

oVirt

oVirt Monitoring with Grafana and DWH

Deep Dive

Shirly Radco
BI Principal Software engineer

08/2020



Agenda

- oVirt Data Warehouse (DWH)
- oVirt Grafana
- Examples

Contributors

Engineering:

- Yedidyah Bar David
- Aviv Litman
- Shirly Radco

QE

- Lucie Leistnerova
- Guilherme De Oliveira
- Pavel Novotny

Documentation

- Eli Marcus

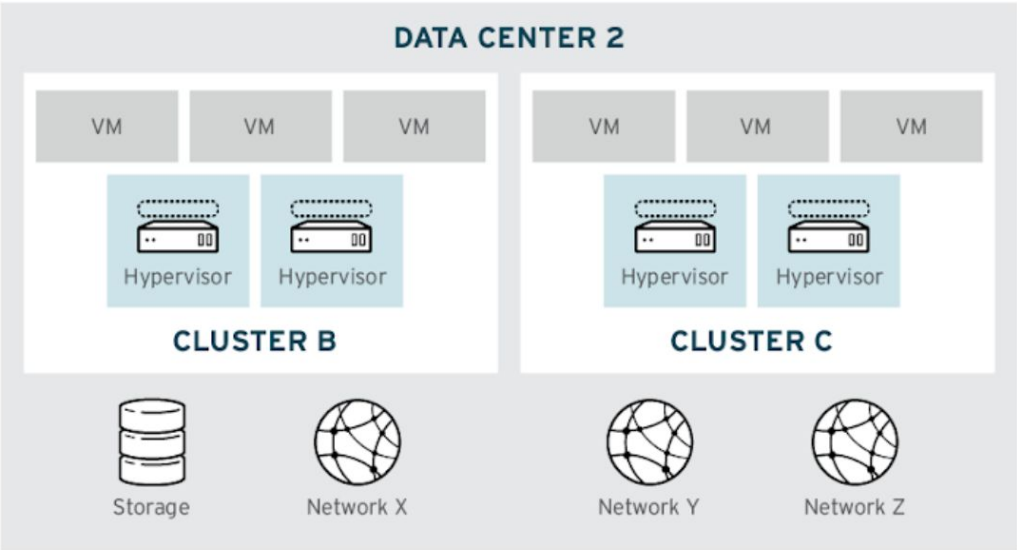
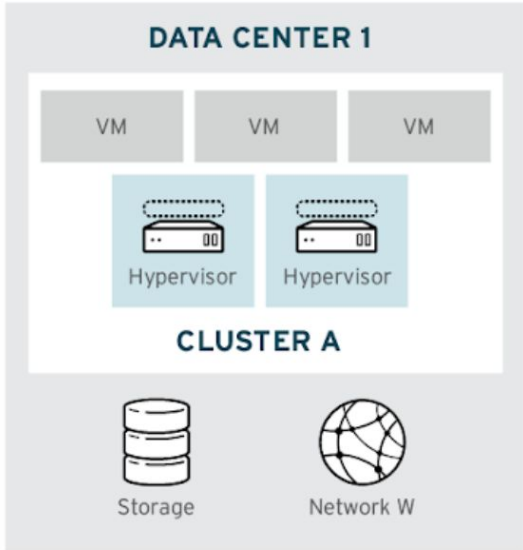
Managers

- Sandro Bonazzola, Peter Lauterbach, Doron Fediuck, Michal Skrivanek

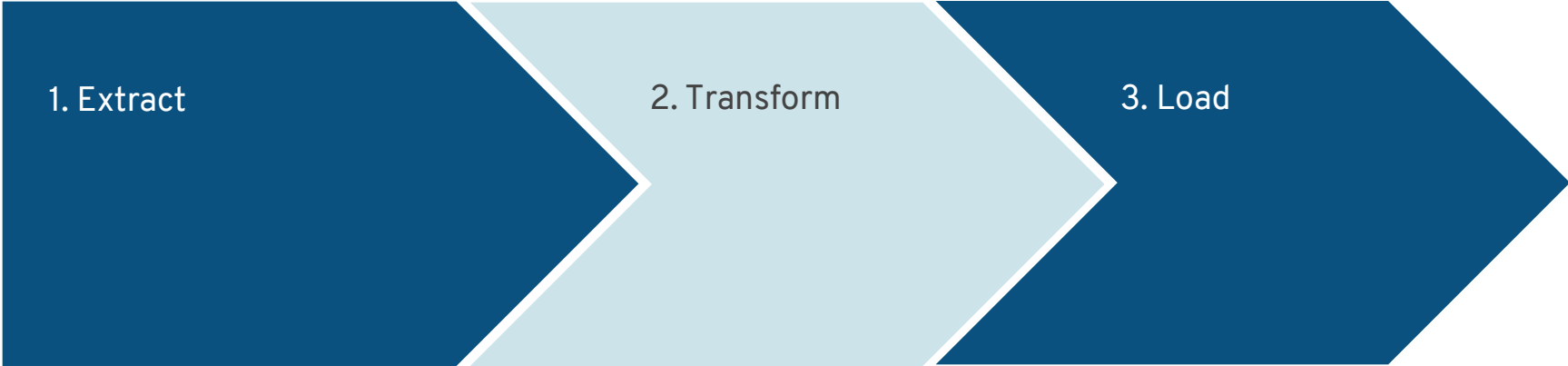
oVirt Data Warehouse (DWH)

oVirt Engine Entities

oVirt engine



ETL Process



ETL Process

1. Extract

- Metrics and configuration data extracted from engine database
- Samples collection interval - 1 minute

ETL Process

2. Transform

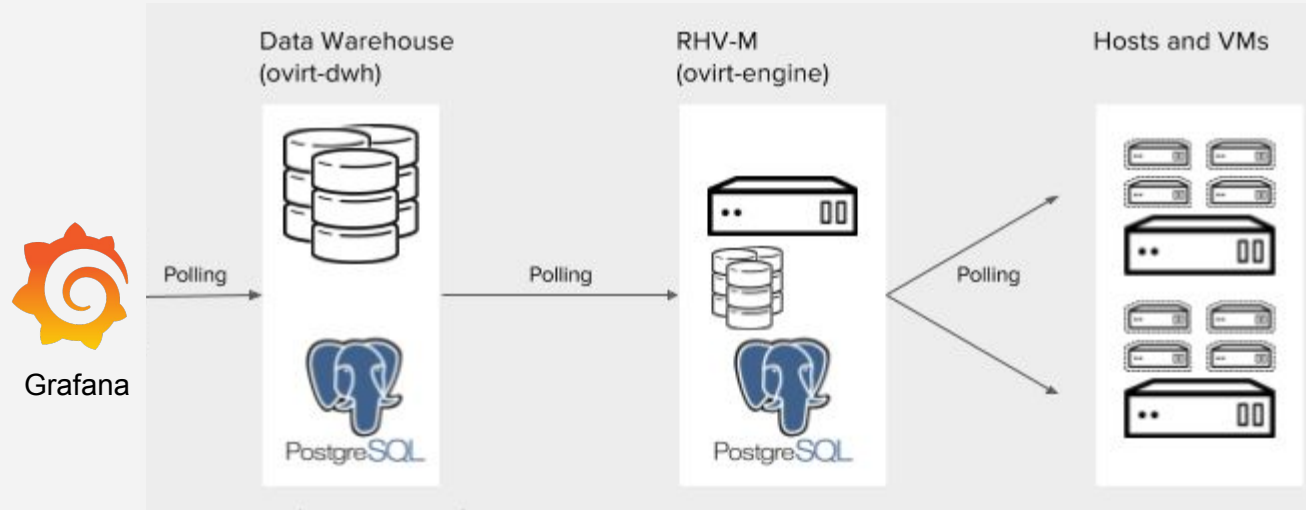
- Data is being validated, transformed, cleansed and metadata added.
- **Aggregations** - hourly and daily aggregations
- **Data Retention - Basic and Full scale**
 - Basic (Default) - sample 24 hours, hourly 1 month, daily - no daily aggregations.
 - Full - sample 24 hours, hourly 2 months, daily 5 years

ETL Process

3. Load

- Data is saved to the DWH postgres database, called `ovirt_engine_history`.
- By default, DWH database is on same machine as the engine database.
- DWH Database can be migrated to a separate machine.

Data Collection Flow



oVirt Grafana

oVirt Grafana



- Grafana is the UI tool used to display the data stored in the oVirt DWH PostgreSQL database
- Pre-Built Dashboards for datacenter, cluster, host, and VM data:
 - Executive Dashboards
 - Trend Dashboards
 - Service Level Dashboards
 - Inventory Dashboards
- User Custom Dashboards
- Dashboards are based on the legacy oVirt reports project and JasperReports
- Data displayed based on the time period selected by the user and includes the samples, hourly and daily statistics.

oVirt Grafana Installation



- Grafana and DWH - **Installed by default during engine-setup**
- DWH is installed in **Basic** scale by default
- It is recommended to change DWH scale to **Full** scale.

Note: For more details on setting DWH to **Full** scale.

For additional information:

<https://www.ovirt.org/develop/release-management/features/grafana/grafana.html>

oVirt Grafana Installation



```
[ INFO ] Stage: Setup validation
        During execution engine service will be stopped (OK, Cancel) [OK]:
[WARNING] Less than 16384MB of memory is available
[ INFO ] Cleaning stale zombie tasks and commands

--== CONFIGURATION PREVIEW ==--

Default SAN wipe after delete      : False
Host FQDN                          : 
Firewall manager                   : firewalld
Update Firewall                    : True
Upgrade packages                   : True
Set up Cinderlib integration       : False
Engine database host               : localhost
Engine database port               : 5432
Engine database secured connection : False
Engine database host name validation : False
Engine database name               : engine
Engine database user name          : engine
Engine installation                 : True
PKI organization                   : 
Set up ovirt-provider-ovn         : True
Grafana integration                : True
DWH database host                  : localhost
DWH database port                  : 5432
DWH database secured connection    : False
DWH database host name validation  : False
DWH database name                  : ovirt_engine_history
DWH database user name             : ovirt_engine_history
Grafana database user name        : ovirt_engine_history grafana
Configure WebSocket Proxy         : True
DWH installation                   : True
Backup DWH database               : True
Configure VMConsole Proxy         : True

Please confirm installation settings (OK, Cancel) [OK]:
[ INFO ] Cleaning async tasks and compensations
[ INFO ] Unlocking existing entities
[ INFO ] Checking the Engine database consistency
[ INFO ] Stage: Transaction setup
[ INFO ] Stopping engine service
[ INFO ] Stopping ovirt-fence-kdump-listener service
[ INFO ] Stopping dwh service
[ INFO ] Stopping vmconsole-proxy service
[ INFO ] Stopping websocket-proxy service
[ INFO ] Stopping service: grafana-server
[ INFO ] Stage: Misc configuration (early)
```

oVirt Grafana Installation



```
[ INFO ] DNF Verify: ovirt-engine-wildfly-19.1.0-2.el8.x86_64 75/80
[ INFO ] DNF Verify: ovirt-engine-wildfly-18.0.1-1.el8.x86_64 76/80
[ INFO ] DNF Verify: ovirt-engine-wildfly-overlay-19.1.0-2.el8.noarch 77/80
[ INFO ] DNF Verify: ovirt-engine-wildfly-overlay-18.0.1-1.el8.noarch 78/80
[ INFO ] DNF Verify: ovirt-web-ui-1.6.4-0.20200723.git9c3b56.el8.noarch 79/80
[ INFO ] DNF Verify: ovirt-web-ui-1.6.3-0.20200515.git63fa555.el8.noarch 80/80
[ INFO ] Stage: Misc configuration
[ INFO ] Upgrading CA
[ INFO ] Updating OVN SSL configuration
[ INFO ] Backing up database localhost:ovirt_engine_history to '/var/lib/ovirt-engine-dwh/backups/dwh-20200804132540.1ldnmeer.dump'.
[ INFO ] Creating/refreshing DWH database schema
[ INFO ] Configuring WebSocket Proxy
[ INFO ] Backing up database localhost:engine to '/var/lib/ovirt-engine/backups/engine-20200804132548.cjhiz63q.dump'.
[ INFO ] Creating/refreshing Engine database schema
[ INFO ] Creating/refreshing Engine 'internal' domain database schema
[ INFO ] Unregistering existing client registration info.
[ INFO ] Install selinux module /usr/share/ovirt-engine/selinux/ansible-runner-service.cil
[ INFO ] Generating post install configuration file '/etc/ovirt-engine-setup.conf.d/20-setup-ovirt-post.conf'
[ INFO ] Stage: Transaction commit
[ INFO ] Stage: Closing up
[ INFO ] Starting service: grafana-server
[ INFO ] Starting engine service
[ INFO ] Starting dwh service
[ INFO ] Starting Grafana service
[ INFO ] Restarting ovirt-vmconsole proxy service

--== SUMMARY ==--

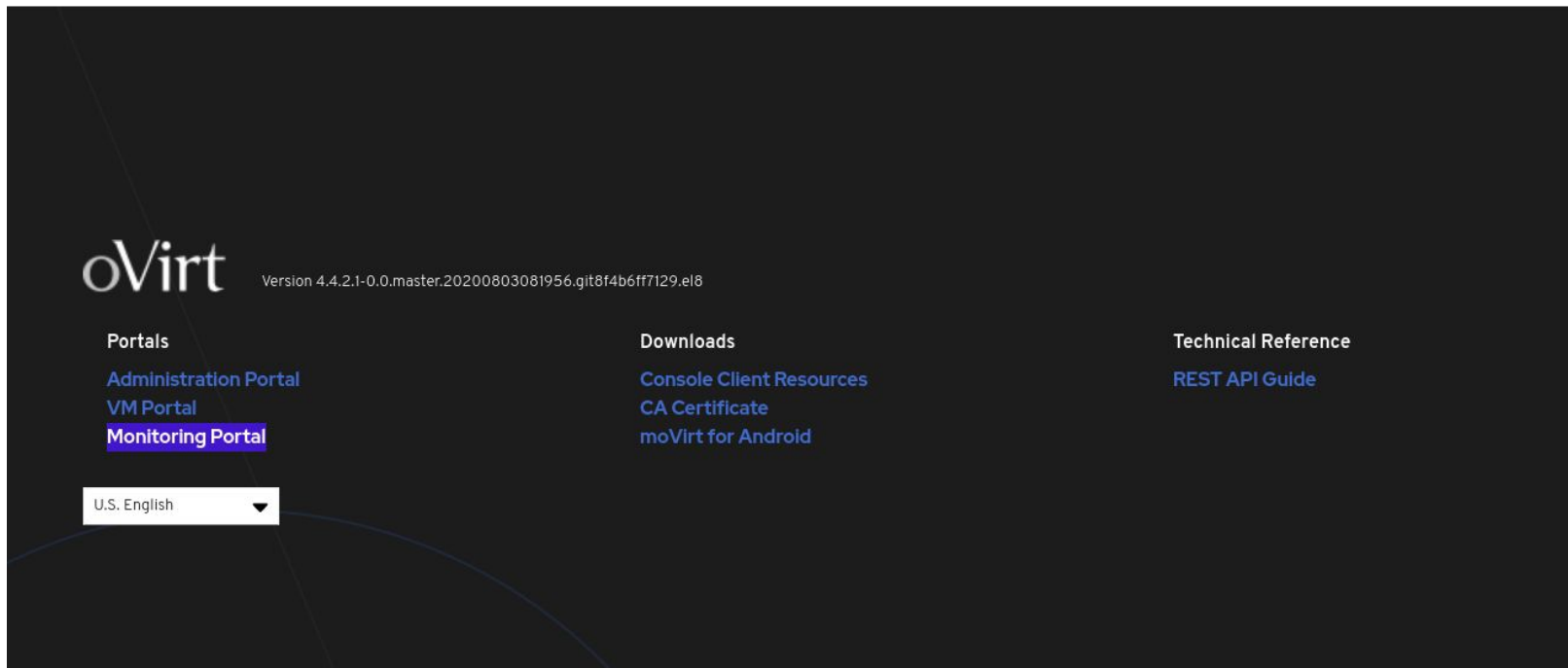
[ INFO ] Restarting httpd
Web access is enabled at:
  http://[REDACTED].com:80/ovirt-engine
  https://[REDACTED].com:443/ovirt-engine
Internal CA [REDACTED]
SSH fingerprint: SHA256:[REDACTED]

[WARNING] Less than 16384MB of memory is available
Web access for grafana is enabled at:
  https://v[REDACTED]/ovirt-engine-grafana/
Please run the following command on the engine machine vm-1[REDACTED].com, for SSO to work:
systemctl restart ovirt-engine

--== END OF SUMMARY ==--

[ INFO ] Stage: Clean up
Log file is located at /var/log/ovirt-engine/setup/ovirt-engine-setup-20200804132220-2qjbbi.log
[ INFO ] Generating answer file '/var/lib/ovirt-engine/setup/answers/20200804132714-setup.conf'
[ INFO ] Stage: Pre-termination
[ INFO ] Stage: Termination
[ INFO ] Execution of setup completed successfully
root@vm-10-69 ~|# systemctl restart ovirt-engine
```

oVirt Grafana Installation



oVirt Grafana - Executive Dashboard



oVirt Executive Dashboards > Executive Dashboard -

☆ 📄 🗨️ 🕒 Last 30 days 🔍 🔄 1m

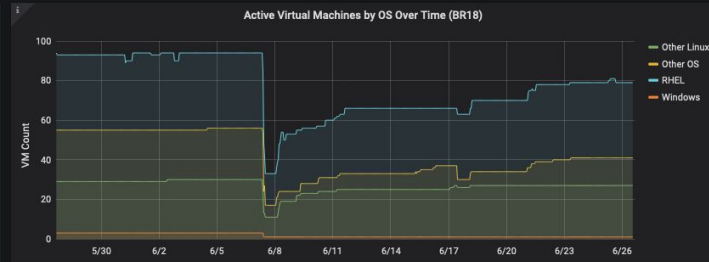
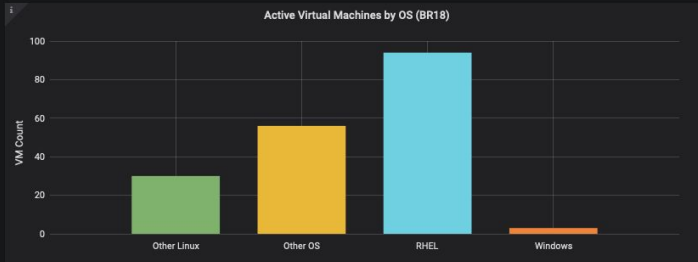
Data Center Cluster All Show Deleted Entities? No

Users' Spice Sessions Activity (BR45)

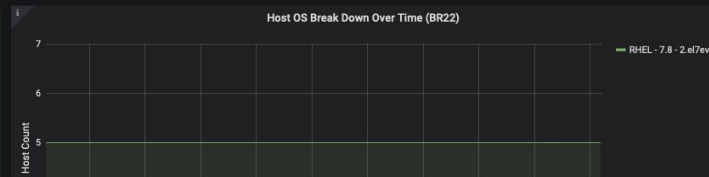
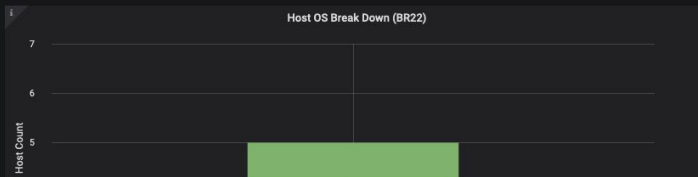
Cluster Name	Session Date	User Name	VM Name	Session Length	CPU Usage	Max CPU Usage	Memory Usage	Max Memory Usage	User CPU Usage	Max User CPU Usage	System CPU Usage	Max System CPU Usage	Cluster Delete	Data/M Delete
Engineering	2020-06-26 13:00:00	-		1.00 hour	0%	0%	59.00%	59.00%	0%	1.00%	1.00%	1.00%	-	-
Engineering	2020-06-26 13:00:00	-		1.00 hour	0%	0%	9.00%	9.00%	0%	1.00%	0%	6.00%	-	-
Engineering	2020-06-26 13:00:00	-		1.00 hour	1.00%	1.00%	29.00%	29.00%	1.00%	1.00%	1.00%	1.00%	-	-

1 2 3 4 5 6 7 8 9

Virtual Machines



Hosts



oVirt Grafana - Cluster Dashboard



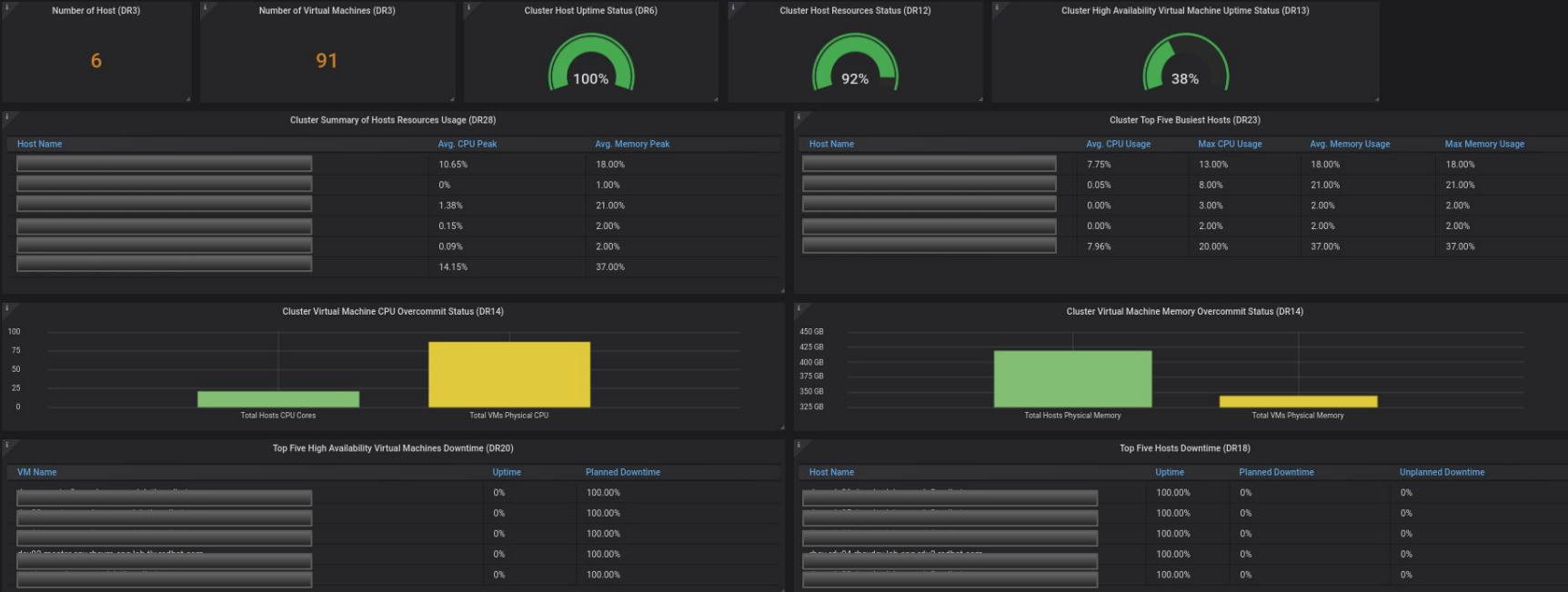
oVirt Executive Dashboards > Cluster Dashboard -



Description

The cluster dashboard displays the latest configurations, resources status and usages percent of the clusters entities.

Reports



oVirt Grafana - Host Resources Usage Dashboard



oVirt Grafana - Inventory Dashboard



oVirt Inventory Dashboards > Inventory Dashboard -

▼ Data Centers Inventory

Data Center Inventory (BR48)

Tag	Data Center	Hosts	Total Configured VMs
		6	91
		2	9
		5	424

CPU Usage and Overcommit (BR48)

Tag	Data Center	Total Hosts CPUs	Total VMs - CPU Cores	Running VMS - CPU Cores ▲	CPUs Overcommit	Running VMS - CPU Cores vs. Total Hosts CPUs
		48	34	24	70.83%	50.00%
		416	281	87	67.55%	20.91%
		320	2 K	832	511.25%	260.00%

Memory Usage and Overcommit (BR48)

Tag	Data Center	Hosts Memory Size	Total VMs - Memory	Running VMS - Memory ▼	Memory Overcommit	Running VMS - Memory vs. Total Memory
		2.51 TB	4.18 TB	1.94 GB	166.44%	77.20%
		2.45 TB	1.07 TB	336.00 MB	43.58%	13.69%
		251.43 GB	126.00 GB	96.00 MB	50.11%	38.18%

oVirt

Thank you!

<https://ovirt.org/>

users@ovirt.org

 @ovirt