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What's Currently Happening with Continuous Delivery on the z/OS stack?

You probably have been hearing a lot about Agile development and how z/OS is embracing it. This has resulted in more functions entering the marketplace earlier. The session will talk about what IBM is doing on the z/OS platform. You will learn about where to find new functions, so that hopefully you can start exploiting them sooner!

June 2018

Agenda

- **What is Continuous Delivery, and why do it?**
- **What is z/OS doing for Continuous Delivery?**
- **What are IBM z/OS middleware and products doing for Continuous Delivery?**
- **How can someone find out about New Functions added via PTFs?**

Agenda

What is Continuous Delivery, and why do it?

What is Continuous Delivery and why do it?

Take a step back to familiarize with some concepts...

- **Agile software development** describes a set of principles for **software development** under which **requirements and solutions** evolve through the collaborative effort of self-organizing cross-functional teams. It promotes **adaptive planning, evolutionary development, early delivery, and continuous improvement**, and it encourages **rapid and flexible response to change**. These principles support the definition and continuing evolution of many software development methods.^[1]

[1] https://en.wikipedia.org/wiki/Agile_software_development

My own emphasis.

What is Continuous Delivery and why do it?

Take a step back to familiarize with some concepts...

- **DevOps** (a clipped compound of developer and operations) is a **culture, movement or practice** that emphasizes the collaboration and communication of both software developers and other information technology (IT) professionals while **automating the process of software delivery and infrastructure changes**. It aims at establishing a culture and environment where **building, testing, and releasing** software can happen **rapidly, frequently, and more reliably**.^[1]
- *Agile addresses a change in software development thinking, DevOps works to have a cultural change.*

[1] <https://en.wikipedia.org/wiki/DevOps>

My own emphasis.

What is Continuous Delivery and why do it?

Take a step back to familiarize with some concepts...

- **Continuous delivery (CD)** is a software engineering approach in which teams produce **software in short cycles, ensuring that the software can be reliably released at any time**. It aims at **building, testing, and releasing software faster and more frequently**. The approach helps **reduce the cost, time, and risk** of delivering changes by allowing for more **incremental updates** to applications in production. A straightforward and repeatable deployment process is important for continuous delivery.^[1]
- *DevOps has a broader scope than CD, and DevOps focuses more on the cultural change, including various phases used for delivering software.*

[1] https://en.wikipedia.org/wiki/Continuous_delivery

What is Continuous Delivery and why do it?

- Consumer expectations rose with the advent of the digital age, and are likely to continue to rise as technologies continue their advancement.
- The adoption of Agile and DevOps methods and new approaches to delivering business applications that use the new technologies, such as mobile, cloud, and real-time analytics, present demands on IBM.
- Each area is changing its approach and provides new functionality regularly and faster to meet the demands.

➔ IBM strives to provide new functions to customers to meet marketplace demands, and will use Continuous Delivery.

Agenda

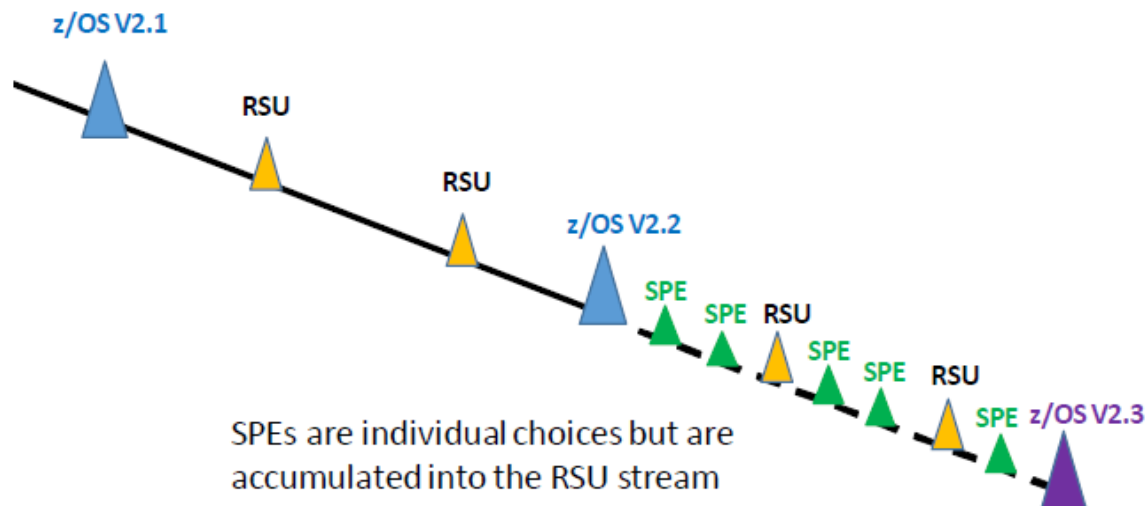
What is z/OS doing for Continuous Delivery?

What is z/OS doing for Continuous Delivery?

- The z/OS operating system product (“the base”) has released a [Redpaper](#) to explain z/OS’ implementation of Continuous Delivery.
 - “IBM z/OS Continuous Delivery”, dated March 18, 2016.
- Indicates that z/OS will use Continuous Delivery methods for appropriate functionality.
 - Good examples: z/OSMF and SDSF
 - Complements the regular z/OS software maintenance process, by using SPEs (= “New Function APARs”)
- Other functionality is more appropriate for a “Version Release” delivery cycle.
- Not intended to address z/OS program products that run on the base. Don’t confuse “the base” with the “the stack”.
- **Base stability is Job One.**

What is z/OS doing for Continuous Delivery?

- “New Function APARs”
- Intention is to have the new function turned off by default.
- You control where and when you want to use it.
- RSU testing performed on the APARs, just as with other APARs.



What is z/OS doing for Continuous Delivery?

- Not all z/OS Continuous Delivery functions could be in “New Function APARs”
- When appropriate, there might be other delivery vehicles used, such as Web deliverables or z/OS features.
- Each new function will be considered for its best delivery method, with **base stability forefront**.



Agenda

**What are (some) IBM
middleware and products
doing for Continuous
Delivery?**

What are (some) z/OS platform products doing for Continuous Delivery?



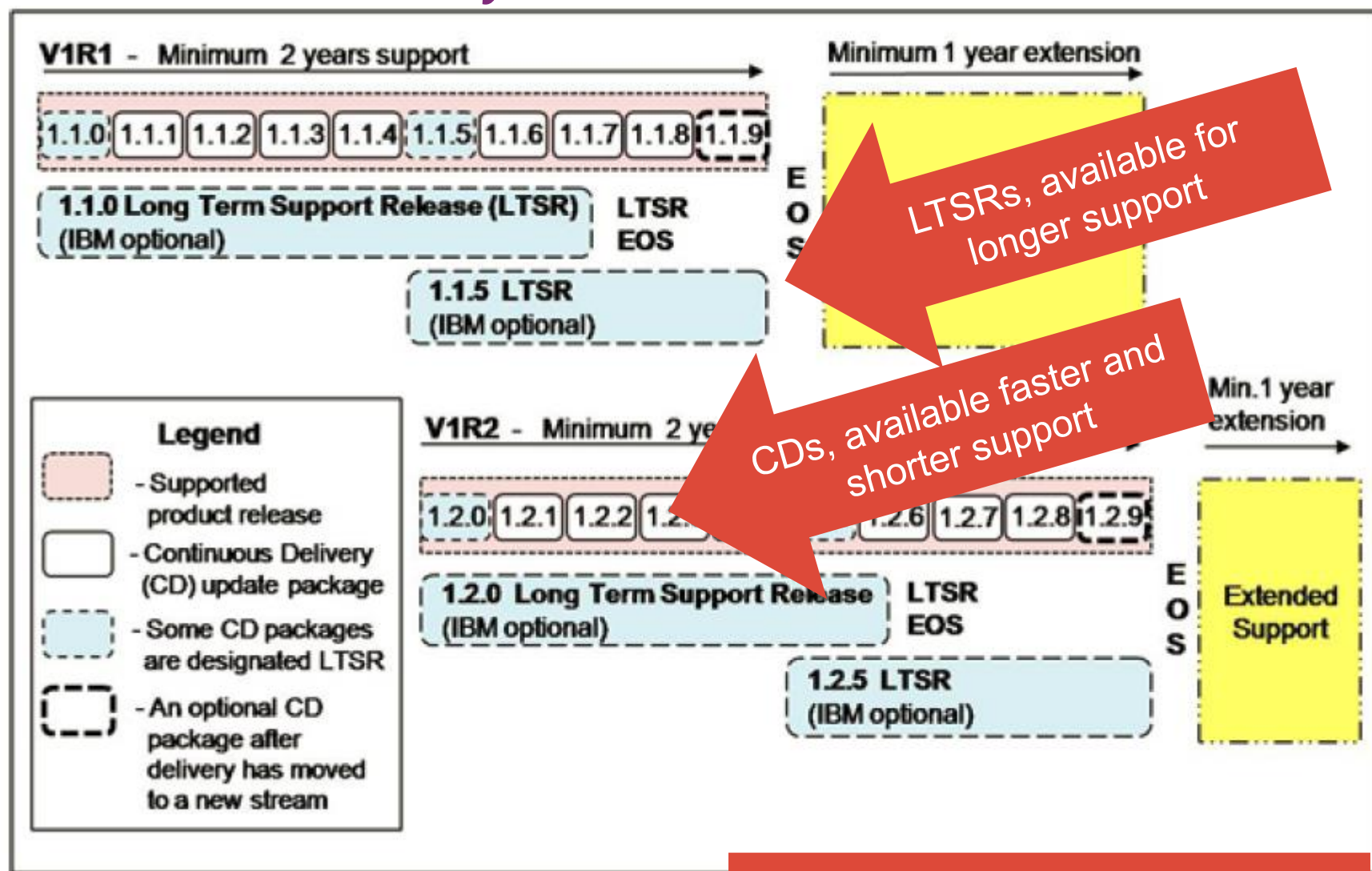
- IBM has released an [IBM announcement](#) to explain IBM's implementation of Continuous Delivery.
- IBM United States Software Announcement 216-269, dated May 24, 2016: "IBM Software Support Lifecycle Policy is enhanced with a continuous delivery support model for eligible, on-premise IBM software products".
- General words about one way an IBM product could do Continuous Delivery.
- This is a general IBM announcement and does not impact or include the IBM z/OS base operating system.
- Announce not specific on *who* it applies to. At all.

What are z/OS platform products doing for Continuous Delivery?



- Example from announcement...two features for each product released:
- **LTSR** (Long Term Service Release): supported for a longer period of time, no new functions (but some might be released here), PTFs for defects (including SECINT) will be provided.
- **CD** (Continuous Delivery): new functions arrive here, more frequent releases, fixes intended to be rolled up into the next level set PTF (or next level).

What are z/OS platform products doing for Continuous Delivery?



Announcement 216-269 description

What are z/OS platform products doing for Continuous Delivery? ...MQ...





- MQ V9 is one such IBM z/OS platform product that intends the sort of deliverable outlined by the RFA 216-269.
- April 19, 2016, IBM United States Software Announcement 216-206
- Title: “**IBM MQ for z/OS, V9.0 delivers new, more flexible delivery and support options, standards-based messaging support for additional environments, and improved management and administration capabilities**”
- “...From this version of IBM MQ onwards, IBM *offers a new delivery and support model that separates out the delivery of defect fixes from the delivery of any new function.*”
- **LTSR**: latest features at the time of GA, with only defect fixes that are provided during the support cycle.
- **CD**: new function is delivered incrementally alongside defect fixes in more frequent modification-level updates. (++)PTFs and FIXCAT of **IBM.MQ.V9R0Mx**, and new MOD level FMID).

Ordering MQ V9 on Shopz




CBPDO ordering panel on 23 May 2018, ServerPac has MQ V9 CD at 9.00.05

◆	[5655-MQ9]	IBM MQ for z/OS V9 CD	 [FMIDs]	9.00.05	English (US)
◆	[5655-MQ9]	IBM MQ for z/OS V9 LTSR	 [FMIDs]	9.00.00	English (US)



FMID	Description
HMS9010	MQ z/OS Base CDR
JMS9011	US English Lang CDR
JMS9012	Japanese Lang CDR



FMID	Description
HMS9000	MQ z/OS Base LTSR
JMS9001	US English Language LTSR
JMS9002	Japanese Lang LTSR

What are z/OS platform products doing for Continuous Delivery? ...CICS TS...



- IBM CICS Transaction Server for z/OS (CICS TS), V5.3 was made generally available in December 2015 .
 - IBM United States Software Announcement 216-036, dated July 12, 2016, title: **“IBM CICS Transaction Server for z/OS, V5.3 is enhanced with continuous delivery and the IBM CICS Transaction Server for z/OS, V5.4 open beta offering is introduced ”**
 - IBM United States Software Announcement 216-354, dated Oct 4, 2016, title: **“IBM CICS Transaction Server for z/OS, V5.3 is further enhanced using continuous delivery and the CICS Transaction Server for z/OS, V5.4 open beta offering is updated”**.
 - IBM United States Software Announcement 217-006, dated January 10, 2017, title: **“IBM CICS Transaction Server for z/OS, V5.3 is further enhanced with the continuous delivery model and the IBM CICS Transaction Server for z/OS, V5.4 open beta offering is updated”**
- ➔ *“CICS TS V5.3 is adopting a continuous delivery model and is updated with a number of new and enhanced key capabilities, delivered using the standard CICS service channel.”*

What are z/OS platform products doing for Continuous Delivery? ...Db2...



- IBM DB2 12 GA's USA 216-378 [announcement](#) on October 4, 2016, “IBM DB2 12 for z/OS expands the value offered to your business by IBM's industry-leading mainframe data server”
- ***Benefiting from enhancements in a faster, more consumable way***
- *“DB2 12 continually delivers new DB2 capabilities and enhancements in a single service stream as the code becomes ready. The result is that clients can benefit from new capabilities and enhancements without waiting for a new release. Clients can activate the new capabilities when a function level is delivered. “*
- *“Function levels enable you to control the timing of the activation and adoption of new features, with the option to continue to apply corrective and preventative service without adopting new features and functions.”*

What are z/OS platform products doing for Continuous Delivery? ...IMS..



- IMS 14.1.0 Publication: Release planning for IMS → IMS Version 14 enhancements → IMS enhancement PTFs
- *IMS uses a continuous delivery model to enhance the most recent in-service version of IMS. In the continuous delivery model, as soon as new IMS function or support for new technology is developed and tested, it is immediately released in a PTF.*
- *Continuous delivery enhancements are applied only to the most recent in-service version of IMS. As soon as a new version of IMS is released, continuous delivery enhancements are applied only to the new version of IMS, and the previous version is designated as a long term support release and is no longer enhanced.*

What are z/OS platform products doing for Continuous Delivery? ...COBOL...



- IBM United States Software Announcement 217-012
March 7, 2017, title: “**IBM Enterprise COBOL for z/OS, V6.1 supports the continuous delivery model for new features**”
- *Enterprise COBOL for z/OS is enhanced to support the continuous delivery model. Continuous delivery allows you to receive new and enhanced capabilities through the compiler service channel. New features and enhancements are included in Program Temporary Fixes (PTFs) along with corrective and preventative service.*
- IBM United States Software Announcement 217-185
- May 9, 2017, title: “**IBM Enterprise COBOL for z/OS, V6.1 releases additional continuous delivery features**”

What are z/OS platform products doing for Continuous Delivery? ...WAS...



- IBM United States Software Announcement 214-184
April 22, 2014, title: **“IBM WebSphere Application Server now offers continuous delivery of new features and simplified administration to help you reduce application time to market and capitalize on new market opportunities”**
- *“This continuous delivery model provides new optionally installable features and function, which can be added to an existing WebSphere Liberty V8.5.5 installation with no requirement for a version upgrade or migration.”*
- IBM United States Software Announcement 216-263
June 7, 2016, title: **IBM WebSphere Application Server for z/OS, V9.0 delivers the next-generation application infrastructure for modern applications to support seamless portability across hybrid cloud landscapes**
- *“You can find information on installing the continuous delivery features in the WebSphere Application Server product documentation.”*

What are z/OS platform products doing for Continuous Delivery? ...IBM Automatic Binary Optimizer...



- IBM United States Software Announcement 217-188
April 11, 2017, title: “**IBM Automatic Binary Optimizer for z/OS, V1.2 supports the continuous delivery model for new features**”
- “*Automatic Binary Optimizer for z/OS is enhanced to support the continuous delivery model, which allows you to receive new and enhanced capabilities through the compiler service channel. New features and enhancements are included in Program Temporary Fixes (PTFs) along with corrective and preventative service.*”

Other z/OS platform products will surely use Continuous Delivery.

Agenda

How can find out about New Functions added via PTFs?

Ways to find z/OS Platform New Function APARs/PTFs



1. **Subscribe in the IBM Support Portal to MyNotifications.**
 - Btw, can do this for z/VM also.
2. **Watch for monthly “historical” updates on a website, [z/OS New Function website](#)**
 - Btw, can do this for z/VM also.
3. **When doing an SMP/E APPLY CHECK, watch out for ++HOLD(ENH).**
4. **Use the SMP/E FIXCAT for MQ: [IBM.MQ.V9R0Mx](#).**

<https://www.ibm.com/support/entry/portal/support>

IBM Support Portal for z/OS already exists

How can we help you?

What's new?

my notifications

Recommended documents and resources

- [Open IBM Service Request](#)
- [Register for IBM Service Request](#)
- Hint: to search for a problem ticket type "PMR" and the full PMR number in the search box above. Example: PMR 12345,123,111. You must be authorized to view the ticket

Search results (All IBM)

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Your new subscription to New Function APARs might look something like this.

Closed New Function APAR link

z/OS family - all hardware, OS, and related software

New Function APARs: **COMPONENT ID: 5655S28PR (Z/OSMF PROVISIONING) PI96931** - The New Function APAR has closed. A fix is pending. Subscription to this APAR is available.

NEW FUNCTION - IBM CLOUD PROVISIONING AND MANAGEMENT FOR Z/OS
ENHANCEMENTS

New Function APAR description

z/OS family - all hardware, OS, and related software

New Function APARs: **COMPONENT ID: 5655S28SM (Z/OSMF CLOUD) PI96930** - The New Function APAR has closed. A fix is pending. Subscription to this APAR is available.



PI96931: NEW FUNCTION - IBM CLOUD PROVISIONING AND MANAGEMENT FOR Z/OS ENHANCEMENTS

APAR status

Closed as new function.

Error description

NEW FUNCTION - IBM CLOUD PROVISIONING AND MANAGEMENT FOR
z/OS ENHANCEMENTS

Local fix

Problem summary

* USERS AFFECTED: *

* All users of IBM Cloud Provisioning and *

* Management for z/OS V2R2 and V2R3. *


Directly links to APAR
information from the
internet.

Web site:

<https://www-03.ibm.com/systems/z/os/zos/installation/zosnfapars.html>



The files are updated about every month. See the file content for the date of the most recent update.



File for download	For use with...
New function APARs for the past 12 months (HTML)	Web browser
New function APARs for the past five years (HTML)	Web browser
New function APARs for the past five years (CSV)	Spreadsheet program

CLOSED DATE (yyyy/mm/dd)	APAR	COMPID	COMPONENT NAME	REL/PTF	FIX DESCRIPTION
2017/04/03	PI77308	5655F7400	IMS PARALLEL REORG	410/UI46100	PROVIDE SITE DEFAULT OPTION OF CABE
2017/03/30	PI77277	5655CEE00	Z/OS CONNECT ENTERP	200/UI46016	z/OS Connect EE V2.0.8.0 update.
2017/03/29	PI68127	5635A0500	IMS V14	400/UI46000	PROVIDE EASE OF USE FOR CONFIGURIN
2017/03/27	PI77901	5697AB100	AUTO BINARY OPT	120/UI45907	SUPPORT FOR VERIFYING THE SMP/E INS
2017/03/27	PI77903	5697TR100	AUTO BIN OPT TRIAL	12J/UI45912 120/UI45911	AN UPDATE TO THE AUTOMATIC BINARY
2017/03/23	OA52000	5698LSA01	AUTO CNTL NETV BASE	12B/UA91422 12E/UA91423 12J/UA91424	ENHANCEMENTS TO MRT, CRT AND PIPE
2017/03/23	OA52211	5697NV600	NETVIEW FOR Z/OS V6	21B/UA91426	ENHANCEMENTS TO MRT, CRT AND PIPE

Summary

- **What is Continuous Delivery, and why do it?**
- IBM wants to deliver new and needed functions faster to customers.
- **What is z/OS doing for Continuous Delivery?**
- Intends to deliver new functions via PTFs, with base stability recognized as a critical.
- **What are IBM middleware and products doing for Continuous Delivery?**
- MQ V9: LTSR and CD releases. New functions in CD PTFs.
- CICS, Db2, IMS, COBOL, WAS, ABO...: new functions via PTFs.
- **How can find out about New Functions added via PTFs?**
- Via MyNotifications, website, or ++HOLD(ENH) for the entire z/OS platform, or MQ FIXCAT!

Handy Dandy Continuous Delivery Matrix

z/OS Platform Product	LTSR/CD FMIDs or PTFs?	Announced Release Beginning with...
z/OS	PTF	<i>...It depends...</i>
MQ 9	LTSR and CD Features w/PTFs on CD FMID for new functions	V9
CICS TS	PTF	V5.3
Db2	PTF, with Function Level controls	12
IMS	PTF	V14.1
COBOL	PTF	V6.1
WAS	PTF	V8.5.5
IBM Auto Bin Optim	PTF	V1.2

- IBM United States Software Announcement 218-150
April 10, 2018, title: “**Preview: IBM z/VM V7.1 will adopt a Continuous Delivery release model to more rapidly support IBM Z advanced virtualization capabilities, and provide a foundation to deliver new function as service**”
- “*IBM will deliver most new z/VM function as Small Programming Enhancements (SPEs) in the service stream of the current Version 7 release. When a new release is introduced, SPEs will be delivered on that release going forward and, with a few exceptions, the earlier release will receive corrective service only and no new function. When z/VM V7.1 becomes available, z/VM V6.4 will receive only corrective service.*”