

z/VM Linear Service

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Agenda

- Relevant Statements of Directions
- Linear Service Overview
- Future Enhancements
- Future: Full Part Replacement

Related Statements of Direction

z/VM 7.3 - Related Statements of Direction

- z/VM 7.3 is the last z/VM release planned to support the ability to apply service in a selective fashion. A future z/VM release intends to implement a linear service model whereby applying one PTF will require all previous service for the same component to be installed.**
- IBM intends to change how z/VM service is delivered in a future z/VM release. Instead of CMS update files, full-part-replacement files will be provided. In addition, full-part-replacement files will no longer contain sequence numbers, which are character line identifiers in the last 8 characters of every line in a fixed record file. z/VM source files will be encoded using the CP1047 code page, unless stated otherwise. Tooling will be provided to assist customers or vendors who still have a need to update z/VM source files.

z/VM Linear Service

How does z/VM deliver service in 7.3 and prior releases?

- z/VM provides all service as APAR/PTFs
- What is an APAR?
 - An Authorized Program Analysis Report, or APAR, is a formal report to IBM development of a problem caused by a suspected defect in a current release of an IBM program.
 - In a nutshell: An APAR is the documentation for a reported problem, a fix or deliverable shipped in service
- What is a PTF?
 - A Program temporary fix or Product temporary fix (PTF), sometimes depending on date, is a single bug fix, or group of fixes, distributed in a form ready to install for customers
 - In a nutshell: A PTF is the installable fix or deliverable containing required source code or binaries
- What APAR types do we provide today?
 - Corrective Service APARs
 - New Function APARs

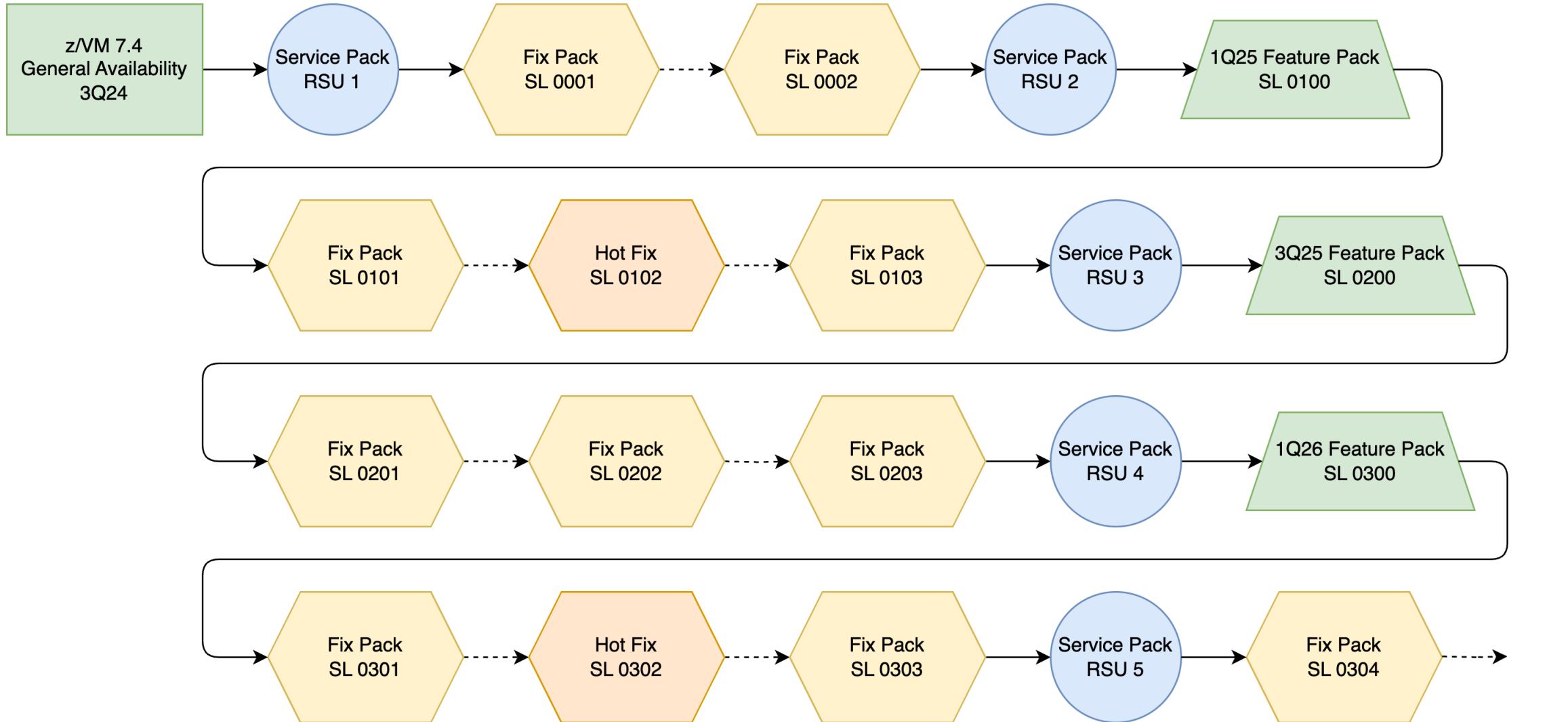
What is linear service?

- z/VM will continue to ship all service as APARs
 - Hot Fix APAR
 - Fix Pack APAR
 - Feature Pack APAR
 - Hardware Support APAR
- All APARs will have a pre-requisite against the APAR that was released last in its component
- A **Hot Fix APAR** will contain a critical fix or a security issue that must be released immediately due to its critical nature or the severity of the security exposure
- **Fix Packs APARs** will be released on a regular cadence, containing all available fixes since the last released Fix Pack
- **Feature Packs APARs** will be released every 6 months, containing new features
- **Hardware Support APARs** will be released in support of new hardware and provide the necessary hardware toleration or exploitation

Different APAR Types

Future Type	Rough Equivalent	Cadence	Description
Hot Fix APAR	Corrective Service APAR	When necessary	Fix for critical issue requiring an immediate solution
Fix Pack APAR	Corrective Service APAR	Every 4 weeks	Bundle of fixes for regular issues with in-depth validation
Feature Pack APAR	New Function APAR	Every 6 months	Bundle of new features
Hardware Support APAR	New Function APAR	When necessary	Support for new or updated hardware

Service Stream - Illustration



Fix Versioning – Service Levels

- The service level used to contain the RSU number in z/VM 7.3 and prior
- The service level will be used to identify the feature and fix pack with z/VM 7.4 going forward in the format *ffxx*, with *ff* representing the feature pack number and *xx* representing the fix pack number for this feature pack
- This will allow you to directly identify the service level a CPLOAD was built with

Security Fixes?

- z/VM will continue to follow the z/VM Statement of Integrity available in the z/VM General Information manual or here: <https://www.vm.ibm.com/security/zvminteg.html>
- We will not publicly acknowledge or comment on the existence or severity of security exposures
- Security APARs will continue to contain the CVSS score, and information will only be available on the IBM Z Security Portal
 - More information on the IBM Z and IBM® LinuxONE Security Portal can be found here: <https://www.ibm.com/downloads/cas/EA0940BR>
- They will be released using the Hot Fix APAR process

Recommended Service Upgrades?

- **Recommended Service Upgrades (RSUs)** will be released shortly before a Feature Pack and will contain all available APARs pre-applied for the core components
- RSUs will continue to provide a critical part in the future, providing a stable base for customers directly before a new Feature Pack introduces new functionality

Why are we making this change?

- Continuous delivery created inflections points when shipping huge New Function APARs where these APARs required the majority of previous APARs to be installed and then were required by a lot of later APARs
 - What we like to call Illusion of Choice
- Improve service selection
 - Discovery of available service can be time consuming or error-prone
 - A linear chain of service will allow you to quickly identify the changes that happened between two different APARs
- Reduce valid system configurations & improving test coverage
 - More than 1,000,000 valid combinations for just 20 APARs
 - You will always run an IBM tested & validated configuration in the future
- Preparation for full part replacement
 - Linear service will allow an easier transition to full part replacement
 - Necessary for the modernization of the service, build & development tools and the to allow a better integration into Linux on Z

What does this mean for you?

- Discovering and selecting applicable service will get significantly easier in the future
- Validating that all systems receive the same service will be simplified
- You will always run a service configuration that received extensive testing from IBM
- z/VM Development intends to improve the service experience with future Feature Packs
- **However: You will no longer be able to select a single fix without having to apply other service or, potentially more problematic, a feature pack**

Available service paths in the future

- Manage and control the amount of service that must be applied by following one of these paths

Service Path	Conservatism	Features	Description
Stay on the oldest release in service	High	Delayed by up two years	Guarantee that no new features must be applied to receive corrective service
Latest RSU of current release	Medium	Delayed by 6 months	Stay on the latest RSU and adopt new features only after a delay of 6 months after availability
Latest released APAR	Low	As soon as available	Apply service and features as soon as available, recommended for development or test systems

- Please talk to me about the value a RSU can provide you in the future!

Changelog

- Implementing linear service allows us to provide a meaningful linear changelog
- List of all APARs in chronological order with release date, details and content
- Useful to compare all changes between an as-is state and a to-be state
- www.vm.ibm.com/changelog/

Changelog

Release	Level	Available	Type	PE	Security	HIPER	APAR	PTF	Details
7.4	0006	January 31, 2025	Fix pack	No	No	No	VM66819	UM90502	z/VM 7.4 CP Fix Pack - Feature 00 Fix 06 + More information
7.4	0005	December 18, 2024	Hotfix	Fixed	No	Yes	VM66815	UM90496	z/VM 7.4 CP Hotfix - Feature 00 Fix 05 + More information
7.4	0004	October 14, 2024	Fix pack	Yes	No	No	VM66800	UM90483	z/VM 7.4 CP Fix Pack - Feature 00 Fix 04 Update Nov. 25, 2024 - PE introduced with this fix pack. + More information
7.4	0003	September 28, 2024	Fix pack	No	No	No	VM66796	UM90478	z/VM 7.4 CP Fix Pack - Feature 00 Fix 03 + More information
7.4	0002	September 20, 2024	Hotfix	No	Yes	No	VM66795	UM90474	z/VM 7.4 CP SECURITY APAR - Feature 00 Fix 02
7.4	0001	September 20, 2024	Fix pack	No	No	No	VM66780	UM90463	Initial fix pack that is provided with the z/VM 7.4 GA installation media. + More information

Showing 1 to 6 of 6 entries

Previous 1 Next

<https://www.vm.ibm.com/changelog/>

Future Enhancements

Service Identification enhancements

- z/VM intends to provide access to the current service information using CP environment variables
 - ZVM.SERVICE.APAR.component VMnnnnnn
 - ZVM.SERVICE.LEVEL.component ffxx
 - ZVM.SERVICE.VERSION.component v.r.ff.xx
- ZVM.SERVICE.APAR will document the most recentl installed APAR for each supported components
- ZVM.SERVICE.LEVEL will document the current recent service level for each supported component
- ZVM.SERVICE.VERSION will document the current version of each supported component

Future: Full Part Replacement

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- PTFs will no longer contain UPDATE files but will contain the full source part instead
- Sequence numbers will no longer be provided

Future: DIFF & PATCH

- CMS UDIFF and UPATCH Utilities will be provided in the 7.4 service stream to allow customers & vendors to prepare for the future changes
- Comparable to the well-known UNIX/Linux utilities
- Aims to provide full bidirectional compatibility for unified diffs between the CMS utilities and the Linux and z/OS versions
- The service process will be enhanced to support the integration for customer and vendor provided patch files directly into the service process comparable to the inclusion of UPDATE files today

Thank you

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