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Lab Overview - HOL-1806-03-CMP - vRealize Business for Cloud - Getting Started
Lab Guidance

Note: It will take more than 90 minutes to complete this lab. You should expect to only finish 2-3 of the modules during your time. The modules are independent of each other so you can start at the beginning of any module and proceed from there. You can use the Table of Contents to access any module of your choosing.

The Table of Contents can be accessed in the upper right-hand corner of the Lab Manual.

vRealize Business for Cloud is a cloud planning, budgeting, and cost visibility tool that helps make decisions across enterprise IT data centers. It provides a single pane of management for both private cloud or public cloud infrastructure. In this introductory lab, you will explore some of the many use cases vRealize Business for Cloud can address.

Lab Module List:

- **Module 1 - Computing the Cost of your Private Cloud** (30 minutes) (Basic)
  Track and manage your private cloud costs from a single pane of glass.
- **Module 2 - Viewing Public Cloud Information** (30 minutes) (Basic)
  vRealize Business for Cloud provides an overview of how your investments are spread across Amazon Web Services (AWS) and Microsoft Azure.
- **Module 3 - Comparing Clouds Models in vRealize Business for Cloud** (30 minutes) (Basic)
  vRealize Business for Cloud compares the cost of the virtual machine groups in the private cloud with that of similar groups in the public cloud models, such as Amazon Web Services, Microsoft Azure.
- **Module 4 - vRealize Business for Cloud Reports** (15 minutes) (Basic)
  Securely share cloud services allocation statements or showback reports through the role-based access reporting tool.
- **Module 5 - vRealize Business Stand-Alone Mode** (15 minutes) (Basic)
  Explore the reasons to deploy vRealize Businesss for Cloud in Stand-Alone Mode.

Lab Captain:

**Matthew DiCapua, Staff Systems Engineer, USA**

This lab manual can be downloaded from the Hands-on Labs Document site found here:

[http://docs.hol.vmware.com](http://docs.hol.vmware.com)

This lab may be available in other languages. To set your language preference and have a localized manual deployed with your lab, you may utilize this document to help guide you through the process:

Location of the Main Console

1. The area in the RED box contains the Main Console. The Lab Manual is on the tab to the Right of the Main Console.
2. A particular lab may have additional consoles found on separate tabs in the upper left. You will be directed to open another specific console if needed.
3. Your lab starts with 90 minutes on the timer. The lab can not be saved. All your work must be done during the lab session. But you can click the **EXTEND** to increase your time. If you are at a VMware event, you can extend your lab time twice, for up to 30 minutes. Each click gives you an additional 15 minutes. Outside of VMware events, you can extend your lab time up to 9 hours and 30 minutes. Each click gives you an additional hour.

Alternate Methods of Keyboard Data Entry

During this module, you will input text into the Main Console. Besides directly typing it in, there are two very helpful methods of entering data which make it easier to enter complex data.
Click and Drag Lab Manual Content Into Console Active Window

You can also click and drag text and Command Line Interface (CLI) commands directly from the Lab Manual into the active window in the Main Console.

Accessing the Online International Keyboard

You can also use the Online International Keyboard found in the Main Console.

1. Click on the Keyboard Icon found on the Windows Quick Launch Task Bar.
Click once in active console window

In this example, you will use the Online Keyboard to enter the "@" sign used in email addresses. The "@" sign is Shift-2 on US keyboard layouts.

1. Click once in the active console window.
2. Click on the Shift key.

Click on the @ key

1. Click on the "@ key".

Notice the @ sign entered in the active console window.
Activation Prompt or Watermark

When you first start your lab, you may notice a watermark on the desktop indicating that Windows is not activated.

One of the major benefits of virtualization is that virtual machines can be moved and run on any platform. The Hands-on Labs utilizes this benefit and we are able to run the labs out of multiple datacenters. However, these datacenters may not have identical processors, which triggers a Microsoft activation check through the Internet.

Rest assured, VMware and the Hands-on Labs are in full compliance with Microsoft licensing requirements. The lab that you are using is a self-contained pod and does not have full access to the Internet, which is required for Windows to verify the activation. Without full access to the Internet, this automated process fails and you see this watermark.

This cosmetic issue has no effect on your lab.

Look at the lower right portion of the screen
Please check to see that your lab is finished all the startup routines and is ready for you to start. If you see anything other than "Ready", please wait a few minutes. If after 5 minutes your lab has not changed to "Ready", please ask for assistance.
Module 1 - Computing the Cost of your Private Cloud (30 Minutes)
Introduction

This Module contains the following lessons:

• Overview of Private Cloud Expenses
• Editing Private Cloud Expenses - Licenseing
• Editing Private Cloud Expenses - Additional Costs

NOTE: The prices you see in your environment may differ slightly from the screen shots shown here in the manual.
Overview of Private Cloud Expenses

Expenses are the costs that are incurred in managing a data center. You can input the expenses manually. If you do not input the expense, the values are obtained from the reference database of the vRealize Business for Cloud. After you determine the total expense for your cloud infrastructure, you can allocate these costs to the underlying resources that constitute the services. These resources are CPU, RAM, storage, and operating system (license and labor).

The private cloud expenses are categorized into different types such as Hardware, Storage on Demand, Licensing, Maintenance, Labor, Network, Facilities, and Additional Costs. You can see the total projected expense on your private cloud accounts for the current month and the trend of cost over time. You can modify the expense of your data center. These costs can be in terms of percentage value or unit rate, and might not always be in terms of the overall cost. Based on your inputs, the final amount of expenses is calculated. If you do not provide inputs regarding expenses, the default values are taken from the reference database. You can see the projected cost of private cloud for the current month and the trend of total cost over time. For all the expenses, vRealize Business for Cloud displays the monthly trend of the cost variations, the actual expense and a chart that represents the actual expense and the reference cost of the expense.

Expense Types:

- **Hardware** - You see the server cost based on CPU age and server cost details.
- **Storage on Demand** - You see the storage total distribution based on category and the uncategorized cost details.
- **Licensing** - You see the licenses cost distribution for the operating systems cost and VMware license of your cloud environment. You can hover the mouse over the chart to see the cost details for each license.
- **Maintenance** - You see the maintenance cost distribution for the server hardware and operating system maintenance. You can hover the mouse over the chart to see the cost details for each maintenance type.
- **Labor** - You see the labor cost distribution for the servers, virtual infrastructure, and operating systems. You can hover the mouse over the chart to see the cost details for each labor type.
- **Network** - You see the networks costs by NIC type. You can hover the mouse over the chart to see the cost details for each NIC type.
- **Facilities** - You see the cost distribution for the facilities such as rent or real estate and power or cooling. You can hover the mouse over the chart to see the cost details for each facility type.
- **Additional Costs:** - You see the for additional expenses such as backup and restore, high availability, management licensing, VMware software licensing.
Editing Private Cloud Expenses - Licensing

You can manually edit monthly cost of all the eight expense types from the current month onwards.

The configuration used for cost drivers determines how vRealize Business for Cloud calculates and displays the cost.

Open Browser

1. Open the Google Chrome Browser on the Desktop
Log In to vRealize Automation

1. Log in to vRealize Automation portal as **cloudadmin**
2. Enter the **VMware1!** password
3. Click **Sign In**
Navigate to Business Management

1. Click on the Business Management tab.

Edit the Expenses for Private Cloud

1. Expand Expenses
2. Select Private Cloud (vSphere)
3. Click Edit Expenses
Navigate to Licensing

1. Select the **Licensing** tab

You can see the following information about the licensing cost:

2. **Name**: Displays the category of the operating system. If the operating system is not Windows or Linux, vRealize Business for Cloud categorizes the operating system under Other Operating Systems.
3. **VMs**: Displays the number of virtual machines that are running on the specific operating system.
4. **Sockets**: Displays the number of sockets on which the specific operating system is running.
5. **Charged by**: Displays whether cost is charged by socket or ELA.
6. **Total Cost**: Displays the total cost of the specific operating system.
7. **Reference Cost**: Displays the reference cost as defined in the vRealize Business for Cloud reference database.
Edit the Windows Server Monthly Licensing Costs

1. Note the **Total Cost** of Windows Licensing is **$162** based on 18 sockets at $9 each
2. Click the **Edit icon** on the **Windows Server line** to edit the monthly cost of the operating systems
Modify the Licensing Cost for Windows Server

1. Select the **monthly cost of a operating system per socket**
2. Modify the **cost value to $25**
3. Click **Save**
Refresh the Page

After a few seconds, you will see a message appear requesting for global synchronization to update the new pricing

1. Click Yes to refresh the page
1. Click back on to the licensing tab
2. Notice that the Monthly Licensing Costs for Windows Server has changed to $450 based on 18 sockets at the new price of $25 each
Editing Private Cloud Expenses - Additional Costs

You can manually edit monthly cost of all the eight expense types from the current month onwards. In this lesson you will edit additional costs.

The configuration used for cost drivers determines how vRealize Business for Cloud calculates and displays the cost.

Edit the Private Cloud Expenses

1. Expand Expenses
2. Select Private Cloud (vSphere)
3. Click Edit Expenses
Navigate to Additional Costs

1. Select the **Additional Costs** tab
2. Click the **plus button** to add a monthly cost for an expense that is not calculated in any other expense type.
Add Disaster Recovery Monthly Cost

1. Let's add an additional monthly cost for **Disaster Recovery** by entering it into the **Cost Type** field.
2. Leave the default setting of **Global** for the **Data Center** field.
3. Enter **$25** in the **Monthly Cost** field for our Disaster Recovery expenses.
4. Click the **Save** button to save changes.

Refresh the Cost Data
You will see a message appear requesting for global synchronization to update the new pricing (it may take a few seconds after you clicked "Save" for this dialog to appear).

1. Click **Yes** to refresh the page

**View the Updated Disaster Recovery Monthly Cost**

![vmware vRealize Automation](image)

1. Click back on to the **Additional Costs tab**
2. Notice that a monthly cost for **Disaster Recovery** has been added to the **Additional Costs** field
Conclusion

Congratulations on completing Module 1.

Proceed to any module below which interests you most.

- **Module 2 - Viewing Public Cloud Information** (30 minutes) (Basic) vRealize Business for Cloud provides an overview of how your investments are spread across Amazon Web Services (AWS) and Microsoft Azure.
- **Module 3 - Comparing Clouds Models in vRealize Business for Cloud** (30 minutes) (Basic) vRealize Business for Cloud compares the cost of the virtual machine groups in the private cloud with that of similar groups in the public cloud models, such as Amazon Web Services, Microsoft Azure.
- **Module 4 - vRealize Business for Cloud Reports** (15 minutes) (Basic) Securely share cloud services allocation statements or showback reports through the role-based access reporting tool.
- **Module 5 - vRealize Business Stand-Alone Mode** (15 minutes) (Basic) Explore the reasons to deploy vRealize Businesss for Cloud in Stand-Alone Mode.

How to End Lab

To end your lab click on the **END** button.
Module 2 - Viewing Public Cloud Information (30 Minutes)
Introduction

This Module contains the following lessons:

- Overview of Amazon Web Services Expenses
- View Amazon Web Services (AWS) Charges
- Overview of Microsoft Azure Expenses
- View Azure Non-EA Account Details

NOTE: The prices you see in your environment may differ slightly from the screen shots shown here in the manual.
Overview of Amazon Web Services Expenses

The Amazon Web Services Overview page lets you view estimated total monthly expense, expense per account, expense distribution per service and virtual machine summary.

Expense Types:

- **Total Expense** - The graph displays the total estimated monthly expense of all Amazon Web Services accounts configured in vRealize Business for Cloud. And also, you can see the monthly expense trend.
- **Services** - This graph displays the estimated expense distributed among different services across all accounts.
- **Accounts** - This graph displays the estimated expense percentage for each account.
- **EC2 Cost Breakdown** - This graph displays the expense distribution of Amazon Elastic Compute Cloud (EC2) service. EC2 service expense includes reserved model cost, demand model cost (PAYG), and other cost that is not perceived in the bill.
- **Largest Changes in Accounts** - This graph displays the top three expense changes compared to expense in the previous month.
- **VMs at a Glance** - This graph displays the total virtual machine count and average expense per month. It also displays the virtual machine count based on power status whether stopped, running or terminated, number of virtual machines in each state, and the cost of virtual machines in each state.
- **Facilities** - You see the cost distribution for the facilities such as rent or real estate and power or cooling. You can hover the mouse over the chart to see the cost details for each facility type.
- **Additional Costs** - You see the for additional expenses such as backup and restore, high availability, management licensing, VMware software licensing.
View Amazon Web Services (AWS) Charges

You can view the details of virtual machines that are hosted on AWS account including service, account cost, price and availability information.

Open Browser

1. Open the Google Chrome Browser on the Desktop

If you are already logged into vRealize Automation from a previous module, you can skip the next couple steps to get logged in and navigate to the Business Management tab.
1. Log in to vRealize Automation portal as **cloudadmin**
2. Enter the **VMware1!** password
3. Click **Sign In**
Navigate to Business Management

1. Click on the Business Management tab.

Overview of Public Cloud (AWS)

1. Expand Expenses
2. Select Public Cloud (AWS)
3. Click Overview

The Overview tab shows you expense trending by month, the relative costs of AWS services which are configured AWS endpoint account(s), and your current VM states with average per VM cost.
View AWS Instances

You can find more details about your EC2 instances as well as the costs associated to each individual instance.

1. Click **Instances**
2. Be sure to click the **Clear Filters** button at the top of the page to view all data
3. Click the **Instance Name** of the **Development0004** virtual machine to see the details of that instance

**NOTE:** The prices you see in your environment may differ slightly to the screen shots shown here in the manual.
AWS Instance Details

You see all the details of virtual machines that are configured to the AWS accounts. The information includes

1. **Header**: Displays the instance name, total cost for the current month, state of the instance, and availability zone. You would also see any AWS tags that have been applied to this VM, if there are any (this VM doesn't have any).

2. **Widgets**: Display the operational details for the instance, such as
   - Total cost trend for the past six months.
   - CPU utilization trend in percentage for the past 30 days, graphically.
   - The disk input and output operations per minute for the past 30 days, graphically.
   - The incoming and outgoing data on a network in bytes for past the 30 days, graphically
View Total Cost And Operational Statistics of EC2 and EBS Services

1. Click **EC2/EBS**

This view shows you summary data for your EC2 and EBS services

2. **Header:** Displays information such as the total cost of EC2 for the current month, the total number of EC2 instances, and the total number of EBS volumes.

3. **Widgets:**

   - **Cost Summary:** Displays the trend of total monthly expense for all EC2 instances configured in vRealize Business for Cloud and the expense distribution across EC2 instance types, for example, t2.micro, m3.medium, c3.large, m3.xlarge.
   - **EC2 Summary:** Displays the top five EC2 instance types based on its count of instances being used and also instances with least CPU utilization.
   - **EBS Summary:** Displays the disk input and output operations per minute for the past 30 days graphically and top five EBS volumes having the maximum size.
   - **Network Operations:** Displays the incoming and outgoing data on a network in bytes for past the 30 days graphically.
Overview of Microsoft Azure Expenses

Microsoft Azure Overview lets you view estimated total monthly expense, expense per account type, expense distribution per service and virtual machine summary.

Expense Types:

• **Total Expense** - The graph displays the Azure expense, which includes the actual expense and the total estimated monthly expense. And also, you can see the monthly expense trend.

• **Services** - This graph displays the estimated expense distributed among different services like Virtual Machines, Storage, Networking, Data Management, and other services across all accounts.

• **Accounts** - This graph displays the actual expense for Enterprise Agreement (EA) and Non-Enterprise Agreement (Non-EA) accounts.

• **Largest Changes in Accounts** - This graph displays the expense changes of EA and non-EA accounts compared to expense in the previous month.

• **VMs at a Glance** - This graph displays the total virtual machine count and average expense of each virtual machine per month. It also displays the virtual machine count based on its power status whether stopped, running or terminated.
View Microsoft Azure Charges

View Azure Instances Information

1. Expand **Expenses**
2. Select **Public Cloud (Azure)**
3. Click **Overview**

The Overview tab shows you expense trending by month, the relative costs of Azure services which are configured in your Azure endpoint account(s), and your current VM states with average per VM cost.
You can see more details about the VMs you have running in Azure.

1. Click the **VMs at a Glance** widget graph.
Select Virtual Machine Instance

If you don’t see any VMs listed when you open this screen, it may be due to having a filter applied. To remove the filter:

1. Click the **Clear Filters** button at the top of the list

The list of Azure running virtual machines shows important details, including:

2. Account Name and ID
3. Virtual Machine unique ID
4. Date it was provisioned
5. Total Monthly Cost
6. Virtual Machine name
7. Click the **ubuntu-server-16-04** instance name to see the statistics of that instance
View Virtual Machine Expenses

1. **Header:** Displays the instance name, total cost for the current month, state of the instance, and region.

2. **Widgets:** Display the operational details for the instance, such as:
   - Total cost trend for the past six months
   - CPU utilization trend in percentage for the past 30 days, graphically
   - The disk read and write operations per second for the past 30 days, graphically
   - The incoming and outgoing data on a network in bytes for past the 30 days, graphically
View Azure Non-EA accounts

You can similarly see statistics for Non-EA accounts.

1. Click **Non-EA VM Stats**
2. **Header:** Displays the total cost for the current month, and the total number of instances.
3. **Widgets:**

   **Cost Summary:** Displays the trend of total monthly expense for all Non-EA accounts configured in vRealize Business for Cloud and the expense distribution across instance types, for example, Standard_A1, Basic_A4, Standard_D5_V2, Standard_Nv24.

   **Virtual Machine Summary:** Displays the operational details, such as:

   - Top five instance types based on its number of instances being used
   - Top instances with least CPU utilization
   - The disk input and output operations per minute for the past 30 days graphically (you will need to scroll down to see)
   - The incoming and outgoing data on a network in bytes for past the 30 days graphically (you will need to scroll down to see)
Conclusion

Congratulations on completing Module 2.

Proceed to any module below which interests you most.

- **Module 1 - Computing the Cost of your Private Cloud** (30 minutes) (Basic)
  Track and manage your private cloud costs from a single pane of glass.
- **Module 3 - Comparing Clouds Models in vRealize Business for Cloud** (30 minutes) (Basic)
  vRealize Business for Cloud compares the cost of the virtual machine groups in the private cloud with that of similar groups in the public cloud models, such as Amazon Web Services, Microsoft Azure.
- **Module 4 - vRealize Business for Cloud Reports** (15 minutes) (Basic)
  Securely share cloud services allocation statements or showback reports through the role-based access reporting tool.
- **Module 5 - vRealize Business Stand-Alone Mode** (15 minutes) (Basic)
  Explore the reasons to deploy vRealize Business for Cloud in Stand-Alone Mode.

How to End Lab

To end your lab click on the **END** button.
Module 3 - Comparing Clouds models in vRealize Business for Cloud (30 Minutes)
Introduction

This Module contains the following lessons:

- Compare Cost of New Virtual Machines Across Cloud Providers
- Compare Cost of Existing Virtual Machines Across Cloud Providers
- Plan Your Procurement

NOTE: The prices you see in your environment may differ slightly from the screen shots shown here in the manual.
Compare Cost of New Virtual Machines Across Cloud Providers

You can add new virtual machines to your private cloud and compare its cost with the cost on other public cloud providers. vRealize Business for Cloud calculates and displays the cost of running virtual machines with similar configurations in your private cloud, Amazon Web Services, Microsoft Azure, VMware Cloud on AWS, or any other public cloud providers that is added and imported in vRealize Business for Cloud.

Open Browser

If you are already logged into vRealize Automation from a previous module, you can skip the next couple steps to get logged in and navigate to the Business Management tab.

1. Open the **Google Chrome Browser** on the **Desktop**
Log In to vRealize Automation

1. Log in to vRealize Automation portal as **cloudadmin**
2. Enter the **VMware1!** password
3. Click **Sign In**
Navigate to Business Management

1. Click on the Business Management tab.

Navigate to What-If Analysis for Public Cloud

1. Expand What-If Analysis
2. Select Public Cloud

By default, vRealize Business for Cloud compares the cost of running the default virtual machine group on three providers such as, Private Cloud, AWS and Azure.
Navigate to Manage Cloud Providers

1. To verify the cost on a different cloud provider, click Manage Cloud Providers
Choose Public Cloud Providers to Compare

You see a list of additional providers, such as Amazon Government, which can be used in place of the defaults for executing the what-if analysis.

1. Drag and drop the **Amazon Government** cloud provider for cost comparison
2. Drag and drop the **VMC** cloud provider for cost comparison
3. Click **Done**

You can modify the selection of all three cloud providers to see the cost of running the default virtual machine group on the selected data provider and can compare the cost on each selected providers.
Add a Virtual Machine Group to the Comparison

1. Click the Add VM Group link to add new virtual machines group

Edit the New Virtual Machine Group

1. Click More in the New Group Box
Make Modifications to the Virtual Machine Group Settings

1. Modify the virtual machine settings, such as changing vCPU(s) count or the RAM (you will need to make some change for the Save button to become enabled)
2. Click Save
1. The cost of your infrastructure with additional virtual machines is updated for your private cloud and other public cloud providers.

The costs you see may differ slightly than those shown above, depending on what values you chose when you created the group. If you select more than one virtual machine, vRealize Business for Cloud groups the virtual machines together according to their CPU, RAM, and operating system configurations and shows the number of virtual machines in this group.
Compare Cost of Existing Virtual Machines Across Cloud Providers

You can compare the cloud cost by importing virtual machines from your private cloud. vRealize Business for Cloud calculates and displays the cost of running virtual machines with similar configurations in your private cloud, Amazon Web Services, and Microsoft Azure, vCloud Hybrid Service, or any other public cloud provider that you had already added and imported in vRealize Business for Cloud.

Import Virtual Machines for What-If Analysis

1. Expand **What-If Analysis**
2. Select **Migration** (by default, vRealize Business for Cloud compares the cost of running the default virtual machine group on three providers such as Private Cloud, AWS and Azure)
3. Click the **Import VMs** link to browse or search the virtual machine that you want to import
Select the Virtual Machine(s) to Import

Virtual Machines can be located by Browsing existing registered endpoints (in this example, vRealize Automation Business Group), or through direct search of VMs. You can search for virtual machines based on the name, tag, or folder. Once located and selected, the virtual machine is added into its own group. The corresponding cost details are updated for your private cloud and other public cloud providers.

1. Select the Development Business Unit
2. Under Virtual Machines, select dev-002 to compare the migration cost of this particular VM
3. Click Done
Navigate to Manage Cloud Providers

1. The selected virtual machine is added into its own group. The corresponding cost details are updated for your private cloud and other public cloud providers.
2. To verify the cost on a different cloud provider, click **Manage Cloud Providers**
Select Cloud Providers for Cost Comparison

You see a list of additional providers, such as Amazon Government.

1. Drag and Drop the providers that you want to select for cost comparison
2. Click Done

You can modify the selection of all three cloud providers. You can see the cost of running the default virtual machine group on the selected data provider and can compare the cost on each selected providers.
Plan Your Procurement

You can add one or more virtual machine groups and verify the cost of running these groups on all data centers that exists in vRealize Business for Cloud. Based on the cost information, you can plan on where to deploy your virtual machine group.

Add a Virtual Machine Group to What-If Analysis

1. Expand **What-If Analysis**
2. Select **Private Cloud** - You see a sample group added by default.
3. Click the **Add VM Group** link to add new virtual machines group
Run the What-If Analysis Scenario

1. Modify the **New Group** configurations according to your requirement (you will need to scroll down to see the New group)
2. Click **Run Scenario**
Analyze Procurement Planning Results

You see the configuration summary of the virtual machine group and the cost of running the group on each data center that exists in vRealize Business for Cloud. If the configuration does not match the data center configuration, you see the message stating that the configuration does not match.

1. Click **Back to Private Cloud** to run additional scenarios
Conclusion

Congratulations on completing Module 3.

Proceed to any module below which interests you most.

- **Module 1 - Computing the Cost of your Private Cloud** (30 minutes) (Basic)
  Track and manage your private cloud costs from a single pane of glass.
- **Module 2 - Viewing Public Cloud Information** (30 minutes) (Basic)
  vRealize Business for Cloud provides an overview of how your investments are spread across Amazon Web Services (AWS) and Microsoft Azure.
- **Module 4 - vRealize Business for Cloud Reports** (15 minutes) (Basic)
  Securely share cloud services allocation statements or showback reports through the role-based access reporting tool.
- **Module 5 - vRealize Business Stand-Alone Mode** (15 minutes) (Basic)
  Explore the reasons to deploy vRealize Businesss for Cloud in Stand-Alone Mode.

How to End Lab

To end your lab click on the END button.
Module 4 - vRealize Business for Cloud Reports (15 Minutes)
Introduction

This Module contains the following lessons:

• View a Report
• Edit and Create Custom Report
• Schedule a Report

NOTE: The prices you see in your environment may differ slightly from the screen shots shown here in the manual.
View Out-of-the-Box Reports

You can run out-of-the-box and custom reports including reports specific to vRealize Automation.

Open Browser

If you are already logged into vRealize Automation from a previous module, you can skip the next couple steps to get logged in and navigate to the Business Management tab.

1. Open the Google Chrome Browser on the Desktop
Log In to vRealize Automation

1. Log in to vRealize Automation portal as cloudadmin
2. Enter the VMware1! password
3. Click Sign In
Navigate to Business Management

1. Click on the Business Management tab

Navigate to Reports

1. Select Reports

A new set of out-of-the-box reports covering infrastructure and cost data enables IT teams to get the most-frequently-used data in one click. Reports are categorized to make them easy to find, but the list is pretty long so there is also a search option to help you locate specific reports. You can send reports to the right person at the right time by using report scheduling.
Let's take a closer look at the Hybrid Cloud Assessment Report.

2. Click on the **Hybrid Cloud Assessment Report** at the top of the list

**Hybrid Cloud Assessment Report**

To generate the report:

1. Click the **Download PDF Report** button. As the report is being generated, you may see a message at the top of the screen letting you know it's working.

2. Once the **HybridCloudAssessment.pdf** download appears at the bottom of your browser window, you can click on it to open the report in a new tab.
Review the Hybrid Cloud Assessment Report

- Understand the cost of your vSphere private cloud infrastructure

The report provides actual cost information of your vSphere private cloud infrastructure, using an efficient cost analysis engine. As per the current analysis, your vSphere private cloud infrastructure has 80 VMs, which costs 11,669 (US Dollar) per month. The average VM cost on private cloud is 145.86 (US Dollar).

- Compare VM cost across cloud environments

The report enables you to compare the cost of VMs in the private cloud and the public cloud environment such as Amazon Web Services (AWS) and Microsoft Azure. As per the analysis, the estimated monthly expense (Total Cost of Ownership including fixed cost of infrastructure) on vSphere private cloud is 11,669 (US Dollar). The infrastructure utilization is 21.08% and corresponding utilization cost will be 2,460 (US Dollar). If the infrastructure is moved to the public cloud environment, the monthly expense will be 11,952 (US Dollar) and 18,867 (US Dollar) for AWS and Azure respectively.

Scroll through the report PDF to see key components of the report, including:

- **Summary** - including the Total Cost of Ownership (TCO) comparison shown above
- vSphere Private Cloud Expenses - breakdown of infrastructure cost by data center and by number of VMs per data center
- Expenses Across Datacenters - average VM profile and cost per data center
- Showback Statement - top business units based on monthly expenses and trending indicator
- Cost Savings Opportunity - all business units and their potential cost savings
- Cloud Comparison - vSphere Private Cloud vs public cloud
1. Click the **Back to Reports** link to return to the reports list

### View the vRealize Automation Virtual Machine Charge Report

1. In the right hand column, scroll down and locate **Expenses - vRealize Automation**
2. Click on **vRA Virtual Machine Charge**
Browse the Data in the Report

A list of all vRealize Automation managed virtual machines appears, with detailed price breakdowns per VM.
Edit and Create a Custom Report

In addition to out-of-the-box reports, you can also create custom reports.

Open the vRealize Automation Virtual Machine Charge Report

Open the vRealize Automation - vRA Virtual Machine Charge report, if you closed it after the last exercise.

1. In the right hand column, scroll down and locate Expenses - vRealize Automation
2. Click on vRA Virtual Machine Charge
A list of all **vRealize Automation managed virtual machines** appears.

1. Click **Edit** and review the following available actions
Modify the Virtual Machine Details in the Report

1. **Columns** is highlighted by default
2. Expand **VM Details** by clicking on the **Black Arrow**
Add Fields to be Displayed in the Report

1. Place a **check** in the box next to **vCPUs**, **RAM GB (Configured)**, and **Storage GB (Configured)**
Add a Filter to the Report

1. Click on the Filters tab
2. Click Add
Create the Filter

1. In the Add Filters box, leave VM Name as the Column selection
2. Type DEV- in the Contains section to filter for all Development virtual machines
3. Click Add
1. Note the new filter called **VM Name**
2. Click **OK**
Save the Report

Notice that we have successfully filtered out our Development virtual machines and have added the three new columns

1. Click **Save** to create a **Custom Report**
Rename the Custom Report

1. Add Custom Report to the end of the name to make the reports new name vRA Virtual Machine Charge Custom Report
2. Click Save
Navigate to Reports

1. Since we have already saved this as a Custom Report, you can click on Reports

Navigate to the Custom Reports
1. Click on **Manage Custom Reports** to view your newly created report

**View the Custom Report**

All Custom Reports are saved in this section. You can execute it by clicking on the Report Name in the first column.
Schedule a Report

You can run a report on demand or schedule it to be run at a later time.

Navigate to the Report Scheduler

1. Click on Reports
2. Click Schedule Report
Create a New Scheduled Report

1. Press the **Add** button to create the Scheduled Report
Create the Schedule for the Report

1. Schedule a report by providing the details such as report category, name, frequency, date and time and the recipient email address. Note that both out-of-the-box and custom reports can be scheduled.
   - **Report Category:** Custom Reports
   - **Report Name:** vRA Virtual Machine Charge Custom Report
   - **Frequency:** Daily
   - **Start Date:** Select a date from the calendar
   - **Start Time:** Select a time
   - **Recipients:** cloudadmin@corp.local

2. Click **Save**

   **Note:** While scheduling a monthly report, if you select the date as 28, 29, 30 or 31, vRealize Business for Cloud generates the report only on the last day of each month (ignoring the selected date). This is because the number of days in a month varies between 28 to 31.
1. If you wish to modify the report, select the report and click the **Edit** option.
2. If you wish to delete the scheduled report, click the **Delete** option.
3. Click **Back to Reports** to see all reports.
Conclusion

Congratulations on completing Module 4.

Proceed to any module below which interests you most.

- **Module 1 - Computing the Cost of your Private Cloud** (30 minutes) (Basic)
  Track and manage your private cloud costs from a single pane of glass.
- **Module 2 - Viewing Public Cloud Information** (30 minutes) (Basic)
  vRealize Business for Cloud provides an overview of how your investments are spread across Amazon Web Services (AWS) and Microsoft Azure.
- **Module 3 - Comparing Clouds Models in vRealize Business for Cloud** (30 minutes) (Basic)
  vRealize Business for Cloud compares the cost of the virtual machine groups in the private cloud with that of similar groups in the public cloud models. such as Amazon Web Services, Microsoft Azure.
- **Module 5 - vRealize Business Stand-Alone Mode** (15 minutes) (Basic)
  Explore the reasons to deploy vRealize Businesss for Cloud in Stand-Alone Mode.

How to End Lab

To end your lab click on the **END** button.
Module 5 - vRealize Business Stand-Alone Mode (15 Minutes)
Introduction

This Module contains the following lessons:

• Installing vRealize Business 7.x Video
vRealize Business Stand-Alone Mode with vIDM

The following page shows a vRB Installation video which covers architecture and installation options. For Stand-Alone mode the specific area of interest is at 2:04 mins into the video.

Installing vRealize Business 7.x (10:42)
Conclusion

Congratulations on completing Module 5.

Proceed to any module below which interests you most.

- **Module 1 - Computing the Cost of your Private Cloud** (30 minutes) (Basic) Track and manage your private cloud costs from a single pane of glass.
- **Module 2 - Viewing Public Cloud Information** (30 minutes) (Basic) vRealize Business for Cloud provides an overview of how your investments are spread across Amazon Web Services (AWS) and Microsoft Azure.
- **Module 3 - Comparing Clouds Models in vRealize Business for Cloud** (30 minutes) (Basic) vRealize Business for Cloud compares the cost of the virtual machine groups in the private cloud with that of similar groups in the public cloud models such as Amazon Web Services, Microsoft Azure.
- **Module 4 - vRealize Business for Cloud Reports** (15 minutes) (Basic) Securely share cloud services allocation statements or showback reports through the role-based access reporting tool.

How to End Lab

To end your lab click on the **END** button.
Conclusion

Thank you for participating in the VMware Hands-on Labs. Be sure to visit http://hol.vmware.com/ to continue your lab experience online.

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