oVirt

oVirt Ansible Automation - Patching Oracle RDBMS

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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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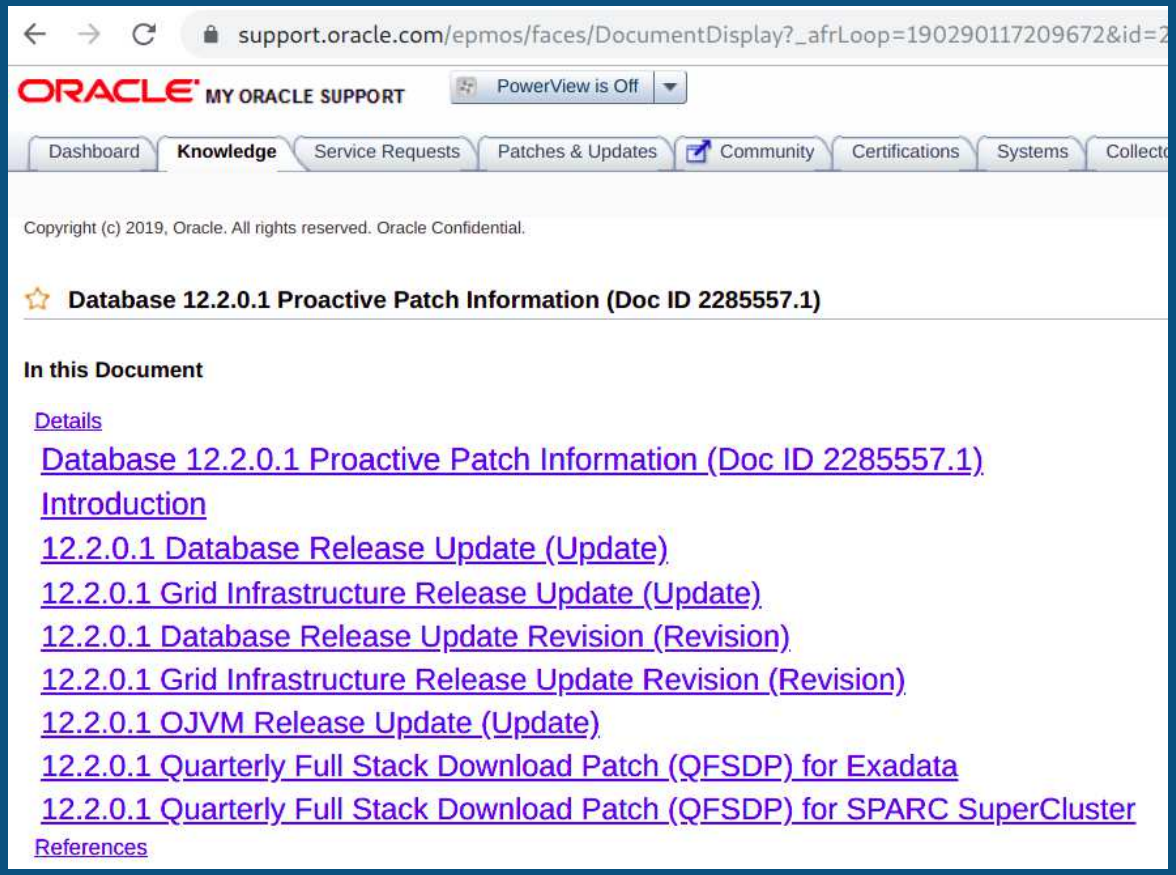
Oracle RDBMS Patching



Oracle RDBMS Patching

Oracle RDBMS Patching

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 1/2

- 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 2/2

- 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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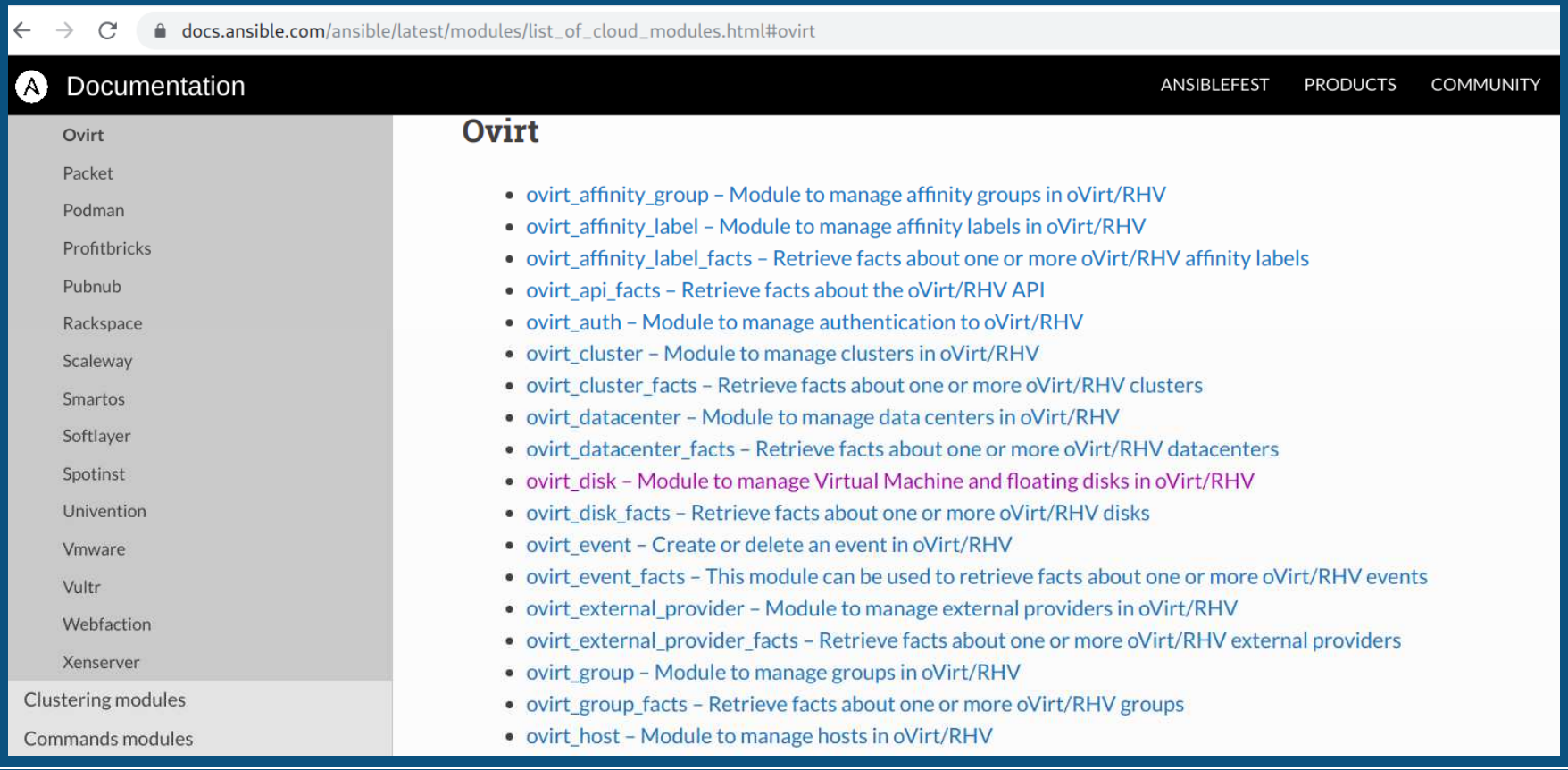
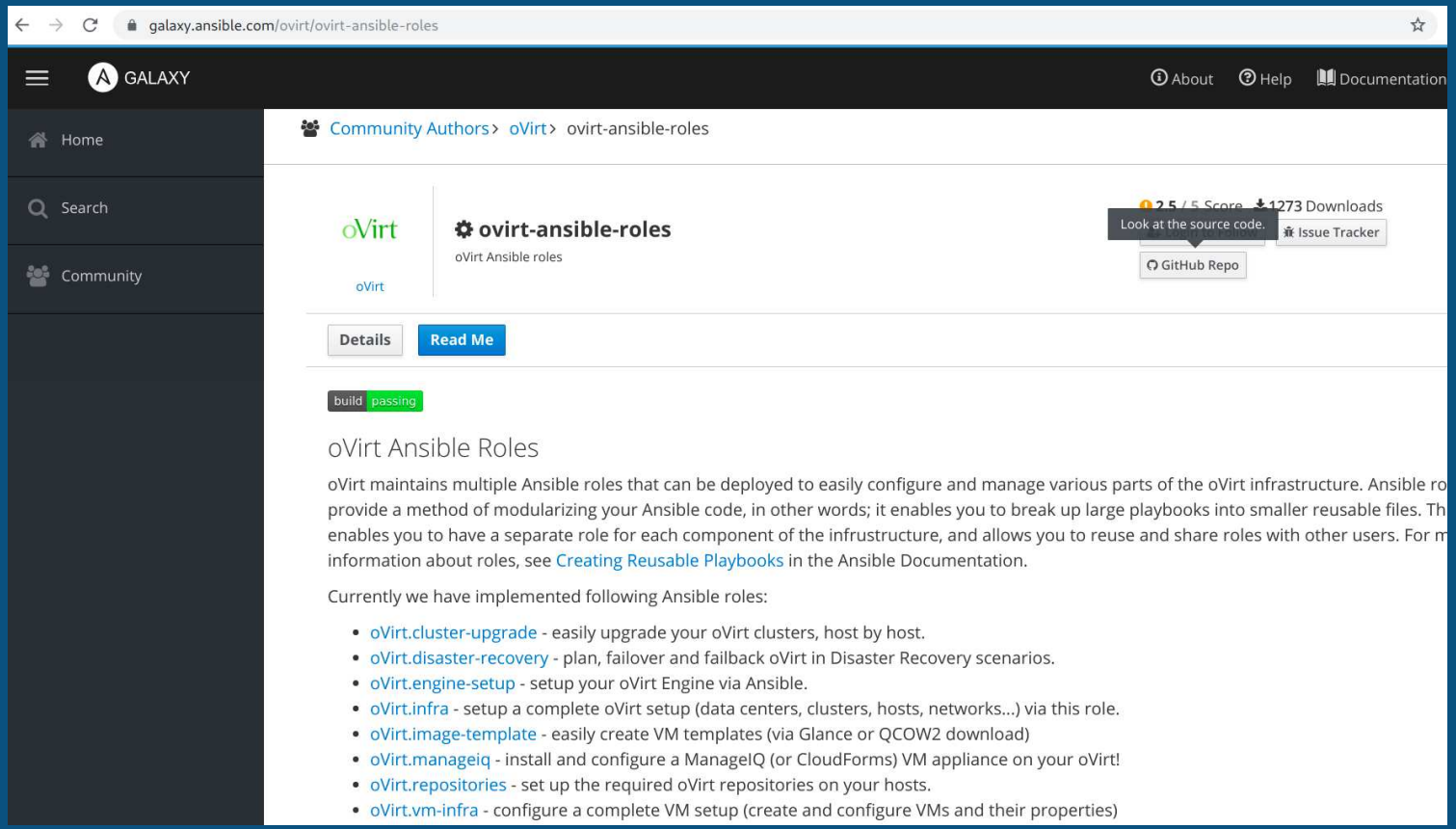
Ansible Modules



Ansible Roles



Oracle RDBMS Patching

Some Ansible modules used by this workflow **1/2**

- 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…)

Oracle RDBMS Patching

Some Ansible modules used by this workflow **2/2**

- lvol: 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

WORKFLOW

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Thank you!

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