IBM Z

State of the z/VM Product

z/VM Development Team

January 23, 2018

IBM

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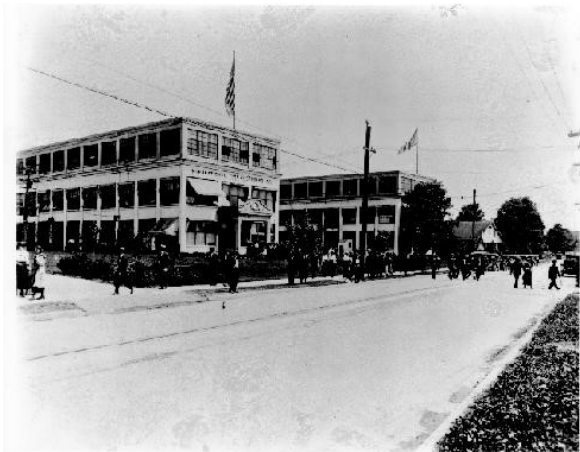
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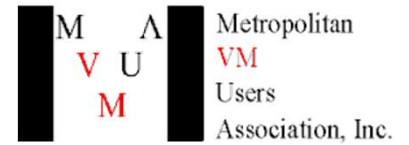
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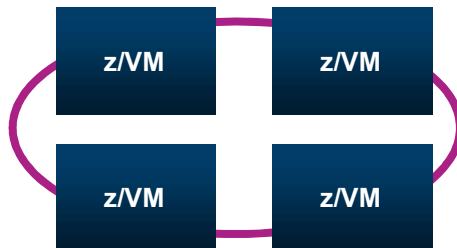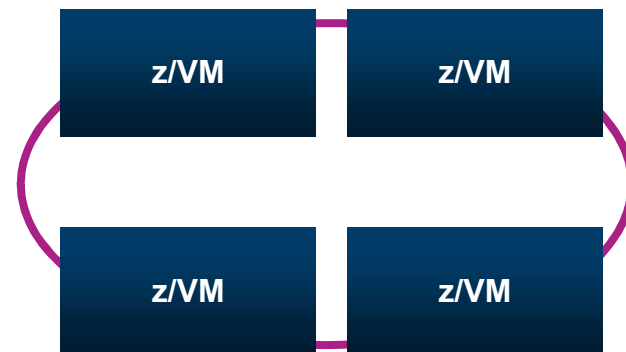
Past

z/VM 5.4

z/VM 6.1

z/VM 6.2

z/VM 6.3

z/VM 6.4

Past: z/VM 6.4

- z/VM 6.4 GA November 11, 2016
  - Paging: HyperPAV and zHPF
  - Scheduler Enhancements
  - System Programmer Love

- Continuous Delivery Model

- 45th Anniversary

- z14 Support August 25, 2017

z/VM 6.4
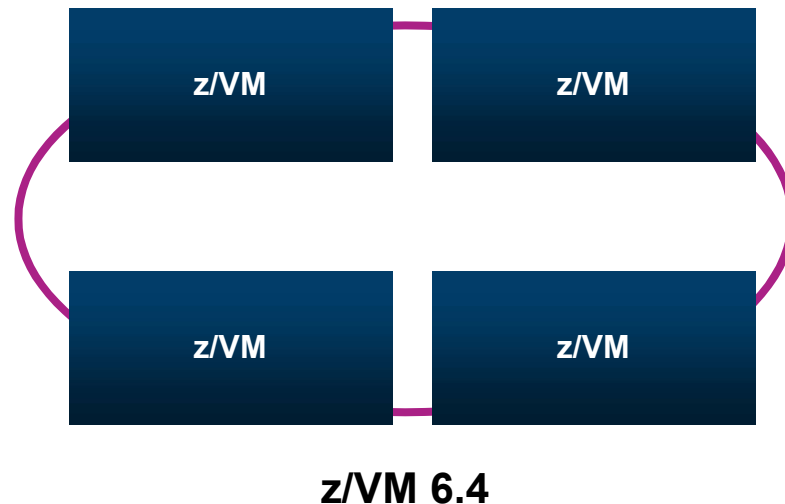
Network Security Enhancement

- 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
  - APARs VM65925, VM65926, VM65931
  - RSU 1702

- Note: While applying 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

IBM z14 Enhancements & z/VM

- Available August 25, 2017

- 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 Exploitation

- z/VM guest exploitation support for the Instruction Execution Protection Facility
  - Increased isolation of data and instructions in memory
  - Available December 15, 2017

- z/VM guest exploitation support for Guarded Storage Facility (reduces pauses in garbage collection)
  - Improve consistency of performance for Java environments
  - Available December 15, 2017

- z/VM support for encrypted z/VM paging
  - Increased security characteristics
  - Planned availability of December 31, 2017

High LPAR Management Time Relief

- Tuning knob introduced to influence how aggressive HiperDispatch is in parking/unparking logical processors

- New options on SET SRM (and QUERY)

- http://www.vm.ibm.com/perf/tips/unpark.html

- APAR VM66063
  - PTF UM35232 (z/VM 6.4) closed October 27, 2017

Present

- A few near term work-in-progress items
    - FCP Monitor Enhancements
    - Security Common Criteria Certification
    - Cloud Management Appliance transitioning to Cloud Connector
    - Performance Toolkit Enhancements
    - Several others for 2018

- The Team
    - Newer teammates doing very well, and making significant contributions
    - >75% of the team interacts with clients

IBM Z Security Portal

▪ The definitive source for security vulnerability information for IBM Z.

▪ See https://www.ibm.com/it-infrastructure/z/capabilities/system-integrity
  – Need to register
  – Registration is validated by a human, so not instantaneous
  – Information on accessing is sent with approval (if approved)
  – Very few IBMers have access
  – Can set up for notifications (weekly/daily)
  – If not getting notification, most common problem is corporate spam filter

▪ Live Virtual Class (Oct 2017) included some tutorial on using the portal
  –http://www.vm.ibm.com/education/lvc/zvmlvc.html

z/VM and Continuous Delivery
Objective

❑ Adopt IBM Design Thinking & Agile concepts to improve client satisfaction with z/VM

  ▪ Engage Sponsor Users early in the development cycle to ensure new code accurately meets their needs

  ▪ Improve time-to-value by shipping new code when ready (via SPE) instead of waiting for a z/VM release

    • Bonus: SPEs are typically easier to install than a traditional z/VM release

  ▪ "SPE First" approach for new development allows for greater schedule flexibility to manage scope and cost

❑ Keep clients informed of product development plans via IBM z/VM web site...

z/VM Continuous Delivery Web Page // www.vm.ibm.com/newfunction

United States [change]

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z/VM Continuous Delivery News

News on upcoming and available new function for z/VM

Last Updated: December 14, 2017

Change Summary - New SPEs are now available for download. December 14

Introduction

Not all enhancements to z/VM are part of a new release or even a formal IBM announcement letter. This page is a resource to learn about enhancements going out through continuous delivery for z/VM. It's also different from formal announcements as it shows work in progress. Think of it as a living preview announcement for z/VM.

As significant changes take place, this page will be updated. So check back often or subscribe. We'll go through each item here and describe a number of characteristics, as defined below. Included at the bottom of this page is a link for a spreadsheet of this information.

Name
The simple name for the project.
Description
A brief summary of what changes, who it effects, and why you would care.
Status
Along with the current status, this will give indication of key changes since the last iteration of this page.
Target Availability
Depending on the project, where it is in the cycle, and other factors, this will list TBD, a quarter, a month, or, in cases where it has become available, a date. This is not a commitment and as more is learned about the work and priorities are adjusted.
Compatibility
This will describe how compatible an item is. In most cases, this will say 'No known incompatibilities'. It is not meant to list all details like a migration guide, but to give some indication of what to expect. further research is desired.
Enablement
This will briefly describe how enablement is managed for this Small Product Enhancement. Can it be enabled or disabled? What is the default? Can it be done dynamically? Is it on a virtual machine basis or system wide basis? It is not meant to describe all details of that process, but to give an idea of what's involved. Will also give indication of whether an IPL of the z/VM system is required, or just recycle of virtual machines or new CMS modules.

Related links
· Resource Link
· Resources for IBM Business Partners
· Resources for developers
· Shopz
· ISV software support
· IBM Training
· IBM Design Centers
· IBM System z Redbooks

Effect
Describes what effect enabling the code may have beyond the compatability statement above. Such as may slightly elongate logoff time or CCW translation code paths changed. These are basically meant to be hints as to how the system may respond or behave differently.
ISV Impact
Indicates any impacts to ISV related products that are known, such as "If using a directory manager product, see vendor for required updates."
Linux & Hardware Interaction
Indicates whether a special level of Linux or hardware is required because of an interaction or dependency.
Release(s)
Indicates the releases planned for this enhancement.

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Request to become more Involved

If you have interest in a project above and would like more information, feel free to contact us. Please understand that we may need to limit participation and there are other requirements that may vary from project to project.

Use the following to notify us of your interest Feedback Form

Small Product Enahancements

SPE name	Target date	Last updated
NICDEF Security Controls	August 4, 2017	
Extended Address Volume Minidisk Support	August 25, 2017	
VSwitch Link Aggregation Load Balance Enhancements	December 15, 2017	December 14, 2017
Centralized Service Management	TBD	
Dynamic Memory Downgrade	TBD	
Processor Scalability Efficiency Enhancements	August 23, 2017	
Firewall Friendly FTP Client	August 23, 2017	
Encrypted Paging	December 15, 2017	December 14, 2017
High PR/SM LPAR Management Time Relief	October 23, 2017	November 30, 2017

Use the following to notify us of your interest Feedback Form

z/VM Continuous Delivery
Infrastructure for Shipping New Function

❑ The majority of new z/VM function will ship **between releases** in the service stream

   ▪ As much as possible, Sponsor User activities will include testing new function prior to general availability

❑ New releases are primarily a roll-up of function and fixes shipped in the service stream of the prior release – new function in the base of a release intended to be **kept to a minimum**

   ▪ Helps reduce release-to-release migration costs for clients who "keep current"

   ▪ Greatly reduces the need of a traditional early support program (Sponsor User testing instead)

❑ New z/VM releases planned to be delivered on **regular cadence** and serviced for 54 months

   ▪ Release GA targeted for the same month every other year (e.g., September 2018, September 2020, …)

   ▪ Helps clients with predictable migration planning and end-of-service planning

❑ Two releases of "New z/VM" can be **ordered** and serviced at the **same time**

   ▪ Clients can install the next release in a test environment and not be forced to migrate off the prior release

   ▪ This allows hands-on experience with next release potentially sooner rather than later

z/VM Product GA Life Cycle – Recent History
Release GA Dates Typically in Second Half of Year

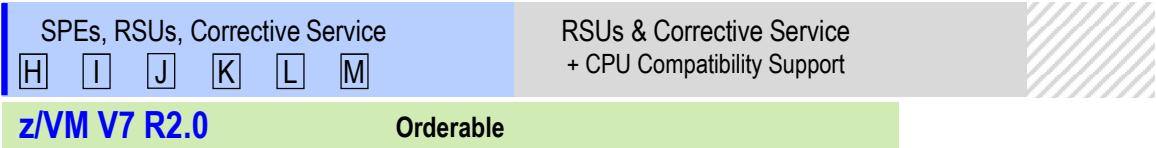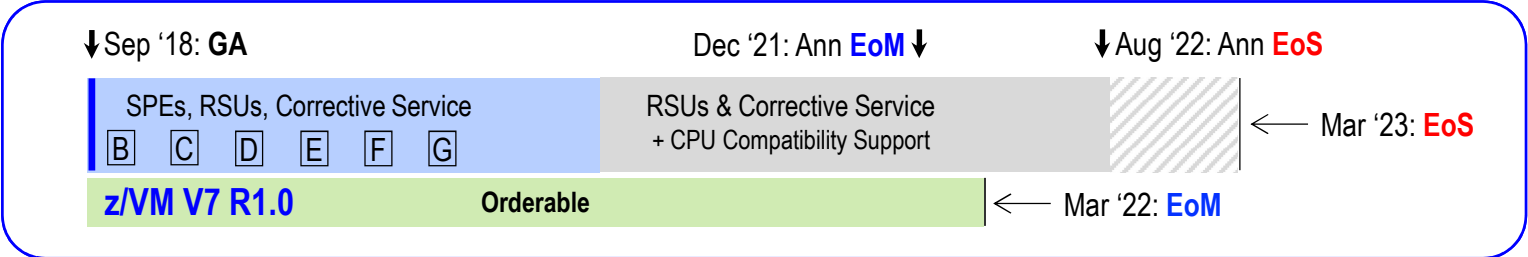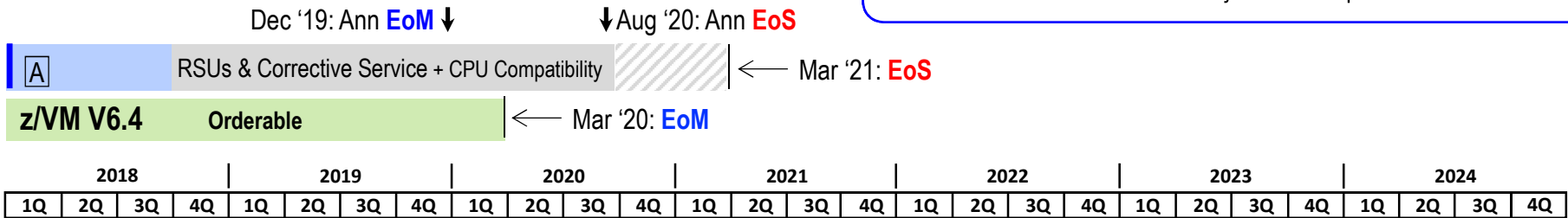| Release	GA Date	Time Since Prior Release GA	EoS (Duration)
z/VM V4.4	8/2003	15 Months	9/2006 (37 Months)
z/VM V5.1*	9/2004	13 Months	9/2007 (36 Months)
z/VM V5.2	12/2005	15 Months	4/2009 (40 Months)
z/VM V5.3	6/2007	18 Months	9/2010 (39 Months)
z/VM V5.4	9/2008	15 Months	12/2017 (111 Months)
z/VM V6.1*	10/2009	13 Months	4/2013 (42 Months)
z/VM V6.2	12/2011	26 Months	6/2017 (66 Months)
z/VM V6.3	7/2013	19 Months	12/2017 (53 Months)
z/VM V6.4*	11/2016	40 Months	TBD

* Architecture Level Set Introduced

"New z/VM" Release Cycle Cadence
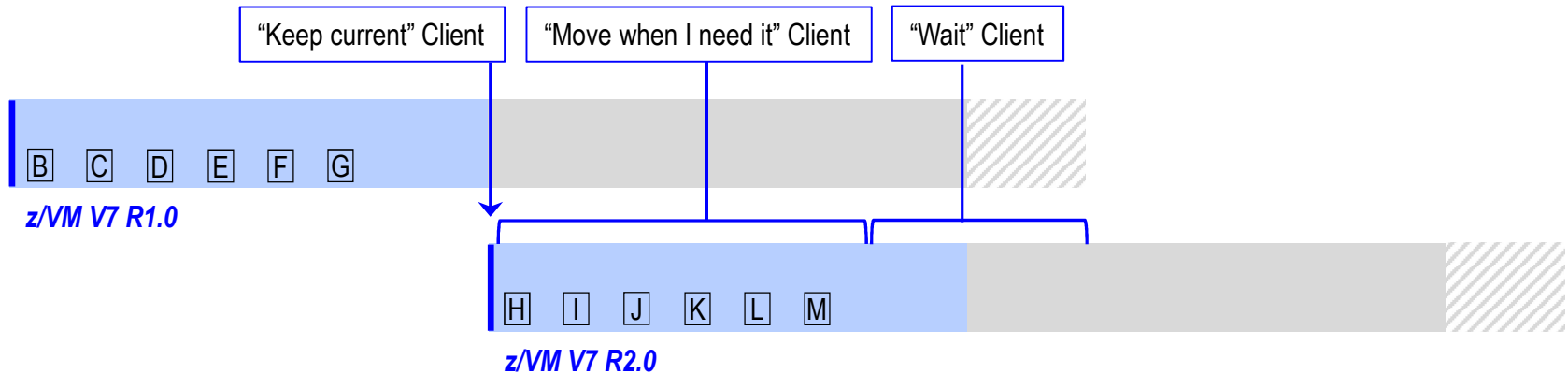
Dates for illustrative purposes.

z/VM Release GAs: September of even years
Releases remain orderable 18 months after GA of next release
Last 6 months of release life cycle overlaps next two releases

Dec '19: Ann **EoM** ↓   ↓Aug '20: Ann **EoS**

| A | RSUs & Corrective Service + CPU Compatibility | |
← Mar '21: **EoS**

z/VM V6.4   **Orderable**   ← Mar '20: **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

↓Sep '18: **GA**   Dec '21: Ann **EoM** ↓   ↓Aug '22: Ann **EoS**

| SPEs, RSUs, Corrective Service | RSUs & Corrective Service + CPU Compatibility Support | |
| B C D E F G | |
← Mar '23: **EoS**

z/VM V7 R1.0   **Orderable**   ← Mar '22: **EoM**

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

z/VM V7 R2.0   **Orderable**

▌ = New function in release base

☒ = <u>Potential</u> SPE bundle delivered in service stream

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Use Case Scenarios – When to Move to Next Release?

"Keep current" Client

"Move when I need it" Client

"Wait" Client

z/VM V7 R1.0

B C D E F G

H I J K L M

z/VM V7 R2.0

"Keep current"
- Able to exploit new function as it becomes available.
- Offer *timely* feedback to IBM on adequacy of new function and any desired follow-on enhancements.
- Potentially avoid staffing bubbles associated with traditional release-to-release migrations.
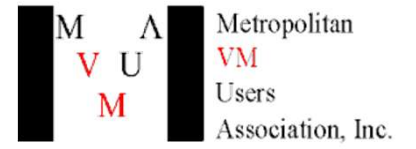
"Move when I need it"
- Monitor IBM development plans and move when compelling new function becomes available.
- Timing of move may be based on staffing availability.
- Optionally install next release in a test environment and migrate production environment months later.

"Wait"
- Client may be risk averse.
- Able to move from one "service only" release to another while both are in service.
- Willing to lag in the adoption of new function, or other factors may limit their ability to adopt new function.

Any other Discussion?

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