

# oVirt

## oVirt Ansible Automation - Patching Oracle RDBMS

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Innovate the datacenter  
With open virtualization

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# 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

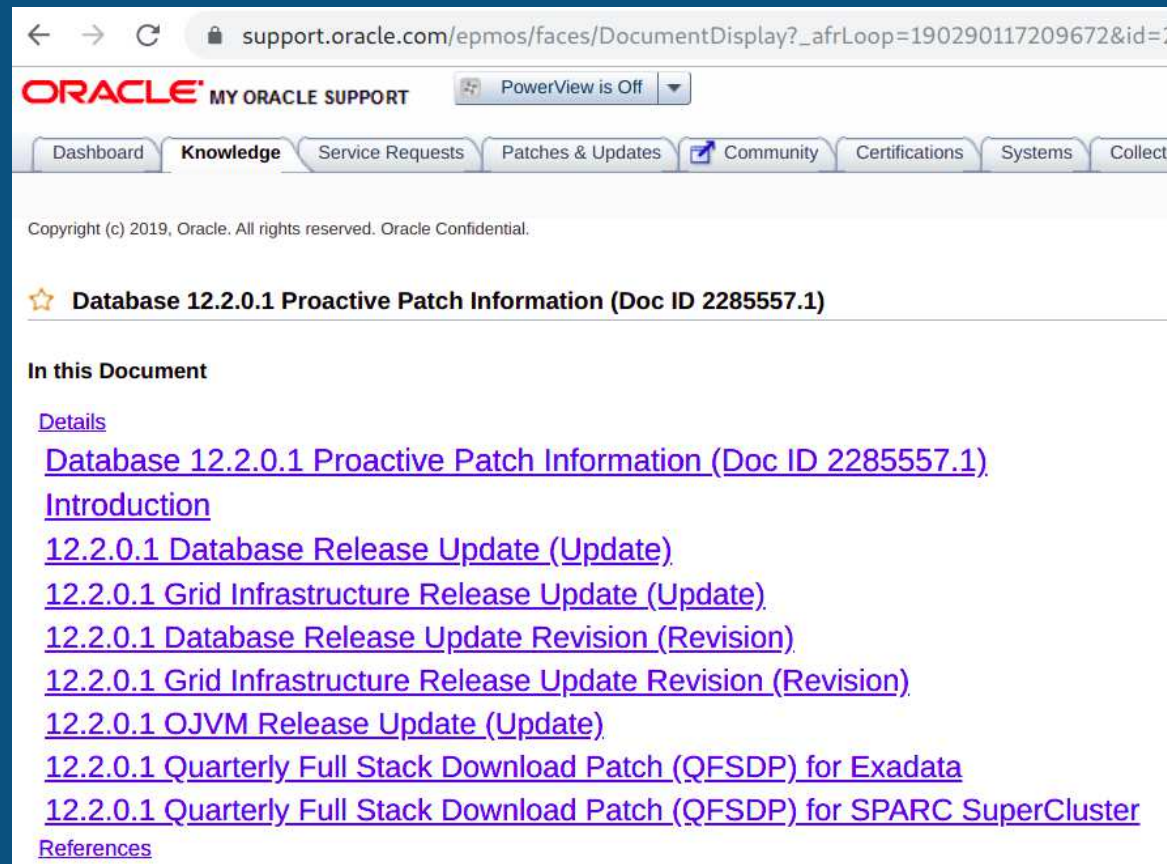
There are many reasons:

- 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



The screenshot shows the Oracle My Oracle Support interface. The browser address bar displays the URL: support.oracle.com/epmos/faces/DocumentDisplay?\_afLoop=190290117209672&id=2. The page header includes the Oracle logo, 'MY ORACLE SUPPORT', and a 'PowerView is Off' button. A navigation menu contains links for Dashboard, Knowledge, Service Requests, Patches & Updates, Community, Certifications, Systems, and Collect. Below the navigation menu, a copyright notice reads: Copyright (c) 2019, Oracle. All rights reserved. Oracle Confidential. The main content area features a star icon and the title 'Database 12.2.0.1 Proactive Patch Information (Doc ID 2285557.1)'. Underneath, the section 'In this Document' lists several links: 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, and 12.2.0.1 Quarterly Full Stack Download Patch (QFSDP) for SPARC SuperCluster. A 'References' link is also present at the bottom of the list.

# 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

# WEB ADMIN GUI

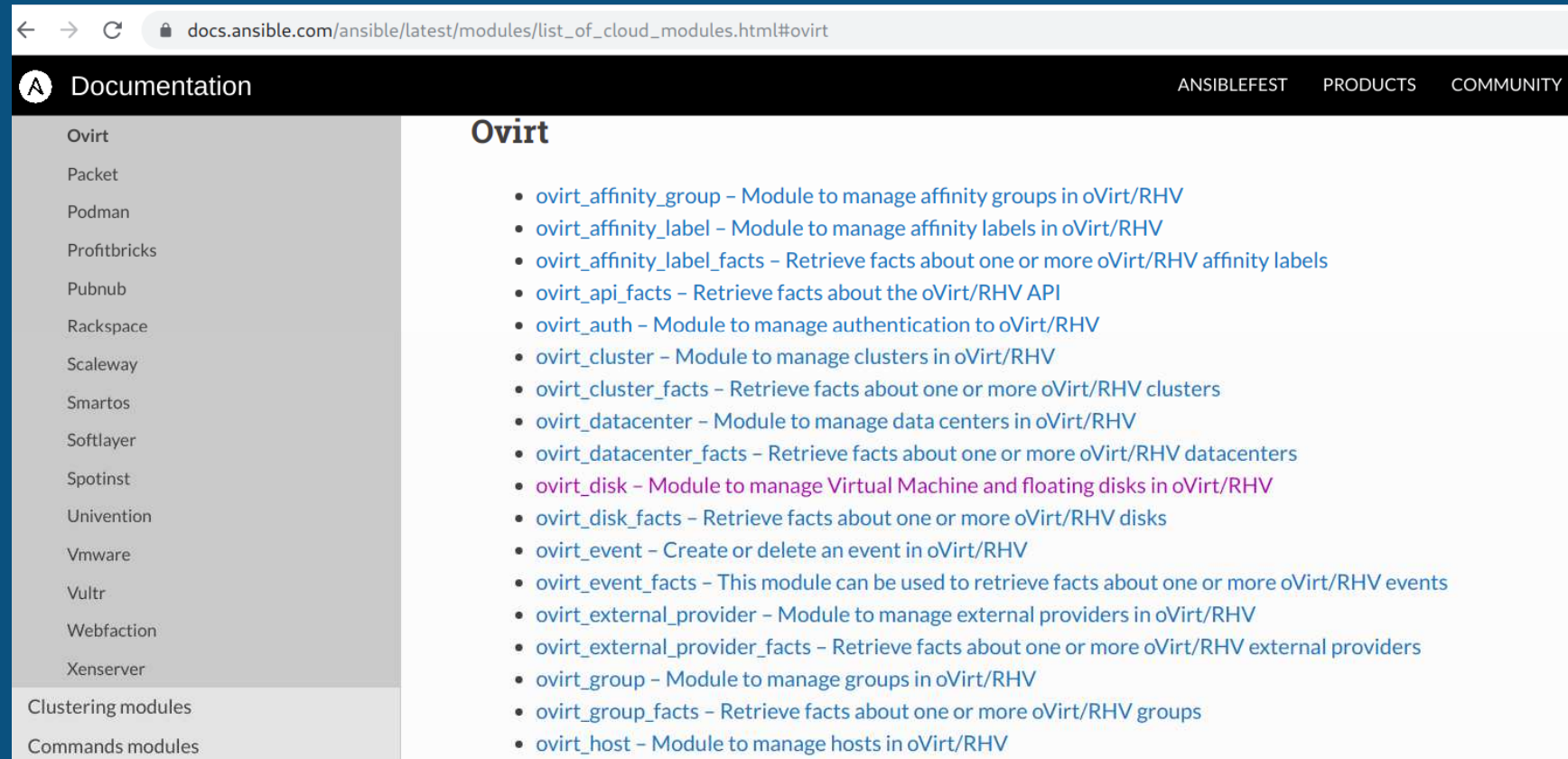
# WORKFLOW

# DEMO

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# Ansible Modules



The screenshot shows a web browser window with the URL `docs.ansible.com/ansible/latest/modules/list_of_cloud_modules.html#ovirt`. The page title is "Documentation" and it includes navigation links for "ANSIBLEFEST", "PRODUCTS", and "COMMUNITY". A sidebar on the left lists various cloud providers, with "Ovirt" selected. The main content area is titled "Ovirt" and contains a list of 20 modules, each with a brief description of its function.

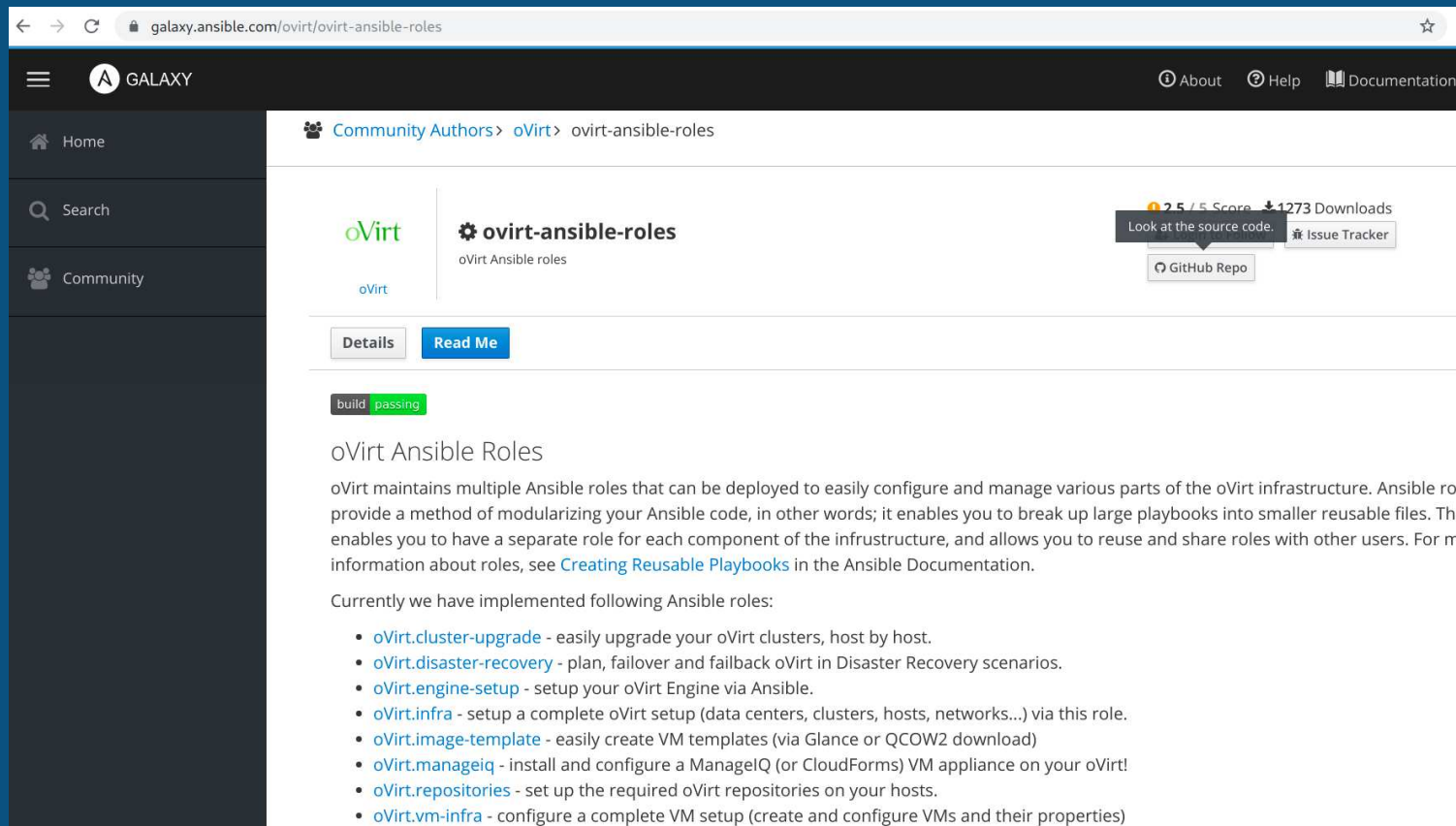
← → ↻ 🔒 docs.ansible.com/ansible/latest/modules/list\_of\_cloud\_modules.html#ovirt

Documentation ANSIBLEFEST PRODUCTS COMMUNITY

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



The screenshot shows the Ansible Galaxy page for the 'ovirt-ansible-roles' collection. The page includes a navigation sidebar with 'Home', 'Search', and 'Community' options. The main content area displays the collection name, a score of 2.5/5, and 1273 downloads. It features buttons for 'Details', 'Read Me', and 'GitHub Repo'. A 'build passing' status is shown. The text describes the roles as a modularized way to manage oVirt infrastructure, listing several roles like 'cluster-upgrade', 'disaster-recovery', 'engine-setup', 'infra', 'image-template', 'manageiq', 'repositories', and 'vm-infra'.

galaxy.ansible.com/ovirt/ovirt-ansible-roles

Community Authors > oVirt > ovirt-ansible-roles

oVirt **ovirt-ansible-roles**  
oVirt Ansible roles

2.5 / 5 Score ↓ 1273 Downloads  
Look at the source code. Issue Tracker  
GitHub Repo

Details Read Me

build passing

## oVirt 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 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.manageiq](#) - 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)



# 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

**ANSIBLE**  
**WORKFLOW**  
**DEMO**

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oVirt

Thank you!

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<https://ovirt.org/>

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