z/VM Platform Update: Ever Onward

Version 6.1

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IBM Z

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Abstract

This session shares the latest information on z/VM. It starts with a high-level tour of the overall continuous delivery strategy and release cadence; and then begins a tour of five value areas and the recent enhancements in each of those areas. You will hear about things such as encrypted paging, greater scalability, and RAS enhancements.

Agenda

- New delivery strategy
  - Two year cadence
  - Continuous delivery
  - Communication

- Preview of z/VM Version 7 Release 1

- Survey of enhancements in various areas
  - Scaling and TCO
  - Managing diverse workloads
  - Security
  - Resiliency and RAS
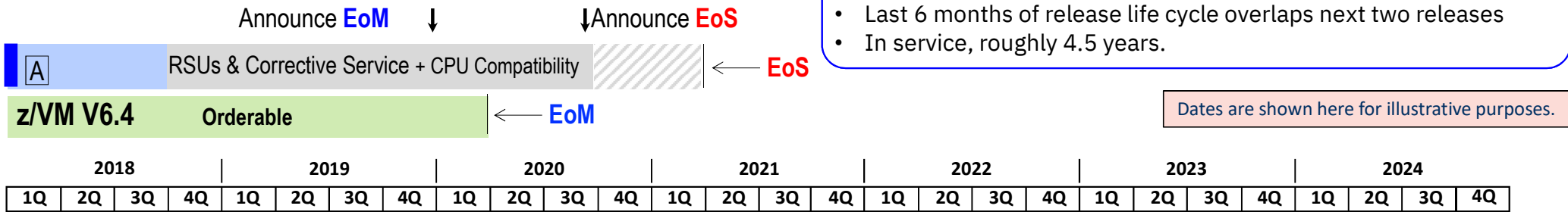 - System Management improvements

- Other Highlights

Release Cadence and Continuous Delivery

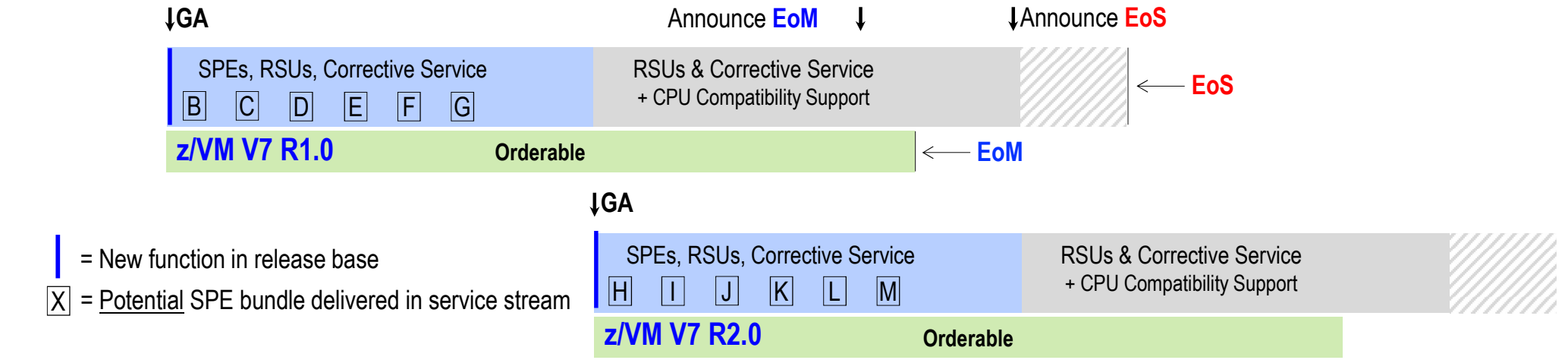# Greater Predictability for Release Schedules and Function

- z/VM is going to a two-year cadence on new releases.
  – Every two years in 3rd quarter of even years
  – Releases remain orderable for approximately 18 months after GA of the next release
  – Releases stay in service for approximately 4.5 years
  – Last 6 months of a release life cycle overlaps with the next two releases
  – Releases will be primarily a roll up of function released in the service stream as Small Programming Enhancements (SPEs)

- Continuous Delivery Strategy
  – Most new function will be delivered as an SPE to the most current release of z/VM
  – Heavy dependence on the sponsor user program
  – A set of SPEs will likely be grouped together and released within a few weeks of each other to help facilitate IBM and client testing
  – Plans for new function will be published on the z/VM home page

z/VM Release Cycle Cadence

- z/VM Release GAs: Every two years in 3rd Quarter of even years
- Releases remain orderable 18 months after GA of next release
- Last 6 months of release life cycle overlaps next two releases
- In service, roughly 4.5 years.

Announce **EoM** ↓   ↓Announce **EoS**

| A | RSUs & Corrective Service + CPU Compatibility | | ← **EoS** |

Dates are shown here for illustrative purposes.

z/VM V6.4   Orderable   ← **EoM**

2018				2019				2020				2021				2022				2023				2024			
1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q

↓GA   Announce **EoM** ↓   ↓Announce **EoS**

| SPEs, RSUs, Corrective Service | RSUs & Corrective Service + CPU Compatibility Support | | ← **EoS** |
| B C D E F G | | | |

z/VM V7 R1.0   Orderable   ← **EoM**

| = New function in release base

X = Potential SPE bundle delivered in service stream

↓GA

| SPEs, RSUs, Corrective Service | RSUs & Corrective Service + CPU Compatibility Support | |
| H I J K L M | | |

z/VM V7 R2.0   Orderable

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.   © 2018 IBM Corporation

z/VM Continuous Delivery Page

- Gives an overview of new function that is under consideration. Allows clients to:
  - Express interest in being a sponsor user for an item.
  - Plan for new support coming out in the future.
  - Understand the value, benefit, and impact of new enhancements.

- http://www.vm.ibm.com/newfunction/

- Subscribe for updates via "Notify me" link on left navigation bar.

z/VM Continuous Delivery Page

- Each item has information as seen in this example.

- The "Target availability" may also be listed as TBD or less granular such as a quarter or month.

- Since this is work in progress, the target availability dates can move multiple times and in different directions.

Encrypted Paging	
Name	Encrypted Paging
Description	Encrypted Paging will improve system security for z/VM 6.4 by exploiting z14 hardware to encrypt guest page data. Ciphering will occur as data moves from active memory onto a paging volume owned by CP (ECKD, SCSI, or native FBA). This will make customer data defensible from attack or breach of volumes, even in cases where a system administrator has unintended access to those volumes.
Status	Available December 11, 2017
Target availability	December 15, 2017
Compatibility	No known incompatibilities.
Enablement	Apply PTFs, re-IPL z/VM, SET ENCRYPT command within CP.
Effect	For the workloads studied, total CPU/tx did not increase more than 5% when compared back to an EP disabled configuration. Compared to a z13, the z14 with EP enabled performed better. As paging rate increases, the total amount of CPU used on EP will increase. Detailed performance report
ISV impact	Some monitor changes are needed. If you have a performance product, please see your vendor.
Linux or hardware interaction	z14 required
Release(s)	z/VM 6.4
Service details	See below for the IBM service information.
APAR	VM65993
PTF	UM35257
RSU	TBD

Navigating Continuous Delivery Page

- Near top of page are two tables with hyperlinks and some summary information
  - SPEs in progress
  - Available SPEs

- A floating navigation triangle will take you back to the top of the page from any where.

SPEs in progress	Target date	Last updated
4TB Main Memory Support *	TBD	May 29, 2018
Centralized Service Management	TBD	
Dump Scalability	September 2018	May 15, 2018
Dynamic Crypto	TBD	February 9, 2018
Dynamic Memory Downgrade *	4th Quarter 2018	May 15, 2018
EAV Paging *	TBD	May 29, 2018
Elliptic Curve Support *	TBD	April 26, 2018
More than 64 Logical Processors *	TBD	May 16, 2018
Multifactor Authentication for z/VM	TBD	April 9, 2018
SSI Greater Than Four	TBD	February 9, 2018
VSwitch Priority Queuing	TBD	February 9, 2018
ZHPM Application *	TBD	March 8, 2018

* Denotes the z/VM team is seeking Sponsor Users. See related SPE for more information.

If you have an ISV product for ESM and/or Directory Management, please see your vendor for appropriate updates.

No Linux or hardware interaction.

z/VM 6.4

CP	RACF	DirMaint
VM65925	VM65931	VM65926
UM35189	UV61339	UV61338
1702		

FTP Client

Firewall Friendly FTP Client

z/VM 7.1

- Preview announce April 10, 2018
  - GA 3rd Quarter 2018
  - New version, primarily to allow for both z/VM 6.4 and 7.1 releases to be orderable simultaneously

- Single System Image and Live Guest Relocation included in the base
  - In z/VM 6.4 was the VMSSI priced feature

- New Architecture Level Set of zEC12, zBC12, or newer processor families

- Includes SPEs shipped for z/VM 6.4, including:
  - Virtual Switch Enhanced Load Balancing, DS8K z-Thin Provisioning, Encrypted Paging, etc.

- Additionally, includes:
  - Dump scalability improvements
  - Foundation work for future SPEs

z/VM Release Status Summary

z/VM Level	GA	End of Service	End of Marketing	Minimum Processor Level	Maximum Processor Level	Security Level
7.1	3Q2018			zEC12 & zBC12		
6.4	11/2016			z196 & z114®	-	Common Criteria Complete! FIPS 140-2 In Progress

Focused Value Areas of Enhancements

Focused Value Areas

- Improved Scaling and TCO
  - More virtual machines in a single z/VM system
  - Lower costs of running a system

- Improved resource management for large diverse workloads
  - Fair and accurate resource control
  - Guest exploitation of z Systems and LinuxONE hardware

- Enhanced Security
  - Protecting data
  - Policy management

- Improved Resiliency and RAS
  - Scripting and automation frameworks
  - Problem determination

- Improved System Management
 - Including things that make a system programmer happy

Improved Scaling and TCO

Real Memory Increase

z/VM 6.4 Base

- Real memory support increased from 1 TB to 2 TB with same degree of overcommitment of real memory
  - Individual virtual machine limit remains at 1 TB

- For systems that are memory constrained, this offers relief.

- For systems with sufficient processor capability, this allows doubling the number of virtual machines in a z/VM system
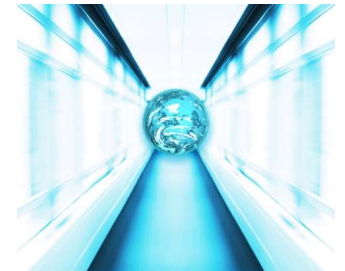
Dynamic SMT

z/VM 6.4 Base

- Dynamic SMT added to change the number of active threads per core without a system outage
  - Potential capacity gains going from SMT-1 to SMT-2 (one to two threads per core) can now be achieved dynamically
  - Can go from SMT-2 to SMT-1 in rare case that it is not optimal for workload (response time concerns greater than capacity gains)
  - Requires running in SMT enabled, but can vary active threads per core

- SMT introduced with the z13 processor family

- Improved benefit from SMT with improvements in the z14 processor family

TCO – z/VM Pricing

- New Sub-capacity pricing terms announced
  - July 17, 2017
  - Software Announcement 217-267

- Pay for software at less than full machine capacity
  - Leaves room for native Linux logical partitions or KVM partitions
  - Planned capacity growth without immediate software impact

- Applies to
  - z/VM 6.3 and z/VM 6.4
  - z/VM priced features
  - z/VM based programs

IBM Wave for z/VM	zSecure	Archive Manager
Backup & Restore Manager	Tape Manager	Operations Manager
OMEGAMON XE on z/VM	Infrastructure Suite	

- Requires
  - z/VM 6.3 or z/VM 6.4
  - Install and configure the z/VM Hypervisor Proxy in a Linux virtual machine in each logical partition involved
  - Use of IBM License Metric Tool (ILMT) to collect data monthly for audit purposes
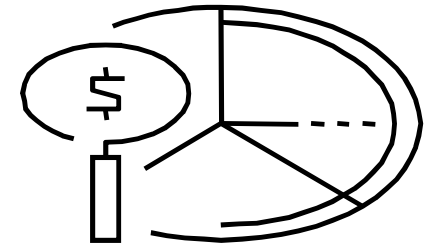
Increased Paging Capability

- Memory overcommitment helps keep TCO values low. Paging effectively allows for better overcommitment ratios.

- z/VM paging to ECKD (DS8000) improved significantly
  - Use of HyperPAV allows:
    - Greater paging bandwidth with parallel I/O
    - Fewer, but larger page volumes
  - Use of High Performance Ficon (zHPF)
    - More efficient I/O processing for z/VM system I/O

- z/VM system volume usage (including paging) with FCP SCSI attached FlashSystems Storage Servers
  - Removes requirement for SAN Volume Controller (SVC aka Spectrum Virtualize) as intermediary for z/VM volumes; lowers latency and removes an expense

Other New Function PTFs

▪ **SSI Distributed IUCV:**
– SSI configuration and administration improvements; Remove restrictions on distributed IUCV connections in an SSI cluster while allowing distributed IUCV policy to be changed dynamically
– APAR VM65872
  • PTF UM35053 (z/VM 6.4) closed Feb 27, 2017
  • RSU 1702

Performance Enhancement via Service

- **SCSI XIV Enhancements:**
  - Improved performance for EDEVICEs using XIV hardware through allowing multiple I/O commands to be issued concurrently. Particularly benefits EDEV paging I/O or shared volumes with minidisks
  - APAR VM65929
    - PTF UM35080 (z/VM 6.4) closed March 9, 2017
    - RSU 1702
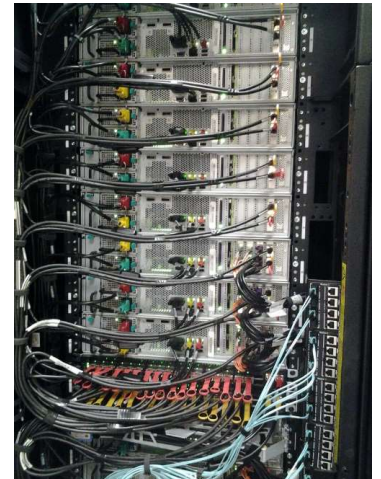
EAV Minidisk Enhancements via Service

- More data means larger disks

- Extended Address Volumes (EAV) minidisks will be able to reside anywhere on EAV volumes

- Benefits:
  - Fewer volumes to manage
  - Regain benefits of sharing minidisks with large volumes

- CP APAR VM65943
  - PTF UM35187 (z/VM 6.4) closed August 25, 2017
  - RSU: TBD

- CMS APAR VM65945
  - PTF UM35204 (z/VM 6.4) closed August 25, 2017
  - RSU: TBD

VM66140 (PTF UM35296) corrects a HIPER from VM65943.

- ICKDSF APAR PI85943
  - PTF UI49579 closed August 25, 2017

Processor Scalability Improvement

▪ Improvements of processing for shared-exclusive spinlocks

▪ Benefits:
  – Improves n-way curve and efficiency in scheduler and dispatcher processing.
  – Some benefit is exclusive to z14 and Emperor II as new capability is exploited

▪ APAR VM65988
  – PTF UM35214 (z/VM 6.4) closed August 23, 2017
  – RSU: TBD

Virtual Switch Enhanced Load Balancing

December 2017

- In link aggregation environments, VSwitch processing balances the load across OSA devices.

- Enhancements to the algorithms for a single VSwitch

- A Multi-VSwitch LAG environment will now do load balancing across the global VSwitch network.

- Benefits:
  – Better utilization of OSA hardware used for VSwitch LA groups

- APAR VM65918
  – PTF UM35253 (z/VM 6.4) closed December 11, 2017
  – RSU: TBD

z-Thin Provisioning

- Allows all z/VM volumes to be on Extent Space Efficient (ESE) thin provisioned volumes.
  - Allows better use of disk space for disk hardware supporting z-Thin Provisioning.
  - Reduces storage costs
  - Most benefit when used to reclaim space with FlashCopy

- APAR VM66098
  - PTF UM35296 (z/VM 6.4) available March 28, 2018
  - RSU: TBD

VM66153 corrects a problem
from VM66098 with FlashCopy.

IBM z14 Enhancements & z/VM

- Available August 25, 2017
  - See http://www.vm.ibm.com/service/vmreqz14.html for background.
  - See 3906/ZVM subset of the 3906DEVICE PSP bucket.

- z/Architecture IPL support on z14
  - Standalones changed to handle
  - ESA/390-compatability mode for DAT-off ESA/390 guests

- Support for Crypto Express6S
  - Guest support

- Support for RoCE Express2
  - Guest support

- Improved memory management support
  - Potential performance improvement especially with SMT

IBM z14 ZR1 and LinuxONE Rockhopper II

- Available May 29, 2018
  - See http://www.vm.ibm.com/service/vmreqz14.html for background.
    - Besides the previous z14 service, you'll need at least VM65639
    - Page includes a file (VMREQMR1 SERVICE) you can down load to check for valid service with command:

    SERVICE ALL STATUS LIST VMREQMR1 SERVICE
  - See also 3907/ZVM subset of the 3907DEVICE PSP bucket.

- Just like the larger z14 and LinuxONE machines, please remember to rebuild stand alone utilities (Formerly ESA/390-based will not work on z14 and new LinuxONE
  - See http://www.vm.ibm.com/service/redalert/index.html#SAPLZ14

- As with the other z14 machines, Security performance enhancements:
  - Crypto Express6S feature
  - CPACF no-charge feature

- Up to 30 configurable cores and 8TB

- 19-inch frame

Improved Resource Management of Diverse Workloads

Handling Diverse Workloads

- Various algorithms changed to remove large system effects and manage memory even more effectively
  - Better and more consistent performance

- Scheduler changes to further improve the accuracy and fairness of access to resources across various configurations
  - Removes surplus share problem seen on earlier releases
  - Eliminates eligible list to avoid complexity of tuning

- New ability to free up paging disk space used (KEEPSLOT = NO)
  - Helpful in environments where memory overcommitment is low
  - Reduces the disk paging space used in a z/VM environment by trading off potential for add I/O.

Additional Processor Parking Controls

- New tuning capability to influence parking processors
  - New SET SRM option
  - VM66063
  - PTF UM35232 (z/VM 6.4) – Closed October 27, 2017
  - RSU: TBD

- Background and guidance on using in z/VM Performance documentation
  - http://www.vm.ibm.com/perf/tips/unpark.html

Greater Guest Efficiencies

z/VM 6.4 Base

- Support for Guests to use Large Page (1 MB pages)
  - Allows guests to use the Enhanced DAT (EDAT-1) architecture
  - Reduces the amount of memory used for guest DAT structures and pathlength to manage that memory
  - z/VM continues to manage on a 4KB basis, retaining the full benefit of overcommitment

- Support for Guests to use Transactional Execution Facility (TX Facility)
  - Guests now informed that TX facility is available for use in z/VM environment
  - TX facility provides instructions that are an efficient alternative for synchronization
  - Performance improvement in processor requirements
  - Requires guest to be at supported level

- Support for Guests to use SIMD (Single Instruction Multiple Data)
  - Guests now informed SIMD is available for use in z/VM environment
  - Performance improvement in processor requirements
  - Requires guest to be at supported level
  - Requires z13, z13s, or LinuxONE

Greater Guest Efficiencies and Capabilities

December 2017

- z/VM guest exploitation support for the Instruction Execution Protection Facility
  - Increased isolation of data and instructions in memory
  - Z14, LinuxONE Emperor II, or LinuxONE Rockhopper II
  - Will require guest support to exploit
  - VM65986
    - PTF UM35255 (z/VM 6.4) – Closed December 11, 2017
    - RSU: TBD

- z/VM guest exploitation support for Guarded Storage Facility (reduces pauses in garbage collection)
  - Improve consistency of performance for Java environments
  - z14, LinuxONE Emperor II, or LinuxONE Rockhopper II
  - Will require guest support to exploit
  - VM65987
    - PTF UM35254 (z/VM 6.4) – Closed December 11, 2017
    - RSU: TBD

CP Foundation for zHPM CPU Resource Management

- Foundational support for Hypervisor Performance Manager (zHPM)
  - Will allow future support for dynamic management of resources allocated to virtual machines.
  - Let IBM know if you're interested in doing a beta for zHPM

- z/VM support includes:
  - Extensions to the Store Hypervisor Information (STHYI) instruction
  - Enhancements to support resource pools, formerly called CPU pools
  - Monitor extensions and greater flexibility

- CP APAR VM66105
  - PTF UM35303 (z/VM 6.4) closed March 28, 2018
  - RSU: TBD

- DirMaint APAR VM66109
  - PTF UV99330 (z/VM 6.4) closed March 28, 2018
  - RSU: TBD

Enhanced Security

Enhanced Security Items

z/VM 6.4 Base

- VLAN access security improvement
  - With an ESM, user access to the default VLAN ID not permitted unless permissions has been granted explicitly through the ESM

- Default TLS protocol settings changed when using TLS/SSL Server
  - TLS 1.2 and TLS 1.1 are enabled by default, older versions disabled by default

- DirMaint to RACF Connector
  - Modernizes the Connector with a collection of functional enhancements
  - Brings processing in line with modern z/VM practices
  - Allows better passing of directory information to RACF
  - Facilitates proper security policy in environments managed by IBM Wave for z/VM or OpenStack

- RSCS TCPNJE traffic can be encrypted

Enhanced Security PTFs

- **RACF Security Policy Enhancements:**
  - Functional RACF enhancements providing improved security and usability for security administrators and auditors
  - APAR VM65930
    - PTF UV61335 (z/VM 6.4) closed March 17, 2017
  - APAR VM65982
    - PTF UM35042 (z/VM 6.4) closed March 22, 2017

- **Crypto Express APVIRT for TLS/SSL Server:**
  - Enable connectivity from the TLS/SSL Server to crypto adapters for improved performance and reduced CPU overhead
  - APAR PI72106
    - PTF UI45923 (z/VM 6.4) – Closed March 29, 2017
    - RSU 1701

Network Security Enhancement

- Simplifies management and security

- New ability to control definition and authorization of NICDEFs in one place, the user directory

- Eliminates operational differences between PORTBASED and USERBASED VSwitches

- Service available August 4, 2017
    - CP APAR VM65925 (PTF UM35189) RSU 1702
    - DirMaint APAR VM65926 (PTF UV61338) RSU 1701
    - RACF APAR VM65931 (PTF UV61339) RSU 1701

- Note: While applying the above service changes the default behavior, settings were added to change default back to previous behavior

Firewall Friendly FTP Client Enhancement

- Updates the z/VM FTP client to improve interaction in configurations which require traversing firewalls.

- Adds new operands to LOCSITE

- APAR PI80912
  - PTF UI49779 (z/VM 6.4) closed August 23, 2017
  - RSU 1702

Encrypted Paging

- Allows better security by encrypting user and virtual disk in storage pages when written to paging disks
  - Requires z14, LinuxONE Emperor II or Rockhopper II

- Goal of < 5% increase in CPU time for workload with encrypted paging
  - Performance is workload dependent

- VM65993
  - PTF UM35257 (z/VM 6.4) – Closed December 11, 2017
  - RSU TBD

Improved Resiliency and RAS

FCP SCSI Disk

- RAS improvements for FCP SCSI Disk environments
  - SCSI driver has additional path recovery
  - Concurrent SVC code loads supported
  - And much more

IBM *Storwize*

The IBM Storwize family provides all-flash and hybrid storage solutions with common functionality, management and mobility.

#Storwize

Problem Determination Aids

- New CP command to determine which PTFs or Local Mods are in the running z/VM system
  - Data is also provided in the z/VM monitor data stream

- New information on disk configurations
  - CP QUERY commands extended for both ECKD and EDEVs
    - Serial numbers, geometry information, features, etc.
    - Some data provided as 'block of hex' for vendor specific interpretation
  - New IOEXPLOR exec to format new information and make readable
    - Applies to IBM devices

- New command EXPLORE FCP allows for testing of FCP subchannels and WWPN ports
  - ADD: adds FCP subchannel and WWPN port to list of devices to be tested
  - START: activates FCP subchannels and opens WWPN ports in list of SCSI devices to be tested
  - Aids in problem determination when setting up FCP devices

Dump Processing Enhancements

- Larger systems mean larger dumps

- Performance enhancement for hard abend and snap dumps to 3390 DASD
  - More intelligent channel programs
  - Decreases dump time significantly
    - 30 to 40% improvement in lab experiments

- Support includes creating smaller Snap dumps by not dumping PGMBKs (page tables) used for guests
  - Optionally can select to include them

- VM65989
  - PTF UM35132 (z/VM 6.4) – Closed May 31, 2017
  - RSU 1702

FCP Monitor Enhancements

- Provides new z/VM monitor records which will contain information related to FCP performance:
  – Utilization of FCP devices (subchannel) and CHPIDs (physical channels) for EDEVICE activity.

- Allows better problem determination for EDEVICE performance.

- APAR VM66095
  – PTF UM35297 (z/VM 6.4) closed March 28, 2018
  – RSU TBD

Improved System Management

Getting Up and Running

- Upgrade In Place – For existing z/VM 6.2 and 6.3 customers
  - Allows moving to z/VM 6.4 from existing systems rather than a new install
  - Support for vendor products, local mods, and backing out if necessary
  - See Install Guide for details

- Future Upgrade in Place will be supported from z/VM 6.4 only

- Dynamic Partition Manager (DPM) – For new customers
  - Support added to allow z/VM 6.4 logical partitions to be configured through new DPM interface rather than traditional PR/SM
  - I/O configuration much easier than older IOCDS approach
  - Limited to FCP SCSI only, no FICON at this time
    - No Single System Image cluster or Live Guest Relocation
  - Must be at recent level of DPM (Driver 27 Bundle S31)
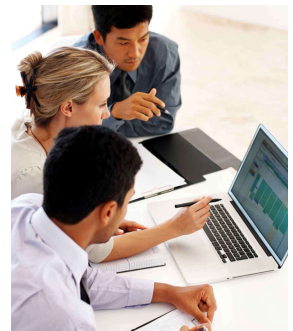
Frameworks for Automation

z/VM 6.4 Base

- CP Environment Variables
  - Allows z/VM meta data to be managed in a structured way
    - Variables set by system programmers
    - Variables read by programs for scripting
  - Replaces homegrown approaches for passing information around, and adds control to the environment
  - One special variable can be set on the IPL screen
    - Example: set as to whether Production, Test DR, or Actual DR

- New information available on z/VM Shutdown processing
  - Better determination of what is shutting down
  - Allows more robust automation to gracefully shutdown the z/VM system and virtual machines

- Significant upgrade to CMS Pipelines
  - Objective is to make available, with the product, many of the advances made to Pipelines since it was last updated in the product
  - Lots of new function
  - Avoids customers having to download and install on their own
  - Renews commitment to this powerful programming environment of Pipelines
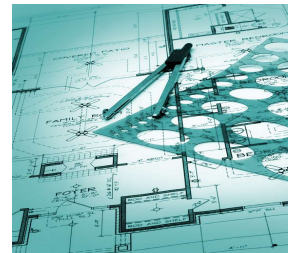
Other Enhancements to Highlight

z/VM 6.4 Base

- Ability to reset counters for a Virtual Switch
  - Clear counts for data, discarded, and error
  - Makes it easier to recognize conditions

- New SET DIALDROP command establishes whether devices dialed to your virtual machine are dropped or stay connected when a virtual machine reset occurs

- Following upgraded to a level equivalent to z/OS 2.2:
  - LDAP server and client utilities
  - MPROUTE
  - System SSL and utilities
  - Program Management Binder

IBM Wave for z/VM
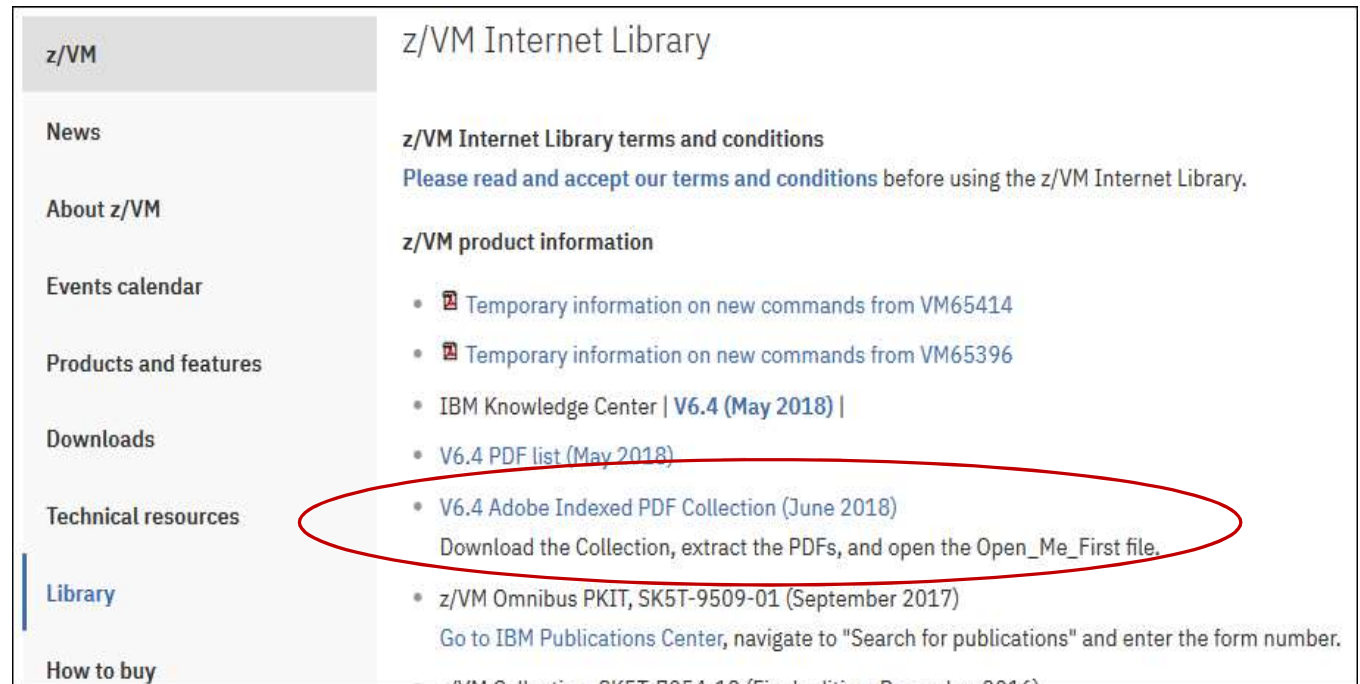
- Current level is IBM Wave V 1.2

- Fix Pack (FP 10) - released May 29, 2018er 2017
  – Support for IBM z14-ZR1
  – Configuring multiple EDEVs on 1 FCP Device
  – APAR fixes

- Next Fix Pack (FP 11) planned for September 2018
  – To include support for z/VM v 7.1

z/VM 6.4 Adobe Indexed PDF Collection

- http://www.vm.ibm.com/library/index.html

- Download zip file & extract folder

- Open Open_Me_First.html
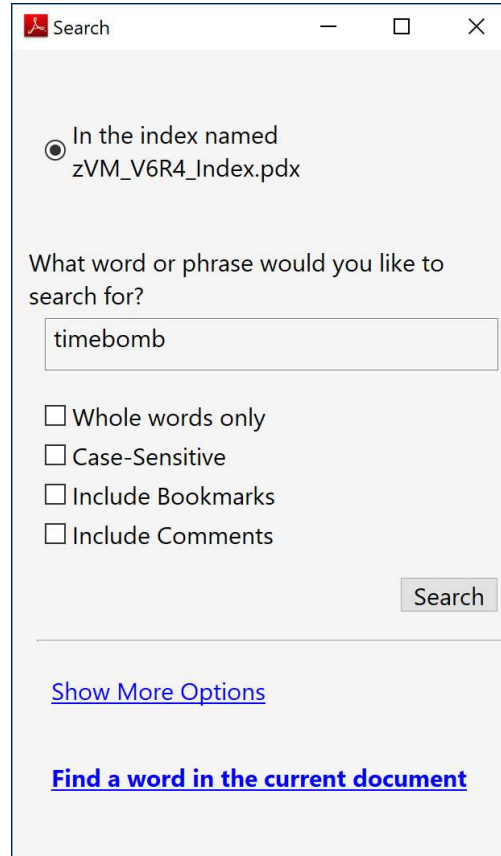 - detailed instructions
  - Index of the z/VM 6.4 Library
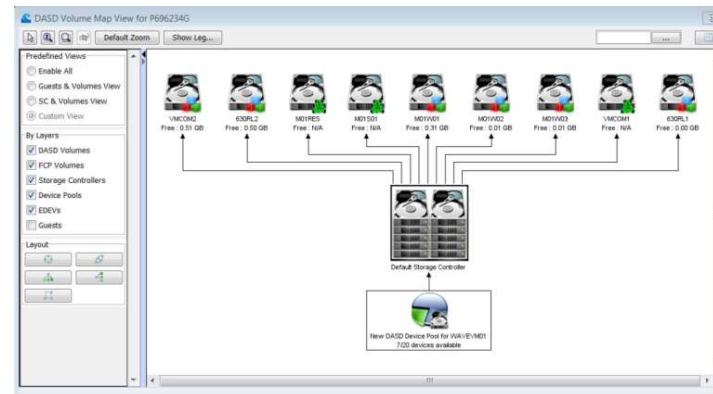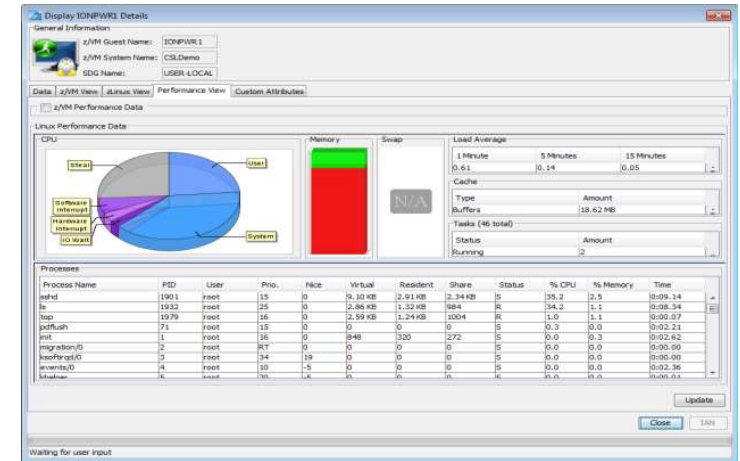
z/VM 6.4 Adobe Indexed PDF Collection

December 2017

- Opening the .PDX file allows searching entire z/VM Library
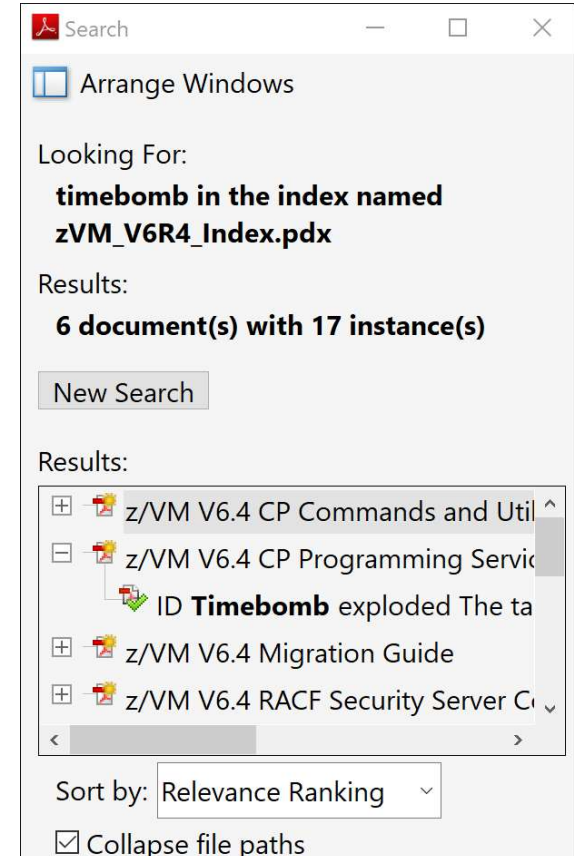
z/VM Cloud Strategy Futures

February 2018

Allow customers to enjoy a broader set of features, collectively provided by IBM and partner-based solutions as part of their vertically integrated Cloud offerings than we have been able to provide via the z/VM Cloud Management Appliance (CMA)

- Switch from an IBM-provided OpenStack and xCAT solution (CMA) to supporting partner-provided cloud solutions via the new z/VM Cloud Connector

- The new code will be shipped and serviced as part of z/VM but will be installed on a customer-provided Linux on z guest

- The code is being developed in open source and is enabled for 3rd party contributions

- See http://www.vm.ibm.com/sysman/cloudcon.html for a lot more details on Cloud Connector

- CMA
  - No additional new function
  - Will continue to supply defect and security fixes to the z/VM 6.4 release

Performance Toolkit HyperPAV Support

- New and updated reports to report on z/VM system use of HyperPAV

- Allows better problem determination and management for z/VM system paging

- APAR VM66085
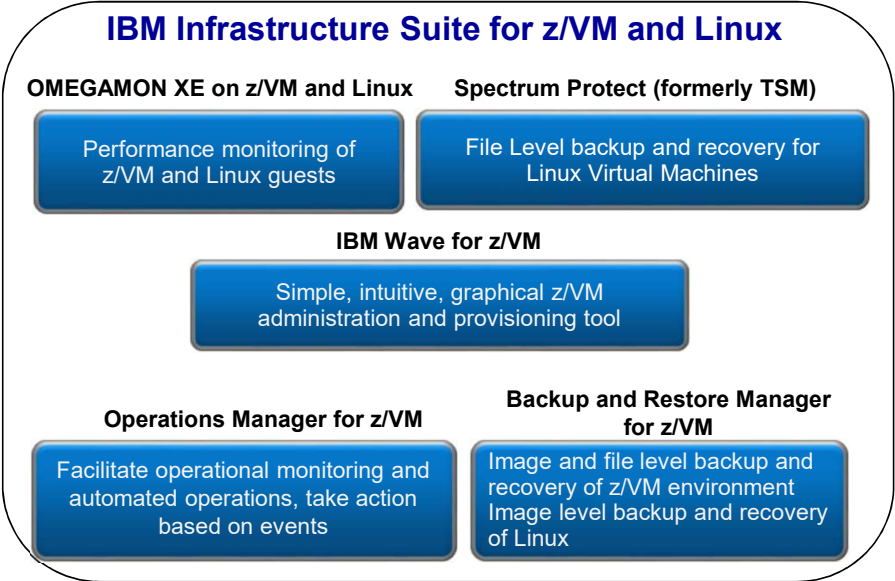 - PTF UM35304 (z/VM 6.4) closed April 11, 2018
  - RSU TBD

Complete Solution for Administration & Management of z/VM and LinuxONE

Integration with other platforms and solutions
- Alerts
- Log data

Single PID
5698-IS2 OTC
5698-IS1 Annual S&S

IBM Infrastructure Suite for z/VM and Linux

OMEGAMON XE on z/VM and Linux

Performance monitoring of z/VM and Linux guests

Spectrum Protect (formerly TSM)

File Level backup and recovery for Linux Virtual Machines

IBM Wave for z/VM

Simple, intuitive, graphical z/VM administration and provisioning tool

Operations Manager for z/VM

Facilitate operational monitoring and automated operations, take action based on events

Backup and Restore Manager for z/VM

Image and file level backup and recovery of z/VM environment
Image level backup and recovery of Linux

Add Tape Manager for z/VM (5697-J08) for customers backing up from z/VM to tape

Web site: http://www.ibm.com/software/products/en/ibm-infrastructure-suite-for-zvm-and-linux
DeveloperWorks Wiki – videos, presentations, white papers: http://ibm.biz/Bd4up3

Other Highlights

z/VM Service Changes with GDPR

- Global Data Privacy Regulation (GDPR) has far reaching implications including on how you send documentation for z/VM problem records and how we retrieve, use, and control them.

- Red Alert with pointers to basic information: http://www.vm.ibm.com/service/redalert/#GDPR

- Date for complete enforciement as been extended, but we are encouraging everyone to not wait until it is enforced.

- In addition to general information, if you are going to send data from z/VM itself, you'll need to:
  – Install and configure the z/VM SSL server using the TCP/IP Planning and Customization book, SC24-6238, Chapter 16: Configuring the SSL Server
  – Get the required ECuRep DigiCert Certifcates into GSKKYMAN and test connection. http://www.vm.ibm.com/related/tcpip/tcpipdig.html
  – Customer firewall changes may be required. Consult with firewall administrators to identify any changes.

- Stay tuned for additional information

Software Withdrawal from Marketing

- IBM DB2 Server for VSE and VM, V7.5

- Announced December 5, 2017

- Effective March 12, 2018

- See https://www-01.ibm.com/common/ssi/rep_ca/9/897/ENUS917-189/ENUS917-189.PDF

z/VM Sponsor Users

▪ Customers input and feedback on individual enhancements

▪ Examples of value add:
  – Feedback on how to handle IPL when dynamic memory downgrade configuration settings do not make sense with real memory on the system
  – Testing of EAV minidisk support with non-IBM DASD
  – Feedback on NICDEF Security Enhancements switch to go back to old default behavior
  – Feedback on VSwitch load balancing enhancement:
    • Urgency
    • Degree of wasted bandwidth at the time and improvement required

▪ http://www.vm.ibm.com/sponsor_user/

"I helped build z/VM"
– Sponsor User

Become a Sponsor User

- Look for items that interest you and you'd work to make a reality with IBM
  - New web page to subscribe to:
    - http://www.vm.ibm.com/newfunction/
  - Request For Enhancements (RFE) that you submit
  - Other dialogues with IBM

- Express interest in being a sponsor user for an item
  - Link on the continuous delivery page
  - Email to Kerry Wilson (kerryw@us.ibm.com)

- Requirements
  - Program is free
  - Must have an IBMID
  - Must sign Feedback Program Agreement (FPA)
 - Commit to work with IBM on the candidate items

Life of a Sponsor User

Design-Heavy

- Paperwork (really online web-work) for approval

- Initial meeting to discuss the pain points / opportunity

- Follow up meetings to discuss design and feedback on externals
  - ~Monthly

- Demo of early code on IBM systems

- Delivery of drivers for client testing

Testing-Heavy

- Paperwork (really online web-work) for approval

- Initial meeting to discuss the pain points / opportunity

- Follow up meetings to discuss design and feedback (no externals)
  - 1 or 2

- Delivery of drivers for client testing
  - Various hardware
  - Various ISV products

Design   Test
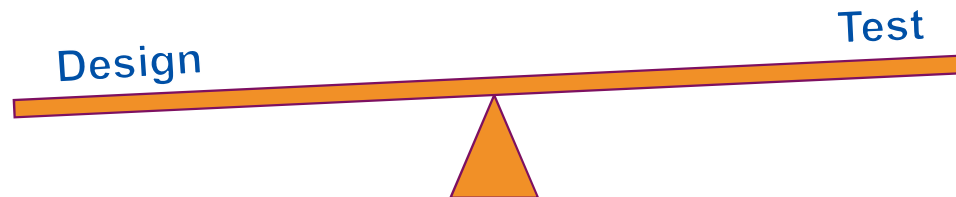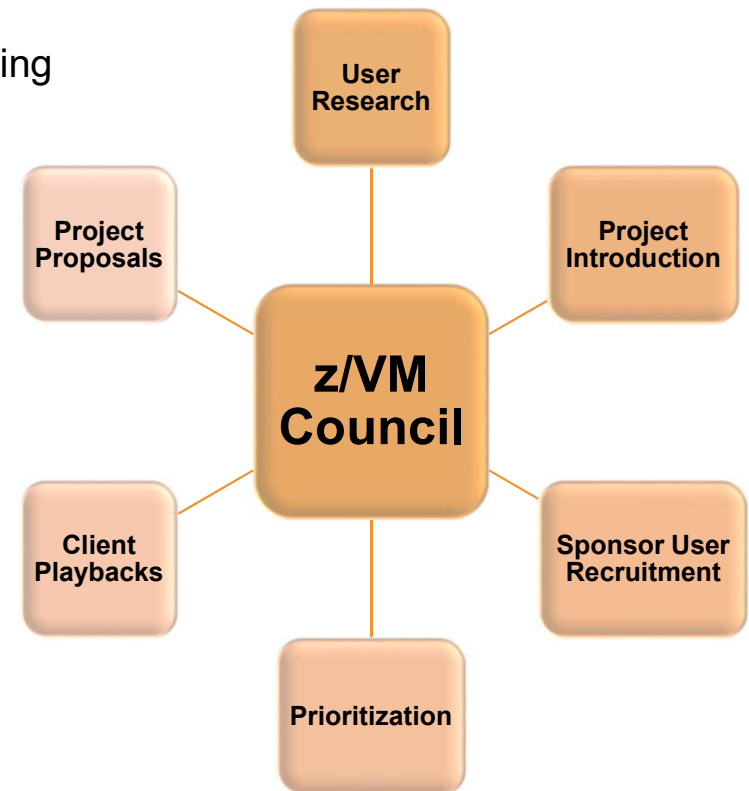
Sponsor Users Wanted:

Specifically looking for sponsor users for:

- Four Terabyte Real Memory Support

- EAV Paging

- z/VM TCP/IP Elliptic Curve Support for TLS

- More than 64 Logical Processors

z/VM Council – Client Communication and Collaboration

- z/VM-centric community started in June 2018
  - Meeting about once a month via telephone and web conferencing
  - User research
  - Propose, define, and prioritize new project proposals
  - Sponsor User Recruitment and Playbacks
  - Other collaboration done via membership web site

- Membership Requirements
  - IBM Z Feedback Program Agreement 9FPA)
  - Regular participation
  - Sponsor User for at least one project per year
  - Homework assignments

- Additional details:
  - http://www.vm.ibm.com/sponsor_user/zvm_council.html
  - Contact: Kerry Wilson – kerryw@us.ibm.com

Summary

z/VM – Ever Onward

Ever Improving z/VM

Sponsor Users

Continuous Delivery

Release Cadence