice only), and you could not download PTFs electronically (you had tape only).

I have been advised on IBM-MAIN by Timothy Sipples of IBM that all three of these features now exist for free (no additional subscription necessary) and he provided URLs to the various services that I would use to perform these three functions.

I tried them and they seem to work, but I remain somewhat skeptical, thinking that once our Resolve for zSeries entitlement goes away some of the behaviors could change. We shall see.

What I want to do is let our Resolve for zSeries contract expire in January and not replace it with anything. Then try for a few months to use the free services Timothy claims exist for mainframe customers. If it becomes too painful, then obviously we'll be forced to subscribe to the new "Software Care" service if it's priced reasonably.

It sure would be great if we could get out from under IBM's "thumb" on this (hopefully now historical) requirement to pay for the privilege of electronically reporting and tracking IBM bugs.

If it works, it will make a great Bit Bucket segment for SHARE in Sacramento or St. Louis!

If it fails, it will make a great Bit Bucket segment for SHARE in Sacramento or St. Louis!

Thanks,

Ed Jaffe

# Sticker Shock and Progress Report

- On January 2<sup>nd</sup> they finally gave us the quote we asked for back in September: a “deeply discounted” price, if we agreed to pre-pay through Sep 2022, of only 2.5 times what we were paying previously. Um...
- Needless to say we prefer the “free” options.
- We have seen no disruption or problems with our weekly RECEIVE ORDER jobs for z/OS service.
- I successfully ordered the z/VM base and some accompanying products using ShopZ.
- I've opened a few SRs since Jan 27 and saw no change at all from previous experiences.
- I have searched for APARs using both the Granular APAR Search for Z and Google search. Both work great, however the IBM search has the filtering I'm used to seeing via SIS on IBMLink.

# Granular APAR Search for Z

## Granular APAR search

for System z

Search for:

Sort by: Hits per doc type:

Newest first

10

→ [Search tips](#)

→ [Start a new search](#)

— Document types

☐ All

☐ PE

☐ Hiper

☐ NEW FUNCTION

☐ INFO

☐ Open  
☐ Closed

Create date:

From:  To:

Last updated date:

From:  To:

External symptom code:  Release:

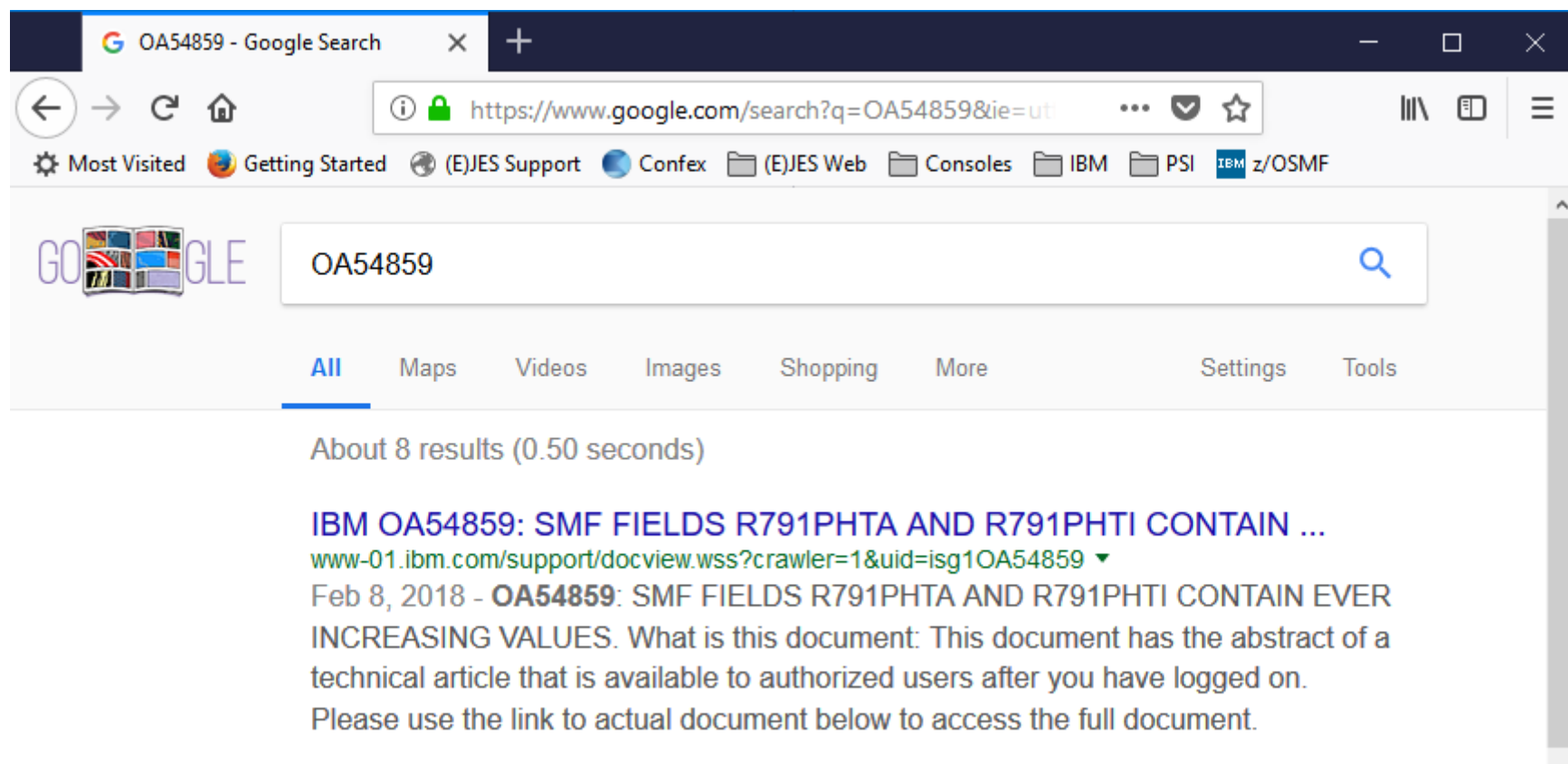
Both open and closed APARs are supported!

So much for rejection of Brian Petersen's SHARE requirement! LOL

Reminds me of when IBM declined SSMVSE11008 requesting large screen support in OSA-ICC. The support was already there, but didn't work in some configurations due to a trivial bug that I got them to fix via PMH.  
(See Bit Bucket x'35')

# Granular APAR Search for Z

- One of my open SRs resulted in FIN APAR OA54859 against RMF.
- I successfully located this APAR using both Granular APAR Search for Z and Google search! 😊



The screenshot shows a Google search interface with the query 'OA54859' entered in the search bar. The search results show 'About 8 results (0.50 seconds)'. The top result is titled 'IBM OA54859: SMF FIELDS R791PHTA AND R791PHTI CONTAIN ...' and includes a link to 'www-01.ibm.com/support/docview.wss?crawler=1&uid=isg1OA54859'. The snippet below the link reads: 'Feb 8, 2018 - OA54859: SMF FIELDS R791PHTA AND R791PHTI CONTAIN EVER INCREASING VALUES. What is this document: This document has the abstract of a technical article that is available to authorized users after you have logged on. Please use the link to actual document below to access the full document.'

# Granular APAR Search for Z

IBM Support

My support ▾ Downloads ▾ Documents ▾ Tickets ▾ Communities ▾ Training ▾ Other ▾

IBM Support

+ What's new?

Search support or find a product

Q

OA54859: SMF FIELDS R791PHTA AND R791PHTI CONTAIN EVER INCREASING VALUES.

APAR status

OPEN

Error description

SMF fields R791PHTA and R791PHTI contain ever increasing values. This is the zAAP and zIIP only equivalent time from ASSB\_IFA\_PHTM and ASSB\_zIIP\_PHTM.

.

The R791PHTM field is the standard CPU time consumed but this field has the time only for the current RMF interval.

.

This APAR is to have R791PHTA and R791PHTI to behave like R791PHTM and have only the current interval time.

Local fix

Problem summary

Problem conclusion

Rate this page

☆ ☆ ☆ ☆ ☆

Average rating (0 users)

Document information

More support for: z/OS family

Software version: 7B0

Operating system(s): MVS, z/OS

Reference #: OA54859

Modified date: 08 February 2018

Contact and feedback



# My 2018 Mainframe Support Experiences

- It looks like IBM is finally providing its mainframe customers with viable support that doesn't cost anything beyond the software license fees.
- So far, I see no degradation whatsoever in the quality of the support functions we must have:
  - Ordering products and service
  - Searching the APAR data base
  - Reporting software problems
- I intend to check with IBM to ensure our cancellation order actually took effect and that our support contract isn't just running on "auto pilot" or was somehow "auto-renewed" without our knowledge.
- I'm thinking of spending an afternoon putting together a freeware AST replacement.
- I'll provide a thorough update in St Louis!



Go with the Flow  
(Ed Jaffe)


# z/OSMF Workflows Hints and Tips


- We've been quietly watching the evolution of z/OSMF workflows and listening to ISV discussions about using workflows to provide guided installation of software products on z/OS.
- IBM uses workflows for z/OS migration. It's only a matter of time before they start using them for z/OS installation as well. Same goes for ISVs.
- A few weeks ago, I asked our lead documentation and web content person to experiment with me to convert one of our installation books into a workflow.
- Based on information I've received from Marna Walle and what I've heard from other ISVs, it appears we've taken a leadership position in terms of workflow content presentation in just a few short weeks.
- Here are some tips for those who are interested.


# z/OSMF Workflows Hints and Tips


- We established an informal goal of tryna make our workflow look as good as our existing Eclipse-based Knowledge Center Plug-Ins.
  - Customers typically install them on z/OS under KC4Z
  - Textured/colored backgrounds, italicized captions, nicely formatted tables, colorized titles, colored table borders, railroad tracks syntax diagrams, intra-step links, embedded images, etc.
- Remember, z/OSMF is displaying content in a web browser - a display platform upon which you ought to be able to make turkeys dance!
- The question is whether you can work around all of z/OSMF's restrictions and limitations and get down to raw browser code. The answer is YES!


# KC4Z Knowledge Center - Textual Content


 IBM Knowledge Center

English 

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Search Filters: (E)JES V5R8  ☒ Auto-select | [Clear All](#) | [Add Products...](#)



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## The EJESJCLU JCL Customization Utility

The EJESJCLU utility is an ISPF dialog you can use to customize the (E)JES JCL samples. The utility has both pre-APPLY and post-APPLY functions.

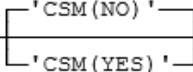
### Pre-APPLY Use of EJESJCLU

Pre-APPLY use of the utility performs the following:

- Prompts for values to substitute for the replaceable “keys”
- Copies the original, unaltered sample members from the SMPTLIB \$QEJ5800.F1 library to your customization library
- Edits the members in the customization library according to the “keys” you specified

Because the utility always begins by copying unaltered members to the customization library, you can run it as many times as necessary until the resulting JCL has been customized to your satisfaction.

To use EJESJCLU, run it in your ISPF session after you unload it from the distribution media. You can invoke it using the TSO/E EXEC command using the following syntax:

```
>>—EXEC—'prefix.$QEJ5800.F1(EJESJCLU)'——>>
```

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# KC4Z Knowledge Center - Textual Content



Search

Search Filters: (E)JES V5R8 ☒ Auto-select | Clear All | Add Products...



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The figures below show what the EJESJCLU prompting panel looks like for both traditional and CSM installation paths. It can be scrolled up and down. The characters plus and/or minus will appear next to **More:** in the upper right hand area of the screen when further scrolling is possible.

Pressing <Enter> validates the input and begins the process of customizing the JCL.

Figure 1. JCL Customization Utility Panel for Traditional Install

```
----- Install JCL Customization Utility ----- V5R8
Command ===>

Job Card and Other General JCL Parameters:
Job Name          ===> (Null won't overlay JCL)
Accounting        ===> 1
Programmer Name   ===>
Job Class         ===> A (Null won't overlay JCL)
Message Class     ===> A (NONE to remove CLASS=)
2nd Job Card:
===> /*
3rd Job Card:
===> /*
JES3 Job Class    ===> A (On /*MAIN JECL)
1st User JECL Card:
===> /*
2nd User JECL Card:
===> /*
Sysout Class      ===> *
Work File Unit Name ===> SYSDA

Customization Library Parameters:
Data Set Name     ===> EJES.INSTALL
```

# KC4Z Knowledge Center - Textual Content



Search

Search Filters: (E)JES V5R8 x ☒ Auto-select | Clear All | Add Products...



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[Table 1](#) lists the keys that are updated by the EJESJCLU utility. Shaded rows denote keys not used by the CSM install path.

Table 1. Keys Updated by the EJESJCLU Utility

Key	Description	Notes
jcname	Job name on the job card	If you leave this parameter blank, the existing job names in the sample JCL will be used.
jcacct	Account number on the job card	-
jcpgmr	Programmer name on the job card	If you leave this parameter blank, the existing programmer names in the sample JCL will be used.
jcjclass	Job class on the job card	Specify <b>NONE</b> to remove the CLASS= keyword from the job card entirely.
jcmclass	Message class on the job card	-
jcard2	Second job card	Can be used to add job card parameters.
jcard3	Third job card	Can be used to add additional job card parameters.
j3jclass	JES3 job class on the //*MAIN JECL	-
jecl1	First User JECL card	Can be used to add JECL parameters.
jecl2	Second User JECL card	Can be used to add additional JECL parameters.
sclass	Sysout class	-
wkunit	Unit name for DASD work files	<b>SYSALLDA</b> will work for all DASD devices. Many installations define special esoteric unit names such as <b>SYSDA</b> or <b>VIO</b> for DASD work files.
custlib	Customization library name.	This is the library where the sample JCL members are customized.
smpprfx	SMP/E data set name prefix	-
smpunit	SMP/E data set unit name	<b>SYSALLDA</b> will work for all DASD devices.

# z/OSMF Workflow Initial Results

- Description and instructions are the two sections where you want real content.
  - Description appears when you display a step
  - Instructions appear when you perform a step
- Only basic HTML tags supported.
- No styling of any kind.
- No font control other than implied by h1, h2, h3, etc.
- No control over table cell sizes and placement.
- No links of any kind.
- No images of any kind.
- Extraordinarily poor documentation about what's possible and what's not. No specifics at all.
  - Trial and error is the name of the game.



# z/OSMF Workflow Initial Results

The screenshot displays the IBM z/OS Management Facility (z/OSMF) interface. The top navigation bar includes the IBM logo, the text 'IBM z/OS Management Facility', and user information 'Welcome edjxadm'. A left-hand sidebar lists various navigation options: Welcome, Notifications, Workflow Editor, Workflows, Cloud Provisioning, Configuration, Consoles, Links, Performance, Problem Determination, Software, z/OS Classic Interfaces, z/OSMF Administration, and z/OSMF Settings. A 'Refresh' button is located below the sidebar. The main content area is titled 'Workflows' and shows a breadcrumb trail: 'Workflows > (E)JES V5R8 Installation > 1.6. Customizing JCL Samples'. The page title is 'Properties for Workflow Step 1.6. Customizing JCL Samples'. Below the title are several tabs: General, Details, Dependencies, Notes, Perform, Status, Input Variables, and Feedback. The 'General' tab is active, displaying the 'Title: Customizing JCL Samples' and a 'Description:' section. The description includes a heading 'Pre-APPLY Use of EJESJCLU', a paragraph explaining the utility's function, a bulleted list of actions, and a paragraph about running the utility multiple times. It also provides instructions on how to use EJESJCLU in an ISPF session. A code block shows the command syntax for EJESJCLU, with a diagram indicating that the 'CSM' parameter can be set to 'NO' or 'YES'. The description concludes with a note about scrolling the prompting panel. A 'Close' button is at the bottom of the main content area.

IBM z/OS Management Facility

Welcome edjxadm

Workflows

Workflows > (E)JES V5R8 Installation > 1.6. Customizing JCL Samples

Properties for Workflow Step 1.6. Customizing JCL Samples

General Details Dependencies Notes Perform Status Input Variables Feedback

Title:  
Customizing JCL Samples

Description:

**Pre-APPLY Use of EJESJCLU**

Pre-APPLY use of the utility performs the following:

- Prompts for values to substitute for the replaceable "keys"
- Copies the original, unaltered sample members from the SMPTLIB \$QEJ5800.F1 library to your customization library
- Edits the members in the customization library according to the "keys" you specified

Because the utility always begins by copying unaltered members to the customization library, you can run it as many times as necessary until the resulting JCL has been customized to your satisfaction.

To use EJESJCLU, run it in your ISPF session after you unload it from the distribution media. You can invoke it using the TSO/E EXEC command using the following syntax:

```
>> EXEC 'prefix.$QEJ5800.F1 (EJESJCLU) ' [ 'CSM (NO) ' ] [ 'CSM (YES) ' ] ><
```

The figures below shows what the EJESJCLU prompting panel looks like for both traditional and CSM installation paths. It can be scrolled up and down. The characters plus and/or minus will appear next to **More:** in the upper right hand area of the screen when further scrolling is possible.

Close


# z/OSMF Workflow Initial Results

The screenshot displays the IBM z/OS Management Facility (z/OSMF) interface. The top navigation bar includes the IBM logo, the text 'IBM z/OS Management Facility', and user information 'Welcome edjxadm'. A left-hand navigation pane lists various system management tasks, with 'Workflows' currently selected. The main content area shows the 'Workflows' tab, specifically the 'Properties for Workflow Step 1.6. Customizing JCL Samples'. This section includes tabs for 'General', 'Details', 'Dependencies', 'Notes', 'Perform', 'Status', 'Input Variables', and 'Feedback'. The 'General' tab is active, displaying the title 'Customizing JCL Samples' and a description: 'Pressing <Enter> validates the input and begins the process of customizing the JCL.' Below the description is a figure caption 'Figure 1. JCL Customization Utility Panel for Traditional Install' and a screenshot of the JCL Customization Utility panel. This panel shows a command prompt with the following text:

```
----- Install JCL Customization Utility ----- V5R8
Command ===>
Job Card and Other General JCL Parameters:
Job Name          ===> (Null won't overlay JCL)
Accounting        ===> 1
Programmer Name   ===> (Null won't overlay JCL)
Job Class         ===> A (NONE to remove CLASS=)
Message Class     ===> A
2nd Job Card:
===> /*
3rd Job Card:
===> /*
JES3 Job Class    ===> A (On /*MAIN JECL)
1st User JECL Card:
===> /*
2nd User JECL Card:
```

At the bottom of the main content area, there is a 'Close' button.

# z/OSMF Workflow Initial Results

 IBM z/OS Management Facility

Welcome edjxadm | ? IBM

- Welcome
- Notifications
- Workflow Editor
- Workflows
  - Cloud Provisioning
  - Configuration
  - Consoles
  - Links
  - Performance
  - Problem Determination
  - Software
  - z/OS Classic Interfaces
  - z/OSMF Administration
  - z/OSMF Settings

Welcome x Workflows x

Workflows > (E)JES V5R8 Installation > 1.6. Customizing JCL Samples [Help](#)

**Properties for Workflow Step 1.6. Customizing JCL Samples**

General Details Dependencies Notes Perform Status Input Variables Feedback

Title:  
Customizing JCL Samples

Description:

Table 1. Keys Updated by the EJESJCLU Utility lists the keys that are updated by the EJESJCLU utility. Shaded rows denote keys not used by the CSM install path.

Table 1. Keys Updated by the EJESJCLU Utility

Key	Description	Notes
jcname	Job name on the job card	If you leave this parameter blank, the existing job names in the sample JCL will be used.
jcacct	Account number on the job card	
jcpgmr	Programmer name on the job card	If you leave this parameter blank, the existing programmer names in the sample JCL will be used.

Close

# z/OSMF Workflow Initial Results

- IBM's z/OS migration workflow has the same issues.
  - We thought, "At least customers can't complain we're doing worse than IBM..." LOL
  - In fact, some of their formatting is much worse.
- But we did notice they had intra-step links working.
- Investigating their code, we saw they wrapped the description in !CDATA tags whenever a link was used.
- We tried that and it worked! We got intra-step links to work!
- We also have inter-step links and they don't work any better than IBM's do (clicking on them does nothing). Hopefully z/OSMF will support this one day for IBM's workflows and ours will start working then too.
- The BIG discovery was that !CDATA also allows CSS to be used! Once we realized that, we stopped stripping out our styling. Now things look pretty damn good!

# z/OSMF Workflow with CSS - Textual Content



IBM z/OS Management Facility

Welcome edjxadm



- Welcome
- Notifications
- Workflow Editor
- **Workflows**
  - ▶ Cloud Provisioning
  - ▶ Configuration
  - ▶ Consoles
  - ▶ Links
  - ▶ Performance
  - ▶ Problem Determination
  - ▶ Software
  - ▶ z/OS Classic Interfaces
  - ▶ z/OSMF Administration
  - ▶ z/OSMF Settings

Refresh

Welcome x Workflows x

Workflows ▶ (E)JES V5R8 Installation ▶ 1.6. Customizing JCL Samples

Help

## Properties for Workflow Step 1.6. Customizing JCL Samples

General

Details

Dependencies

Notes

Perform

Status

Input Variables

Feedback

Title:

Customizing JCL Samples

Description:

### The EJESJCLU JCL Customization Utility

The EJESJCLU utility is an ISPF dialog you can use to customize the (E)JES JCL samples. The utility has both pre-APPLY and post-APPLY functions.

#### Pre-APPLY Use of EJESJCLU

Pre-APPLY use of the utility performs the following:

- Prompts for values to substitute for the replaceable "keys"
- Copies the original, unaltered sample members from the SMPTLIB \$QEJ5800.F1 library to your customization library
- Edits the members in the customization library according to the "keys" you specified

Because the utility always begins by copying unaltered members to the customization library, you can run it as many times as necessary until the resulting JCL has been customized to your satisfaction.

To use EJESJCLU, run it in your ISPF session after you unload it from the distribution media. You can invoke it using the TSO/E EXEC command using the following syntax:

```
>>—EXEC—'prefix.$QEJ5800.F1 (EJESJCLU) ' [ 'CSM(NO) ' ] —><  
[ 'CSM(YES) ' ]
```

# z/OSMF Workflow with CSS - Textual Content

The screenshot displays the IBM z/OS Management Facility (z/OSMF) interface. The top navigation bar includes the IBM logo, the text 'IBM z/OS Management Facility', and user information 'Welcome edjxadm'. A left-hand sidebar lists various management functions: Welcome, Notifications, Workflow Editor, Workflows, Cloud Provisioning, Configuration, Consoles, Links, Performance, Problem Determination, Software, z/OS Classic Interfaces, z/OSMF Administration, and z/OSMF Settings. A 'Refresh' button is located below the sidebar.

The main content area is titled 'Workflows' and shows a breadcrumb trail: 'Workflows > (E)JES V5R8 Installation > 1.6. Customizing JCL Samples'. The title of the current view is 'Properties for Workflow Step 1.6. Customizing JCL Samples'. Below the title are several tabs: 'General' (selected), 'Details', 'Dependencies', 'Notes', 'Perform', 'Status', 'Input Variables', and 'Feedback'.

The 'General' tab contains the following information:

- Title:** Customizing JCL Samples
- Description:** Pressing <Enter> validates the input and begins the process of customizing the JCL.


Below the description is a figure caption: 'Figure 1. JCL Customization Utility Panel for Traditional Install'. The figure shows a sample JCL panel with the following content:

```
----- Install JCL Customization Utility ----- V5R8
Command ==>

Job Card and Other General JCL Parameters:
Job Name           ==>                (Null won't overlay JCL)
Accounting         ==> 1
Programmer Name    ==>                (Null won't overlay JCL)
Job Class          ==> A              (NONE to remove CLASS=)
Message Class      ==> A
2nd Job Card:
==> /*
3rd Job Card:
==> /*
JES3 Job Class     ==> A              (On /*MAIN JECL)
1st User JECL Card:
==> /*
2nd User JECL Card:
==> /*
Sysout Class       ==> *
```

A 'Close' button is located at the bottom of the dialog.

# z/OSMF Workflow with CSS - Textual Content

 IBM z/OS Management Facility

Welcome edjxadm | ? IBM

- Welcome
- Notifications
- Workflow Editor
- Workflows
  - Cloud Provisioning
  - Configuration
  - Consoles
  - Links
  - Performance
  - Problem Determination
  - Software
  - z/OS Classic Interfaces
  - z/OSMF Administration
  - z/OSMF Settings

Refresh

Welcome x Workflows x

Workflows > (E)JES V5R8 Installation > 1.6. Customizing JCL Samples Help

Properties for Workflow Step 1.6. Customizing JCL Samples

General Details Dependencies Notes Perform Status Input Variables Feedback

Title:  
Customizing JCL Samples

Description:

Table 1 lists the keys that are updated by the EJESJCLU utility. Shaded rows denote keys not used by the CSM install path.

Table 1. Keys Updated by the EJESJCLU Utility

Key	Description	Notes
jcname	Job name on the job card	If you leave this parameter blank, the existing job names in the sample JCL will be used.
jacct	Account number on the job card	-
jcpgrmr	Programmer name on the job card	If you leave this parameter blank, the existing programmer names in the sample JCL will be used.
jcjclass	Job class on the job card	Specify <b>NONE</b> to remove the CLASS= keyword from the job card entirely.
jcmclass	Message class on the job card	-
jcard2	Second job card	Can be used to add job card parameters.
jcard3	Third job card	Can be used to add additional job card parameters.
j3jclass	JES3 job class on the //*MAIN JECL	-
jcl4	Fourth JES3 job card	Can be used to add JES3 parameters.


Close

# What About Images?

- A picture is worth 1000 words!
- We tried relative references to images without an explicit path name, but always got a 404 error.
- It turns out that workflows are copied elsewhere when you do "Create Workflow..." in z/OSMF.
  - The z/OS UNIX "current" directory while resolving a reference has no relationship whatsoever to the directory from which the workflow was originally read. And, you can't reference anything outside the WAS Liberty "context."
- We decided to convert our images (using a free, online web-based utility) to base 64 encoding and embed them directly into the workflow. That works!
- We have not yet tried it, but we believe it might even be possible to show embedded video in a workflow and - yes - to make turkeys dance!



# z/OSMF Workflow with B&W Images

 IBM z/OS Management Facility

Welcome edjxadm | ? IBM

- Welcome
- Notifications
- Workflow Editor
- Workflows
  - Cloud Provisioning
  - Configuration
  - Consoles
  - Links
  - Performance
  - Problem Determination
  - Software
  - z/OS Classic Interfaces
  - z/OSMF Administration
  - z/OSMF Settings

Refresh

Welcome x Workflows x

Workflows > (E)JES V5R8 Installation > 23.3. Example Staged Migration Scenarios [Help](#)

**Properties for Workflow Step 23.3. Example Staged Migration Scenarios**

General Details Dependencies Notes Perform Status Input Variables Feedback


Title:  
Example Staged Migration Scenarios

Description:

**Phase I - Migrate System "A" to New BCP/JES and (E)JES Release**

This example assumes System "A" will be first to migrate to the new BCP/JES and (E)JES release. The actual choice of which system to migrate depends entirely on installation preferences and JES capabilities. EJESCAS on System "A" interoperates with EJESCAS on the other systems, which continue to run the older (E)JES release.


**Phase I**  
**Migrate System "A" to**  
**New BCP/JES and (E)JES Release**



**Runs:**  
New (E)JES  
New EJESCAS  
New BCP and JES

Close

# z/OSMF Workflow with Color Images

 IBM z/OS Management Facility

Welcome edjxadm | ? IBM

- Welcome
- Notifications
- Workflow Editor
- Workflows
  - Cloud Provisioning
  - Configuration
  - Consoles
  - Links
  - Performance
  - Problem Determination
  - Software
  - z/OS Classic Interfaces
  - z/OSMF Administration
  - z/OSMF Settings

Refresh

Welcome x Workflows x

Workflows > (E)JES V5R8 Installation > 7.5. Initiate Product Install Help

Properties for Workflow Step 7.5. Initiate Product Install

General Details Dependencies Notes Perform Status Input Variables Feedback

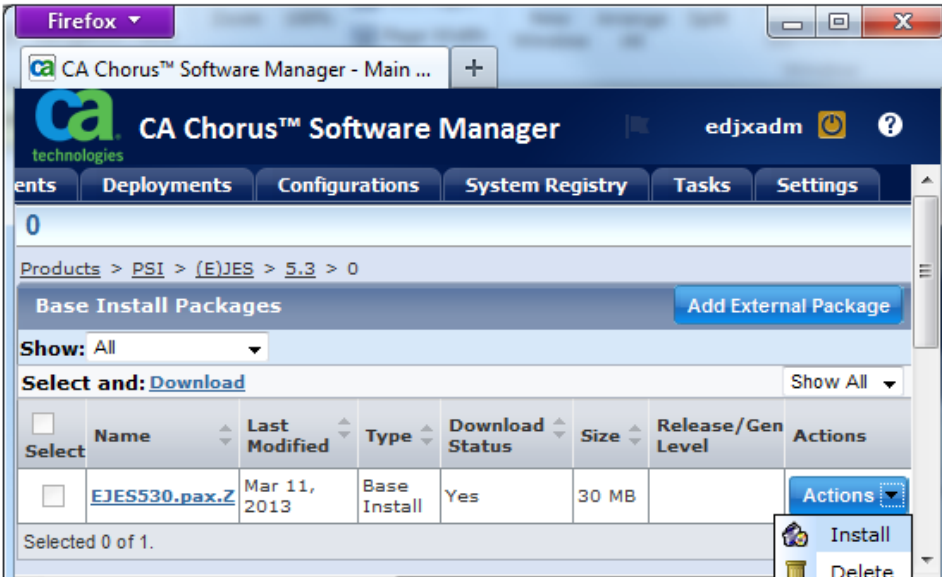
Title:  
Initiate Product Install

Description:

Open the **Actions** pull-down to the right of the just-inserted install package and click **Install**.

Firefox

CA Chorus™ Software Manager - Main ...



Close

CA Chorus™ Software Manager

edjxadm

Products > PSI > (E)JES > 5.3 > 0

Base Install Packages [Add External Package](#)

Show: All

Select and: [Download](#) Show All

Select	Name	Last Modified	Type	Download Status	Size	Release/Gen Level	Actions
<input type="checkbox"/>	EJES530.pax.Z	Mar 11, 2013	Base Install	Yes	30 MB		<a href="#">Actions</a> <ul style="list-style-type: none"><li>Install</li><li>Delete</li></ul>

Selected 0 of 1.

# z/OSMF Workflows Hints and Tips

- Don't even think about using the z/OSMF workflow editor for content creation. It's woefully inadequate.
  - You can use it to build a workflow preamble/skeleton
  - You can use it to create variables and prompt for them
  - You can use it to create dependencies between steps
  - DO NOT USE IT TO CREATE ANY SERIOUS CONTENT!
- Leverage popular tools that produce HTML from a styled document. You can massage the output using grep or similar utility to produce workflow elements (steps, descriptions, etc.) that can be appended to the preamble created by the workflow editor.
- With just a little more effort, you might develop a script that can automatically update an existing workflow with the latest content from the source.
- Wrap descriptions and instructions in !CDATA tags.



I've Been Searching So Long  
(Tom Conley)

# ISPF 3.17 UDLIST - UNIX Commands

- UDLIST allows Unix commands from command line
- Enter /etc on 3.17
- Go to Options pull down
- Go to 1. Directory List Options...
- Enter "/" for Enter z/OS UNIX commands in Command field
- Issue cat httpd.conf
- Output from cat command displayed in ISPF Browse
- cat command fails because Unix requires full path
- Issue cat /SOW1/etc/httpd.conf
- ISPF Browse shows cat output of httpd.conf

# ISPF 3.17 UDLIST - Enable UNIX Commands



Menu Utilities View Options Help

Command ==>

Pathname . : /S0W1/etc

EUID . . . : 0

Command Filename

-----

- 1 1. Directory List Options...
2. Directory List Column Arrangement...
3. Directory List Default Line Commands...
4. Enable superuser mode(SU)
5. Refresh List
6. Save List
7. Reset

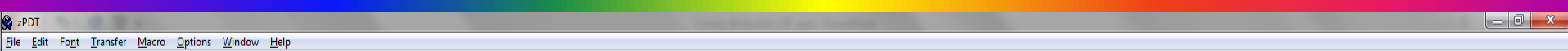
of 44  
CSR

-----

.	Dir	rxrx-rx-rx
..	Dir	rxrxrx---
cfgasst	Dir	rxrxrx---
csch.cshrc	File	rx-r--r--
csch.login	File	rx-r--r--
dfs	Dir	rxrx-rx-rx
hosts	File	rx-----
httpd.conf	File	rx-----
httpd.envvars	File	rx-----
ics_pics.conf	File	rx-----
inetd.conf	File	-----
inetd.pid	File	rx-r--r--
init.options	File	-----
ioepdcf	Syml	rxrxrxrxrx

\*UDLIST

# ISPF 3.17 UDLIST - Enable UNIX Commands



```
                                z/OS UNIX Directory List Options
Command ==> _____

Width of filename column . . . . . 30

Pathname substitution character . . . . !

z/OS UNIX command time limit . . . . . _____

Enter "/" to select option
/ Confirm File Delete
/ Confirm Non-empty Directory Delete
- Bypass z/OS UNIX File Edit Options panel
  Display permissions in octal format
☒ Enter z/OS UNIX commands in Command field
```

Output Mode  
2 1. View  
2. Browse

\*UDLIST

# ISPF 3.17 UDLIST - Issue UNIX Commands



Menu Utilities View Options Help

z/OS UNIX Directory List

Row 1 to 14 of 44

Command ==> cat httpd.conf

Scroll ==> CSR

Pathname . : /S0W1/etc

EUID . . . : 0

Command Filename

Message

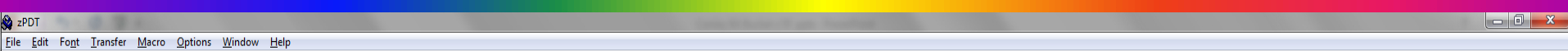
Type Permission

_____	.		Dir	rwxr-xr-x
_____	..		Dir	rwxr-xr-x
_____	cfgasst		Dir	rwrxwx---
_____	csh.cshrc		File	rw-r--r--
_____	csh.login		File	rw-r--r--
_____	dfs		Dir	rwxr-xr-x
_____	hosts		File	rwx-----
_____	httpd.conf		File	rwx-----
_____	httpd.envvars		File	rw-----
_____	ics_pics.conf		File	rw-----
_____	inetd.conf		File	-----
_____	inetd.pid		File	rw-r--r--
_____	init.options		File	-----
_____	ioepdcf		Syml	rwrxwxrwx

\*UDLIST



# ISPF 3.17 UDLIST - Issue UNIX Commands



Menu Utilities Compilers Help

BROWSE /tmp/IBMUSER.02:09:20.67.stderr.ispfudl Line 0000000000 Col 001 080

Command ==> Scroll ==> CSR

\*\*\*\*\* Top of Data \*\*\*\*\*

cat: httpd.conf: EDC5129I No such file or directory.

\*\*\*\*\* Bottom of Data \*\*\*\*\*

\*UDLIST

# ISPF 3.17 UDLIST - Issue UNIX Commands



Menu Utilities View Options Help

z/OS UNIX Directory List

Row 1 to 14 of 44

Command ==> cat /S0W1/etc/httpd.conf

Scroll ==> CSR

Pathname . : /S0W1/etc

EUID . . . : 0

Command Filename

Message

Type Permission

_____	.		Dir	rwxr-xr-x
_____	..		Dir	rwxr-xr-x
_____	cfgasst		Dir	rwrxwx---
_____	csh.cshrc		File	rw-r--r--
_____	csh.login		File	rw-r--r--
_____	dfs		Dir	rwxr-xr-x
_____	hosts		File	rwx-----
_____	httpd.conf		File	rwx-----
_____	httpd.envvars		File	rw-----
_____	ics_pics.conf		File	rw-----
_____	inetd.conf		File	-----
_____	inetd.pid		File	rw-r--r--
_____	init.options		File	-----
_____	ioepdcf		Syml	rwrxwxrwx

\*UDLIST

# ISPF 3.17 UDLIST - Issue UNIX Commands



Menu Utilities Compilers Help

BROWSE /tmp/IBMUSER.02:10:30.68.stdout.ispfudl Line 0000000000 Col 001 080  
Command ==> Scroll ==> CSR

\*\*\*\*\* Top of Data \*\*\*\*\*

# COMPONENT\_NAME: web httpd.conf

#

# RECENT CHANGES:

# PQ60323 - June 2002: added ServiceSync directive  
# PQ61680 - June 2002: enhanced SSLCipherSpec directive; corrected MaxContent  
# PQ61160 - July 2002: added DetectUTF8 directive  
# PQ63620 - August 2002: added ProxyMap, ProxyPreserveHost, and ProxyPassReve  
# PQ63061 - September 2002: added ENUExecs directive  
# PQ66630 - October 2002: added MaxItemSet directive  
# PQ67557 - November 2002: added BreadCrumb directive  
# PQ70521 - April 2003: added PostDataConv directive  
# PQ71799 - June 2003: added "separate" option for SMF directive for scalable  
# PQ71799 - June 2003: added "sync" option for SMFRecordingInterval directive  
# PQ76263 - Aug 2003: added "use\_umask" directive  
# PQ74746 - July 2003: added format option to DirShowDate directive  
# PQ74747 - July 2003: added "SSL" option to SSL\_ClientAuth subdirective; not  
# PQ80414 - December 2003: added SAFExpTime directive and GroupFile %%SAF%%  
# PQ78542 - December 2003: added the NCSA log formats

\*UDLIST

# ISPF 3.17 UDLIST - Issue UNIX Commands

- Issue UNIX FIND command to show all .conf files
- `find / -name ".conf"`
- ISPF 3.17 didn't like that - he wants to do find on panel
- Searched high and low, read doc, didn't find anything
- Entering the full path of the command worked
- `/bin/find / -name ".conf"`
- Entering full path for Unix commands colliding with ISPF?
- Must be a better way
- Turns out, you can enter a "/" on the command line
- Gives you a UNIX command panel (like ISPF 6, SDSF, etc.)

# ISPF 3.17 UDLIST - Issue UNIX Commands



Menu Utilities View Options Help

z/OS UNIX Directory List Put string in quotes  
Command ==> find / -name ".conf" Scroll ==> CSR

Pathname . : /

EUID . . . : 0

Command	Filename	Message	Type	Permission
---------	----------	---------	------	------------

_____	.		Dir	rxrx-rx-rx
_____	..		Dir	rxrx-rx-rx
_____	...		Dir	rxrx-rx-rx
_____	\$SYSNAME		Syml	rxrxrxrxrx
_____	\$VERSION		Syml	rxrxrxrxrx
_____	apps		Dir	rxrxrxrx-rx
_____	bin		Syml	rxrxrxrxrx
_____	dev		Syml	rxrxrxrxrx
_____	domino1		Dir	rxrx-rx-rx
_____	domino2		Dir	rxrx-rx-rx
_____	domino3		Dir	rxrx-rx-rx
_____	domino4		Dir	rxrx-rx-rx
_____	domino5		Dir	rxrx-rx-rx
_____	domino6		Dir	rxrx-rx-rx

\*UDLIST

# ISPF 3.17 UDLIST - Issue UNIX Commands



Menu Utilities View Options Help

z/OS UNIX Directory List

Row 1 to 14 of 31

Command ==> /bin/find / -name ".conf"

Scroll ==> CSR

Pathname . : /

EUID . . . : 0

Command Filename

Message

Type Permission

_____	.		Dir	rxrx-rx-rx
_____	..		Dir	rxrx-rx-rx
_____	...		Dir	rxrx-rx-rx
_____	\$SYSNAME		Syml	rxrxrxrx
_____	\$VERSION		Syml	rxrxrxrx
_____	apps		Dir	rxrxrx-rx
_____	bin		Syml	rxrxrxrx
_____	dev		Syml	rxrxrxrx
_____	domino1		Dir	rxrx-rx-rx
_____	domino2		Dir	rxrx-rx-rx
_____	domino3		Dir	rxrx-rx-rx
_____	domino4		Dir	rxrx-rx-rx
_____	domino5		Dir	rxrx-rx-rx
_____	domino6		Dir	rxrx-rx-rx

\*UDLIST

# ISPF 3.17 UDLIST - Issue UNIX Commands

```
zPDT
File Edit Font Transfer Macro Options Window Help

Menu Utilities View Options Help

z/OS UNIX Directory List
Command ==> /bin/find / -name ".conf" Scroll ==> CSR

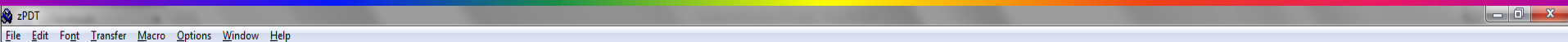
Pathname . : /
EUID . . . : 0
Command Filename Message Type Permission
-----
. Dir rwxr-xr-x
.. Dir rwxr-xr-x
... Dir rwxr-xr-x
$SYSNAME Syml rwxrwxrwx
$VERSION Syml rwxrwxrwx
apps Dir rwxrwxr-x
bin Syml rwxrwxrwx
dev Syml rwxrwxrwx
domino1 Dir rwxr-xr-x

ISRU781 Running shell command: /bin/sh -Lc /bin/find / -name ".conf"
PID=33620010

domino6 Dir rwxr-xr-x
*UDLIST
```

MA X SYSTEM 0.0 a 1,1

# ISPF 3.17 UDLIST - Issue UNIX Commands



Menu Utilities View Options Help

z/OS UNIX Directory List

Row 1 to 14 of 31

Command ==> /

Scroll ==> CSR

Pathname . : /

EUID . . . : 0

Command Filename

Message

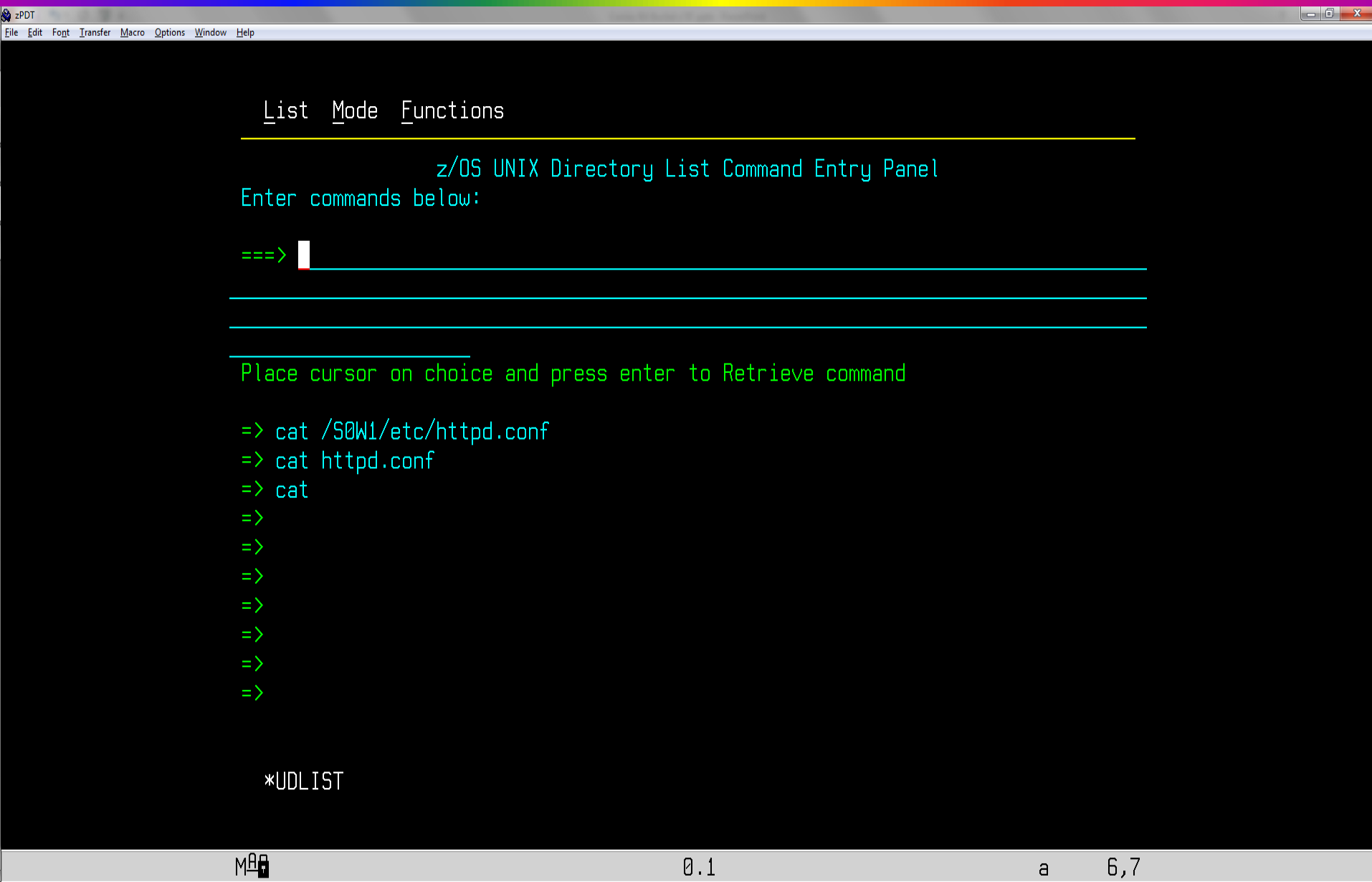
Type Permission

_____ .	Dir	rxrx-rx-rx
_____ ..	Dir	rxrx-rx-rx
_____ ...	Dir	rxrx-rx-rx
_____ \$SYSNAME	Syml	rxrxrxrx
_____ \$VERSION	Syml	rxrxrxrx
_____ apps	Dir	rxrxrx-rx
_____ bin	Syml	rxrxrxrx
_____ dev	Syml	rxrxrxrx
_____ domino1	Dir	rxrx-rx-rx
_____ domino2	Dir	rxrx-rx-rx
_____ domino3	Dir	rxrx-rx-rx
_____ domino4	Dir	rxrx-rx-rx
_____ domino5	Dir	rxrx-rx-rx
_____ domino6	Dir	rxrx-rx-rx

\*UDLIST



# ISPF 3.17 UDLIST - Issue UNIX Commands



The screenshot shows the zPDT ISPF 3.17 UDLIST panel. At the top, there is a menu bar with options: File, Edit, Font, Transfer, Macro, Options, Window, and Help. Below the menu bar, the panel title is "z/OS UNIX Directory List Command Entry Panel". The main area is divided into sections. The first section is titled "List Mode Functions" and contains the text "Enter commands below:". Below this, there is a prompt "===>" followed by a cursor. The second section is titled "Place cursor on choice and press enter to Retrieve command" and contains a list of commands: "=> cat /S0W1/etc/httpd.conf", "=> cat httpd.conf", "=> cat", "=>", "=>", "=>", "=>", "=>", "=>", and "=>". At the bottom of the panel, the text "\*UDLIST" is displayed.

```
zPDT
File Edit Font Transfer Macro Options Window Help

List Mode Functions

z/OS UNIX Directory List Command Entry Panel
Enter commands below:

===>

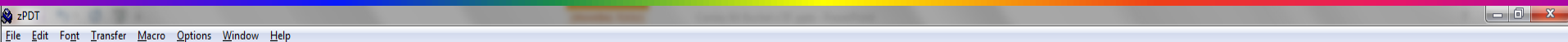
Place cursor on choice and press enter to Retrieve command

=> cat /S0W1/etc/httpd.conf
=> cat httpd.conf
=> cat
=>
=>
=>
=>
=>
=>
=>
=>

*UDLIST
```

MP 0.1 a 6,7

# ISPF 3.17 UDLIST - Issue UNIX Commands



List Mode Functions

z/OS UNIX Directory List Command Entry Panel

Enter commands below:

==> find / -name ".conf"

Place cursor on choice and press enter to Retrieve command

=> /bin/find / -name ".conf"

=> /bin/find

=> cat /S0W1/etc/httpd.conf

=> cat httpd.conf

=> cat

=>

=>

=>

=>

=>

\*UDLIST

# ISPF 3.17 UDLIST - Issue UNIX Commands



List Mode Functions

z/OS UNIX Directory List Command Entry Panel

Enter commands below:

==> find / -name ".conf"

Place cursor on choice and press enter to Retrieve command

=> /bin/find / -name ".conf"

=> /bin/find

=> cat /S0W1/etc/httpd.conf

=> cat httpd.conf

=> cat

=>

=>

=>

ISRU781 Running shell command: /bin/sh -lc find / -name ".conf" PID=50397226

\*UDLIST



Tighten Up!  
(Tom Conley)

# Inadequate Password Controls

- "For those of you still using 8-character passwords, all uppercase, no passphrases, no Multi-Factor Authentication, thank you"
  - Philip Young - SHARE in Sacramento
- Consider mixed-case passwords
  - Implementation problematic
  - Backout to uppercase renders mixed-case passwords unusable
- Consider passphrases
  - Greatly increases password security
  - Requires user education and commitment to change long-standing behavior
- Consider Multi-Factor Authentication
  - Easiest to implement and strongest method of authentication

# Inadequate Password Controls - RACF

- OA43998 and OA43999 for RACF enabled much stronger password encryption (KDFAES) and added special characters to increase password keypace
- You should implement KDFAES as soon as possible!
- Implementing KDFAES in RACF is simple
  - SETR PASSWORD (ALGORITHM(KDFAES) )
- Backing out KDFAES in RACF is also simple
  - SETR PASSWORD NOALGORITHM
- RACF automatically determines correct format of password hash for current/historical password
  - RACF development did things right, no excuse for not implementing KDFAES

# Inadequate Password Controls

- You should implement KDFAES as soon as possible!
- An excellent reference is [Joel Tilton's KDFAES Walkabout](#)
- Biggest issue for implementing KDFAES is performance
- KDFAES will increase CPU spent on password encryption
  - Enable VLF caching for all RACF structures
  - Run REPORT MISSINGFIX for these FIXCATs
    - IBM.Function.RACF.PasswordCharacters
    - IBM.Function.RACF.PasswordEncryption
  - Selectively convert current passwords to minimize performance issues
  - Selectively convert/delete historic passwords to minimize performance issues

# Inadequate Password Controls

- KDFAES maintenance per II14765 (performance APARs underlined):
  - OA54190 - ICH408I FOR SOME VALID USERID/PASSWORD
  - OA53242 - INVALID PASSWORD MIXEDCASE KDFAES
  - OA52291 - EXTRANEIOUS PURGE OF IRRACEE
  - OA52226 - RACF VLF PURGE IRRACEE FOR USER PROFILE
  - OA52117 - RACF KDFAES PERFORMANCE, OPTIMIZE VLF
  - OA50846 - ABEND0C4-11, ICH408I INVALID PASSWORD
  - OA50749 - SAF MACRO SUPPORT FOR RACF APAR OA50748
  - OA50748 - MINIMIZE KDFAES PERFORMANCE IMPACTS
  - OA49494 - IRR420I ERROR ABEND483 RSN088 ICHRIN00
  - PI64443, PI64442, PI64175 - INCREASED CPU FOR PASSWORD VERIFICATIONS IN CICS AFTER KDFAES





# Discontinuous Availability (Skip Robinson)

# Discontinuous Availability

- We recently applied an RSU bundle
- Included UI51463 for PI84103 MQ V8 (HMS8000)
- Came with ++HOLD for action DB2BIND:
- After migration of PTF, DB2 bind must be run
- Bind required on each sysplex during migration
- On sandbox sysplex, DB2 bind was disruptive
- It threw up an ENQ held by another sysplex member
- In order to complete bind, we had to stop MQ on other system(s)
- This meant no DB2-MQ function for the duration

# Discontinuous Availability

- No big deal on sandbox, but in production, we perform rolling IPLs:
- One system shuts down while another system keeps running
- Application is not disrupted
- This prepares for IPL of the down system
- If we have to stop MQ for a bind, DB2-MQ functions are unavailable throughout the sysplex
- This affects our most important mainframe application!
- MQ Level 2 told us we could suspend/resume function on the running MQ
- But this still looks like an interruption
- We cannot test this scenario anywhere else because of load dissimilarities

# Discontinuous Availability

---

- UI51463 turns out to be HIPER, so we had to research the issue
- We decided we could dodge this specific vulnerability
- Sooooo our sysprogs learned how to perform SMP/E RESTORE ;-(
- We will reinstall UI51463 when we need a (rare) full sysplex outage
- The promise of continuous availability has failed us
- Bottom line: a single fix to any component should not require a sysplex-wide outage



Barreling Down Highway S722  
(Skip Robinson)

# Barreling Down Highway 722

- We occasionally get a runaway program
- Produces millions of lines of sysout
- If loop continues, one job can literally fill the spool
- Usage shoots up rapidly, often unnoticed until too late
- Even after discovery, spool may still hit 100% before action is taken
- At that point no task can start in the sysplex
- Including TSO logon to diagnose/fix the problem
- JES2 was once set here to abend runaway jobs with S722
- Caused an uproar among application teams--and their managers
- Eventually sysprog staff relented and removed the abend option

# Barreling Down Highway 722

- From then on, spool would periodically fill up
- Everyone would scramble to recover, often during off hours
- Resolution almost always required CANCEL/PURGE of offending job
- After PURGE, no longer any output for diagnosis
- We recently set out (again) to remedy the problem
- We reset JES2 option toabend jobs with excessive output
- Enabled globally in JES2 init deck:
- ESTLNCT NUM=nnnnn,INT=iiiiii,OPT=1
- OPT '1' indicatesabend job when limit is exceeded
- Limit was set so high that a 'normal' job would never trip

# Barreling Down Highway 722

- In production, a handful of jobs started abending with minimal output
- This message was issued at \*job start\*:
- \$HASP375 JES2 ESTIMATED LINES EXCEEDED
- No JECL card was present in the job
- Failed even when we substituted PGM=IEFBR14 in EXEC card
- Say what???
- After much consternation, we found it
- //TEST722 JOB (TE000ROBIN,DK1D,,0),
- // 'SKIP',NOTIFY=&SYSUID



# Barreling Down Highway 722

- Accounting field 3<sup>rd</sup> positional parm indicates O/P limit
  - (TE000ROBIN,DK1D,,0)
  - Failing jobs were all created years ago by one person
  - No one knows why; until now no one noticed
  - Previously \$HASP375 was benign, info only
  - Solution was to remove positional parms beyond second
  - Several other positional parms are given various meanings; you can look them up
  - Ancient implementation seldom if ever used nowadays
  - Recommendation: never use these optional parms!
- 
- We finally got our first intendedabend
  - \*13.41.43 SYSX00      \*\$HASP050 JES2 RESOURCE  
SHORTAGE OF TGS - 76% UTILIZATION REACHED

# Barreling Down Highway 722

- In the job via SDSF:
- | JOBNAME  | JobID    | TGPct | Queue |
|----------|----------|-------|-------|
| XY7851GD | JOB02810 | 25.73 | PRINT |
- 13.41.11 JOB02810 \$HASP375 XY7851GD  
ESTIMATE EXCEEDED BY 2,899,971 KB
- 13.41.12 JOB02810 \$HASP375 XY7851GD  
ESTIMATED LINES EXCEEDED
- 13.41.13 JOB02810 IEF450I XY7851GD STEP010 -  
ABEND=S722 U0000 REASON=00000000
- Job did not require immediate PURGE since spool space was available
- We were able to logon to examine failing sysout
- In a single sysout data set, we found 40 million lines of all blanks!

# Acknowledgments Both Knowing and Unknowing

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- Timothy Sipples (IBM)
- Peter Relson (IBM)
- Amy Gilbert (Phoenix Software International)
- Chad Rikansrud (RSM Partners)
- Beth Shelly (IBM)
- Joel Tilton
- Philip Young



Meet Me in  
St. Louis