IT Business Management Standard Edition Installation and Administration Guide

VMware IT Business Management Suite 1.0.1

EN-001248-01

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IT Business Management Standard Edition Installation and Administration Guide

The *VMware® IT Business Management Suite™ Standard Edition Installation and Administration* guide provides information about installing and configuring IT Business Management Standard Edition.

Intended Audience

This information is intended for anyone who wants to install and configure IT Business Management Standard Edition. The information is written for administrators who are familiar with virtual machine technology and data center operations.

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
- "IT Business Management Standard Edition Architecture," on page 8
- "Supported Product Integrations," on page 10

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.

IT Business Management Standard Edition Architecture

IT Business Management Standard Edition provides users greater visibility into the financial aspects of their IaaS delivery and lets them optimize and improve these operations.

The architecture illustrates the three main components of IT Business Management Standard Edition, the server, data collector, and reference database.

Figure 1-1. IT Business Management Standard Edition Architecture
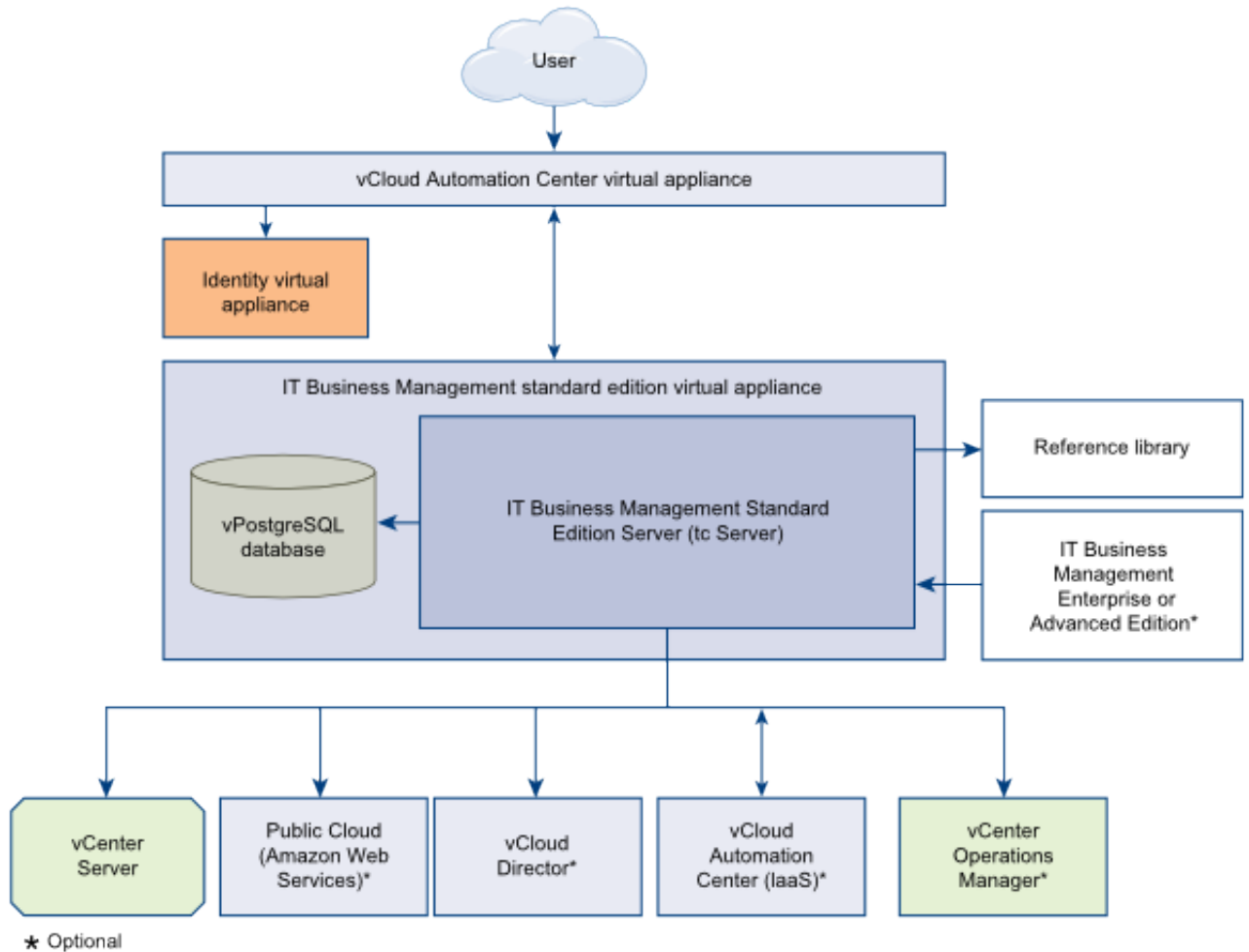
IT Business Management Standard Edition Server

IT Business Management Standard Edition server is based on a tc Server instance, running Spring container and communicating through a JPA and Hibernate (on top of JDBC) to vPostgress database that runs IT Business Management Standard Edition schema. vCloud data collector collects infrastructure events and usage statistics from the vCenter Server and places the infrastructure events and usage statistics into the

local Postgres database. Then the server consumes the data from the Postgres database.

IT Business Management Standard Edition server runs Quartz instance and schedules hourly, daily, and monthly jobs. IT Business Management Standard Edition user interface and all its external APIs return the costs calculated by the periodic jobs.

1 When a job starts, the job collects inventory, usage information, user changes to cost formulas that were made prior to starting the job, and most current defaults from the reference database.

2 The job then invokes series of calculation steps on the data, without interfering with ongoing inventory or user changes. When recalculation is finished, the costs are updated.

Table 1-1. Server Components

Component	Description
Inventory and Usage Service	Receives information from data collector, stores the information, and provides APIs for servers, virtual machines, other inventory elements, and their usage statistics.
Inventory Statistics	Aggregates inventory information for cost calculation and allocation.
Cost Drivers	Calculates costs that do not involve a usage parameter. The module has a user interface that lets you configure various parameters of cost calculation. IT Business Management Standard Edition has eight cost drivers, server, storage, operating system, maintenance, labor, network, facilities, and other.
Cost Allocation	Calculates the cost of a virtual machine according to up-time and usage. You can also configure some allocation parameters.
Consumer Allocation	Allocates costs according to tags of the virtual machine or according to mapping provided by the user.
Planning	Calculates the expected cost of existing inventory from Amazon and Azure.
Public Cloud Report	Provides you with a summary of the infrastructure that are deployed on a public cloud provider (for example Amazon).
Reference Database	Holds known configurations and default costs for each configuration, vendor, and geography.

Data Collector

This component is responsible for connecting to vCenter Server instances and retrieving both inventory information (servers, virtual machines, clusters, storage devices, and associations between them) and usage (CPU and memory) statistics.

Reference Database

This component is responsible for producing default, out-of-the-box costs for each of the supported cost drivers. References are updated periodically, and user can download the latest data set and import the data set into IT Business Management Standard Edition. The new values affect cost calculation. Reference data that is used depends on currency selection that you select when installing the product.

Communication Between Data Collector and the Server

Data collector and the server communicate through a database. Data collector writes to the database and the server reads the data. Data collector keeps inventory information time stamped, so it is possible to retrieve and view the inventory back in time. The architecture of data collector tables is flexible, and stores properties retrieved from the vCenter Server in key-value pairs. In some cases, the server converts this data into specific relations, and performs aggregation operations.

Communication Between Server and Reference Database

Reference database is a compressed and encrypted file, which the users can download and install manually. You can update the most current version of reference database. For more information, see "Update the Reference Database for IT Business Management Standard Edition," on page 29.

Other Sources of Information

These sources are optional, and are used only if installed and configured. The sources include vCloud Automation Center, vCloud Director, vCenter Operations Manager, and Amazon Web Services (AWS).

Data Input Synchronization

The system picks up the data from the external sources continuously and periodically updates the tables, which are used to display the data and generate the report. This update occurs daily, but can also be triggered by changes in the user interface and major changes in the inventory, such as when you initialize a system or add a new vCenter Server.

External Interfaces

Interface	Description
vCloud Automation Center	Call the IT Business Management Standard Edition to get the base rates.
IT Business Management Advanced and Enterprise Edition	Can receive inventory information, which is used as a basis for cost model creation. A special HTTPS API is designated for IT Business Management Advanced and Enterprise Edition.

Supported Product Integrations

IT Business Management Standard Edition integrates with various products and lets you use the information directly from these integration without having to manually enter the information.

VMware vSphere

IT Business Management Standard Edition allows addition of one or more vCenter Server machines to get the complete inventory list. The inventory list contains information related to virtual machines configuration, ESXi host capacity, cluster capacity, storage profiles, storage capacity, and vCenter Server attributes and tags.

VMware vCloud Director

IT Business Management Standard Edition integration with vCloud Director lets you view the organizational constructs from vCloud Director. IT Business Management Standard Edition supports organization, organization virtual datacenter (vDC), and virtual machines constructs.

NOTE The cost of virtual machine does not change whether you see the virtual machine as part of vCenter Server or vCloud Director.

VMware IT Business Management Advanced and Enterprise Edition

IT Business Management Standard Edition exposes APIs to let the third-party systems to extract data in a CSV format. The information includes object properties along with costs and allocations around virtual machines, physical servers, datastores, and the public cloud.

IT Business Management Advanced and Enterprise Edition editions uses these APIs to collect private and public cloud information, which can be used in cost models and reports.

VMware vCenter Operations Manager

IT Business Management Standard Edition does not have any direct integration with vCenter Operations Manager. In an environment where vCenter Operations Manager 5.7.x is installed, IT Business Management Standard Edition gets the expected CPU and memory utilization for each cluster or unclustered ESXi host from vCenter Operations Manager. Otherwise, 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.

VMware vCloud Automation Center

IT Business Management Standard Edition has tight integration with vCloud Automation Center. IT Business Management Standard Edition appears as a tab, named as **Business Management**, in the vCloud Automation Center user interface shell. IT Business Management Standard Edition uses the common services of vCloud Automation Center such as SSO authentication and authorization. The Infrastructure as a Service (IaaS) component of vCloud Automation Center consumes the base rate APIs of IT Business Management Standard Edition to compute blueprint price of virtual machine.

IT Business Management Standard Edition also has data integration with IaaS component of vCloud Automation Center. You can define rules and categorize according to vCloud Automation Center hierarchy. For more information, see Demand Analysis in the *IT Business Management Standard Edition User's Guide*.

Amazon Web Services

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

Installing IT Business Management Standard Edition

2

You can install IT Business Management Standard Edition as a virtual appliance on a vCenter Server or as a vApp on vCloud Director.

This chapter includes the following topics:

IT Business Management Standard Edition System Requirements

Before you install IT Business Management Standard Edition, verify that minimum hardware and software requirements are met.

IT Business Management Standard Edition Disk and Memory Requirement

IT Business Management Standard Edition requires a minimum of 50GB of disk space, 4GB memory, and 2 vCPU.

Port Requirements

Following ports should be open for communication between different entities.

Port	Description
443	For IT Business Management Standard Edition user interface connection through HTTPS
22	For external SSH connection
5432	For vPostgres instance. By default, this port is used with loopback address and not accessible to outside world.
5480	For Web console access

Virtualization Software Requirements

Before you install the IT Business Management Standard Edition virtual appliance, your environment must meet certain requirements.

- VMware ESXi 5.0 or 5.1. See vSphere documentation at https://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html.

- vCenter Server 5.0 or 5.1. See vSphere documentation at https://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html.

- vCloud Automation Center 6.0.x release. See vCloud Automation Center 6.0.x documentation.

NOTE   If you want to deploy IT Business Management Standard Edition on VMware vCloud Director, verify that VMware vCloud Director 5.1 or 5.1.1 is already deployed in your environment.

The IT Business Management Standard Edition user interface appears as the **Business Management** tab on the vCloud Automation Center user interface shell.

Web Interface Support

Because IT Business Management Standard Edition is integrated with vCloud Automation Center, you can use all of the browsers that vCloud Automation Center supports.

- Microsoft Internet Explorer 10.0. In Internet Explorer, select **Tools > Compatibility View Settings** and disable the **Disable intranet sites in Compatibility View** check box.

- Google Chrome 30.0 and 31.0.

- Mozilla Firefox 24.0 and 25.0.

You must have the VMRC plug-in for vCloud Director installed to work with your browser.

NOTE   The screen resolution must be above 1024x768 to view the complete
IT Business Management Standard Edition user interface. If you set the resolution to 1024x768 or lower, you might not see all the options on the user interface such as, **System Status** and **Help** and also tabs such as, **Public clouds** and **Reports**. To view the complete IT Business Management Standard Edition Standard user interface, zoom out the browser or increase the screen resolution.

IT Business Management Standard Edition Deployment Scenarios and Best Practices

You can deploy the IT Business Management Standard Edition appliance on vCloud Automation Center standalone and on vCloud Automation Center with the Infrastructure as a Service (IaaS) component integrated.

IT Business Management Standard Edition Standalone

1   Deploy and configure VMware identity virtual appliance (SSO).

2   Deploy the vCloud Automation Center virtual appliance and configure to point to identity virtual appliance.

3   Deploy the IT Business Management Standard Edition virtual appliance and then register IT Business Management Standard Edition with vCloud Automation Center. For more information, see vCloud Automation Center Installation Guide for 6.0.x.

IT Business Management Standard Edition with vCloud Automation Center

If vCloud Automation Center is present in your environment, deploy the IT Business Management Standard Edition virtual appliance and register with existing vCloud Automation Center.

Best Practices

■   Deploy IT Business Management Standard Edition in the same LAN where your vCenter Server setups are deployed.

■   Do not deploy the setups over a WAN. Performance over WAN in such cases might be degraded.

■   Keep IT Business Management Standard Edition, vCenter Server, VMware identity virtual appliance, and vCloud Automation Center in the same timezone. Otherwise, data synchronization might be delayed.

Deploy IT Business Management Standard Edition in vSphere

You can deploy the IT Business Management Standard Edition virtual appliance by using vSphere Client on the vCenter Server. The IT Business Management Standard Edition virtual appliance is in an OVA format.

Prerequisites

■   Log in to the vSphere Client as a user with administrator privileges.

■   Verify that your system meets all the requirements as described in "IT Business Management Standard Edition System Requirements," on page 14.

■   Verify that you have deployed and configured the VMware identity virtual appliance in your cloud environment. See *vCloud Automation Center Installation Guide* for 6.0.x.

■ Verify that you have deployed and configured the vCloud Automation Center virtual appliance in your cloud environment. See *vCloud Automation Center Installation Guide* for 6.0.x.

Procedure

1 In the vSphere Client, select **File > Deploy OVF Template**.

2 Browse to the OVA file, select it, and click **Next**.

3 On the OVF Template Details pane, click **Next**.

4 Accept the End User License Agreement and click **Next**.

5 On the Name and Location pane, type a unique virtual appliance name according to the IT naming convention of your organization and click **Next**.

   If more than one data center is present, select the data center on which to deploy the virtual appliance.

6 On the Host/Cluster pane, select the host or cluster on which to deploy the virtual appliance, and click **Next**.

7 On the Storage pane, select the storage location on which to store the virtual appliance, and click **Next**.

8 On the Disk Format pane, select **Thick Provision Lazy Zeroed** as the disk format and click **Next**.

9 On the Properties pane, configure the default gateway, DNS, static IP address, and netmask values, and click **Next.**

   NOTE   It is recommended to configure the default gateway, DNS, IP address, and netmask values manually.

10 Select **Power on after deployment**, and click **Finish** to confirm the settings and begin the deployment.

The process of deploying the IT Business Management Standard Edition virtual appliance might take few minutes.

What to do next

Start your appliance and set the currency of your choice. See "Start the IT Business Management Standard Edition Appliance," on page 17.

Deploy IT Business Management Standard Edition in vCloud Director

To install IT Business Management Standard Edition in vCloud Director, you must download the appliance. For information about adding vApps, see the vCloud Director documentation.

Prerequisites

■ Log in to the vCloud Director as a user with administrator privileges.

■ Verify that the system meets all the requirements as described in "IT Business Management Standard Edition System Requirements," on page 14.

■ Verify that you have deployed and configured the VMware identity virtual appliance in your cloud environment. See *vCloud Automation Center Installation Guide* for 6.0.x.

■ Verify that you have deployed and configured the vCloud Automation Center virtual appliance in your cloud environment. See *vCloud Automation Center Installation Guide* for 6.0.x.

■ Convert OVA format to OVF format. See https://www.vmware.com/support/developer/ovf/. Verify that the .ovf and .vmdk files are in the same folder.

Procedure

1   Log in to vCloud Director and select the organization in which to deploy
    IT Business Management Standard Edition.

2   Select the Catalog and click the **vApp Templates** tab.

3   Click the **Upload** icon .

4   In the Upload OVF as a Template window, provide the requested information.

    Configure the IP allocation from the static pool.

5   If a certificate warning appears, click **OK** to continue uploading the appliance.

6   Right-click the uploaded template, select **Add to My Cloud**, and follow the prompts to add a vApp.

7   Navigate to **My Cloud**.

8   Right-click the IT Business Management Standard Edition virtual machine and select **Properties**.

9   On the **Guest OS Customization** tab, select **Enable guest customization**, deselect **Allow local
    administrator password**, and click **OK**.

10 Right-click the newly added vApp and select **Start**.

What to do next

Start your appliance and set the currency of your choice. See "Start the IT Business Management Standard
Edition Appliance," on page 17.

Start the IT Business Management Standard Edition Appliance

You must start the newly added vCloud Director vApp or vSphere virtual machine to verify that your
installation was successful. You can also set the currency during this process.

Prerequisites

Verify that you have the VMRC plug-in for vCloud Director installed to work with your browser. See "Web
Interface Support," on page 14.

Procedure

1   Open the IT Business Management Standard Edition appliance.

    ■   From vCloud Director, double-click the vApp and select **Popout Console**.

    ■   From the vSphere Client, locate the powered on virtual machine and click the **Console** tab.

2   Set the currency for IT Business Management Standard Edition appliance.

    The default currency is US Dollar (USD). IT Business Management Standard Edition also supports the
    following currencies.

Currency Name	Supported Abbreviation
Euro	EUR
British Pound	GBP
Australian Dollar	AUD
Canadian Dollar	CAD
Singapore Dollar	SGD
Japanese Yen	JPY

Currency Name	Supported Abbreviation
Indian Rupee	INR
Israeli Shekel	ILS

NOTE   If you do not select a currency, US Dollar (USD) is selected by default.

3   Navigate to the appliance URL by using a supported browser.

The appliance URL format is https://*IT_Business_Management_Standard_Edition_IP_adress*:5480.

4   Type the user name as **root** and password as **vmware** of the virtual appliance and click **Login**.

The IT Business Management Standard Edition Web console opens in the browser.

What to do next

For security reason, change the password for the root user. See "Change Root Password," on page 23.

Configure IT Business Management Standard Edition with vCloud Automation Center

You can use the IT Business Management Standard Edition Web console to configure
IT Business Management Standard Edition appliance with vCloud Automation Center.

Prerequisites

Verify that you have deployed and configured the vCloud Automation Center virtual appliance in your cloud environment.

Procedure

1   Log in to the IT Business Management Standard Edition Web console at
https://*IT_Business_Management_Standard_Edition_IP_address*:5480.

2   Type the user name and password of the virtual appliance and click **Login**.

3   On the **vCloud Automation Center** tab, type the credentials to register with vCloud Automation Center server.

Option	Description
Hostname	Type the host name or IP address of the vCloud Automation Center virtual appliance.
SSO Default Tenant	Type the SSO default tenant name that you have defined while configuring your vCloud Automation Center virtual appliance.
SSO Admin User	Type the administrator user name that you have defined while configuring your vCloud Automation Center virtual appliance.
SSO Admin Password	Type the administrator password that you have defined while configuring your vCloud Automation Center virtual appliance.

4   Register IT Business Management Standard Edition with vCloud Automation Center.

Option	Action
If you are registering for the first time or if vCloud Automation Center certificate has changed	a Click **Register**. Registration fails and `Failed to register with vCloud Automation Center` message appears. b (Optional) To view the vCloud Automation Center certificate, click View vCloud Automation Center certificate link. c Click **Accept vCloud Automation Center certificate** check box. d Click **Register**.
If vCloud Automation Center is already registered	a Click **Register**.

If all the parameters are correct, a `Registered with vCloud Automation Center server` message appears.

NOTE   If you change the certificate of vCloud Automation Center, you need to again register IT Business Management Standard Edition with IT Business Management Standard Edition.

Create a Tenant in vCloud Automation Center User Interface

To access the IT Business Management Standard Edition through the vCloud Automation Center user interface, you must create a IT Business Management Standard Edition tenant in vCloud Automation Center.

Prerequisites

Verify that you have deployed and configured the vCloud Automation Center virtual appliance in your cloud environment.

Procedure

1   Log in to the vCloud Automation Center user interface at
     https://*vCloud_Automation_Center_host_name*/shell-ui-app.

     Use SSO administrator credentials to log in.

2   On the **Tenants** tab, click the **Add Tenant** icon ✚.

3   On the **General** tab, type the details of your tenant and click **Next**.

Option	Description
Name	Type the name of the tenant.
Description	(Optional) Type the description of the tenant.
URL Name	Type the URL name that identifies the tenant.
Contact Email	(Optional) Type an email address of the user.

4   To provide LDAP or active directory details, on the **Identity Stores** tab, click the **Add Tenant** ✚ icon.

Option	Description
Name	Name of your LDAP or active directory server.
Type	Type of authentication, open LDAP or active directory.
URL	URL for Open LDAP or active directory. For open LDAP and active directory, use the format ldap://*host name:port* or ldaps://*host name:port*
Domain	Domain DNS name.
Domain Alias	Domain NetBIOS name.

Option	Description
Login User DN	Name of the domain that user logs in to.
Password	Password for authentication purpose.
Group Search Base DN	Base domain name for groups.
User Search Base DN	Base domain name for users.

5   Click **Test Connection**.

    If the connection is successful, the `Connection is available` message appears.

6   Click **Add** and click **Next**.

7   On the **Tenant Admins** tab, select users and groups from your identity stores to grant the tenant administrator role.

8   Click **Add**.

9   Log out from the application.

Example: Values to Set an LDAP or Active Directory Connection

Option	Example Value
URL	ldap://*IP adress*:389
Domain	example.com
Domain Alias	example
Login User DN	cn=admin,dc=example,dc=com
Group Search Base DN	dc=example,dc=com
User Search Base DN	dc=example,dc=com

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. 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. See "Create a Tenant in vCloud Automation Center User Interface," on page 19.

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 **Users**.

4   Search and select the user to which you want to add the role.

5   From the Add Roles to this User box, assign the **Business Management Administrator** or **Business Management Read only** user privileges to the user.

6   Click **Update**.

7   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. See

Unregister IT Business Management Standard Edition from vCloud Automation Center

If you want to deploy a new version of IT Business Management Standard Edition appliance, you need to first unregister the earlier instance of IT Business Management Standard Edition appliance from vCloud Automation Center.

Procedure

1   Log in to the IT Business Management Standard Edition Web console,
https://*IT_Business_Management_Standard_Edition_IP_address*:5480.

2   Type the user name and password of the virtual appliance and click **Login**.

3   On the **vCloud Automation Center** tab, type the credentials of already registered
vCloud Automation Center server.

Component	Description
Hostname	The host name or IP address of the vCloud Automation Center virtual appliance.
SSO Default Tenant	The name of the SSO default tenant that you have defined while configuring your vCloud Automation Center virtual appliance.
SSO Admin User	The administration user name that you have defined while configuring your vCloud Automation Center virtual appliance.
SSO Admin Password	The administrator password that you have defined while configuring your vCloud Automation Center virtual appliance.

4   Click **Unregister**.

If all the parameters are correct, a `Unregistered with vCloud Automation Center server` message is displayed.

NOTE   If vCloud Automation Center certificate has changed, unregister
IT Business Management Standard Edition from vCloud Automation Center fails. To avoid the failure, unregister and then re-register IT Business Management Standard Edition with
vCloud Automation Center.

What to do next

Follow the process of deploying the IT Business Management Standard Edition appliance as described in

Configure NTP Server

You can configure the Network Time Protocol (NTP) server for periodic time synchronization. NTP is an industry standard and ensures accurate timekeeping in your guest.

Procedure

1   Log in to the IT Business Management Standard Edition virtual machine console.

2   Navigate to `/etc/ntp.conf` and add the command.

    ```
    server %my-ntp-server%
    fudge %my-ntp-server% stratum int
    ```

    `server %my-ntp-server%` is the IP address or full qualified domain name of the NTP server. `stratum int` specifies the stratum number assigned to the driver in the range 0 to 15, both inclusive. This number overrides the default stratum number assigned by the driver.

3   Check the status of NTP server by running the `chkconfig -a ntp` command.

4   If the service is running, restart the service. If the service is not started, start the service by running the `service ntp start` command.

5   Disable the time synchronization by VMware Tools by running the `/usr/bin/vmware-toolbox-cmd timesync disable` command.

6   To verify the status of NTP server, run the `ntpq -pn` command.

Change SSL Certificates

You can manually create a new Java SSL key store with the private key and import the certificate that is issued by Certifying Authority (CA).

The new ssl.keystore replaces the old key store with the same password as that of the old key store at `/usr/local/tcserver/vfabric-tc-server-standard/tcinstance1/conf/ssl.keystore`.

Prerequisites

Take a backup of existing key store if you want to restore the old key store again.

Procedure

1   Navigate to `/usr/local/tcserver/vfabric-tc-server-standard/tcinstance1/bin/setenv.sh` to locate the old password for the key store provided as a property for tomcat keystore *javax.net.ssl.trustStorePassword=<password>*.

2   Create a PKCS12 key store file. For example,
    `openssl pkcs12 -export -in <ca_provided_cert>.crt -inkey server.key -out keystore.p12 -name tomcat -CAfile ca.crt -caname <CA Name>`.

3   Convert the pkcs12 file to a Java key store. For example,
    `keytool -importkeystore -deststorepass <password> -destkeypass <password> -destkeystore server.keystore -srckeystore keystore.p12 -srcstoretype PKCS12 -srcstorepass <SOURCE_P12_KEYSTORE_PASSWORD> -alias tomcat`

    Where *<password>* is the auto-generated password for old key store in the property *javax.net.ssl.trustStorePassword*.

4   Log in to the IT Business Management Standard Edition Web console and register
     IT Business Management Standard Edition with vCloud Automation Center. This ensures that
     vCloud Automation Center is added to the newly created key store.

     You have the choice of exporting the existing certificates from old ssl.keystore and then import them in
     the new key store. For this scenario, accepting the certificate from
     IT Business Management Standard Edition Web console is not needed. Restart of
     IT Business Management Standard Edition server is sufficient.

Change Root Password

For security reasons, you must change the password for the root user of
IT Business Management Standard Edition virtual appliance after installation.

Procedure

1   Log in to the IT Business Management Standard Edition virtual appliance either through SSH or the
     physical console.

2   Type `passwd root` command.

3   Type the new password.

4   Re-type the password for confirmation.

     IT Business Management Standard Edition virtual appliance password is changed successfully.

Setting Up IT Business Management Standard Edition

3

After you deploy IT Business Management Standard Edition, you must manage the vCenter Server instances by adding them to IT Business Management Standard Edition. You can also update the reference database, manage vCloud Director instances, manage public cloud accounts, download a support file, and update the license key for IT Business Management Standard Edition.

This chapter includes the following topics:

IT Business Management Standard Edition Administration

Before you start using the IT Business Management Standard Edition appliance, you must set up the IT Business Management Standard Edition appliance to work in your virtual environment.

You can perform operations like adding vCenter Server instances, updating a reference database, updating the license key, and downloading support file information.

- Add vCenter Server to IT Business Management Standard Edition by entering vCenter Server details. You can add up to four vCenter Server instances.

- Add vCloud Director to IT Business Management Standard Edition by entering vCloud Director details.

- Manage public cloud accounts, for example Amazon Web Services (AWS).

- Update the reference database to reflect the most current data. You can either update the references database manually or by running an auto update feature.

- Download the support file containing critical runtime information about the system.

- Update the license key.

- Generate a token that you can use to define a connection between IT Business Management Advanced and Enterprise Edition and IT Business Management Standard Edition.

- Provide the CPU, RAM, and storage unit rates to vCloud Automation Center. vCloud Automation Center uses an API to compute the blueprint price of a virtual machine.

  NOTE   This data is not used anywhere in IT Business Management Standard Edition for any form of cost computation.

Add vCenter Server Instances

After you install IT Business Management Standard Edition, you can add a vCenter Server instance to IT Business Management Standard Edition to enable vCenter Server management and retrieve the inventory information from your virtual environment. You can add up to four vCenter Server instances.

Prerequisites

To add vCenter Server to IT Business Management Standard Edition, you need the credentials of the vCenter Server user. The vCenter Server user must have some additional permissions apart from the normal Read-only role that is assigned to a vCenter Server user. To add additional permissions to the vCenter Server user, perform the following steps.

1. Log into vCenter Server as an administrative user and create a clone of the Read-only role in a vCenter Server.

2. Include the **Storage views.View**, **Profile-driven storage.Profile-driven storage view** permissions to this cloned role. Include **Global.vCenter Operations User** also if you have integrated vCenter Server with VMware vCenter Operations Manager.

3. Create a user in vCenter Server for IT Business Management Standard Edition and assign this cloned role to the user.

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.

   This link is selected by default.

5. Under Manage vCenter Server connections, click the ⊞ icon.

6. Type the IP address, user name, and password of the vCenter Server that you want to add.

7. Click **Save**.

   A dialog with untrusted SSL certificate is displayed.

8. Click **Install**.

   If the credentials are valid, vCenter Server is added to the IT Business Management Standard Edition. Refresh the browser to view the added vCenter Server.

   NOTE   After addition of vCenter Server to IT Business Management Standard Edition, if the vCenter Server certificate changes, data collection fails because vCenter Server presents a new certificate, which might again be untrusted. You must add the vCenter Server again and accept the new vCenter Server certificate. You can edit the vCenter Server details by clicking the ✎ icon and then accept the new vCenter Server certificate.

Edit or Delete vCenter Server Instances

You can edit or delete vCenter Server instances from IT Business Management Standard Edition. You can use the edit functionality to update the vCenter Server information after certificate of vCenter Server changes.

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.

    This link is selected by default.

5   To edit the vCenter Server, click the ✏ icon.

6   Modify the details and click **Save**.

7   To delete vCenter Server, click the ✖ icon and click **Save**.

8   (Optional) You can retrieve vCenter Server that you have deleted by clicking **Revert**.

Add vCloud Director Instances

You can add vCloud Director instances to IT Business Management Standard Edition to get vCloud Director based categorization.

If you add vCloud Director to IT Business Management Standard Edition, you can categorize the data according the vCloud Director hierarchy.

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 vCloud Director, click the ➕ icon.

6   Type the IP address, user name, and password of vCloud Director that you want to add.

7   Click **Save**.

    A dialog with untrusted SSL certificate is displayed.

8   Click **Install**.

    If the credentials are valid, vCloud Director is added to the IT Business Management Standard Edition. Refresh the browser to view to added vCloud Director.

    NOTE   After addition of vCloud Director to IT Business Management Standard Edition, if the vCloud Director certificate changes, data collection fails because vCloud Director presents a new certificate, which might again be untrusted. You must add the vCloud Director again and accept the new vCenter Server certificate. You can edit the vCloud Director details by clicking the ✏ icon and then accept the new vCloud Director certificate.

Edit or Delete vCloud Director Instances

You can edit or delete vCloud Director instances from IT Business Management Standard Edition. You can use the edit functionality to update the vCloud Director information after certificate of vCloud Director changes.

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.

    This link is selected by default.

5   To edit the vCloud Director, click the ✏ icon.

6   Modify the details and click **Save**.

7   To delete vCloud Director, click the ✖ icon and click **Save**.

8   (Optional) You can retrieve vCloud Director that you have deleted by clicking **Revert**.

Manage Amazon Web Services Account

You can add or modify an AWS account that you want 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 *IT Business Management Standard Edition User's* 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 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 details of an AWS account, click the ✏ icon, 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**.

Update the Reference Database for IT Business Management Standard Edition

You can update the reference database to have the most updated version of the reference library. You can either update the references database manually or by running an auto-update feature. This reference database supplies values for cost calculations.

Prerequisites

For auto-update process, verify that port 22 is open so that IT Business Management Standard Edition can access SaasFTP.digitalfuel.com to start the auto update process.

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.

Under Reference Database, the current version of reference library appears.

5   If an auto update is available, click the 🟠 icon, which is displayed next to Status.

The Reference Database section of Administration page appears.

a   Click **Run auto update** link.

b   Accept the legal agreement.

The reference database is updated.

6   To manually update the reference database, click **manual update process** link.

a   Click **Generate and download file** link. An encrypted Zip file with the required data is downloaded to your default download folder.

b   Contact VMware customer support and provide them with the Zip file that you have generated. Depending on the information that you have provided, an updated reference costs file will be generated for you.

c   Click **Browse** and select the file.

d   Click **Done**.

The reference database is updated.

Generate and Download the Support File

You can download the support file, which contains critical runtime information about the system.

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 Support File, click **Generate and download file**.

6   Save the file.

The support file is saved as an archive file.

This Zip file includes the `itfm-vc-dc.log`, which contains information about data collector issues and `itfm.log` is an application log file that contains information about all the other processes, thread dump, and other metrics.

Update Licenses for IT Business Management Standard Edition

You can update the license of IT Business Management Standard Edition by using the Update License feature.

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.

Under Update License, IT Business Management Standard Edition displays the current license serial key number, license type, maximum number of virtual machines that the entered license key allows, and the number of virtual machines that are currently running in your environment.

5   In the **New Serial** text box, type the new license key.

6   Click **Update**.

If the new license key is valid, the license is updated.

Generate Token for IT Business Management Advanced and Enterprise Edition Integration

You can generate a token and IT Business Management Standard Edition host URL from
IT Business Management Standard Edition. You can also download the certificate file that you can import in
IT Business Management Advanced and Enterprise Edition.

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 ITBM token, click **Generate a new ITBM token**.

IT Business Management Standard Edition generates a token and
IT Business Management Standard Edition host URL.

6   Click **Download Certificate file** and select the location where you want to save the certificate file.

You can use this information to define a connection between
IT Business Management Advanced and Enterprise Edition and IT Business Management Standard Edition.

What to do next

For detailed process of integration between IT Business Management Advanced and Enterprise Edition and IT Business Management Standard Edition, see *IT Business Management Enterprise and Advanced Edition Installation* guide.

Compute the Blueprint Price of a Virtual Machine

You can update the vCPU, RAM, and storage prices, which vCloud Automation Center can consume, by using an API to compute the blueprint price of a virtual machine.

vCloud Automation Center cost profile information from IT Business Management Standard Edition that vCloud Automation Center can use to calculate blueprint price of a 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 the **Administration** tab.

3   Click **Business Management**.

4   Click the **Pricing** link.

5   Set the vCPU, RAM, and storage values.

Option	Action
Set the same values for cost and price.	Select the **Set default prices for computing and storage** check box.
Set your own values for prices of RAM and vCPU.	Select **Manually set prices for computing and storage** check box.

IT Business Management Standard Edition does not use these values for cost calculation and presentation.

6   Click **Save**.

The prices of vCPU, RAM, and storage are updated. vCloud Automation Center can use these prices to compute the blueprint price of a virtual machine.

View and Update System Status

You can view and update the status of critical internal business processes and understand the overall system health. The system processes run periodically to ensure that your inventory and cost data are always current.

■   Data collector connects to vCenter Server instances and collects the inventory data and usage statistics. After collection of inventory data and usage statistics finishes, IT Business Management Standard Edition displays timestamp in GMT.

■   Cost calculation involves the steps for computing base rates, allocated costs, cost for each virtual machine, classification of virtual machines under **Consumers** tab and pre-generation of reports. Cost calculation occurs daily, but you can also run the process manually.

■   vCloud Automation Center connector collects data about consumers of a virtual machine in terms of blueprints, provisioning groups and tenants from IaaS component of vCloud Automation Center. vCloud Automation Center connection information appears only after you configure IaaS component of vCloud Automation Center.

■   Public cloud connection connects to the listed accounts in AWS to collect inventory and usage data. Public cloud connection information appears only after you configure an AWS account.

- vCloud Director connector connects to vCloud Director to collect data about consumers of the virtual machine according to organization and organization vDC. vCloud Director connection information appears only after you add vCloud Director to IT Business Management Standard Edition.

You can also view and update cost calculation and public cloud connection 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 **Status**.

IT Business Management Standard Edition displays the system status information. Information related to data collector, cost calculation, vCloud Automation Center, public cloud connection, and vCloud Director connection is displayed. If all the processes are running correctly a green check mark

is displayed. If any problem with any of the processes occur, a red exclamation icon is displayed. To further analyze the issues with the processes, view the `itfm-vc-dc.log` for data collector process and `itfm.log` for all the other processes.

4 (Optional) To update the cost calculation and public cloud connection, click **Update now**.

Troubleshooting IT Business Management Standard Edition

4

You can troubleshoot IT Business Management Standard Edition for some of the common problems that might occur when installing or using IT Business Management Standard Edition.

This chapter includes the following topics:

Error While Accessing Business Management Tab

An error message is displayed when you attempt to access the **Business Management** tab after registering with vCloud Automation Center.

Problem

After registering IT Business Management Standard Edition with vCloud Automation Center, if you click the **Business Management** tab in vCloud Automation Center user interface, an `Error 404` message is displayed.

Solution

1 Log in to the IT Business Management Standard Edition virtual machine.

2 Run the `monit restart vcbm-server` command.

The server restarts in 20 to 30 seconds. You can find the log file at `/usr/local/tcserver/vfabric-tc-server/tcinstance1/logs/itfm.log`.

vCloud Automation Center Synchronization Job Fails

You might be unable to retrieve tenant, blueprints, and business group information from vCloud Automation Center because synchronization job fails.

Problem

With the IaaS component of vCloud Automation Center integrated with IT Business Management Standard Edition, the synchronization job shows `java.lang.NullPointerException`.

Cause

This problem occurs if you add the vCenter Server to vCloud Automation Center, but the same vCenter Server is not added to IT Business Management Standard Edition.

Solution

◆ Add the vCenter Server that you have added to vCloud Automation Center to IT Business Management Standard Edition.

After you add the vCenter Server and complete the inventory synchronization in IT Business Management Standard Edition, blueprints, tenants, and business group information becomes available.

Business Management tab does not appear

After registering IT Business Management Standard Edition with vCloud Automation Center, **Business Management** tab does not appear in the vCloud Automation Center user interface.

Problem

After registering IT Business Management Standard Edition with vCloud Automation Center and adding Business Management role to the user, Business Management tab does not appear in the vCloud Automation Center user interface. No error is reported in the log file.

Cause

This problem occurs because a known issue of restrictions on extension visibility when IaaS component of vCloud Automation Center is not available.

Solution

1   Create extension.properties file under `/etc/vcac` and hide the home page tab, .

    `shell.disabledExtensions=csp.home`

    You can hide other tabs by using `shell.disabledExtensions=<extension–id>[,<extension–id>]`.

2   Restart the vCloud Automation Center virtual appliance.

3   Log in to the vCloud Automation Center interface. Business Management tab should appear.

IT Business Management Standard Edition and vCloud Automation Center Connection Failure

An error message is displayed after registering IT Business Management Standard Edition with vCloud Automation Center.

Problem

After you register IT Business Management Standard Edition with vCloud Automation Center and then if you navigate to **Administration > Business Management** `java.net.NoRouteToHostException: No route to host` error message is displayed.

Cause

This problem can occur if the IP address of IT Business Management Standard Edition virtual appliance changed after IT Business Management Standard Edition is registered with vCloud Automation Center. To confirm the issue.

1   Log in to IT Business Management Standard Edition by using SSH.

2   Type the command `/usr/local/tcserver/vfabric-tc-server-standard/tcinstance1/conf/security.properties`. This file should contain the property *vcbm.host=<ip_address>*. Check if this IP address is same as that of IT Business Management Standard Edition virtual appliance.

Solution

- Deploy a new instance of IT Business Management Standard Edition virtual appliance.

  a   Unregister from IT Business Management Standard Edition.

  b   Remove IT Business Management Standard Edition virtual appliance from your environment.

  c   Deploy a new instance of IT Business Management Standard Edition with static IP and fully-qualified domain name.

  d   Register IT Business Management Standard Edition with vCloud Automation Center.

- If you do not want to deploy a new instance of IT Business Management Standard Edition, perform the following workaround.

  a   Unregister IT Business Management Standard Edition with vCloud Automation Center.

  b   Change the IP address in the file `/usr/local/tcserver/vfabric-tc-server-standard/tcinstance1/conf/security.properties` to correct IP address.

  c   Re-create the SSL key store file `/usr/local/tcserver/vfabric-tc-server-standard/tcinstance1/conf/ssl.keystore` with correct IP address and fully-qualified domain name. The key store requires the password. You can fiind the auto-generated password in the file `/usr/local/tcserver/vfabric-tc-server-standard/tcinstance1/bin/setenv.sh` given as property for tomcat *keystore javax.net.ssl.trustStorePassword=<password>*. For example, run the command `keytool -genkey -keystore ssl.keystore -dname CN=<ITBM-VM-IP-Address> -ext san=DNS:<ITBM-FQDN> -alias tomcat -storepass <password> -keypass <password>` from directory `/usr/local/tcserver/vfabric-tc-server-standard/tcinstance1/conf`. Make sure you take the back up of ssl.keystore before creating a new one.

  d   Register IT Business Management Standard Edition with vCloud Automation Center.

IT Business Management Standard Edition Displays an Exception while Parsing XML Documents

IT Business Management Standard Edition displays an exception while parsing XML Documents because Java has introduced a counter for each process that limits the XML entity expansions. After the counter reaches its limit, further communication with XML documents might not work.

Problem

This exception occurs because JDK 1.7u45 has a functional bug while parsing XML documents. After the counter reaches the limit of 64000 an exception is displayed.

```
Exception in thread "main" javax.xml.stream.XMLStreamException: ParseError at [row,col]:[1,1]
Message: JAXP00010001: The parser has encountered more than "64000" entity expansions in this
document; this is the limit imposed by the JDK.
at
com.sun.org.apache.xerces.internal.impl.XMLStreamReaderImpl.setInputSource(XMLStreamReaderImpl.ja
va:219)
at com.sun.org.apache.xerces.internal.impl.XMLStreamReaderImpl.<init>(XMLStreamReaderImpl.java:
189)
at
com.sun.xml.internal.stream.XMLInputFactoryImpl.getXMLStreamReaderImpl(XMLInputFactoryImpl.java:
277)
```

```
at
com.sun.xml.internal.stream.XMLInputFactoryImpl.createXMLStreamReader(XMLInputFactoryImpl.java:
129)
```

```
at com.sun.xml.internal.stream.XMLInputFactoryImpl.createXMLEventReader(XMLInputFactoryImpl.java:
78)
```

```
at Main.main(Main.java:38)
```

Solution

◆ Restart the IT Business Management Standard Edition server by typing `monit restart vcbm-server` command.

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