

IT Business Management Standard Edition User's Guide

VMware IT Business Management Suite 1.0.1

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IT Business Management Standard Edition User's Guide

The VMware® *IT Business Management Suite™™ Standard Edition User's Guide* provides information about the IT Business Management Standard Edition user interface, explains key terms and concepts, and describes various tasks that you can perform to gain better visibility of your infrastructure.

Intended Audience

This information is intended for users or administrators IT Business Management Standard Edition by using the IT Business Management Standard Edition user interface.

VMware Technical Publications Glossary

VMware Technical Publications provides a glossary of terms that might be unfamiliar to you. For definitions of terms as they are used in VMware technical documentation, go to <http://http://www.vmware.com/support/pubs>.

Introduction to IT Business Management Standard Edition

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VMware IT Business Management Standard Edition provides capabilities that allow users to gain greater visibility into financial aspects of their infrastructure and let them optimize and improve these operations.

This chapter includes the following topics:

- [“Challenges Faced by the Manager of Cloud Operations,”](#) on page 7
- [“IT Business Management Standard Edition Goals,”](#) on page 7
- [“Access IT Business Management Standard Edition by Using vCloud Automation Center,”](#) on page 8
- [“Understanding the IT Business Management Standard Edition Dashboard,”](#) on page 8

Challenges Faced by the Manager of Cloud Operations

The manager of cloud operations in an organization constantly faces the following challenges regarding cost visibility and optimization in the delivery of Infrastructure as a Service (IaaS).

- What is the total spending and what is it comprised of?
- What is the cost of delivering a unit of IaaS?
- Who consumes these services and at what cost?
- What are these services used for and what is the cost allocation for each?
- How is my cost efficiency compared to that of other public cloud infrastructures?
- What is the cost of potential alternatives to delivering IaaS?
- How do I use the information above to optimize the cost of my existing and future operations?
- How do I create an accurate showback report to show it to the stake holders

IT Business Management Standard Edition Goals

IT Business Management Standard Edition is a part of vCloud Automation Center and provides business management and cost transparency capabilities to your virtual infrastructure.

- Determine pricing of vCloud Automation Center blueprints by using the current cost and utilization levels of virtual machines as a reference.
- Make decisions related to placement of workloads, either in the private or public clouds, based on the cost and the services that are available in your hybrid cloud environment.
- Provide showback cost of virtual machine and blueprints based on business unit, application group across the hybrid cloud environment.

- As infrastructure stakeholders, allows you to manage costs based on capital expenditure and operating expenditure.
- Get out-of-the-box accurate cost of virtual machines without performing any financial configuration.

Access IT Business Management Standard Edition by Using vCloud Automation Center

You can access the IT Business Management Standard Edition user interface after logging in to the vCloud Automation Center user interface.

The IT Business Management Standard Edition user interface appears as a tab in the vCloud Automation Center user interface.

Prerequisites

Verify that you have created a IT Business Management Standard Edition tenant. For more information, see *IT Business Management Standard Edition Installation and Administration Guide*.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 On the **Administration** tab, click **Users**.
- 3 Search and select the user to which you want to add a role.
- 4 From the Add Roles to this User box, assign the **Business Management Administrator** or **Business Management Read only user** privileges to the user.
- 5 Click **Update**.
- 6 Refresh the browser.

The **Business Management** tab is available in the vCloud Automation Center user interface.

What to do next

If you are accessing the **Business Management** tab for the first time, you need to provide a valid IT Business Management Standard Edition license. After adding a valid license, you can use IT Business Management Standard Edition user interface. You can also update IT Business Management Standard Edition license. For more information, see *IT Business Management Standard Edition Installation and Administration* guide.

Understanding the IT Business Management Standard Edition Dashboard

The dashboard provides information about Total Cloud Cost, Operational Analysis, Demand Analysis, Cost Drivers, Cloud Resources, Demand Allocation, CAPEX/OPEX, Allocation, and Demand Largest Changes.


Table 1-1. IT Business Management Standard Edition Dashboard

Category	Description
Total Cloud Cost	Displays the total cost of running a cloud per month.
Operational Analysis	Displays the average cost per month of running a virtual machine in your cloud environment.
Demand Analysis	Displays the number of virtual machines that were consumed over a period of time. This analysis is useful for tracking the demand for virtual machines for planning.

Table 1-1. IT Business Management Standard Edition Dashboard (Continued)

Category	Description
Cost Drivers	Displays the distribution of cost breakdown or your cloud environment in terms of cost drivers. The cost drivers are Server Hardware, Storage, OS Licensing, Maintenance, Labor, Network, Facilities, and Other Costs. For more information about viewing and editing cost drivers, see Chapter 2, “Computing the Cost of Your Cloud,” on page 11.
Cloud Resources	Displays the cost breakdown for a virtual machine in terms of CPU, memory, storage, and operating system license and labor cost.
Demand Allocation	Displays how the allocated costs are spread across different consumer groups of virtual machines. This widget displays only the top consumers of virtual machines in terms of cost.
CAPEX/OPEX	Displays the total capital expenditure and operating expenditure incurred for your private cloud.
Allocation	Displays the allocated and unallocated costs for different resource types (CPU, memory, and storage) over the month.
Demand Largest Changes	Displays the category where the largest change in the cost has occurred month on month. The list is ordered by descending order of change in cost. The widget also provides an idea as to which top level consumer has the highest month on month increase or decrease in IT cost consumption.

NOTE In IT Business Management Standard Edition, the **Overview** tab displays the projected cost of the virtual machine until the end of the current month. All the other tabs, displays the cost of virtual machines incurred until the current date of the month.

You can print the information that is present in the Overview tab by clicking **Print** icon .

Computing the Cost of Your Cloud

Cost drivers are the costs that are incurred in managing a datacenter. You can manually input the cost drivers. If you do not input the cost drivers, the cost driver values are obtained from the reference database of the IT Business Management Standard Edition.

This chapter includes the following topics:

- [“Overview of Cost Drivers,”](#) on page 11
- [“Calculating Depreciation,”](#) on page 11
- [“View Information for Cost Drivers,”](#) on page 12
- [“Editing Cost Drivers,”](#) on page 13

Overview of Cost Drivers

IT Business Management Standard Edition categorizes the cost drivers into Server Hardware, Storage, OS Licensing, Maintenance, Labor, Network, Facilities, and Other Costs. The cost driver data that you provide is the monthly cost except for the server hardware host.

You can modify the cost drivers of your datacenter. These costs can be in terms of percentage value or unit rate and might not always be in terms of the actual cost. The final amount of cost drivers are arrived by your inputs. If you do not provide inputs regarding cost drivers, the default values are taken from the reference database, which is part of the IT Business Management Standard Edition product.

Calculating Depreciation

IT Business Management Standard Edition calculates the yearly depreciation values and then divides the value by 12 to arrive at the monthly depreciation.

IT Business Management Standard Edition uses the salvage value of zero dollars.

`depreciable cost == original cost`

IT Business Management Standard Edition uses the maximum value between yearly depreciation of declining balance with multiplied depreciation rate and yearly depreciation of straight line over five years. Yearly depreciation = Maximum (yearly depreciation of double declining balance method, yearly depreciation of straight line method).

Table 2-1. Depreciation Methods

Method	Calculation
Double declining balance	$\text{Depreciation rate} = 2 / \text{number of depreciation years}$ <hr/> Yearly depreciation <ul style="list-style-type: none"> ■ In every year, except the last year of depreciation, $\text{yearly depreciation} = (\text{original cost} - \text{accumulated depreciation}) * \text{depreciation rate}$ ■ In the last year of depreciation, $\text{yearly depreciation} = \text{original cost} - \text{accumulated depreciation}$
Straight line	$\text{Yearly depreciation} = (\text{original cost} - \text{accumulated depreciation}) / \text{number of depreciation years}$

View Information for Cost Drivers

You can view all the factors that affect the cost of your environment.

IT Business Management Standard Edition categorizes cost drivers into server hardware, storage, OS licensing, maintenance, labor, network, facilities, and other costs.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Cost**.

The information related to cost drivers is displayed. For all the cost drivers, IT Business Management Standard Edition displays the monthly trend of the cost variations, the actual cost of the cost driver, and a chart that represents the actual cost and reference cost of the cost driver.

- 4 Click the cost driver for more information about the cost.







Option	Description
Server Hardware	Displays the server cost information by CPU age. Server hardware costs are calculated by using declining balance depreciation over the last three years. For complete cost information related to server hardware, click the Server Hardware list with full cost information link.
Storage	Displays the storage cost information according to storage type or storage profile. For complete cost information related to storage, click the Storage list with full cost information link.
OS Licensing	Displays the operating systems cost distribution of your cloud environment. For complete cost information related to OS licensing, click the OS Licensing list with full cost information link.
Maintenance	Displays the maintenance cost distribution according to server hardware and OS maintenance. For complete cost information related to maintenance, click the Maintenance list with full cost information link.
Labor	Displays the labor cost distribution according to servers, virtual infrastructure, and operating system. For complete cost information related to labor, click the Labor list with full cost information link.
Network	Displays the networks costs by NIC type. For complete cost information related to network, click the Network list with full cost information link.

Option	Description
Facilities	Displays the facilities costs distribution according to rent, real estate, power, and cooling. For complete cost information related to facilities, click the Facilities list with full cost information link.
Other Costs	Displays the other costs details such as backup and restore, high availability, management licensing, VMware software licensing.

Editing Cost Drivers

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


The configuration used for cost drivers determines how IT Business Management Standard Edition calculates and displays the cost.

- If the costs are based on the industry benchmark values, a vertical band of orange color  is displayed next to the Edit monthly cost icon .
- If the costs are calculated according to the hardware configuration, a vertical band of green color  is displayed next to the Edit monthly cost icon .
- If the costs have been manually entered, a vertical band of blue color  is displayed next to the Edit monthly cost icon .

Edit Monthly Cost of Server Hardware

You can view, add, edit, or delete the cost of each server of a batch and the purchase date of a batch server running in your cloud environment. After you update the server hardware cost, IT Business Management Standard Edition updates the total cost and depreciation for the current month.




Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Cost**.
All the eight cost drivers are displayed.
- 4 Click **Edit Cost**.
- 5 In the Server Hardware section, click the **Edit monthly cost** icon .

IT Business Management Standard Edition groups all the server hardware in your inventory according to their hardware configuration.

Category	Description
Name	Displays the name of the server in your inventory.
Number of Servers	Displays the total number of servers of any particular hardware configuration in your inventory.
Description	Displays the description of the server group.
Reference Cost	Displays the reference cost as provided by the IT Business Management Standard Edition reference database.
Cost	Displays the average cost per server.

Category	Description
Total Cost	Displays the total cost of servers in your inventory. This value is arrived by multiplying the cost value with number of servers.
Current Month Depreciation	Displays the depreciation of the server hardware for the current month.


- 6 Click the **Click to edit** icon  for which you want to change the monthly cost and depreciation. The Server Purchase Details page displays the total number of servers in your group into purchase batches according to their purchase price and date.
- 7 View and modify the server hardware configuration.
 - To view all the servers belonging to a group, click the link where number of servers are listed.
 - To edit the server purchase details, update the **Purchase Date**, **Number of Servers**, and **Cost per Server** text boxes.
 - To add server purchase details, click the  icon. Type the **Purchase Date**, **Number of Servers**, and **Cost per Server** text boxes.
 - To delete a server purchase details, click the  icon. The selected server group information is deleted.
- 8 Click **Done**.

According to your inputs, IT Business Management Standard Edition updates the total cost of server hardware and depreciation for the current month.

Edit Monthly Cost of Storage

You can edit the monthly cost of the datastores of your cloud environment. The storage hardware are categorized according to storage profile and storage type.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Cost**.
All the eight cost drivers are displayed.
- 4 Click **Edit Cost**.
- 5 In the Storage section, click the **Edit monthly cost** icon .

IT Business Management Standard Edition categorizes storage according to storage profile and storage type.

Category	Description
Storage Profile	Displays the storage profile name as configured in the vCenter Server if you view the storage cost based on storage profile.
Storage Type	Displays the storage type into Block Device, Fiber Channel, and SAN if you view the storage cost based on storage type. If the datastore is not on any of the storage device type, IT Business Management Standard Edition displays the datastore as uncategorized.
Datastores	Displays the total number of datastores for a specific profile or type.
Total GB	Displays the total storage for a specific profile or type.

Category	Description
Reference Cost	Displays the reference cost, which is fixed at \$0.1/GB. The reference cost is only available if you view the storage cost according to storage profiles.
Monthly Cost Per GB	Displays the monthly cost per GB for a specific profile or type.
Monthly Cost	Displays the total monthly cost for a specific profile or type.


- 6 Edit the total monthly cost per GB for storage either by storage profile or by storage type.
 - Edit the monthly cost per GB for the storage profile. This option is selected by default. The reference cost is only available if you select datastore by storage profile.
 - Edit the monthly cost per GB for the storage type. No reference cost is available.

According to your inputs, IT Business Management Standard Edition calculates and displays the monthly cost of your storage.

Edit Monthly Cost of Operating System Licensing


You can edit the total operating system licensing cost of your cloud environment. You can edit the operating system licensing cost by either selecting the ELA charging policy or selecting the per socket value.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Cost**.
All the eight cost drivers are displayed.
- 4 Click **Edit Cost**.
- 5 In the OS Licensing section, click the **Edit monthly cost** icon .

IT Business Management Standard Edition displays all the operating systems in your cloud environment.

Category	Description
OS Name	Displays the category of the operating system, Windows or Linux. If the operating system is not Windows or Linux, IT Business Management Standard Edition categorizes the operating system under Other OS.
VMs	Displays the number of virtual machines that are running on the specific operating system.
Sockets	Displays the number of sockets on which the specific operating system is running.
Charged by	Displays whether cost is charged by socket or ELA.
Total Cost	Displays the total cost of the specific operating system.
Reference Cost	Displays the reference cost as defined in the IT Business Management Standard Edition reference database.

- 6 Click the **Click to edit** icon  of the operating system for which you want to change the monthly cost .
The operating license details page is displayed, which summarizes operating system information running in your environment.

- 7 Edit the monthly cost of the operating systems by either updating monthly cost of operating system for each socket or updating the monthly cost of operating system according to ELA charging policy.
 - Edit the monthly cost for all operating systems of specific type by selecting per socket and entering the cost value accordingly.
 - Edit the monthly cost for all operating systems of a specific type by selecting the ELA charging policy and entering the cost value accordingly.

NOTE For the Windows operating system group, an additional option lets you charge for Windows desktops according to the ELA policy.


- 8 Click **Done**.

According to your inputs, IT Business Management Standard Edition calculates and displays the total cost and updates the Charged by column with the option that you have selected.

Edit Monthly Cost of Maintenance

You can edit the monthly cost of maintaining your cloud environment. Maintenance cost is categorized into hardware maintenance cost and operating system maintenance cost. Hardware maintenance cost is calculated as a percentage of the purchase cost of servers. Operating system maintenance cost is calculated as a percentage of the Windows licensing costs.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Cost**.
All the eight cost drivers are displayed.
- 4 Click **Edit Cost**.
- 5 In the Maintenance section, click the **Edit monthly cost** icon .
- 6 Edit the monthly maintenance cost.
 - Edit the percentage value of the hardware maintenance cost.
 - Edit the percentage value of the operating system maintenance cost.
- 7 Click **Save**.


The monthly maintenance cost is updated.

Edit Monthly Cost of Labor


You can edit the monthly cost of labor for your cloud environment. The labor cost is combination of the total cost of the server administrator, virtual infrastructure administrator, and the operating system administrator.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.

- 3 Click **Cloud Cost**.
All the eight cost drivers are displayed.
 - 4 Click **Edit Cost**.
 - 5 In the Labor section, click the **Edit monthly cost** icon .
- The monthly labor cost is displayed.

Category	Description
Category	Displays the categories of labor cost, Servers, Virtual Infrastructure, and Operating System.
Calculated by	Displays whether the cost is calculated hourly or monthly.
Total Monthly Cost	Displays the total monthly cost of the particular category.
Reference Cost	Displays the reference cost for the category from the IT Business Management Standard Edition database.


- 6 Click the **Click to edit** icon  for which you want to change the monthly labor cost.
The total number of servers, virtual machines, and operating system installations are displayed.
- 7 Edit the monthly labor cost by either updating the hourly rates or modifying the total monthly labor cost.
 - Edit the hourly rate.
 - Edit the total monthly labor cost.
- 8 Click **Done**.

The total monthly cost is updated. The hourly rate option or the monthly cost option that you select is updated in the Calculated by field.

Edit Monthly Cost of the Network

You can edit the monthly networking expenses of your cloud environment. You can edit the monthly cost for each Network Interface Controller (NIC) type either 1 Gigabit or 10 Gigabit, or can edit the total cost of all the networking expenses associated with the cloud.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Cost**.
All the eight cost drivers are displayed.
- 4 Click **Edit Cost**.
- 5 In Network, click the **Edit monthly cost** icon .
- 6 Edit the monthly cost of network by either updating the total monthly cost for each NIC card or by updating the total network cost of all network expenses.
 - Edit the total monthly cost for each NIC card by typing values for 1 Gigabit NIC and 10 Gigabit NIC.
 - Edit the total monthly cost of all network expenses associated with the cloud.

- 7 (Optional) Type an estimated percentage value for external network activity.

This value is used to calculate the value of external network deduction and is displayed as part of the VM cost details in the **Cloud Comparison** tab.


- 8 Click **Save**.

The total monthly network expenses are updated.

Edit Monthly Cost of Facilities

For your cloud environment, you can edit the total monthly cost of facilities or edit the facilities cost according to real estate, power, and cooling requirements.

Procedure


- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Cost**.
All the eight cost drivers are displayed.
- 4 Click **Edit Cost**.
- 5 In Facilities, click the **Edit monthly cost** icon .
- 6 Edit the monthly facilities cost by either updating the detailed cost of facilities or by updating the total monthly cost of facilities.
 - Edit the detailed cost of facilities by updating the monthly cost of rent or real estate per rack unit and the monthly cost of power and cooling per kilowatt-hour.
 - Edit the total monthly cost of facilities.
- 7 Click **Save**.

The monthly facilities cost is updated.

Edit Other Costs

The Other Costs cost driver lets you add any additional or extra cost that is not covered by other cost drivers categorized by IT Business Management Standard Edition. No reference value is present for this cost driver.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Cost**.
All the eight cost drivers are displayed.
- 4 Click **Edit Cost**.
- 5 In Other Costs, click the **Edit monthly cost** icon .
- 6 Type the total monthly costs for cost drivers other than the cost drivers categorized by IT Business Management Standard Edition.
For example, the cost of management software, disaster recovery, and high availability.

7 Click **Save**.

The monthly cost for other factors is updated.

Operational Analysis

After you determine the total spend for running 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).

This chapter includes the following topics:

- [“Understanding Operational Analysis,”](#) on page 21
- [“Edit Cost Utilization,”](#) on page 22
- [“Virtual Machine Cost Allocation,”](#) on page 24

Understanding Operational Analysis

The operational analysis considers the CPU, RAM, and storage as first class components of the cloud infrastructure.

The operational analysis module accepts the total monthly operating cost in your cloud infrastructure as modelled by using the cost driver component as input, and arrives at base rate for CPU and RAM expressed in terms of dollar per gigahertz and dollar per gigabytes of CPU and RAM respectively. The derived base rates for CPU, memory, and storage configured in the cost driver are then used to attribute the total cloud cost for the month to the virtual machines to arrive at the total cost of operating virtual machines for the month. Certain costs are directly attributed to the virtual machines, for example desktop operating system licenses and labor costs. These are not part of resource base rates, and are classified under the heading of OS (License and Labor).

The Resources table under the **Operational Analysis** tab displays cost breakdown information in terms of the current month cost, trend, and total percentage value of CPU, RAM, storage, operating system (license and labor) consumption in your cloud environment.

Calculating the Base Rate and the Expected CPU Utilization Percentage

IT Business Management Standard Edition calculates the base rates of CPU and memory so that they can be used for virtual machine cost computation. Base rates are determined for each cluster, which are homogeneous provisioning groups. Hence, base rates might change across clusters, but are the same within a cluster. Unclustered hosts in a vCenter Server are grouped according to their vendor, model, and configuration.

- 1 IT Business Management Standard Edition first arrives at the fully loaded cost of the cluster from the cost drivers. After the cost of a cluster is determined, this cost is split into CPU and memory costs based on the industry standard cost ratios for the different models of the server.
- 2 The CPU base rate is first computed by dividing the CPU cost of the cluster by the CPU capacity of the cluster. CPU base rate is then prorated by dividing the CPU base rate by expected CPU utilization percentage to arrive at true base rate for charging the virtual machines.

- 3 The memory base rate is first computed by dividing the memory cost of the cluster by the memory capacity of the cluster. Memory base rate is then prorated by dividing the memory base rate by expected memory utilization percentage to arrive at true base rate for charging the virtual machines.
- 4 You can either provide the expected CPU and memory utilization or can derive the expected CPU and memory utilization based on 3-month utilization average of ESXi hosts.

Edit Cost Utilization

You can adjust how the cost allocation happens in your virtual infrastructure. The total loaded cloud cost involves hardware, operating systems, maintenance, network, labor, and facilities costs. You can control how these costs are allocated on to your virtual infrastructure.

View Information for Server Cluster

IT Business Management Standard Edition categorizes all the ESXi hosts according to their cluster configuration. For ESXi hosts that are not clustered, categorization is based on five parameters, which are server model, CPU model, core count, CPU capacity, and memory size.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Operational Analysis**.
- 4 Click **Edit Utilization**.

The Server Clusters table provides information on the basis of the cluster configuration.

Table 3-1. Server Clusters

Category	Description
Type	Displays the icon that identifies whether this is a group of clustered or unclustered hosts.
Description	Displays the name of the cluster. If the ESXi hosts are not clustered, IT Business Management Standard Edition displays the server model, CPU model, core count, CPU capacity, and memory size.
Servers	Displays the total number of servers belonging to a cluster.
Utilization % of Capacity	Displays the percentage of utilization of the cluster's CPU and RAM capacity in terms of gigahertz and gigabytes respectively for the current month.
Total Cost	Displays the total cost of the cluster.
Expected CPU utilization %	Displays the percentage of expected CPU utilization. You can set the expected CPU utilization. For more information, see “Set the Expected CPU and Memory Utilization for the Host,” on page 23.
Expected memory utilization %	Displays the percentage of expected memory utilization. You can set the expected memory utilization. For more information, see “Set the Expected CPU and Memory Utilization for the Host,” on page 23.

Table 3-1. Server Clusters (Continued)

Category	Description
Base rates	Depending on the expected CPU utilization value that you have defined, IT Business Management Standard Edition calculates the base rate for the cluster and displays the information for CPU and RAM in terms of dollar per gigahertz and dollar per gigabytes respectively.
Unallocated Costs	Derived by multiplying the unused capacity of CPU and RAM by CPU and RAM base rates. Here, $\text{unused capacity} = \text{total capacity} - (\text{used} + \text{reserved capacity})$. NOTE The unused capacity is displayed as zero if total capacity is less than addition of used and reserved capacity.

Set the Expected CPU and Memory Utilization for the Host

You can set the expected CPU and memory utilization for the host by using the system defined value, which is computed by using historical averages, by defining a global value, or by defining a value at each cluster level. This value is used for calculating the virtual machine cost allocation.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Operational Analysis**.
- 4 Click **Edit Utilization**.
- 5 Set expected CPU and memory utilization.
 - You can select the system defined value, which computes the expected CPU and memory utilization by using historical averages. This option is selected by default.
 - You can set the global value for the expected CPU and memory utilization percentages in terms of percentage value. If you select this option, the value that you type is applied to the all server clusters.
 - You can set the expected CPU and memory utilization percentages for each cluster by typing the value in the **Expected CPU Utilization %** and **Expected Memory Utilization %** text boxes. Select the option and then set the expected utilization by navigating to the Expected CPU Utilization % and Expected Memory Utilization % column.
- 6 Click **Save**.

IT Business Management Standard Edition uses the value that you have provided to calculate and display the updated base rates of CPU and RAM in terms of cost per gigahertz and cost per gigabytes for the server cluster. IT Business Management Standard Edition also updates the unallocated costs for the server cluster.

Virtual Machine Cost Allocation

IT Business Management Standard Edition uses the utilization cost model to allocate the cost. The utilization cost model allocates the cost in proportion to the actual utilization of server CPU and memory resources of the virtual machines.

After the base rate is computed, IT Business Management Standard Edition reads different attributes of the virtual machine, such as usage, additional services of virtual machine such as fault tolerance, and then prepare the costs by using each parameter. These costs are computed on a daily basis and are added to calculate the monthly costs.

The list of virtual machines in the Resource Cost page are categorized according to the server generation that the virtual machine belongs to. If a virtual machine is deleted, the cost of virtual machine is not considered for the current month. Generation refers to the release date of server in the market. For example, the virtual machines hosted on servers released in the year 2009 appear under a single group heading.

View Server and Virtual Machine Information

You can view the information related to total cost of virtual machines in your environment and the average cost of all the virtual machines. You can also view detailed information related to CPU, RAM, and storage cost related to a particular virtual machine.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.


- 2 Click **Business Management**.

- 3 Click **Operational Analysis**.

All the live virtual machines in your cloud environment are displayed according to the generation of server that they belong to.

- 4 Click the link where the number of live virtual machines is displayed.

IT Business Management Standard Edition displays all the virtual machines belonging to a particular generation. The number of vCPUs, CPU cost, RAM cost, storage cost, direct virtual machine cost, and total cost of the virtual machine that you have selected is displayed.

- 5 To view the ESXi host details to which the virtual machine belongs to and to view the virtual machine resource cost history, click the  icon.

The name or IP address, configuration, and the host cluster information of the virtual machine is displayed. The resource cost history of the virtual machine is displayed in a graphical manner where the X axis represents the month and the Y axis represents the cost in dollars for that month.

- 6 To view all the servers belonging to a particular generation, click the link where the number of servers is listed.

The ESXi host name and description is displayed.

Demand Analysis

Demand analysis attempts to determine who consumes the resources, the purpose for which they are being consumed, and the costs associated with the resources.

IT Business Management Standard Edition follows a business model for classification purpose.

- 1 IT Business Management Standard Edition classifies the top level consumer, for example, a business unit or a cost center.
- 2 IT Business Management Standard Edition classifies the context, for example, an application or a service.

This chapter includes the following topics:

- [“View Demand Analysis Information,”](#) on page 25
- [“Grouping of Consumers,”](#) on page 26
- [“View Virtual Machine Information,”](#) on page 29

View Demand Analysis Information

You can view and sort the list of consumers on the basis of the consumer name, total cost, number of virtual machines, CPU cost, RAM cost, and storage cost.

Procedure

- 1 Log in to the vCloud Automation Center interface at `https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL` by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Demand Analysis**.
- 4 From the **Sort By** drop-down menu, select the sorting option for the information on the **Demand Analysis** tab.

IT Business Management Standard Edition displays the list of consumers according to the selected option.

Grouping of Consumers

Demand Analysis provides cost visibility of how your virtual infrastructure is being used by different consumers. This helps you in budgeting and comparison across different consumer groups within the enterprise. You can define rules and categorize your consumer lists according to your vCenter Server, vCloud Automation Center, and vCloud Director hierarchies. You can also upload a CSV file describing your vCenter Server hierarchy.

Categorize vCenter Server Hierarchy

You can define rules to categorize your vCenter Server hierarchy. The top level is the business unit, organization, or the cost center consuming your virtual machines. The secondary level displays the projects or applications within a consumer.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Demand Analysis**.
- 4 Click the **Edit** link.
- 5 Select the **Set rules to categorize your vCenter hierarchy** check box and click **Next**.
- 6 Select the top-level entity.
 - Folder nomenclature. For example, folders whose name or labels begin with BU_.
 - Hierarchy level in the vCenter Server. For example, all the folders at level 3 in the vCenter Server.
 - Virtual machine tags. For example, all the virtual machines that have tags that are set from a specific tag category.
 - Categorize by regular expression. You can enter a regular expression that matches every virtual machine that you want to assign to that top-level entity. The regular expression must include one group, some sub-pattern surrounded by parentheses. For example, if you define a regular expression as `(.+?)[_-].+` and if your virtual machine name is `dev_department_vm1`, then the first-level consumer name is displayed as `dev` and it has all the virtual machines that matches this criteria.

NOTE You can also format the top-level display name by omitting the prefix or suffix.

- 7 Click **Next**.
- 8 (Optional) Select the secondary-level entity.

For example, if the top-level entity is configured to be a folder named `marketing`, you can configure one of the following secondary-level entities.

- All the entities under the `marketing` folder in the vCenter Server with folder names starting with BU_.
- All the entities under the `marketing` folder at level 3.

- All the entities under the marketing folder containing at least one virtual machine with a specific tag category.
- All the virtual machine under the marketing folder with specified regular expression. For example, if you define a regular expression as `.+[--](.+) [--].+` and if your virtual machine is `dev_department_vm1`, then the secondary-level consumer name is displayed as `department`.

NOTE You can also format the secondary-level display name by omitting the prefix or suffix.

- 9 Click **Save**.
- 10 Click **Done**.

Depending on the configuration, IT Business Management Standard Edition displays the consumer name, the number of projects if you select the secondary-level entity, the number of live virtual machines, a graphical representation of resource cost consumption, and the cost rounded off to nearest full figure, for example if the cost is 24,300, IT Business Management Standard Edition displays the cost as 24K.

NOTE If none of the criteria matches, all the business units, cost centers, and folders are classified under Others.

Upload a CSV File

You can upload a CSV file describing the vCenter Server hierarchy in a specified format. You can view the consumers of the virtual machine categorized according to Configuration Management Database (CMDB) data that you have maintained.

No direct integration with CMDB is supported by IT Business Management Standard Edition, however, you can upload a CSV file. The acceptable CSV file format is virtual machine MOID, vCenter Server UUID, a unique business unit ID, business unit name, a unique project ID, and a project name. After you upload the CSV file successfully, the **Demand Analysis** tab displays the information present in the CSV file.

Prerequisites

Verify that the CSV file is saved in Encoding in UTF-8 without BOM format. To get this format, open the CSV file in Notepad++ and then navigate to **Encoding > Encoding in UTF-8 without BOM** and save the file.

Procedure

- 1 Log in to the vCloud Automation Center interface at `https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL` by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Demand Analysis**.
- 4 Click the **Edit** link.
- 5 Select the **Upload a CSV file describing the vCenter hierarchy** check box and click **Next**.
- 6 Click **Browse** and select the CSV file that you want to upload.

The CSV file that you are uploading must contain the information under the headings `vmMoid`, `vcServerUUID`, `businessUnitName`, `projectId`, and `projectName`.

- 7 Click **Upload**.

If all the parameters are correct, a `Consumer list rules saved successfully` message is displayed by the IT Business Management Standard Edition.

- 8 Click **Done**.

IT Business Management Standard Edition displays the vCenter Server hierarchy information according to the uploaded CSV file. Any subsequent uploads of CSV file are treated as an update to the existing CSV file.

Categorize vCloud Automation Center Hierarchy

IT Business Management Standard Edition has data integration with the IaaS component of vCloud Automation Center. You can define rules to categorize your vCloud Automation Center hierarchy.

Prerequisites

- Verify that IT Business Management Standard Edition is configured with the IaaS component of vCloud Automation Center and all the services are running.
- Verify that vCenter Server instances that you have added to vCloud Automation Center are added to IT Business Management Standard Edition.
- Verify that tenants, business groups, and blueprints are available and configured in the IaaS component of vCloud Automation Center.

Procedure

- 1 Log in to the vCloud Automation Center interface at `https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL` by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Demand Analysis**.
- 4 Click the **Edit** link.
- 5 Select the **Use vCloud Automation Center categorization (Tenant, Business Group, Blueprint)** check box, and click **Next**.
- 6 Select the top level entity.

Option	Description
Tenant	Categorizes according to tenants that you have defined in vCloud Automation Center.
Business Group	Categorizes according to business groups that you have defined in vCloud Automation Center.

- 7 Click **Next**.
- 8 Select the secondary level entity.

Option	Description
Business Group or Blueprint	If you have selected Tenant as the top level entity, you can define the secondary level entity according to a business group or a blueprint of vCloud Automation Center.
Blueprint	If you have selected Business Group as the top level entity, you can define the secondary level entity according to blueprints of vCloud Automation Center.

- 9 Click **Save**.

IT Business Management Standard Edition displays the tenants or business groups of vCloud Automation Center at the top level, business group or blueprints at the secondary level, the number of live virtual machines, a graphical representation of resource cost consumption, and the cost rounded off to nearest full figure, for example if the cost is 24,300, IT Business Management Standard Edition displays the cost as 24K.

NOTE If none of the criteria for the categorization match, all the virtual machines are displayed under the Others heading.

Categorize vCloud Director Hierarchy

You can define rules to categorize your vCloud Director hierarchy. IT Business Management Standard Edition integration with vCloud Director lets you view organization constructs from vCloud Director instance.

Prerequisites

Verify that vCloud Director is integrated with IT Business Management Standard Edition. You can add more than one vCloud Director. For more information about adding vCloud Director, see *IT Business Management Standard Edition Installation and Administration Guide*.

Procedure

- 1 Log in to the vCloud Automation Center interface at `https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL` by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Demand Analysis**.
- 4 Click the **Edit** link.
- 5 Select the **Use vCloud Director categorization** check box and click **Next**.
- 6 Click **Done**.

IT Business Management Standard Edition categorizes and displays organization constructs of vCloud Director according to organization, organization vDC, and virtual machines.

NOTE The virtual machines that are not part of vCloud Director are displayed under the Others heading.

View Virtual Machine Information

IT Business Management Standard Edition categorizes and displays the virtual machines according to the hierarchy that you defined. You can view the detailed information related to CPU, RAM, storage, and operating system costs of all the live virtual machines according to criteria that you have defined.

Prerequisites

Define and categorize vCenter Server, vCloud Director, or vCloud Automation Center hierarchy by which you want to view the information.

Procedure

- 1 Log in to the vCloud Automation Center interface at `https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL` by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Demand Analysis**.

Depending on the hierarchy that you have defined, all the live virtual machines are listed.

- 4 Click the link where the number of live virtual machines is displayed.

IT Business Management Standard Edition displays all the virtual machines according to the selected criteria. The number of virtual CPUs that belongs to the virtual machine, total cost, CPU cost, RAM cost, storage cost, and direct virtual machine cost of the virtual machine that you have selected is displayed.

- 5 To view the details of the ESXi host to which the virtual machine belongs, and to view the virtual machine cost history, click the ► icon.

The name or IP address, the configuration, and the host cluster information for the virtual machine is displayed. The cost history of the virtual machine is displayed in a graph where the X axis represents the month and the Y axis represents the cost for that month.

Comparison of Cloud Cost

You can view the virtual machine cost of your private cloud and then compare it with the Amazon Web Services and Windows Azure public cloud pricing models.

IT Business Management Standard Edition estimates the costs of running a completely new instance or an existing instance of a virtual machine in the private cloud by calculating the cost drivers of your private cloud. IT Business Management Standard Edition then provides you with a comparison of the cost of the same configuration in Amazon Web Services and Windows Azure cloud models.

Understanding the Cloud Comparison Feature

The Cloud Comparison feature lets you add virtual machine groups or import virtual machine groups from your private cloud to IT Business Management Standard Edition for cost comparison purpose.

IT Business Management Standard Edition then compares the cost of the virtual machine groups in the private cloud with that of similar groups in the public cloud models. The costs are updated in all the service models if you change the virtual machine configuration. IT Business Management Standard Edition calculates the virtual machine cost for the private cloud on the basis of CPU cores, CPU speed, RAM, price plan, up time, operating system for a single virtual machine, and Network Attached Storage (NAS) and Storage Area Networks (SAN) for group storage. IT Business Management Standard Edition searches the instance type to get the configuration requirements with the smallest CPU and memory, and have available prices for the requested operating system, region, and policy.

View Cloud Comparison Information

IT Business Management Standard Edition provides the cost related information of running a virtual machine group in your private cloud environment and the cost of running the same virtual machine group against Amazon Web Services and Windows Azure.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Comparison**.

By default the information related to the **Compare new VMs to Cloud** link is displayed.

IT Business Management Standard Edition displays a sample group with the configuration of 2 cores, 1.6GHz CPU, and 3.5GB RAM. IT Business Management Standard Edition displays a suitable cluster with the minimum price for the configuration.

Compare Cost of Cloud by Adding New Virtual Machines to Your Cloud

You can compare the cloud cost by adding new virtual machines to your private cloud or by using the existing virtual machines as a template. IT Business Management Standard Edition calculates and displays the cost of running the virtual machines with similar configurations in your private cloud, Amazon Web Services, and Windows Azure.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Comparison**.
- 4 Click the **Compare new VMs to Cloud** link.
- 5 Click the **Add VM Group** link to add new virtual machines group.
- 6 In VM Settings, modify the settings according to your requirements and click **Save**.

The new virtual machine group is added. The corresponding cost details are updated for your public cloud, Amazon Web Services, and Windows Azure.

- 7 Click the **Use current VMs as template** link to use the virtual machines from your private cloud as a template.

If you select more than one virtual machine, IT Business Management Standard Edition groups the virtual machines together according to their CPU, RAM, and operating system configurations, and shows the number of virtual machines in this group. IT Business Management Standard Edition names the group according to the search phrase or the category selected in the browse option.

- Browse and select the virtual machine that you want to import.
- Search and select the virtual machine that you want to import.

The selected virtual machine is added. The corresponding cost details are updated for your public cloud, Amazon Web Services, and Windows Azure.

Compare Cost of Cloud by Using Virtual Machines from Your Private Cloud

You can compare the cloud cost by importing the virtual machines from your private cloud. IT Business Management Standard Edition calculates and displays the cost of running the virtual machines with similar configurations in your private cloud, Amazon Web Services, and Windows Azure.


Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Comparison**.
- 4 Click the **Compare existing VMs to Cloud** link.
- 5 Click the **Import VMs** link.

Each virtual machines gets its own group after import.

- Browse and select the virtual machine that you want to import.
- Search and select the virtual machine that you want to import.

The selected virtual machine is added. The corresponding cost details are updated for your public cloud, Amazon Web Services, and Windows Azure.

- 6 (Optional) To view the details of the virtual machine that you have imported, click the **View VM details** icon .

Select a Cluster

For all the configurations that you plan to run in your private cloud, multiple clusters or unclustered ESXi hosts might have the required capabilities. You can change the cluster on which the configuration runs.

Procedure


- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Comparison**.
You can change the cluster configuration only for the virtual machines that are either added or imported by using **Compare new VMs to Cloud** link.
- 4 To change the cluster for the virtual machine group, click the link where the cluster information is displayed.
By default, IT Business Management Standard Edition selects the cluster with the minimal price.
- 5 Select the **Select Cluster** check box.
- 6 Select the cluster that you want to assign to the virtual machine group.
- 7 Click **Save**.

IT Business Management Standard Edition assigns the selected cluster to the virtual machine group. After changing the cluster, if the group configuration or cluster capabilities change and the selected cluster is no longer suitable for this configuration, the price is returned to be the default minimal price.

Edit Virtual Machine Group

You can edit the virtual machine settings for the group that you have added or imported from your private cloud environment. The corresponding cost details are updated in Amazon Web Services and Windows Azure.

Procedure


- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Comparison**.
- 4 Click the **Compare new VMs to cloud** link.
You can edit the virtual machine group only for the virtual machines that are either added or imported by using **Compare new VMs to Cloud** link.
- 5 The virtual machine for which you want to edit the settings, click the **Edit Group** icon .
- 6 Edit the virtual machine settings as required and click **Save**.

The cost related to the virtual machine is updated in your private cloud, Amazon Web Services, and Windows Azure environments.

View Information of Virtual Machine Group

You can view the virtual machine settings for the group that you have imported from your private cloud.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Comparison**.
- 4 Click the **Compare existing VMs to Cloud** link.
- 5 To view information about the virtual machine, click the **View VM details** icon .


The virtual machine details are displayed. You cannot edit this information.

NOTE The option to view a virtual machine's group is only available for the virtual machines imported by using **Compare existing VMs to Cloud** link.

Delete Virtual Machine Group

You can delete the virtual machine group that you have added or imported from your private cloud environment.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Comparison**.
- 4 Select the link from where you want to delete the virtual machine group.
- 5 To delete the virtual machine group, click the **Delete Group** icon .

The virtual machine group along with its cost details is deleted from your environment.

Reset the Cloud Comparison Information

You can restore the default configurations by using the reset feature. After a reset operation is completed, IT Business Management Standard Edition displays the default configuration.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Cloud Comparison**.
- 4 Click **Reset**.

In the **Compare new VMs to Cloud** link, the default configuration of the sample virtual machine group of 2 cores, 1.6GHz CPU, 3.5GB RAM is restored. In the **Compare existing VMs to Cloud** link, IT Business Management Standard Edition deletes all the added virtual machine groups.

Collecting Public Cloud Information

IT Business Management Standard Edition provides the users of IT Business Management Standard Edition an overview of how their investments are spread across Amazon Web Services (AWS) public cloud. IT Business Management Standard Edition integrates with AWS and provides detailed analysis of the AWS bills.

Configuring Amazon Web Services

Before you add AWS to IT Business Management Standard Edition, you need to configure an AWS account. After configuring AWS, you should see the CSV (comma-separated value) bills in the S3 bucket that you have configured.

You must have the AWS account ID, access key, secret key, and S3 bucket name.

- You must have an AWS account name and account ID. For more information, see <http://docs.aws.amazon.com/awsaccountbilling/latest/about/programaccess.html>.

NOTE The account ID is a 12 digit number (for example 1234-1234-1234) that you can see after you log in to the Web portal of an AWS account <https://portal.aws.amazon.com/gp/aws/manageYourAccount>. Do not use hyphens when you attempt to add or update the AWS account in IT Business Management Standard Edition.

- You must have an access key. For more information about getting an access key, see <http://docs.aws.amazon.com/fws/1.1/GettingStartedGuide/index.html?AWSredentials.html>.
- You must have a secret key. For more information about getting a secret key, see <http://docs.aws.amazon.com/fws/1.1/GettingStartedGuide/index.html?AWSredentials.html>.
- You need to follow the programmatic billing access process after getting an access key and secret key so that you can build applications that reference your billing data from a CSV file stored in an Amazon S3 bucket. For more information about getting the programmatic billing access, see <http://docs.aws.amazon.com/awsaccountbilling/latest/about/programaccess.html>.

NOTE Verify that the CSV bills are being generated in the S3 bucket that you have configured. After the bills are generated, you can add the AWS account. For more information, see “[Manage Amazon Web Services Account](#),” on page 36.


Manage Amazon Web Services Account

You can add and modify the AWS account that you plan to track and analyze by using IT Business Management Standard Edition.

Prerequisites


Verify that you have an account ID, access key, secret key, and S3 bucket name. For more information, see [“Configuring Amazon Web Services,”](#) on page 35.

Procedure

- 1 Log in to the vCloud Automation Center interface at `https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL` by using credentials of a tenant administrator.
- 2 Click the **Administration** tab.
- 3 Click **Business Management**.
- 4 Click the **General** link.
- 5 Under Manage Public Cloud Account, to add the AWS account details, click the add icon .
- 6 Type the name, description, account ID, access key, secret key, and S3 bucket name.
- 7 Click **Save**.

If all the information regarding AWS account that you provided is correct, IT Business Management Standard Edition adds the AWS account.

IT Business Management Standard Edition starts populating the dashboard information after a few minutes. Currently, IT Business Management Standard Edition refreshes its data by connecting to AWS every 30 minutes. You can force run the AWS collection job from the System Status menu.

- 8 (Optional) To modify the AWS account details, click the entry, edit the information, and click **Save**.
If the information that you have provided is correct, the AWS account details are modified and saved.
- 9 (Optional) To delete an AWS account, click the  icon and click **Save**.
You can retrieve the AWS account that you have deleted by clicking **Revert**.

View Amazon Web Services Information

After you add an AWS account, IT Business Management Standard Edition displays the total AWS cloud information along with account specific information.

Prerequisites

Verify that you have added the AWS account to IT Business Management Standard Edition. For more information, see [“Manage Amazon Web Services Account,”](#) on page 36.

Procedure

- 1 Log in to the vCloud Automation Center interface at `https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL` by using credentials of a tenant administrator.
- 2 Click **Business Management**.

3 Click **Public Cloud**.

IT Business Management Standard Edition lists all the accounts that are added in the Accounts pane, displays the total monthly cost of the entire AWS cloud, cost trend for the last 12 months from the time that the account has been added, the average virtual machine cost of the entire AWS cloud, the cost trend for the last 12 months from the time that the account was added, and the total number of virtual machines in the entire AWS cloud.

4 From the **Account** drop-down menu, select the account for which you want to view the information related to service type.

Information related to the account that you have selected, for example AWSDataTransfer, AmazonS3, AmazonEC2, or AmazonSNS appears in the Service Type pane.

5 To view detailed information about the service type, click the service type from AWS cost details pane.

The usage details of service type categorized according to Usage Type, Start Time - End Time, Usage, and Total cost is displayed.

6 (Optional) You can print the information that is present in the **Public Cloud** tab by clicking **Print** icon



Generating Reports

You can generate reports from IT Business Management Standard Edition to get information about various system objects such as servers, datastores, virtual machines, virtual machines of the public cloud, and clusters.

You can export the reports in a CSV format. You can use this data for further analysis.

This chapter includes the following topics:

- [“View Report for Servers,”](#) on page 39
- [“View Report for Datastores,”](#) on page 40
- [“View Report for Virtual Machines,”](#) on page 41
- [“View Report for Virtual Machines in a Public Cloud,”](#) on page 41
- [“View a Report for Clusters,”](#) on page 41
- [“Export Reports,”](#) on page 42

View Report for Servers

You can view a report about all the servers that are running in your environment. You can add more information related to servers that are categorized according to server hardware, OS licensing, maintenance, physical server labor, network, facilities, other costs, and allocation costs.

IT Business Management Standard Edition also displays the total loaded costs of servers that are running in your environment.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Reports**.

By default, information related to servers is displayed. IT Business Management Standard Edition displays the server details and also the total loaded costs of servers.

- 4 Select the specific cost that you want to add to the server details cost.

Option	Description
Sever hardware	Along with server details, IT Business Management Standard Edition displays the server hardware details according to purchase date, original purchase price, depreciated value, current reference price. IT Business Management Standard Edition calculates and displays the total monthly cost of server hardware.
OS licensing costs	Along with server details, IT Business Management Standard Edition displays the operating system licensing details according to operating systems that are running on the virtual machines for a specific server and Windows desktop operating system. Operating system details for a specific server include sockets, cost for each socket, operating systems, Windows server cost, Red Hat cost, SUSE cost, other operating system cost for the virtual machines that are running on this server. Windows desktop operating system details include desktop cost and total cost of Windows desktop. IT Business Management Standard Edition calculates and displays the total operating system cost.
Maintenance costs	Along with server details, IT Business Management Standard Edition displays the maintenance costs details according to hardware and software maintenance cost. IT Business Management Standard Edition also calculates and displays the total maintenance cost.
Physical server labor Costs	Along with server details, IT Business Management Standard Edition displays the physical server labor costs details according to physical server labor hours and hourly cost. IT Business Management Standard Edition calculates and displays the total labor cost.
Network costs	Along with server details, IT Business Management Standard Edition displays the network cost details according to ports, cost for each port, and total network cost for 1 gigabit and 10 gigabit networks. IT Business Management Standard Edition calculates and displays total network cost by adding the total networking cost for 1 gigabit and 10 gigabit network.
Facilities costs	Along with server details, IT Business Management Standard Edition displays details of rent, power, and cooling. IT Business Management Standard Edition calculates and displays the total facilities cost.
Other Costs	Along with server details, IT Business Management Standard Edition displays the details of other costs.

View Report for Datastores

You can view a report about all the datastores that are running in your environment.

IT Business Management Standard Edition displays the datastore details along with their total monthly cost.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Reports**.
- 4 Click the **Datastores** link.

IT Business Management Standard Edition displays the datastore details such as the datastore name, datastore path, storage type, storage profile, monthly cost per GB, reference cost per GB, total capacity in GB, and the total monthly cost of datastore.

View Report for Virtual Machines

You can view a report of all the virtual machines that are running in your environment.

IT Business Management Standard Edition displays the virtual machine details in a grid display or in a vCenter Server folder structure.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Reports**.
- 4 Click the **VMs** link.
- 5 Select the way that you want to view the virtual machines report.

Option	Description
Shows VMs in a grid display	Displays the virtual machines report in a tabular form
Show VMs in vCenter Server folder structure	Displays the virtual machines according to folder structure of vCenter Server where all the ESXi hosts are listed.

IT Business Management Standard Edition displays the details of the virtual machines along with their total monthly cost.

View Report for Virtual Machines in a Public Cloud

You can view a report of all the virtual machines that are running in the public cloud. Along with virtual machine details, the total monthly cost of virtual machines in your public cloud is displayed.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Reports**.
- 4 Click the **Public Cloud VMs** link.

The details of virtual machines in your public cloud are displayed along with invoice, storage, and monthly uptime information. IT Business Management Standard Edition also displays the total monthly cost of virtual machines of your private cloud.

View a Report for Clusters

You can view the report of all the clusters of your virtual environment.

IT Business Management Standard Edition displays the total monthly cost of running a cluster in your environment.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Reports**.

- 4 Click the **Clusters** link.

IT Business Management Standard Edition displays all the cluster details, either clustered or unclustered, and information about cluster cost allocation. IT Business Management Standard Edition also displays the weighted average cost of the virtual machines in the cluster along with the total monthly cost of the cluster.

Export Reports

You can export the reports from IT Business Management Standard Edition in a CSV format for further analysis. The export functionality transfers the reports of the link that you have selected.

Procedure

- 1 Log in to the vCloud Automation Center interface at https://vCloud_Automation_Center_host_name/shell-ui-app/org/tenant_URL by using credentials of a tenant administrator.
- 2 Click **Business Management**.
- 3 Click **Reports**.
- 4 Click the link of the entity for which you want to export the reports, and click **Export**.

NOTE For the reports related to Servers, the exported data contains all the components regardless of the check box that you have selected in the **Servers** link.

- 5 Select the location where you want to save the CSV file and click **OK**.

A report related to link that you have selected is exported in a CSV format.

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