

Q&A Session for IBM TechU Talk: How to build your complete Red Hat OpenShift environment on IBM Z

Session number: 927473988

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Starting time: 7:17 AM

Q1. Will today's session also cover anything with Cloud Pak for z/OS customers?

A: Yes, Wilhelm will talk some about how to enable the z/OS environment for Cloud, but Cloud Paks run in Linux.

Q2. Sorry, I should not have used 'cloud PAK'. I meant IBM Cloud Broker to connect OpenShift for z/OS.

A: Ah, yes, Wilhelm has slides to address that also.

Q3. With OpenShift, the method is to combine front-end, app servers and DB as multiple containers in a pod. When security specialists ask us to implement security zones to segregate among these 3 tiers, what is your recommendation?

A: There's a tradeoff between security and performance here. We have clients that moved their app server to the same zone as their databases by co-locating on Z, and saw 7x reduction in latency. We have recommendations for this, but rather than writing a white paper here in the chat, I suggest contacting our experts in Montpellier: Narjisse Zaki and Seb Llaurency. Please feel free to set up a call to discuss this with them.

Q4. We are not using WebEx in May?

A: TechU Talks is moving to a new platform to increase capacity and improve user experience. Register once and get access to webcasts and replays from May 12th going forward. Register today at: <https://bit.ly/TechUTalks>

Q5. Will this session be offered again, or is it being recorded?

A: The replay will be posted. If the recording is impacted, we will re-record. Thank you for your patience. Replay, Presentation and Q&A transcript be posted here:

<https://www.ibm.com/services/learning/events/techutalks>

Q6. What about [OpenShift being supported] in z/OS Container Extensions (zCX)?

A: OpenShift is not supported in zCX today.

Q7. Is OpenShift support for zCX planned?

A: It is intended, but the plans are not yet firm. We have no time horizon for it.

Q8. How much effort is needed to migrate from Docker to OpenShift/Crio?

A: If you mean the Docker EE runtime environment to OpenShift then it is quite a bit of effort (defining templates, routes, deployments, etc.). Otherwise, you can run Docker container images with Podman, etc., with no changes needed.

Q9. Can OpenShift Container Platform (OCP) V4.3 also run on IBM z13 hardware?

A: Yes, IBM z13 and newer are supported for OpenShift 4.x releases.

Q10. Please clarify what you mean by [OpenShift on] IBM Z... are you specifically saying Linux on Z and nothing on z/OS?

A: OCP is a Linux environment. OpenShift on Z means on Linux on either IBM Z hardware or LinuxONE hardware. OpenShift is not supported natively on z/OS, nor in z/OS Container Extensions (zCX) today. IBM offers integration between OCP and z/OS today via z/OS Cloud Broker and Red Hat Ansible for z/OS.

Q11. Is SMC-D supported by Red Hat OpenShift on Z?

A: No, not yet.

Q12. How is OpenShift on IBM Z supported compared to LinuxONE? Does z/VM come into play?

A: OpenShift on Z is supported exactly the same for Linux on IBM Z as for LinuxONE. z/VM is currently required for OCP on Z, for both Linux on IBM Z and LinuxONE.

Q13. "In OpenShift Container Platform 4.2 for Z, you must use [ECKD] DASD disks if you require multi-path support." - Is it the same for OCP 4.3? We are using Fibre Channel-only and no [ECKD] DASDs and therefore can use single-path only.

A: Red Hat OpenShift 4.3 supports both FICON and FCP attached disk. These can be z/VM minidisks, full-pack minidisks, or dedicated DASDs. To reach the minimum required DASD size for Red Hat CoreOS installations, you need extended address volumes (EAV). If available, use HyperPAV to ensure optimal performance. See the Red Hat Documentation here: https://docs.openshift.com/container-platform/4.3/installing/installing_ibm_z/installing-ibm-z.html

For Fiber Channel attached disks, in Red Hat OpenShift 4.3 you still have only the single path capability for disks only, multipathing is on the Roadmap.

Q14. What do you mean by "z/VM is the only supported option"? Please clarify.

A: When Elton said that z/VM is the only supported installation option for both LinuxONE and IBM Z for OpenShift, it means that is the only environment we have tested, and the documentation, the people who respond to Help Requests, the development team, all expect that you are using z/VM.

Q15. Can the worker nodes on LinuxONE be managed by the master nodes on x86?

A: No, there is no multiarchitecture support at this time (it means workers and masters for one OCP cluster cannot run in multi-architecture platforms). IBM Multi-Cloud Manager (MCM) is the way to do this, but it will need separate OpenShift clusters.

Q16. I understand as of now z/VM is the only supported software hypervisor. Are there any plans for OpenShift supporting KVM for Linux on Z somewhere in the future?

A: Yes, this is a desired feature for the future. Please let us know if you need KVM to be a supported hypervisor for OCP on Z.

Q17. Does Red Hat OpenShift support z/VM Single System Image (SSI) Cluster?

A: We do not have extensive testing of SSI with OCP today, so no official support.

Q18. If the bootstrap is running RHEL7 is it still sufficient for OCP 4.3 installation?

A: The bootstrap is required to run CoreOS.

Q19. From a High Availability (HA) perspective, the implementation of OpenShift on IBM Z will need at least two LPARs. Can the three master nodes be spread across multiple LPARs? Can these manage all the worker nodes spread across LPARs? All on IBM Z.

A: Yes, you can have them across multiple LPARs. Just make sure they are all in the same data center. "Stretch clusters" across data centers are not supported by Kubernetes, so not by OCP either.

Q20. Is the Container Storage Interface (CSI) plugin the method used by Persistent Volume Claim (PVC)? In other words, is CSI used for FCP/iSCSI/CKD persistent storage vs. registry specific?

A: The Persistent Volume Claim (PVC) can claim from different types of Persistent volumes (PV), such as Local Volumes or shared volume. The shared volume (rwm – read write many) can only be NFS. OCS is on the roadmap.

Q21. We have installed our OCP clusters in a z/VM 7.1 SSI configuration and it works, but whether Red Hat will support us is a different story?

A: Yes, it is a different story. This is the same story with KVM. Sometimes a combination or configuration like this "works" but official support requires extensive testing, so it is still a work in progress.

Q22. Many customers (especially banks) don't allow external connectivity from their system. Is it a requirement to have external network? Can't we implement all the installables on a local repository (e.g., NFS).

A: Yes. Disconnected Installs are supported. We have done this at several clients today (banks, etc.).

Q23. Thanks! I think if IBM can do a writeup on disconnected deployment, it would be useful.

A: It is no different than OCP on x86. You just need a local Docker repository. Mirror OCP installation containers to it, then point your installation to that vs . online (same steps as for Intel). See Red Hat Documentation at:
https://docs.OpenShift.com/container-platform/4.3/installing/install_config/installing-restricted-networks-preparations.html

Q24. Does OCP on Z support the RoCE/SMC-D? Or does it rely on z/VM for that?

A: No SMC-D support today in OCP for Z, but it is known as a desired feature for our roadmap. OCP cannot use the RoCE/SMC-D of z/VM either.

Q25. Have you measured VSwitch with HiperSockets (HS) bridge and how would you configure one?

A: Yes, IBM has implemented this at client sites. While IBM is working on public documentation for configuration, please reach out to elton.desouza@ca.ibm.com for help in the meantime.

Q26. Does a connection between Red Hat OpenShift and z/OS require z/OS Connect EE?

A: It does not. You could use other options like JDBC, MQ protocol, etc.

Q27. Is there a Cloud Pak that provides ELK Stack (Elasticsearch Logstash Kibana)?

A: OCP uses parts of the Elastic Stack for its monitoring. IBM Cloud Pak for Integration deploys an ELK stack. For more information, see
https://www.ibm.com/support/knowledgecenter/SSGT7J_19.4/logging/3.0.0/log_overview.html

Q28. I have been reading an IBM Redbook about Linux containers on Z, and it seems that a UserID in RACF is still necessary? Why is that?

A: There is no general requirement for RACF (Resource Access Control Facility) in conjunction with containers on Z. If you have RACF as security tool in z/VM, then it depends on the authorization setup for z/VM guests in general.

Q29. Can I use OpenShift on an old outdated IBMz10 machine?

A: At worst, it would not run. At best it probably would not have full function. In any case, there would be no formal help with it from IBM or Red Hat. The oldest supported hardware technology for OCP on Z is IBM z13 / LinuxONE Emperor / LinuxONE Rockhopper.

Q30. Can I run LinuxONE on IBM z10?

A: Linux on Z runs on z10, but LinuxONE is hardware – IBM’s brand of Linux-only hardware servers.

Q31. Is Red Hat Enterprise Linux CoreOS (RHCOS) NIC VLAN aware?

A: Yes it is because it is based on RHEL 8.

Q32. Is LinuxONE is built on Red Hat Linux?

A: IBM LinuxONE is hardware. It can run a variety of Linux distributions, including the three enterprise distributions: SUSE Linux Enterprise Server (SLES), Canonical Ubuntu Server, and Red Hat Enterprise Linux (RHEL). LinuxONE can also run community editions of Linux, such as OpenSUSE, Fedora, Debian, and others.

Q33. SMT2 is z13+?

A: The minimum requirement for Openshift on IBM Z & LinuxONE is the IBM z13 or newer with SMT2 (Simultaneous Multi-Threading) enabled.

Q34. For internal IBMers to try and test/learn, do we have OCP installables hosted anywhere in IBM sites (e.g., ftp3.linux)

A: Rather than downloading the installable code, if you want some hands-on experience, you can install OCP on a LinuxONE machine in the LinuxONE Community Cloud, hosted by Marist College (<https://linuxone.cloud.marist.edu/cloud/>)

Q35. What is the use case of IBM Cloud Broker here? When can OpenShift interact with z/OS resources via OCP [Cloud Broker]?

A: z/OS Cloud Broker provides self-service access to z/OS resources. With the integration with Red Hat OpenShift, you can use a single control point for cloud services. Details and how to setup Cloud Broker and connect to z/OS, see link below.

<https://www.ibm.com/support/z-content-solutions/cloud-broker/>

Q36. When in the cloud, how do ECKD disks integrate with open platforms disk when it comes to moving images?

A; This is a complicated question to answer because of the point in time in the maturation of OCP on Z. There is currently no public cloud offering of OCP on Z, no multi-arch support in OCP for Z, and NFS is the only file system supported by OCP for Z, and the only supported way to implement OCP on Z is as guests of z/VM.

As a result, “When in the cloud” today means on-premises private cloud, and “moving images” means moving s390x images between NFS storage devices that are virtualized by z/VM. In this case, integration of ECKD and iSCSI storage occurs at the z/VM level. OCP does not know whether the underlying storage device is ECKD or iSCSI. OCP can move the s390x container images easily between ECKD and open platforms disk attached to the IBM Z or LinuxONE system.