oVirt Data Warehouse

02/11/11

Yaniv Dary
BI Software Engineer, Red Hat
oVirt Data Warehouse Overview

- API for historical configuration and statistical data.
- Used to create SQL reports using any tool.
- Currently provides information on host, vm, disks, storage domain and more.
- Uses ETL (Extract Transform Load) service to receive data from the ovirt engine database.
Importance of Business Intelligence

- Right decisions on solid data.
- Know everything about your product.
- Preparing for the future.
- Summarizing and simplifying large data.
- Integral part of managing virtualization.
oVirt Engine DWH Views

- The engine API for the ETL.
- Creates a more user friendly interface of the engine tables.
- Gaps the differences between the engine to the history database tables.
- First stage in data transformation.
Talend Open Studio

- Powerful and versatile open source solution for data integration.
- Easy-to-use graphical development environment.
- Support for all types of data integration, data migration and data synchronization operations.
- Strong open source community.
- Based on the eclipse UI.
TOS demo
DB Tables and API Views

- Sample data is collected at the end of every minute and is kept for up to 48 hours.
- Hourly level is aggregated every hour for the hour before last and is kept for 2 months.
- Daily level is aggregated every day for the day before last and is kept for 5 years.
- Upgrade is done via reentrent PL/pgSQL files.
Roadmap

- Support hibernate create database to enable cross database compatibility.
- Add fedora packaging.
- Add more columns of statistics.
- Add more sources other than ovirt-engine database.
oVirt Reports

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JasperReports and JasperReports Server Overview

- JasperReports is an open source Java reporting tool that can produce reports and export them to PDF, HTML, Microsoft Excel, RTF, ODT, Comma-separated values and XML files.

- It generates the reports from an XML or .jasper file.

- JasperReports Server is a reporting server for JasperReports. Using it you can generate, organize, secure and deliver interactive reports.
oVirt Reports Overview

- oVirt reports package provides a suite of pre-configured reports that enable you to monitor the system.
- The reports module is based on JasperReports and JasperServer.
Reports Example

Active Virtual Machines by OS in Clusters of Data Center Default

Criteria:
- **Datacenter**: Default
- **Cluster**: All
- **Date Range**: 2011-08-01 - 2011-10-31
- **VM Type**: All
- **Period**: Quarterly
- **Show Deleted Virtual Machines**: Yes

Input Controls:
- **Show Deleted Entities?**: Yes
- **Data Center**: RHEV-M-3
- **Cluster**: RHEV-M-3
- **VM Type**: Server
- **Period Range**: Monthly
- **Select Month**: August 2011
- **Start Date**: 2011-08-01
- **End Date**: 2011-08-31

Graphs:
1. **RHEL vs Other Linux OS**
2. **Distribution of Windows Versions**
3. **RHEL vs Windows OS**
4. **Virtual Machines With Known OS vs Unknown OS**

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oVirt Reports Topics

- Executive – High level reports that highly summarize data on resources and system entities.
- Inventory – Reports that list entities or display data about their status.
- Service Level – Report that are used to examine system health and service quality to users.
- Trends – Graphs that indicate resource usage for planning of resources.
<table>
<thead>
<tr>
<th>Report Name</th>
<th>Description</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Virtual Machines by OS (BR19)</td>
<td>The report contains comparative measurements number of running virtual machines and OS usage in for a selected cluster and a selected virtual machine's type within the requested period.</td>
<td>October 18</td>
</tr>
<tr>
<td>Cluster Capacity Vs Usage (BR19)</td>
<td>This report contains charts displaying host's resources usage measurements (CPU core; physical Memory) and charts displaying virtual machine's resources usage measurements (virtual machine's total vCPU, Virtual Memory size) for a selected cluster.</td>
<td>October 18</td>
</tr>
<tr>
<td>Host OS Break Down (BR22)</td>
<td>This report contains a table and a chart displaying the number of hosts for each OS version for a selected cluster within a requested period.</td>
<td>October 18</td>
</tr>
<tr>
<td>Summary of Host Usage Resources (BR17)</td>
<td>The report contains a scattered chart of CPU and memory usage data within a requested period and for a selected cluster.</td>
<td>October 18</td>
</tr>
</tbody>
</table>
IReport Demo
Roadmap

- Hibernate data source based reports.
- Adding more reports and reports types (Like events log reports).
- Adding localization to reports.
- Web admin integration.
- Integrated authentication with engine.
How To Contribute?

**DWH**

Git:   git://gerrit.ovirt.org/ovirt-dwh
Wiki:  http://ovirt.org/wiki/Ovirt_DWH
mailing list: engine-devel@ovirt.org

**Reports**

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THANK YOU!

http://www.ovirt.org
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- Datacenter: Default
- Cluster: All
- Data Range: 2011-08-01 - 2011-10-31
- VM Type: All
- Show Deleted Virtual Machines: Yes

- Chart: Bar
- Show Deleted Entities: False
- VM Type: All
- Period Range: Month
- Virtual Machines With Known OS vs Unknown OS
- Show Deleted Entities: False
- VM Type: All
- Period Range: Month

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### Reports Tree

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<th>Summary</th>
</tr>
</thead>
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<tr>
<td>Active VS</td>
<td>The report lists the number of running virtual machines and OS usage for each workload and a selected virtual machine's type within the reported period.</td>
</tr>
<tr>
<td>Cluster Capabilities Vs Hosts (CVH)</td>
<td>This report contains the performance metrics of the physical hostname, including CPU, memory, and I/O usage for each host.</td>
</tr>
<tr>
<td>Host OS Breakdown (BOB)</td>
<td>This report contains a table and a chart displaying the number of hosts for each OS version and a selected cluster within a specified period.</td>
</tr>
<tr>
<td>Summary of Host Usage Resources (SUH)</td>
<td>This report contains a comparison of CPU and memory usage data within a specified period and for a selected cluster.</td>
</tr>
</tbody>
</table>

Sort by: Name | Date

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IReport Demo

Report creation demo.
Reports structure.
Pro edition demo
Themes and charts.
Roadmap

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THANK YOU!

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