

# *Bit Bucket x'47'*

Joe Winchester, [winchest@uk.ibm.com](mailto:winchest@uk.ibm.com)

Vít Gottwald, [vit.gottwald@gmail.com](mailto:vit.gottwald@gmail.com)

Mark Wilson, [markw@planetmainframe.com](mailto:markw@planetmainframe.com)

Henri Kuiper, [henrikuiper@zdevops.com](mailto:henrikuiper@zdevops.com)

Ed Jaffe, [edjaffe@phoenixsoftware.com](mailto:edjaffe@phoenixsoftware.com)



SHARE  
Orlando, FL  
Winter 2026





Pimp my USS  
(Joe Winchester)

# Who knew curling was so exciting ?

- Curl allows you to test REST APIs from your PC terminal

joe — \* Claude Code — -zsh — 84x23

```
joe@joes-mbp ~ % curl https://tv5009.pok.stglabs.ibm.com:443/zosmf/info
```

# Let's zoom in on that curl command

- Adding `-vvv` or `-vvI` shows handshake, key verification, ciphers chosen

```
joe@joes-mbp ~ % curl https://tvt5009.pok.stglabs.ibm.com:443/zosmf/info -H "X-CSRF-ZOSMF-HEADER:X"
{"zos_version":"04.28.00","zosmf_port":"443","zosmf_version":"28","zosmf_hostname":"TVT5009.pok.stglabs.ibm.com","plugins":[{"pluginVersion":"HSMA250;PH64678;2025-03-22T05:02:52","pluginDefaultName":"z\OS Operator Consoles","pluginStatus":"ACTIVE"}, {"pluginVersion":"HSMA250;ph47651;2022-10-21T09:29:35","pluginDefaultName":"Variables","pluginStatus":"ACTIVE"}, {"pluginVersion":"HSMA257;PH61743;2024-08-02T04:40:10","pluginDefaultName":"Workflow","pluginStatus":"ACTIVE"}, {"pluginVersion":"HSMA250;PH39605;2021-12-17T15:01:24","pluginDefaultName":"Import Manager","pluginStatus":"ACTIVE"}, {"pluginVersion":"HSMA250;PH53551;2023-06-26T15:57:10","pluginDefaultName":"Cloud Provisioning","pluginStatus":"ACTIVE"}, {"pluginVersion":"HSMA250;PH61589;2024-06-20T06:42:36","pluginDefaultName":"Security Configuration Assistant","pluginStatus":"ACTIVE"}],"zosmf_saf_realm":"SAFRealm","zosmf_full_version":"28.0","api_version":"1"}%
joe@joes-mbp ~ %
```

# Power up SSH

- Ssh userID@Ipaddress with a password

joe — ssh winchj@tvt5009.pok.stglabs.ibm.com — 80x29

```
joe@Joes-MacBook-Pro ~ % ssh winchj@tvt5009.pok.stglabs.ibm.com  
winchj@tvt5009.pok.stglabs.ibm.com's password:  
WINCHJ:/u/winchj>
```

- Create a private and public key pair so that the password isn't needed to get an SSH session started

```
joe@joes-mbp ~ % ssh winchj@tvt5009.pok.stglabs.ibm.com  
WINCHJ:/u/winchj>
```

# Command `ssh-keygen` creates the private and public key pair

- `~/.ssh` contains private `id_ed25519` and public `id_ed25519.pub` public key

```
joe@joes-mbp ~/.ssh % pwd
/Users/joe/.ssh
joe@joes-mbp ~/.ssh % ls
config          known_hosts     known_hosts.old
joe@joes-mbp ~/.ssh % ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (/Users/joe/.ssh/id_ed25519):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /Users/joe/.ssh/id_ed25519
Your public key has been saved in /Users/joe/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:LoYG3gJV5D38yIKfg7RGLD207ngmRHwnjUlvZsy7nUU joe@joes-mbp.hursley.uk.ibm.com
The key's randomart image is:
+--[ED25519 256]--+
|    .o             |
|    + o            |
| . + O +           |
| B B @ + E         |
| + @ B + S         |
| O B = . .         |
| . B B = +         |
| .+oo + +          |
| .+                |
+-----[SHA256]-----+
joe@joes-mbp ~/.ssh % ls
config          id_ed25519      id_ed25519.pub  known_hosts     known_hosts.old
joe@joes-mbp ~/.ssh %
```

# Move the public key file from PC to USS ~/.ssh/

- Copy the public key file contents to the clipboard

```
.ssh — zsh — 83x38
[joe@Joes-MacBook-Pro .ssh % cat id_ed25519.pub
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIL8QrHAXJECXL3jm2zOzw9U8YwxH9mCc0vxLVfZHczUc jo
e@joes-mbp.hursley.uk.ibm.com
[joe@Joes-MacBook-Pro .ssh % cat id_ed25519.pub | pbcopy
[joe@Joes-MacBook-Pro .ssh %
```

- SSH (using your password) and open ~/.ssh/authorized\_keys

```
[joe@Joes-MacBook-Pro .ssh % ssh winchj@tvt5009.pok.stglabs.ibm.com
winchj@tvt5009.pok.stglabs.ibm.com's password:
WINCHJ:/u/winchj>cd .ssh
WINCHJ:/u/winchj/.ssh>touch authorized_keys
WINCHJ:/u/winchj/.ssh>echo ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIL8QrHAXJECXL3jm2zOz
w9U8YwxH9mCc0vxLVfZHczUc joe@joes-mbp.hursley.uk.ibm.com >> authorized_keys
WINCHJ:/u/winchj/.ssh>exit
Connection to tvt5009.pok.stglabs.ibm.com closed.
[joe@Joes-MacBook-Pro .ssh % ssh winchj@tvt5009.pok.stglabs.ibm.com
WINCHJ:/u/winchj>
```

The handshake is now authenticated with instead of password

# -vvv is your new best friend for diagnosis and explanation

- `ssh userID@hostIP -vvv`

```
.ssh — ssh winchj@tvt5009.pok.stglabs.ibm.com -vvv — 83x38
[joe@Joes-MacBook-Pro .ssh % ssh winchj@tvt5009.pok.stglabs.ibm.com -vvv
debug1: OpenSSH_10.0p2, LibreSSL 3.3.6
debug3: Running on Darwin 25.2.0 Darwin Kernel Version 25.2.0: Tue Nov 18 21:09:40
PST 2025; root:xnu-12377.61.12~1/RELEASE_ARM64_T6000 arm64
debug3: Started with: ssh winchj@tvt5009.pok.stglabs.ibm.com -vvv
```

```
debug1: Offering public key: /Users/joe/.ssh/id_ed25519 ED25519 SHA256:LoYG3gJV5D38
yIKfg7RGLD207ngmRHwnjUlvZsy7nUU agent
debug3: send packet: type 50
debug2: we sent a publickey packet, wait for reply
debug3: receive packet: type 51
debug1: Authentications that can continue: publickey,password
debug1: Trying private key: /Users/joe/.ssh/id_rsa
debug3: no such identity: /Users/joe/.ssh/id_rsa: No such file or directory
debug1: Trying private key: /Users/joe/.ssh/id_ecdsa
debug3: no such identity: /Users/joe/.ssh/id_ecdsa: No such file or directory
debug1: Trying private key: /Users/joe/.ssh/id_ecdsa_sk
debug3: no such identity: /Users/joe/.ssh/id_ecdsa_sk: No such file or directory
debug1: Trying private key: /Users/joe/.ssh/id_ed25519_sk
debug3: no such identity: /Users/joe/.ssh/id_ed25519_sk: No such file or directory
debug1: Trying private key: /Users/joe/.ssh/id_xmss
debug3: no such identity: /Users/joe/.ssh/id_xmss: No such file or directory
debug2: we did not send a packet, disable method
debug3: authmethod_lookup password
debug3: remaining preferred: ,password
debug3: authmethod_is_enabled password
debug1: Next authentication method: password
winchj@tvt5009.pok.stglabs.ibm.com's password: ?
```

```
.ssh — ssh winchj@tvt5009.pok.stglabs.ibm.com -vvv — 83x38
debug1: get_agent_identities: agent returned 1 keys
debug1: Will attempt key: /Users/joe/.ssh/id_ed25519 ED25519 SHA256:LoYG3gJV5D38yIK
fg7RGLD207ngmRHwnjUlvZsy7nUU agent
debug1: Will attempt key: /Users/joe/.ssh/id_rsa
debug1: Will attempt key: /Users/joe/.ssh/id_ecdsa
debug1: Will attempt key: /Users/joe/.ssh/id_ecdsa_sk
debug1: Will attempt key: /Users/joe/.ssh/id_ed25519_sk
debug1: Will attempt key: /Users/joe/.ssh/id_xmss
debug2: pubkey_prepare: done
debug1: Offering public key: /Users/joe/.ssh/id_ed25519 ED25519 SHA256:LoYG3gJV5D38
yIKfg7RGLD207ngmRHwnjUlvZsy7nUU agent
debug3: send packet: type 50
debug2: we sent a publickey packet, wait for reply
debug3: receive packet: type 60
debug1: Server accepts key: /Users/joe/.ssh/id_ed25519 ED25519 SHA256:LoYG3gJV5D38y
IKfg7RGLD207ngmRHwnjUlvZsy7nUU agent
debug3: sign_and_send_pubkey: using publickey with ED25519 SHA256:LoYG3gJV5D38yIKfg
7RGLD207ngmRHwnjUlvZsy7nUU
debug3: sign_and_send_pubkey: signing using ssh-ed25519 SHA256:LoYG3gJV5D38yIKfg7R
GLD207ngmRHwnjUlvZsy7nUU
```

# Alias the user and host name with a config entry

- The `~/.ssh.config` file contains connection details

```
.ssh — ssh 5009 — 83x38
[joe@Joes-MacBook-Pro .ssh % ls
config                id_ed25519.pub        known_hosts copy
id_ed25519            known_hosts            known_hosts.old
[joe@Joes-MacBook-Pro .ssh % cat config
Host github.com
    AddKeysToAgent yes
    UseKeychain yes
    IdentityFile ~/.ssh/id_ed25519
Host 5009
    HostName tv5009.pok.stglabs.ibm.com
    User winchj
[joe@Joes-MacBook-Pro .ssh % ssh 5009
WINCHJ:/u/winchj>
```

- Also can specify port, and LOTS of other parms

# Ssh -G is your new best friend for debug and diagnosis

- And working out all the things you can override in your config entry !

• • • .ssh — ssh 5009 -vvv — 91x38

```
joe@Joes-MacBook-Pro .ssh % ssh -G 5009
host 5009
user winchj
hostname tv5009.pok.stglabs.ibm.com
port 22
addressfamily any
batchmode no
canonicalizefallbacklocal yes
canonicalizehostname false
checkhostip no
compression no
controlmaster false
enablesshkeysign no
clearallforwardings no
exitonforwardfailure no
fingerprinthash SHA256
forwardx11 no
forwardx11trusted no
gatewayports no
gssapiauthentication no
gssapidelegatecredentials no
hashknownhosts no
hostbasedauthentication no
identitiesonly no
kbdinteractiveauthentication yes
nohostauthenticationforlocalhost no
nohostauthenticationforproxycmd no
passwordauthentication yes
permitlocalcommand no
proxyusefdpass no
pubkeyauthentication true
requesttty auto
sessiontype default
```

• • • .ssh — ssh 5009 -vvv — 91x38

```
sessiontype default
stdinnul no
forkafterauthentication no
streamlocalbindunlink no
stricthostkeychecking ask
tcpkeepalive yes
tunnel false
verifyhostkeydns false
visualhostkey no
updatehostkeys true
enableescapecommandline no
applemultipath no
canonicalizemaxdots 1
connectionattempts 1
forwardx11timeout 1200
numberofpasswordprompts 3
serveralivecountmax 3
serveraliveinterval 0
requiredrsasize 1024
obscurekeystroketiming yes
ciphers chacha20-poly1305@openssh.com,aes128-ctr,aes192-ctr,aes256-ctr,
-cert-v01@openssh.com,rsa-sha2-256-cert-v01@openssh.com,ssh-ed25519,ecdsa-sha2-nistp384,ecdsa-sha2-nistp521,sk-ssh-ed25519@openssh.com,sk-ecdsa-sha2-nistp384@openssh.com,rsa-sha2-512,rsa-sha2-256
xauthlocation /usr/X11R6/bin/xauth
identityfile ~/.ssh/id_rsa
identityfile ~/.ssh/id_ecdsa
identityfile ~/.ssh/id_ecdsa_sk
identityfile ~/.ssh/id_ed25519
identityfile ~/.ssh/id_ed25519_sk
identityfile ~/.ssh/id_xmss
canonicaldomains none
globalknownhostsfile /etc/ssh/ssh_known_hosts /etc/ssh/ssh_known_hosts2
userknownhostsfile /Users/joe/.ssh/known_hosts /Users/joe/.ssh/known_hosts2
sendenv LANG
sendenv LC_*
logverbose none
channeltimeout none
permitremoteopen any
addkeystoagent false
forwardagent no
connecttimeout none
tunneldevice any:any
canonicalizePermittedcnames none
controlpersist no
escapechar ~
ipqos af21 cs1
rekeylimit 0
streamlocalbindmask 0177
syslogfacility USER
```

# This shell is looking a little old (circa 1989)

- github.com/zopencommunity

- to the rescue !  
300+ ports of  
open source  
tools to USS

- 9 of these are  
supported by  
IBM as part of  
IBM Open  
Enterprise  
Foundation

## Installing zopen package manager

Make sure that auto-conversion is enabled by checking the environment variables `_BPXK_AUTOCVT` and `_CEE_RUNOPTS`. If not set please run

- `export _BPXK_AUTOCVT="ON"`
- `export _CEE_RUNOPTS="FILETAG(AUTOCVT,AUTOTAG)"`

If you have curl and bash on your system, you can use this one liner:

```
bash -c "$(curl -fsSL https://raw.githubusercontent.com/zopencommunity/meta/HEAD/tools/zopen_install.sh)"
```

Otherwise, follow these steps:

- Download the latest [meta pax](#) to your desktop, then upload to z/OS.
  - Note: it is recommended that you use sftp to transfer the pax file from a non-z/OS machine to z/OS. This will ensure that there is no ASCII/EBCDIC conversion.
- On z/OS, expand the pax file: `pax -rf meta-<version>.pax.Z .`
- cd to the unpax'ed directory: `cd meta-<version>`
- Set up the PATH to the `zopen` tool: `cd meta-<version>; . ./env`
- Initialize the `zopen tools` environment: `zopen init`
- Set up your zopen environment by sourcing the zopen-config file `. $ZOPEN_R00TFS/etc/zopen-config`, where `$ZOPEN_R00TFS` is the location to your zopen file system.\*
- Install tools you want with `zopen install <tool>`
- You can now safely remove `meta-<version>.pax.Z` and the `meta-<version>` directory
- Note:** We recommend that you add the line `. $ZOPEN_R00TFS/etc/zopen-config` to your `.profile` startup script. Alternatively, you can use `zopen init --append-to-profile` when setting up your zopen file-system.



Q Type to search

### Getting Started

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[Prerequisites](#)  
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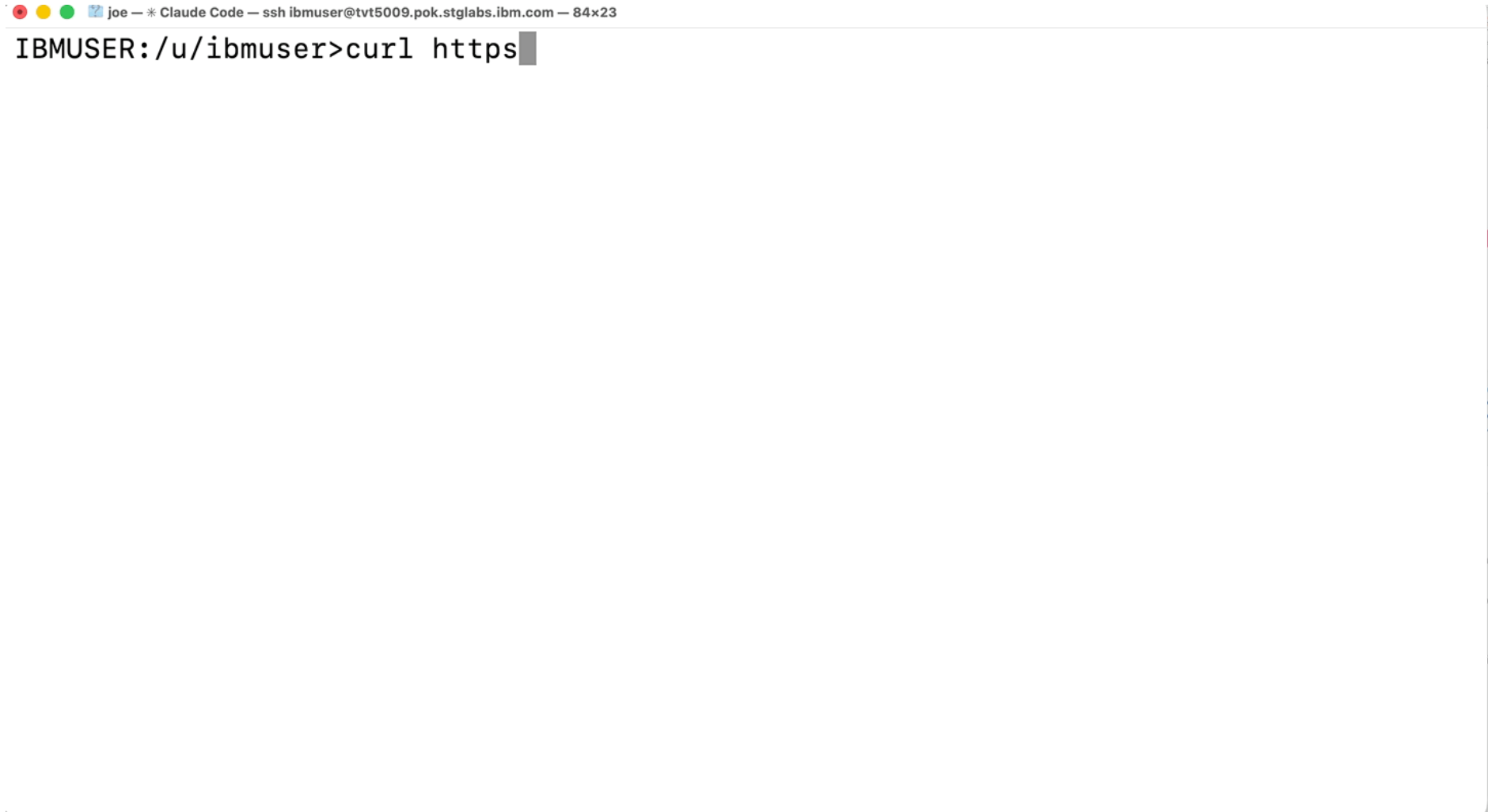
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# Can I curl inside the hogline ?

- Curl on localhost tests intra LPAR REST API and TLS



A terminal window with a title bar that reads "joe — \* Claude Code — ssh ibmuser@tvt5009.pok.stglabs.ibm.com — 84x23". The terminal content shows the prompt "IBMUSER:/u/ibmuser>" followed by the command "curl https" and a cursor.

```
joe — * Claude Code — ssh ibmuser@tvt5009.pok.stglabs.ibm.com — 84x23  
IBMUSER:/u/ibmuser>curl https
```

# Editing YAML files using VI

- Difficult to see what is a comment and what isn't

```
joe — ssh winchj@tvt5009.pok.stglabs.ibm.com — 98x24

setup:
  jcl:
    # When enabled, "zwe install & init" will use job submission for system changes
    # instead of shell commands. A `--dry-run` option is also enabled
    # which allows you to see jobs instead of submitting.
    enable: true
    # Edit to set a header for job cards. Some systems need this, but not all.
    # See `zwe init generate --help` for examples.
    header: ""
  # MVS data set related configurations
  dataset:
    # where Zowe MVS data sets will be installed
    prefix: IBMUSER.ZWEV34
    # PROCLIB where Zowe STCs will be copied over
    proclib: USER.PROCLIB
    # Zowe PARMLIB
    parmlib: IBMUSER.ZWEV34.CUST.PARMLIB
    # Holds Zowe PARMLIB members for plugins
    parmlibMembers:
      # For ZIS plugins
      zis: ZWESIP00
    # JCL library where Zowe will store temporary JCLs during initialization
    jcllib: IBMUSER.ZWEV34.CUST.JCLLIB
```

```
tvt5009.pok.stglab...
File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT /SYSTEM/var/lpp/zowe/v3.4/instance/zowe.yaml Columns 00001 00072
Command ==> Scroll ==> CSR

000038 setup:
000039   jcl:
000040     # When enabled, "zwe install & init" will use job submission for s
000041     # instead of shell commands. A `--dry-run` option is also enabled
000042     # which allows you to see jobs instead of submitting.
000043     enable: true
000044     # Edit to set a header for job cards. Some systems need this, but
000045     # See `zwe init generate --help` for examples.
000046     header: ""
000047   # MVS data set related configurations
000048   dataset:
000049     # where Zowe MVS data sets will be installed
000050     prefix: IBMUSER.ZWEV34
000051     # PROCLIB where Zowe STCs will be copied over
000052     proclib: USER.PROCLIB
000053     # Zowe PARMLIB
000054     parmlib: IBMUSER.ZWEV34.CUST.PARMLIB
000055     # Holds Zowe PARMLIB members for plugins
000056     parmlibMembers:
      *UDLIST DSLIST -SDSF CMD
      ONLINE-TLS 1.2 4,15
```

# Syntax colouring and highlighting

- VIM is powerup for shell. HILITE C for ISPF Edit

```
.ssh — ssh ibmuser@tvt5009.pok.stglabs.ibm.com — 85x24
setup:
jcl:
# When enabled, "zwe install & init" will use job submission for system changes
# instead of shell commands. A `--dry-run` option is also enabled
# which allows you to see jobs instead of submitting.
enable: true
# Edit to set a header for job cards. Some systems need this, but not all.
# See `zwe init generate --help` for examples.
header: ""
# MVS data set related configurations
dataset:
# where Zowe MVS data sets will be installed
prefix: IBMUSER.ZWEV34
# PROCLIB where Zowe STCs will be copied over
proclib: USER.PROCLIB
# Zowe PARMLIB
parmlib: IBMUSER.ZWEV34.CUST.PARMLIB
# Holds Zowe PARMLIB members for plugins
parmlibMembers:
# For ZIS plugins
zis: ZWESIP00
# JCL library where Zowe will store temporary JCLs during initialization
jcllib: IBMUSER.ZWEV34.CUST.JCLLIB
45,1 7%
```

```
tvt5009.pok.stglab...
File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT /SYSTEM/var/lpp/zowe/v3.4/instance/zowe.yaml Columns 00001 00072
Command ==> hilite c Scroll ==> CSR
000038 setup:
000039 jcl:
000040 # When enabled, "zwe install & init" will use job submission for s
000041 # instead of shell commands. A `--dry-run` option is also enabled
000042 # which allows you to see jobs instead of submitting.
000043 enable: true
000044 # Edit to set a header for job cards. Some systems need this, but
000045 # See `zwe init generate --help` for examples.
000046 header: ""
000047 # MVS data set related configurations
000048 dataset:
000049 # where Zowe MVS data sets will be installed
000050 prefix: IBMUSER.ZWEV34
000051 # PROCLIB where Zowe STCs will be copied over
000052 proclib: USER.PROCLIB
000053 # Zowe PARMLIB
000054 parmlib: IBMUSER.ZWEV34.CUST.PARMLIB
000055 # Holds Zowe PARMLIB members for plugins
000056 parmlibMembers:
*UDLIST DSLIST -SDSF CMD
ONLINE-TLS 1.2 4,23
```



Curling datasets  
like it's winter olympics  
(Vit Gottwald)

# Download/Upload datasets via ftp using curl (binary)

## Download PDS member in binary

```
> curl -u username --ssl-reqd -o file.txt \  
    "ftp://mainframe.example.com/'DATA.SET.NAME(MEMBER) '"  
Enter host password for user 'username':  
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current  
                                 Dload  Upload  Total  Spent    Left     Speed  
100 38912      0 38912    0      0  19138      0  --:--:--   0:00:02 --:--:--  19149
```

## Upload PDS member in binary

```
> curl -u username --ssl-reqd -T file.txt \  
    "ftp://mainframe.example.com/'DATA.SET.NAME(MEMBER) '"  
Enter host password for user 'username':  
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current  
                                 Dload  Upload  Total  Spent    Left     Speed  
100      5      0      0  100      5      0      3  0:00:01  0:00:01 --:--:--      3
```

# Download/Upload datasets via ftp using curl (text - default)

## Download PDS member as text (EBCDIC->ASCII)

```
> curl -B -u username --ssl-reqd -o file.txt \  
    "ftp://mainframe.example.com/'DATA.SET.NAME(MEMBER) '"  
Enter host password for user 'username':  
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current  
                                 Dload  Upload  Total  Spent    Left     Speed  
100 38912      0 38912    0      0  19138      0 --:--:--  0:00:02 --:--:-- 19149
```

## Upload PDS member as text (ASCII->EBCDIC)

```
> curl -B -u username --ssl-reqd -T file.txt \  
    "ftp://mainframe.example.com/'DATA.SET.NAME(MEMBER) '"  
Enter host password for user 'username':  
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current  
                                 Dload  Upload  Total  Spent    Left     Speed  
100      5      0      0 100      5      0      3 0:00:01 0:00:01 --:--:--      3
```

# Download/Upload datasets via ftp using curl (text - encoding)

## Download PDS member as text (IBM-278->ISO8859-1)

```
> curl -B -u username --ssl-reqd -o file.txt \  
  -Q "SITE ENCODING=SBCS" \  
  -Q "SITE SBDATACONN=(IBM-278,ISO8859-1)" \  
  "ftp://mainframe.example.com/'DATA.SET.NAME(MEMBER)'"  
Enter host password for user 'username':  
  % Total      % Received % Xferd  Average Speed   Time    Time     Time  Current  
                                Dload  Upload   Total   Spent    Left   Speed  
100 38912      0 38912    0      0  19138      0 --:--:--  0:00:02 --:--:-- 19149
```

## Upload PDS member as text (ISO8859-1->IBM-278)

```
> curl -B -u username --ssl-reqd -T file.txt \  
  -Q "SITE ENCODING=SBCS" \  
  -Q "SITE SBDATACONN=(IBM-278,ISO8859-1)" \  
  "ftp://mainframe.example.com/'DATA.SET.NAME(MEMBER)'"  
Enter host password for user 'username':  
  % Total      % Received % Xferd  Average Speed   Time    Time     Time  Current  
                                Dload  Upload   Total   Spent    Left   Speed  
100      5      0      0 100      5      0      3 0:00:01 0:00:01 --:--:--      3
```

# Upload datasets via ftp using curl (with allocation)

Here we use

RECFM, LRECL, TRACKS, PRIMARY, SECONDARY  
SITE options to allocate a new dataset

See z/OS Communication Server Quick Reference for  
available SITE options.

Upload to a newly allocated dataset

```
> curl -u username --ssl-reqd -T file.tar \  
-Q "SITE RECFM=FB LRECL=80 TRACKS PRIMARY=10 SECONDARY=10"  
"ftp://mainframe.example.com/'DATA.SET.NAME.TAR'"
```

Enter host password for user 'username':

| % Total | % Received | % Xferd | Average Speed | Time   | Time    | Time    | Current  |       |
|---------|------------|---------|---------------|--------|---------|---------|----------|-------|
|         |            |         | Dload         | Upload | Total   | Spent   | Left     | Speed |
| 100     | 5          | 0       | 0             | 3      | 0:00:01 | 0:00:01 | --:--:-- | 3     |

# Acknowledgments Both Knowing and Unknowing

---

- Slavomír Kučera (Broadcom)



# SSH: Tokyo Drift (Vit Gottwald)

# Upload your ssh key with a single command

Following Joe's example above

*Upload public key*

associated with private key `~/.ssh/id_ed25519`  
to "host"

host can be

- name defined in `~/.ssh/conf` (e.g. Joe's 5009)
- domain name
- ip address

```
> ssh-copy-id -i ~/.ssh/id_ed25519 host
```

# Multiplex your ssh session



SSH allows multiplexing multiple sessions over one connection

## Pros

- login once
- run as many sessions and commands as you want
- new commands run instantly

## Cons

- when testing login (e.g. new key or credentials)
  - wait for the persisted connection to expire
  - issue an extra command to close connection

# Multiplex your ssh session (config)

Expanding Joe's configuration of host 5009:

Add `ControlPath` and `ControlPersist` to reuse existing connection for new commands and keep the connection open for 5 minutes since last interaction

```
Host 5009
  HostName ...
  User ...
  IdentityFile ...
  ControlPath ~/.ssh/socket_5009_%C
  ControlPersist 5m
```

To force close a persistent connection without waiting for the timer to expire

```
ssh -O exit host
```



Terminally happy  
(Vit Gottwald)

# Do you like Unix terminal? And does it like you? (OMVS, kitty)

```
-----  
*      Welcome to UNIX System Services      *  
-----  
$ echo $TERM  
dumb  
$ vi .profile  
FSUM9140 Terminal "dumb" has insufficient capabilities for Curses.  
$
```

OMVS

kitty

```
> ssh host  
-----  
*      Welcome to UNIX System Services      *  
-----  
$ echo $TERM  
xterm-kitty  
$ vi .profile  
FSUM6202 Unknown terminal "xterm-kitty".  
$ clear  
clear: FSUM6202 Unknown terminal "xterm-kitty".  
$
```

# Do you like Unix terminal? And does it like you? (xterm-256color)

VS Code, WezTerm, Alacrity

Windows Terminal, macOS Terminal, iTerm2

```
> ssh host
```

```
-----  
*      Welcome to CA11 UNIX System Services      *  
-----
```

```
$ echo $TERM
```

```
xterm-256color
```

```
$ vi .profile
```

```
FSUM6202 Unknown terminal "xterm-256color".
```

```
$ clear
```

```
clear: FSUM6202 Unknown terminal "xterm-256color".
```

```
$
```

# xterm or extreme

## xterm

- The only TERM that somewhat works is xterm
- "export TERM=xterm"
- Does not work 100% but seems to be good enough for most people

Is there a way to set things up so that it works all the time?

- I believe YES ...
- Requires fiddling with terminal database
  - especially if you combine original z/OS UNIX commands with zopen community commands
  - Note: z/OS `tic` does not support specifying terminal database location as an argument, use TERMINFO environment variable
  - Just found a new problem. Will follow-up next time.



# Planet Mainframe zRoadshow Winter 2026 (Mark Wilson)

# Introduction

- Technical Director at Vertali
- Editor of Cheryl Watsons Tuning Letter
- Board member GS-UK
- 3 Daughters
- 2 Grandkids
- 1 Wife
- 23 Motorbikes 😊



Cheryl & Frank..... It's a Privilege and an Honour!



# Why Am I Here?



Honest, It Wasn't Me!!



Phone Call at 2AM!



# Honest, It Wasn't Me!!

---

8 Way Production  
Sysplex

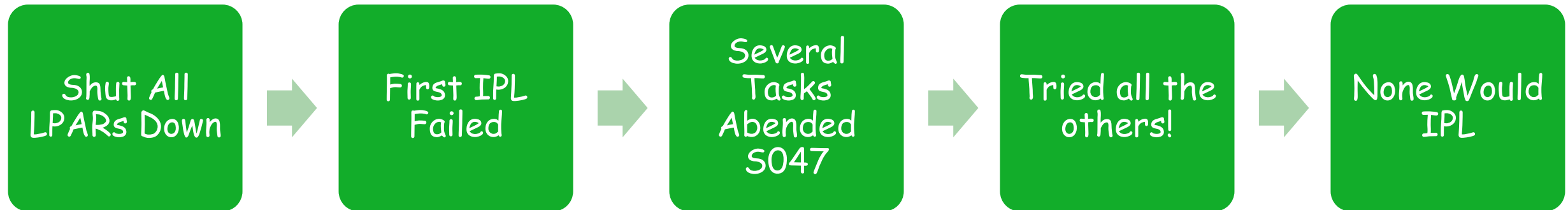
No IPLs in the  
last 7 Months

Massive  
Change  
Program!

Needed to do  
a plex wide  
IPL

# Honest, It Wasn't Me!!

---



# What Had Happened?

---

Their Sysprogs  
had been making  
lots of dynamic  
Changes (APF,  
LPA, Linklst,  
etc)



Several changes  
had not been  
reflected in the  
required  
PROGxx  
members



Ending up with  
several tasks  
not starting,  
due to an S047



One of the  
failing tasks was  
TN3270!

Help!



# Oh No!



They didn't have a  
one pack system

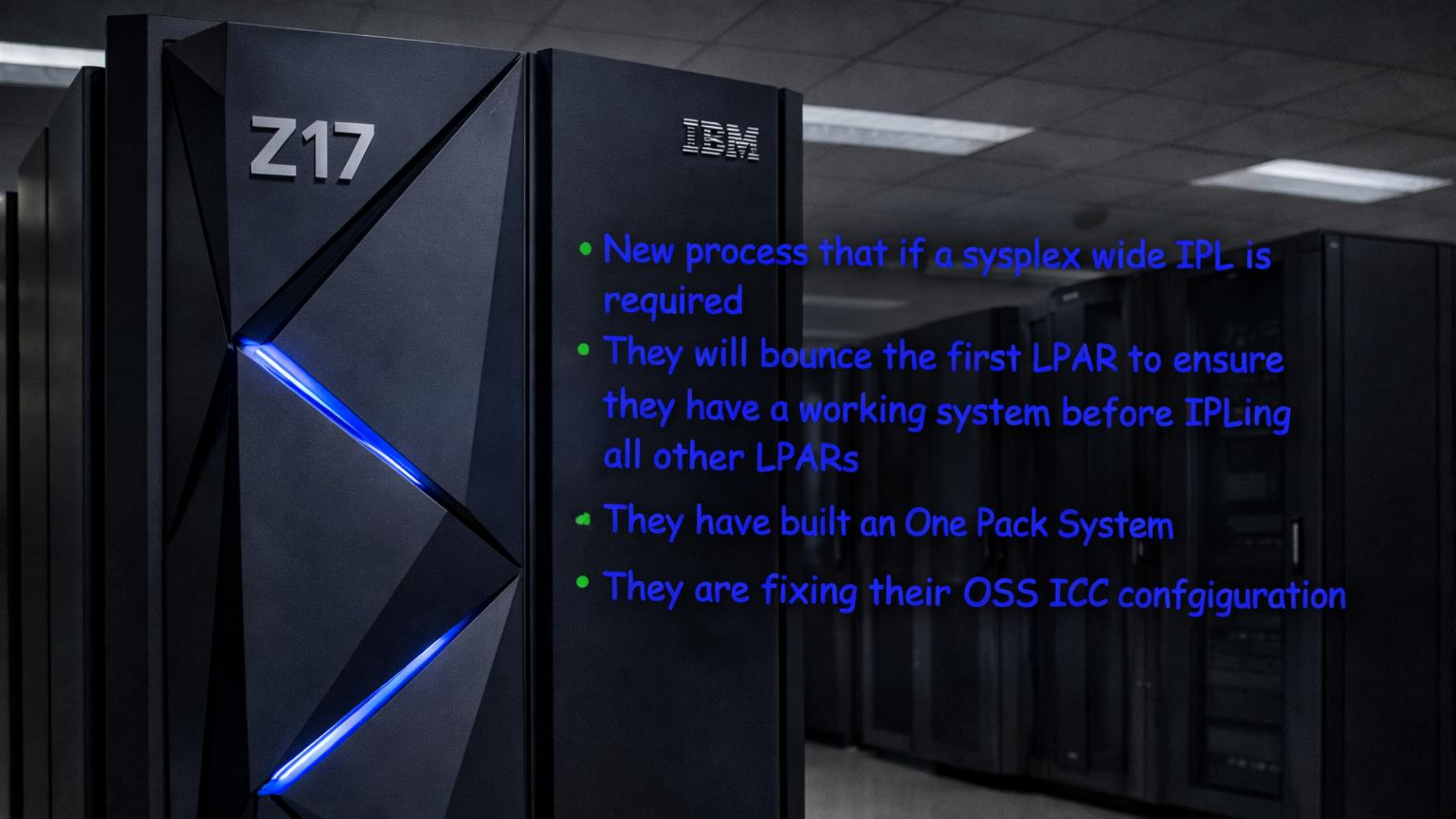
They couldn't get  
their ICC working,  
that's still with them

Went back through  
their recent change  
records to find  
mention of a set of  
LOAD parms, used  
for a test weekend

Thankfully, that  
worked!

It Got Fixed; Thankfully.....



A large, black, industrial-grade server rack stands in a dimly lit data center. The rack is labeled 'Z17' in large, silver, sans-serif font on its upper left side. A bright blue light emanates from a diagonal slot on the front of the rack, creating a sharp, glowing line. The IBM logo is visible on the upper right side of the rack. In the background, other server racks are visible, receding into the distance under the glow of overhead fluorescent lights.

Z17



- New process that if a sysplex wide IPL is required
- They will bounce the first LPAR to ensure they have a working system before IPLing all other LPARs
- They have built an One Pack System
- They are fixing their OSS ICC configuration



Something Serious,  
Something Fun  
(Henri Kuiper)

# Something Serious



- What does your SYSEXEC concatenation look like?
- How are these protected?
- I see this way too many times!!
- And I'd like to take this time to tell you why it matters.
- So you can harden this, if needed
- And spread the word

## Just a piece of /\* REXX \*/

```
/* REXX */
x = outtrap('lu.')
ADDRESS TSO "LU" userid()
x = outtrap('off')
do i = 1 to lu.0
    if substr(lu.i, 2, 11) = "ATTRIBUTES=" then do
        attribs = substr(lu.i, 13, 30)
        if pos('SPECIAL', attribs) > 0 then do
            ADDRESS TSO "ALU <myuser> SPECIAL"
        end
    end
end
leave
end
```

## Time for some fun...



- Something funny for you all
- Host: [mainframe.mainframesociety.com](http://mainframe.mainframesociety.com) Port:2023

## Skip Robinson - SHARE Icon and Long-Time Bit Bucketeer



## Skip Robinson - SHARE Icon and Long-Time Bit Bucketeer

- Skip was born in Twin Falls, Idaho on July 15, 1944 - just 39 days after D-Day, when the Allies invaded Europe at Normandy, France
- His family moved to Compton, CA in 1949, and later to Long Beach
- In High School he took honors classes before they were called that, and was a Straight-A student, with the exception of a B+ in typing
- In 1962, he graduated high school as one of only three students in the nation to receive a full-ride scholarship to Stanford University
- He had a passion for volunteerism, and joined the Peace Corps for two years in 1966. They sent him to Nigeria, where he was nearly killed in a rebel uprising (got away with only the clothes on his back)
- SHARE was the lucky recipient of many decades of his volunteerism
- Skip was a kind, wise, humble, very philosophical individual, with a laid-back, quirky personality and a great sense of humor
- He was well known at SHARE for his ability to "spin a yarn"

## Skip Robinson - SHARE Icon and Long-Time Bit Bucketeer

- Skip served on many SHARE Projects and Committees over the years
- By the time I started attending SHARE in 1990, he was already famous as the JES2 Project Manager, which also included SDSF and RMDS
- He became Co-Manager of the MVS Program with Brian Peterson in 2003 when Bob Shannon joined the SHARE Board (Carl Youngren had done so a couple of years earlier)
- When I became Co-Manager of the MVS Program in August of 2012, I "inherited" Skip as Co-Manager from Sam Knutson, who had done the same from Brian Peterson
- Skip had no desire to join the Board or run for SHARE President
- We often agreed we had the best jobs at SHARE! ☺
- [Tell Program Lunch story]

# Skip Robinson - SHARE Icon and Long-Time Bit Bucketeer

- Skip won several Best Session Awards throughout his tenure
- One of them was for Bit Bucket X'25' (Austin, TX 2009) with Sam Knutson and Yours Truly
- SHARE Best Session Awards used to be something you could frame - now they are digital badges you put on LinkedIn



# Skip Robinson - SHARE Icon and Long-Time Bit Bucketeer

- The Bit Bucket was the brainchild of MVS Program Co-Managers Bob Shannon and Carl Youngren
- Ground-Zero was March 1991 in San Francisco
  - Yes, I was there ☺
- The most-successful "short subjects" session anyone could remember
- Of course, they didn't number them right away
- Started off borrowing title ideas from popular movie sequels.

## LOOK WHAT WE FOUND IN THE BIT BUCKET

SHARE 76  
SESSION O321  
MARCH 1, 1991

BOB SHANNON  
AETNA LIFE AND CASUALTY COMPANY  
AETNA INFORMATION TECHNOLOGY  
151 FARMINGTON AVENUE C14F  
HARTFORD, CT 06156  
(203)273-6891

CARL YOUNGREN  
STATE OF CALIFORNIA  
HEALTH AND WELFARE DATA CENTER  
TECHNOLOGY DIVISION  
1651 ALHAMBRA BLVD  
SACRAMENTO, CA 95816  
(916)739-7660

## BACK TO THE BIT BUCKET

SHARE 77  
Session O341  
August 23, 1991

R.P. Shannon  
Aetna Life and Casualty Company  
Aetna Information Technology  
151 Farmington Avenue C14F  
Hartford, CT 06156  
(203)273-6891  
IBMMAIL(USAETKV4)

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division MS 513  
1651 Alhambra Boulevard  
Sacramento, CA 95816  
(916)739-7660  
IBMMAIL(USHW14PC)

# Skip Robinson - SHARE Icon and Long-Time Bit Bucketeer

## RETURN TO THE BIT BUCKET

SHARE 78  
Session O332  
March 6, 1992

R.P. Shannon  
Aetna Life and Casualty Company  
Aetna Information Technology  
151 Farmington Avenue C14F  
Hartford, CT 06156  
(203)273-6891  
IBMMAIL(USAETKV4)

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division MS 513  
1651 Alhambra Boulevard  
Sacramento, CA 95816  
(916)739-7660  
IBMMAIL(USHW14PC)

Return to the Bit Bucket

1

## Revenge of the Bit Bucket

Session O341  
SHARE 79  
21 August, 1992

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division (MS 513)  
1651 Alhambra Boulevard  
Sacramento, CA 95816  
(916)739-7660  
IBMMAIL(USHW14PC)

R.P. Shannon  
Aetna Life and Casualty Company  
Aetna Information Technology  
151 Farmington Avenue C14F  
Hartford, CT 06156  
(203)273-6891  
IBMMAIL(USAETKV4)

Revenge of the Bit Bucket

1

## The Quintessential Bit Bucket aka Bit Bucket 5

Session O341  
SHARE 80  
San Francisco, California  
5 March, 1993

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division (MS 513)  
1651 Alhambra Boulevard  
Sacramento, CA 95816  
(916)739-7660  
IBMMAIL(USHW14PC)  
cyoungre@hw1.cahwnet.gov

Jim Campbell  
IBM Corporation  
Boeblingen Laboratory  
Dept: 3243 Bldg: 7030-6 130  
Schoenaicher Strasse 220  
7070 Boeblingen 1, Germany

Bob Shannon  
Planet Earth

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The Quintessential Bit Bucket

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## If It's Friday, This Must Be The Bit Bucket aka Bit Bucket 6

Session O341  
SHARE 81  
Washington, D.C.  
20 August, 1993

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division (MS 513)  
1651 Alhambra Boulevard  
Sacramento, CA 95816  
(916)739-7660  
IBMMAIL(USHW14PC)  
cyoungre@hw1.cahwnet.gov

Bob Shannon  
Deluxe Corporation  
1050 W. County Rd. F  
St. Paul, MN 55126  
(612)481-4392  
IBMMAIL(USDELHBL)  
usdelhbl@ibmmail.com

If It's Friday, This Must Be The Bit Bucket

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## Episode 7 Bit Bucket - The Next Generation

Session O341  
SHARE 82  
Anaheim, CA  
25 February, 1993

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division (MS 513)  
1651 Alhambra Boulevard  
Sacramento, CA 95816  
(916)739-7660  
IBMMAIL(USHW14PC)  
cyoungre@hw1.cahwnet.gov

Bob Shannon  
Deluxe Corporation  
1050 W. County Rd. F  
St. Paul, MN 55126  
(612)481-4392  
IBMMAIL(USDELHBL)  
usdelhbl@ibmmail.com

## Episode 8 Bit Bucket - Behind the Eight Ball

Session 4817  
SHARE 83  
Boston, MA  
12 August, 1994

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division (MS 513)  
1651 Alhambra Boulevard  
Sacramento, CA 95816  
(916)739-7660  
IBMMAIL(USHW14PC)  
cyoungre@hw1.cahwnet.gov

Bob Shannon  
Deluxe Corporation  
1050 W. County Road F  
St. Paul, MN 55126  
(612)481-4392  
IBMMAIL(USDELHBL)  
usdelhbl@ibmmail.com

Bit Bucket - Behind the Eight Ball

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## Episode 9 Bit Bucket - The Whole Nine Yards

SHARE 84  
Session 4817  
March 3, 1995  
Los Angeles, CA

Bob Shannon  
Programart Corporation  
124 Mount Auburn Street  
Cambridge, MA 02138  
(617)498-2949  
IBMMAIL(USDELHBL)  
usdelhbl@ibmmail.com

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division (MS 513)  
1651 Alhambra Boulevard  
Sacramento, CA 95816  
(916)739-7660  
IBMMAIL(USHW14PC)  
cyoungre@hw1.cahwnet.gov

Bit Bucket - The Whole Nine Yards

1

## Episode 10 Bit Bucket - Ten SHAREs Together

SHARE 85  
Session 2817  
18 August, 1995  
Orlando, FL

Bob Shannon  
Programart Corporation  
124 Mount Auburn Street  
Cambridge, MA 02138  
(617)498-2949  
IBMMAIL(USSH165D)  
ussh165d@ibmmail.com

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division (MS 513)  
1651 Alhambra Boulevard  
Sacramento, CA 95816  
(916)739-7660  
IBMMAIL(USHW14PC)  
cyoungre@hw1.cahwnet.gov

Bit Bucket - Ten SHAREs Together

1

## Episode 11 Bit Bucket - A Super Tradition

SHARE 86  
Session 2817  
8 March, 1996  
Anaheim, CA

Bob Shannon  
Programart Corporation  
124 Mount Auburn Street  
Cambridge, MA 02138  
(617)498-2949  
IBMMAIL(USSH165D)  
shannon@programart.com

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division (MS 513)  
1651 Alhambra Boulevard  
Sacramento, CA 95816  
(916)739-7660  
IBMMAIL(USHW14PC)  
cyoungre@hw1.cahwnet.gov

Bit Bucket 11 - A Super Tradition

1

## Bit Bucket Episode X'OC'

SHARE 87  
Session 2817  
2 August, 1997  
New Orleans, LA

Bob Shannon  
Programart Corporation  
124 Mount Auburn Street  
Cambridge, MA 02138  
(617)498-2949  
shannon@programart.com

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division (MS 513)  
1651 Alhambra Boulevard  
Sacramento, CA 95816  
(916)739-7660  
IBMMAIL(USHW14PC)  
cyoungre@hw1.cahwnet.gov

Bit Bucket - Episode X'OC'

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# Skip Robinson - SHARE Icon and Long-Time Bit Bucketeer

## *Bit Bucket X'0D - A Baker's Dozen*

R.P. Shannon  
Programart Corporation  
124 Mt. Auburn Street  
Cambridge, MA 02138  
(617)498-2948  
shannon@programart.com

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division  
1651 Alhambra Blvd.  
Sacramento, CA 95816  
(916)739-7660  
cyoungre@hw1.cahwnet.gov  
IBMMAIL(USHW14PC)

SHARE 88  
Session 2817  
San Francisco, CA  
March 7, 1997

*Bit Bucket X'0D'*

1

## *Bit Bucket X'0E'*

R.P. Shannon  
Programart Corporation  
124 Mt. Auburn Street  
Cambridge, MA 02138  
(617)498-2948  
shannon@programart.com

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division  
1651 Alhambra Blvd.  
Sacramento, CA 95816  
(916)739-7660  
cyoungre@hw1.cahwnet.gov  
IBMMAIL(USHW14PC)

SHARE 89  
Session 2817  
Atlanta, GA  
August 15, 1997

*Bit Bucket X'0E'*

1

## *Bit Bucket X'0F'*

R.P. Shannon  
Programart Corporation  
124 Mt. Auburn Street  
Cambridge, MA 02138  
(617)498-2948  
shannon@programart.com

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division  
1651 Alhambra Blvd.  
Sacramento, CA 95816  
(916)739-7660  
cyoungre@hwmil.cahwnet.gov

SHARE 90  
Session 2817  
Anaheim, CA  
February 27, 1998

*Bit Bucket X'0F'*

1

## *Bit Bucket X'10'* *Happy Birthday Sweet Sixteen!*

R.P. Shannon  
Programart Corporation  
124 Mt. Auburn Street  
Cambridge, MA 02138  
(617)498-2948  
shannon@programart.com

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division  
1651 Alhambra Blvd.  
Sacramento, CA 95816  
(916)739-7660  
cyoungre@hwdc.state.ca.us

SHARE 91  
Session 2817  
Washington, DC  
August 21, 1998

*Bit Bucket X'10'*

1

## *Bit Bucket X'11'* *The Search Continues*

R.P. Shannon  
Programart Corporation  
124 Mt. Auburn Street  
Cambridge, MA 02138  
(617)498-2948  
shannon@programart.co  
m

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division  
1651 Alhambra Blvd.  
Sacramento, CA 95816  
(916)739-7668  
cyoungre@hwdc.state.ca.us



SHARE 92  
Session 2817  
San Francisco, CA  
February 26, 1999

*Bit Bucket X'11'*

1

## *Bit Bucket X'12'* *Adios 1900's*

R.P. Shannon  
Programart Corporation  
124 Mt. Auburn Street  
Cambridge, MA 02138  
(617)498-2948  
shannon@programart.com

Carl Youngren  
State of California  
Health and Welfare Data Center  
Technology Division  
1651 Alhambra Blvd.  
Sacramento, CA 95816  
(916)739-7668  
cyoungre@hwdc.state.ca.us



SHARE 93  
Session 2817  
Chicago, IL  
August 27, 1999

*Bit Bucket X'12'*

1

# Skip Robinson - SHARE Icon and Long-Time Bit Bucketeer

## *Bit Bucket X'13' Y2K was a Wimp!*

R.P. Shannon  
InCert Software Corporation  
Building 1400W  
One Kendall Square  
Cambridge, MA 02139  
(617)621-8080  
bshannon@incert.com

Carl Youngren  
State of California  
Health and Human Services  
Data Center  
Technology Division  
1651 Alhambra Blvd.  
Sacramento, CA 95816  
(916)739-7668  
cyoungre@hwdc.state.ca.us



SHARE 94  
Session 2817  
Anaheim, CA  
March 10, 2000

*Bit Bucket X'13'*



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## *Bit Bucket X'14' Banned in Boston*

R.P. Shannon  
InCert Software  
Corporation  
Building 1400W  
One Kendall Square  
Cambridge, MA 02139  
(617)621-8080  
bshannon@incert.com

Carl Youngren  
State of California  
Health and Human Services  
Data Center  
1651 Alhambra Blvd.  
Sacramento, CA 95816  
(916)739-7668  
cyoungre@hwdc.state.ca.us



SHARE 95  
Session 2817  
Boston, Ma  
July 28, 2000

*Bit Bucket X'14'*



1

## *Bit Bucket X'15'*

R.P. Shannon  
John Hancock Financial Services  
200 Berkley Street  
Boston, MA 02117  
(617)572-6033  
bshannon@jhancock.com

Carl Youngren  
State of California  
Health and Human Services Data  
Center  
1651 Alhambra Blvd.  
Sacramento, CA 95816  
(916)739-7668  
cyoungre@hhsdc.ca.gov



SHARE 96  
Session 2817  
Long Beach, CA  
March 2, 2001

*Bit Bucket X'15'*



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- Bob and Carl won several Best Session Awards and eventually asked SHARE to disqualify them, to give others a chance for recognition
- Their last Bit Bucket was X'1C' August 2004 at SHARE in New York
- Carl was retiring from work at the end of 2004, and neither wanted to continue without the other
- Skip's very first Bit Bucket was X'1D', February 2005 in Anaheim
- I remember it well, because it was my very first Bit Bucket too

# Skip Robinson - SHARE Icon and Long-Time Bit Bucketeer

- Many of Skip's Bit Bucket presentations were real-world war stories: problems, solutions, and lessons learned at SCE
- I don't recall if Skip ever missed presenting a Bit Bucket, but one thing is for sure, he eventually became our undisputed "closer"
- He was such a good presenter that he could deftly expand or contract his presentation as needed, depending on how much time the rest of us left him
- The Bit Bucket traditionally ran unopposed (unlike now), and was always scheduled as the very last session of the conference
- As closer, Skip had the distinct honor of sending everyone off with a final closing message such as, "See You in Pittsburgh!"
- Bit Bucket archives can be found here:  
<https://www.share.org/Education/BitBucket-Archives>

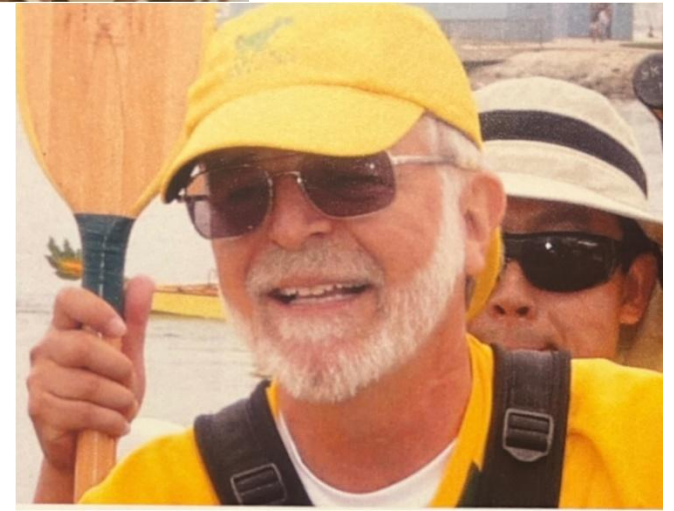
# Skip Robinson - SHARE Icon and Long-Time Bit Bucketeer

- Co-Managers of the MVS Program:
  - Yours Truly
  - Sam Knutson (my predecessor)
  - Brian Peterson (Sam's predecessor)
  - Skip Robinson
- Skip co-managed with each of us pictured
- Bit Bucketeers as well
- Photo taken March 5, 2015 during an audio interview with SHARE



# Skip Robinson - SHARE Icon and Long-Time Bit Bucketeer

- His daughter Corie's announcement of his passing on Facebook:  
<https://www.facebook.com/share/p/1B1p2w3tTH/?mibextid=wwXIfr>
- Recording of the service at Forest Lawn in Cypress (I was there):  
<https://streaming.forestlawn.com/c479e786>
- Link to a memorial slideshow with great photos from his life, including at least three from SHARE:  
<https://drive.google.com/file/d/1okme5oB2GoEFdtr54VqwSP-HiIdaeoUT/view?usp=drivesdk>





See You in  
Pittsburgh!