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oVirt Conference October/2019 – Innovate the datacenter
With open virtualization
Agenda

- Running Oracle RDBMS inside oVirt Virtual Machines
- Standard Patching Workflow for Oracle RDBMS (12cR2)
- Apply patching workflow using Web Admin GUI
- Demo (Web Admin GUI)
- oVirt related Ansible Modules and Roles
- Apply patching workflow using Ansible
- Demo (Ansible)
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Oracle RDBMS inside oVirt VMs

There are many reasons:

- High Performance VM with performance metrics as close as possible to bare metal
  - New VM profile type in oVirt 4.2, with some limitations
  - Improved in oVirt 4.3 (Full Live Migration Support)

- Huge Pages Support
- IO Threads to boost I/O performance
- vNUMA Support with appropriate NUMA pinning
- Great amount of Memory support in VM → currently 2Tb
- Great amount of vCPUs support → currently 384
- CPU Hot Plug
- Memory Hot Plug
- Disk Hot Plug
- Network Device Hot Plug
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Oracle RDBMS Patching

**Database 12.2.0.1 Proactive Patch Information (Doc ID 2285557.1)**

In this Document
- Details
- Database 12.2.0.1 Proactive Patch Information (Doc ID 2285557.1)
- Introduction
- 12.2.0.1 Database Release Update (Update)
- 12.2.0.1 Grid Infrastructure Release Update (Update)
- 12.2.0.1 Database Release Update Revision (Revision)
- 12.2.0.1 Grid Infrastructure Release Update Revision (Revision)
- 12.2.0.1 OJVM Release Update (Update)
- 12.2.0.1 Quarterly Full Stack Download Patch (QFSDP) for Exadata
- 12.2.0.1 Quarterly Full Stack Download Patch (QFSDP) for SPARC SuperCluster

References
Oracle RDBMS Patching

![Patching Diagram]

- **July**: Database Release Update 12.2.0.1.<build-date>
- **October**: Database Release Update 12.2.0.1.<build-date>
- **Jan**: Database Release Update 12.2.0.1.<build-date>
- **April**: Database Release Update 12.2.0.1.<build-date>
- **July**: Database July 2017 Release Update Revision 12.2.0.1.<build-date>
- **Jan**: Database Oct2017 Release Update Revision 12.2.0.1.<build-date>
- **April**: Database July 2017 Release Update Revision 12.2.0.1.<build-date>
- **July**: Database July 2017 Release Update Revision 12.2.0.1.<build-date>

**RU**

- **RUR #1**
- **RUR #2**
Several patching workflows available

- In Place patching  < --- we will focus on this one, but making use of a new disk

- Out Of Place (OOP) patching
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Oracle RDBMS Patching

In Place patching strategy using floating disks and helper VM

- Use a helper VM based on the same OS template as the Oracle VMs
- One disk configured as PV and dedicated to Oracle RDBMS software
- Shutdown database and listener on the helper VM
- Apply desired RDBMS RU and OJVM RU patches (*opatch apply* command)
- Make a copy of the patched ORACLE software disk into a separate floating disk
Oracle RDBMS Patching

Target VM patching workflow

- Shutdown database and listener
- Hot remove of the current Oracle RDBMS software disk
- Hot add of the new patched Oracle RDBMS software disk
- Start database in upgrade mode
Oracle RDBMS Patching

Target VM patching workflow

- Run `datapatch` against the database
- Shutdown / startup database
- Verify DBA REGISTRY
- Give access to database services
Oracle RDBMS Patching

WEB ADMIN GUI

WORKFLOW

DEMO
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Ansible Modules

Ovirt

- ovirt_affinity_group – Module to manage affinity groups in oVirt/RHV
- ovirt_affinity_label – Module to manage affinity labels in oVirt/RHV
- ovirt_affinity_label_facts – Retrieve facts about one or more oVirt/RHV affinity labels
- ovirt_api_facts – Retrieve facts about the oVirt/RHV API
- ovirt_auth – Module to manage authentication to oVirt/RHV
- ovirt_cluster – Module to manage clusters in oVirt/RHV
- ovirt_cluster_facts – Retrieve facts about one or more oVirt/RHV clusters
- ovirt_datacenter – Module to manage data centers in oVirt/RHV
- ovirt_datacenter_facts – Retrieve facts about one or more oVirt/RHV datacenters
- ovirt_disk – Module to manage Virtual Machine and floating disks in oVirt/RHV
- ovirt_disk_facts – Retrieve facts about one or more oVirt/RHV disks
- ovirt_event – Create or delete an event in oVirt/RHV
- ovirt_event_facts – This module can be used to retrieve facts about one or more oVirt/RHV events
- ovirt_external_provider – Module to manage external providers in oVirt/RHV
- ovirt_external_provider_facts – Retrieve facts about one or more oVirt/RHV external providers
- ovirt_group – Module to manage groups in oVirt/RHV
- ovirt_group_facts – Retrieve facts about one or more oVirt/RHV groups
- ovirt_host – Module to manage hosts in oVirt/RHV
Ansible Roles

oVirt maintains multiple Ansible roles that can be deployed to easily configure and manage various parts of the oVirt infrastructure. Ansible roles provide a method of modularizing your Ansible code, in other words; it enables you to break up large playbooks into smaller reusable files. This enables you to have a separate role for each component of the infrastructure, and allows you to reuse and share roles with other users. For more information about roles, see Creating Reusable Playbooks in the Ansible Documentation.

Currently we have implemented the following Ansible roles:

- `oVirt.cluster-upgrade` - easily upgrade your oVirt clusters, host by host.
- `oVirt.disaster-recovery` - plan, failover and failback oVirt in Disaster Recovery scenarios.
- `oVirt.engine-setup` - setup your oVirt Engine via Ansible.
- `oVirt.infra` - setup a complete oVirt setup (data centers, clusters, hosts, networks...) via this role.
- `oVirt.image/template` - easily create VM templates (via Glance or QCOW2 download)
- `oVirt.migrate` - install and configure a ManageIQ (or CloudForms) VM appliance on your oVirt!
- `oVirt.repositories` - set up the required oVirt repositories on your hosts.
- `oVirt.vm-infra` - configure a complete VM setup (create and configure VMs and their properties)
Some Ansible modules used by this workflow

- **setup**: gathers facts about remote hosts

- **ovirt auth**: module to manage authentication to oVirt

- **ovirt disk**: module to manage Virtual Machine and floating disks

- **shell**: execute shell commands on targets (pay attention to idempotence...
Some Ansible modules used by this workflow

- lvoll: configure LVM logical volumes
- service: module to manage services
- debug: print statements during execution
- mount: control active and configured mount points
Oracle RDBMS Patching

ANSIBLE

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Thank you!

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