z/OS 2.4 IBM Education Assistant (IEA)

Solution Name: Continuous Delivery Items

Element(s)/Component(s): Multiple components across z/OS

Agenda

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

Trademarks

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

Session Objectives

- z/OS development has been delivering more and more new function via a continuous delivery model.
- This session will provide a brief overview of the these items.

Solution: New default behavior for terminating signals in Language Environment-enabled applications.

- Language Environment-enabled applications can now be rolled back when they are terminated by a POSIX-defined terminating signal and there are no registered signal handlers.

Audience:

- Application Developers.

Wow:

- This enables resource managers, RRS, or Context Services exits to no longer commit in-progress updates.

Dependency:

- Both DB2 (PI94412) and MQ (PH08231) made appropriate changes.

Announcement Information

- **Announced:** March 5, 2019.

APAR	z/OS Releases	Available
PH01571 PI93384	Provided on z/OS V2.2 and V2.3	December 2018

Solution: Serviceability enhancement to Language Environment Dumps

- Enhancements have been made to the Language Environment IPCS LEDATA Verbexit and CEEDUMP, to show full service level information in the traceback section, when users use the SERVICE compiler option to specify the service level string of COBOL, PL/I, or XL C/C++ programs.

Audience:

- Application Developers

Wow:

- Improves serviceability of high-level language programs.

Announcement Information

- **Announced:** November 13, 2018

APAR	z/OS Releases	Available
PI91583	Provided on z/OS V2.3	May 2018

Solution: Upgraded X-Windows virtual framebuffer

- An upgraded version of X-Windows virtual framebuffer (Xvfb) has been provided.
- Formerly included in the IBM Ported Tools for z/OS product, the PTFs for this APAR deliver Xvfb X11R6.9 and is now included as part of the z/OS.

Audience:

- Application Developers

Wow:

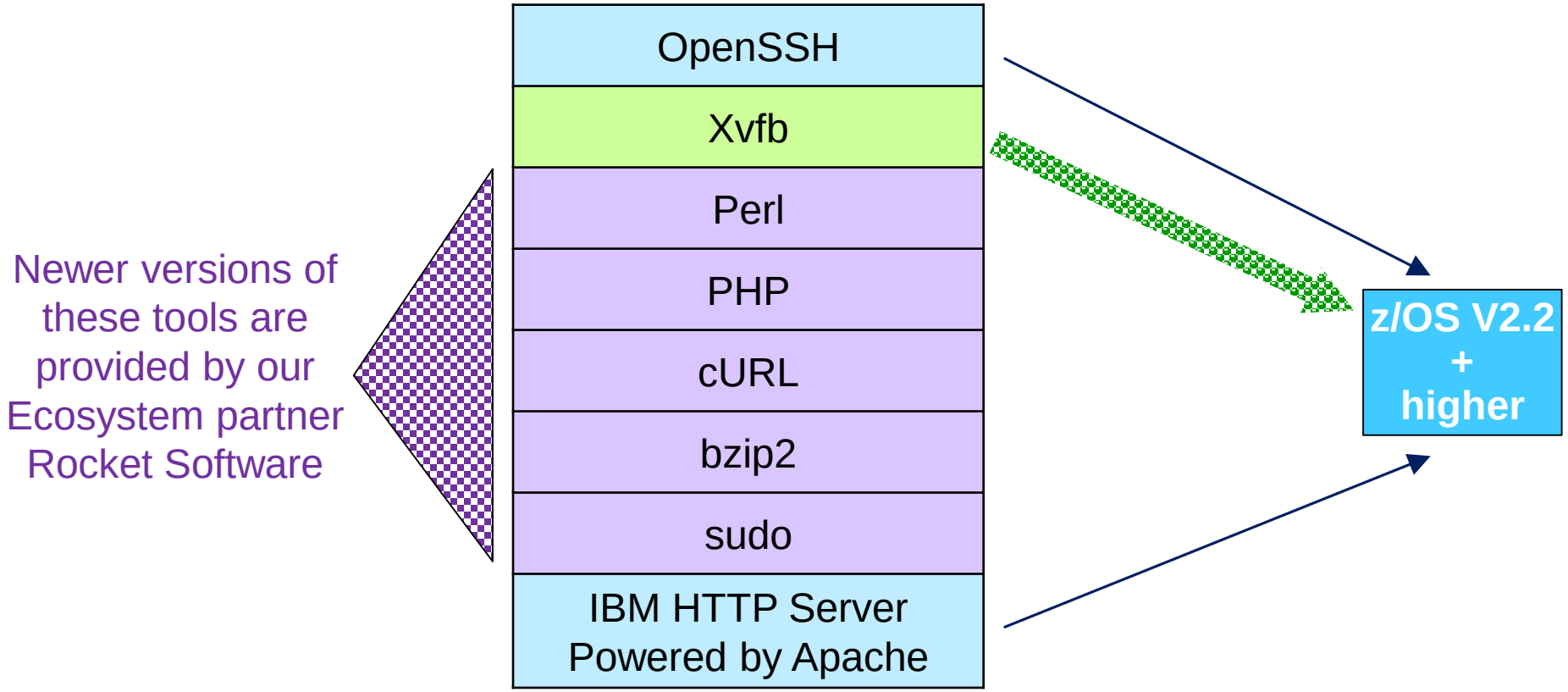
- Xvfb is an in-memory display server and enables a client to run graphical applications without a physical display device. It is especially useful when testing an X-Windows server without using real hardware.

Announcement Information

- **Announced:** November 13, 2018

APAR	z/OS Releases	Available
OA55855	Provided on z/OS V2.2 and V2.3	October 2018

Disposition of IBM Ported Tools for z/OS



End of Support for IBM Ported for z/OS (5655-M23) is September 30, 2018.

Solution: Support for Compressed Data Sets by NFS Server

- New function in the z/OS NFS Server allows for the sharing of compressed data sets with other platforms.

Audience:

- Application Developers

Wow:

- The use of compressed data sets requires no configuration changes to the NFS Server and is transparent to end users.

Announcement Information

- **Announced:** November 13, 2018

APAR	z/OS Releases	Available
OA54846	Provided on z/OS V2.2 and V2.3	August 2018

Solution: NFS Server Unicode support

- Enables text conversion from UTF-8 to single-byte EBCDIC (and vice versa) when sharing z/OS data with other platforms.
- Specify UTF-8 conversion on the mount statement for MVS data sets or z/OS UNIX file systems.
- Use of the new UTF-8 support requires the NFS version 4 protocol.

Audience:

- Application Developers

Wow:

- Besides ASCII ⇔ EBCDIC conversion, we have the ability for UTF-8 ⇔ EBCDIC conversion when sharing text files between platforms.

Announcement Information

- **Announced:** August 7, 2018

APAR	z/OS Releases	Available
OA51979	Provided on z/OS V2.2	April 2018
OA55124	Provided on z/OS V2.3	April 2018

Solution: NFS Server Encryption support

- This support complements the policy-enabled enhanced data protection for z/OS data sets called ***Pervasive Encryption.***

Audience:

- Application Developers

Wow:

- This enhancement gives remote users access to data in encrypted sequential extended format data sets.

Announcement Information

- **Announced:** March 6, 2018

APAR	z/OS Releases	Available
OA53223	Provided on z/OS V2.2 and V2.3	December 2017

Solution: Enhancement to ***iconv*** utility

- New **-B** option allows for the removal of the BOM (Byte-Oriented Mark) from the beginning of Unicode (UTF-8, UTF-16, and UTF-32) byte streams

Audience:

- Application Developers

Wow:

- Useful when converting data from Unicode to other CCSIDs, by eliminating the substitution character that would otherwise be placed at the beginning of the output buffer.

Announcement Information

- **Announced:** November 13, 2018

APAR	z/OS Releases	Available
OA54559	Provided on z/OS V2.2 and V2.3	July 2018

Solution: z/OS UNIX **cp** utility to preserve ALIAS information

- When using **cp** utility to copy MVS data sets to z/OS UNIX directories (or vice versa) ALIAS information will be preserved.
- New **-I** option must be used with existing -X option to get this behavior

Audience:

- Application Developers

Wow:

- Very useful when transporting binaries across environments.

Announcement Information

- **Announced:** August 7, 2018

APAR	z/OS Releases	Available
OA55299	Provided on z/OS V2.2 and V2.3	July 2018

Solution: Show extended processing information in **zlsof** utility of z/OS UNIX System Services

- zlsof (list open files)
- Show extended processing information:
  - start time, elapsed time, CPU time
  - thread number
  - state of the process read-write open mode other related information
- In addition, the zlsof utility can generate output in JSON (JavaScript Object Notation) format

Separate presentation included in T3 material

Audience:

- System Programmers

Wow:

- This new extended information enables customers to get a more complete picture of file usage by z/OS UNIX processes currently active on the system.
- Enables customers to parse and build reports .

Announcement Information

- **Announced:** August 7, 2018

APAR	z/OS Releases	Available
OA55246	Provided on z/OS V2.2 and V2.3	June 2018

Solution: OpenSSH CPACF support

- z/OS OpenSSH will directly use the Central Processor Assist for Cryptographic Functions (CPACF) instructions, if present, to implement symmetric ciphers and MAC algorithms, instead of invoking the Integrated Cryptographic Service Facility (ICSF), which also uses the CPACF instructions.

Audience:

- Application Developers

Wow:

- Circumventing ICSF and invoking CPACF instructions directly provides improved performance.
- Customers that still want to meet the FIPS 140-2 specification with IBM z/OS OpenSSH will need to continue to select using ICSF.

Announcement Information

- **Announced:** March 6, 2018

APAR	z/OS Releases	Available
OA54299	Provided on z/OS V2.2 and V2.3	December 2017

Solution: True random number generation for z/OS UNIX

- Generate true random numbers via /dev/random when running on IBM z14 family of servers, without needing to set up the Integrated Cryptographic Service Facility (ICSF). .

Audience:

- Application Developers

Separate presentation included in T3 material

Wow:

- ICSF setup is no longer required to read from /dev/random or /dev/urandom if running on z14 hardware.
- Users of OpenSSH, who use **sftp** and **ssh**, no longer need to set up ICSF, especially when using the function in APAR OA54299.

Announcement Information

- **Announced:** August 7, 2018

APAR	z/OS Releases	Available
OA55437	Provided on z/OS V2.2 and V2.3	June 2018

Solution: RMF support to collect IBM zHyperLink related performance measurements

- In SMF 74 subtype 1 - Device Activity records
- In SMF 74 subtype 5 - Cache Activity records
- In SMF 74 subtype 8 - ESS Activity records
- In SMF 74 subtype 9 - PCIE Activity records.
- These measurements are reported in the RMF Postprocessor Device, Cache, ESS, and PCIE Activity reports, respectively, in the RMF Monitor III PCIE Activity report.

Audience:

- System Programmers

Announcement Information

- **Announced:** March 6, 2018

APAR	z/OS Releases	Available
OA53411	Provided on z/OS V2.2 and V2.3	February 2018
OA50755 OA53411	Provided on z/OS V2.2	February 2018

Solution: Enhancements to IBM Cloud Provisioning and Management for z/OS

- Simplify security setup for cloud provisioning. A new sample IZUPRSEC is provided to configure security for cloud provisioning and management plug-in.
- Consume REST APIs described in the Swagger specification.

Audience:

- Middleware System Programmers / Cloud Architects

Wow:

- Improves the z/OS platform's cloud capabilities.
- After this initial configuration, middleware system programmers can simply create and test-run middleware templates without requiring any intervention by z/OS system programmers and security administrators.
- Cloud architects can easily view the constructs of the Cloud Provisioning and Management REST APIs through the use of Swagger so z/OS can be incorporated into their cloud offerings.

Announcement Information

- **Announced:** May 15, 2018

APAR	z/OS Releases	Available
PI96931	Provided on z/OS V2.2 and V2.3	June 2018

Solution: z/OS System Logger enabled the use of IBM zHyperWrite data replication

Audience:

- System Programmers

Wow:

- Can improve logging throughput when log stream staging data sets are mirrored using the IBM HyperWrite data replication for exploiters of DASDONLY type log streams.
- The system logger processing to offload log data from interim storage to offload data sets for both DASDONLY and Coupling Facility structure-based log streams is also improved.

Announcement Information

- **Announced:** August 7, 2018

APAR	z/OS Releases	Available
OA54814	Provided on z/OS V2.2 and V2.3	September 2018

Solution: z/OS Capacity Provisioning Manager is enhanced with new commands to set and report LPAR weights

- The new commands are SET LPARWEIGHT and REPORT LPARWEIGHT.
- LPAR weight information has been added to the REPORT CONFIGURATION output for observed systems.

Audience:

- System Programmers

Wow:

- You can now set and report on LPAR weights, without accessing HMC console.

Announcement Information

- **Announced:** August 7, 2018

APAR	z/OS Releases	Available
OA55039	Provided on z/OS V2.2 and V2.3	September 2018

Solution: Passphrase support for z/OS MCS operator console

- z/OS MCS operator console enhanced to support the use of passphrases to authenticate a user ID when logging on as a z/OS operator.
- This will supplement the existing support for standard (maximum of eight-characters) passwords (the default).
- To enable a console passphrase, the security administrator must enable this feature. When the security profile MVS.CONSOLE.PASSWORDPHRASE.CHECK is defined in the OPERCMDS class in the security product.

Audience:

- System Programmers

Wow:

- Can improve system security and enhance usability because a console passphrase can provide an exponentially greater number of possible combinations of characters than a standard password, the use of console passphrases.

Announcement Information

- **Announced:** August 7, 2018

APAR	z/OS Releases	Available
OA54790	Provided on z/OS V2.2 and V2.3	September 2018

Solution: Enhancement to program management binder

- New option called STRIPSEC=IGNEXP (Ignore Export) will remove unreferenced sections (CSECTs) even though they are in the exported symbols table.

Audience:

- Application Developers

Wow:

- Has the potential of reducing the size of the program object or load module.

Announcement Information

- **Announced:** November 13, 2018

APAR	z/OS Releases	Available
OA53262	Provided on z/OS V2.2 and V2.3	February 2018

Solution: Unicode Services support for composition characters on both sides of a user-defined conversion table.

- A user can now define a conversion table in Unicode Services with composition characters on both sides (the from and the to sides) of a user-defined conversion table.
- A new utility called CUNMITG4 has been provided to create the binary files associated with such a user-defined conversion table.

Audience:

- Application Developers

Wow:

- In our highly globalized world, this support can help clients to implement solutions that meet certain regional IT standards associated with surnames and first names.

Announcement Information

- **Announced:** March 5, 2019

APAR	z/OS Releases	Available
OA54426	Provided on z/OS V2.2 and V2.3	January 2019

Background

- On May 1, 2019, Japan is scheduled to have a new emperor.
  - Emperor Akihito plans to abdicate his throne on April 30, 2019 and Crown Prince Naruhito is in line for succession.
- With each new emperor a new era name is defined.
- The Japanese government will announce the name of Japan's next Imperial era on April 1, 2019 for use by Japanese calendaring schemes.
- In addition, each era name is assigned a ligature (symbol).
  - Ligature - where two or more graphemes or letters are joined as a single glyph.

Japanese era name
https://en.wikipedia.org/wiki/Japanese_era_name

The Japanese era name (gengō, "year name"), also known as nengō, is the first of the two elements that identify years in the Japanese era calendar scheme. The second element, a number, counts the years since the era began; as in many other systems, there is no year zero. For example, the first year of the Heisei period was 1989 ACE, or "Heisei 1", so the year 2018 ACE in this scheme is "Heisei 30".

Background *(cont.)*

First date of Japanese Era	Era name	Era name in IBM Japanese DBCS code	Valid year values
1868-09-08	Meiji	X'0E45A645840F'	01 - 45
1912-07-30	Taisho	X'0E455B45770F'	01 - 15
1926-12-25	Showa	X'0E45B3457A0F'	01 - 64
1989-01-08	Heisei	X'0E458D45BA0F'	01 - 31
2019-05-01	*Reiwa*	*new DBCS code*	01 - 999 (01 = 2019)

- This is a "once-in-a-generation change" and is being treated as a "Y2K-like" issue.
  - These changes will be provided on z/OS V2.1, V2.2 and V2.3, even though z/OS V2.1 will be out of support at this time.

Identified areas of z/OS

- PTF for APAR OA56512 which provides support for the new ligature in z/OS Unicode Services.
- PTFs for APARs PH05611 and PH08908 which provides support for the new Japanese era name and ligature in Language Environment.
- Web deliverable for the z/OS Font Collection which provides support for the new ligature in over 40 WorldType fonts. This support will be made available by April 26, 2019 from: http://www.ibm.com/systems/z/os/zos/downloads/

- **FIXCAT**

Category	Description	Keyword
`IBM.Function.Reiwa`	Fixes that enable and support the new Japanese Reiwa era.	`REIWA/K`

Session Summary

- This session provided a brief overview of the many new function IBM delivered as continuous delivery items post-z/OS V2.3 GA.

Appendix

List of z/OS V2.3 Enhancement (quarterly) announcement letters:

- **4Q2017** - https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=an&subtype=ca&appname=gpateam&supplier=897&letternum=ENUS217-536
- **1Q2018** - https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=897/ENUS218-118&infotype=AN&subtype=CA
- **2Q2018** - https://www-01.ibm.com/common/ssi/ShowDoc.wss?docURL=/common/ssi/rep_ca/6/897/ENUS218-236/index.html&request_locale=en
- **3Q2018** - https://www-01.ibm.com/common/ssi/ShowDoc.wss?docURL=/common/ssi/rep_ca/0/897/ENUS218-320/index.html&request_locale=en
- **4Q2018** - https://www-01.ibm.com/common/ssi/ShowDoc.wss?docURL=/common/ssi/rep_ca/2/897/ENUS218-472/index.html&request_locale=en
- **1Q2019** - https://www-01.ibm.com/common/ssi/ShowDoc.wss?docURL=/common/ssi/rep_ca/2/897/ENUS219-122/index.html&request_locale=en