CloudPortal Business Manager 2.2 POC Cookbook

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1 Overview

This cookbook is a step-by-step guide for service providers to create a POC setup of an Infrastructure as a Service (IaaS) business with Citrix CloudPortal Business Manager and CloudPlatform. The IaaS business will offer products and bundles shown in Table 1 and Table 2. Table 1 includes basic products or resources offered by the IaaS cloud and its utility price. Table 2 includes bundles containing multiple products.

Table 1. IaaS Product Price List

Products	EUR (€)	US ($)	Unit	Description
Small Instance	0.03	0.04	per Hour	Small running VM (1 CPU@500MHz, 512MB RAM)
Medium Instance	0.07	0.09	per Hour	Medium running VM (1 CPU@1GHz, 1GB RAM)
Network Bytes Received	0.02	0.03	per GB	Data transfer from Internet
Network Bytes Sent	0.06	0.08	per GB	Data transfer to Internet
IP Address	0.8	1	Per Month	Public IP address
Root Volume	0.09	0.12	Per GB per month	Storage used by root volume of the VM.
Data Volume	0.09	0.12	per GB per month	Storage used by data volume of the VM.
Secondary storage	0.07	0.09	per GB per month	Storage used for user-created templates, ISOs and volume snapshots.
CentOS 5.6 Template	0.002	0.003	per Hour	CentOS 5.6 template used by running VMs.

Table 2. IaaS Product Bundle Price List

	One-time Charge		On-Going Price			
Product Bundles	EUR (€)	US ($)	EUR (€)	US ($)	Unit	**Description**
Small CentOS Instance	4	5	20	26	Month	Includes small instance, CentOS OS, 20GB root volume
Medium CentOS Instance	4	5	44	57	Month	Includes medium instance, CentOS OS, 20GB root volume
Compute Instance	4	5	Starting from 0	Starting from 0	Month	Any instance size with one-time charge, and will be billed at utility rate every month
20GB Data Volume	0	0	1.7	2.2	Month	Includes 20GB data volume
50GB Data Volume	0	0	4.0	5.2	Month	Includes 50GB data volume
Silver Network Package	0	0	0.9	1.1	Month	Includes 10GB of network bytes sent and 10GB of network bytes received
Gold Network	0	0	1.7	2.2	Month	Includes 20GB of network bytes

Package						sent and 20GB of network bytes received
Standard Support	0	0	80	100	Month	Include a standard support package for the customer

This cookbook covers the following topics. Prior knowledge of CloudPlatform is required.

- Prepare CloudPlatform to be used with CloudPortal Business Manager
- Install and Configure CloudPortal Business Manager
- Connect CloudPortal Business Manager to CloudPlatform
- Create Products, Bundles and Catalogs
- Create Accounts and Users

2 Prepare CloudPlatform to Be Used with CloudPortal Business Manager

2.1 Assumptions

This cookbook assumes the following:

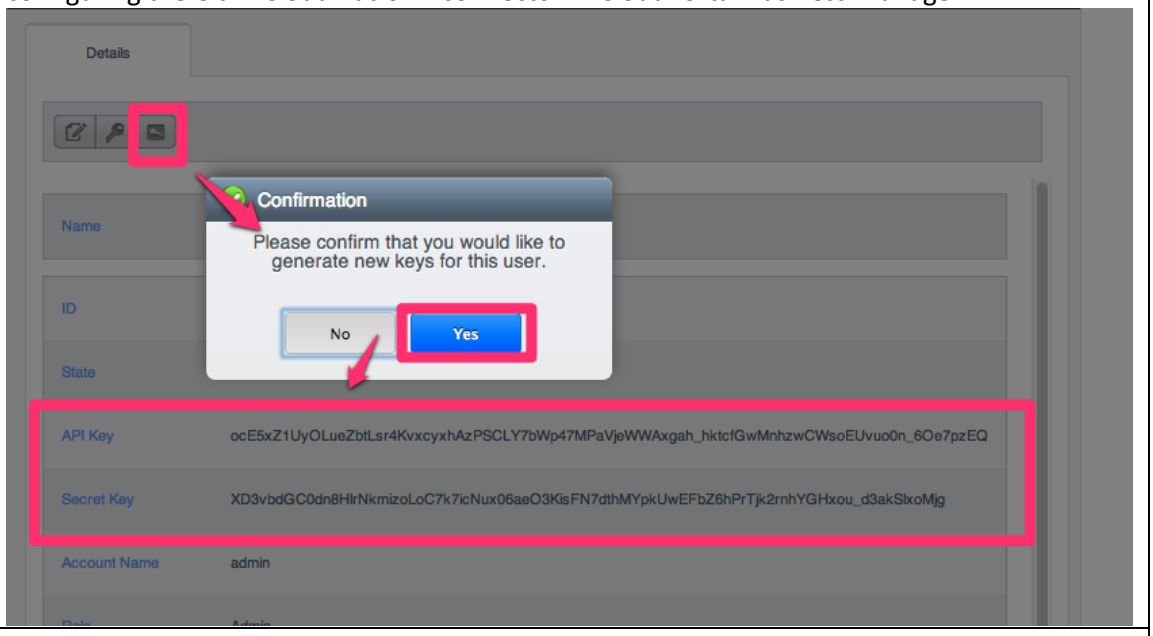
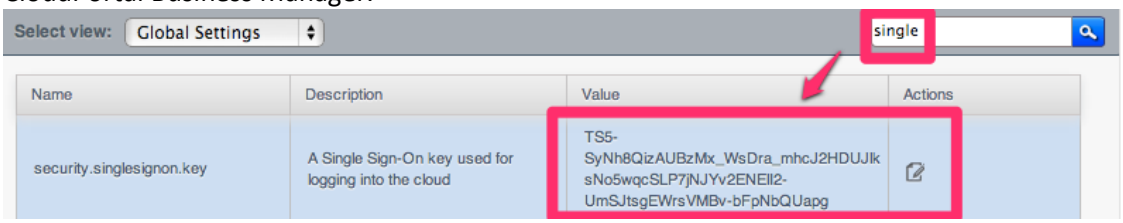
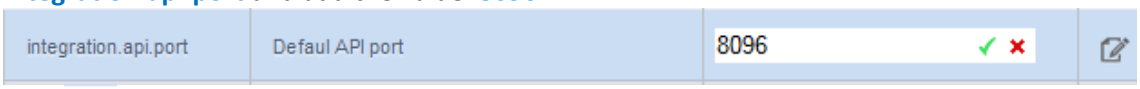
- Citrix CloudPlatform is installed and fully operational (e.g. instances deployment tested).
- CloudPlatform version 4.2.1 is used (Although CloudPortal Business Manager 2.2 supports CloudPlatform 3.0.4 to 4.2.1, this cookbook is written for CloudPlatform 4.2.1. If you have a different version of CloudPlatform, please make adjustments accordingly).
- The CloudPlatform deployment contains XenServer host.
- The following Compute offerings and template are defined in CloudPlatform. These are out of the box for CloudPlatform 4.2.1 deployment with XenServer host. They will be used later when creating products and bundles in CloudPortal Business Manager. If you use a different hypervisor, the default template will be different.

Table 3. CloudPlatform Compute Offerings and Template

Compute Offering	**Small Instance** – 1 CPU, 500 MHz, 512MB RAM
	Medium Instance – 1 CPU, 1024 MHz, 1024MB RAM
Template	**CentOS 5.6 (64-bit) no GUI (XenServer)**

2.2 Steps to configure CloudPlatform

Step	Action
1.	Log on to CloudStack Management Server at: http://CloudStack_IP:8080/client as **admin** (default password is: '**password**')

Step	Action
2.	Generate **API key** and **secret key**. Navigate to **Accounts** -> **Admin** and select **View Users**. Click on **Admin**. In the next screen click on the **Generate Keys**, and confirm the action when prompted. CloudPlatform will generate **API key** and **secret key**. Copy them to a text file. This information will be used later when configuring the Citrix CloudPlatform connector in CloudPortal Business Manager. 
3.	Obtain **SSO key**. Click on **Global Settings** from left navigation and search for the word '**single**' – the key **security.singlesignon.key** will be displayed, please copy its value to a text file. This information will be used later when configuring the Citrix CloudPlatform connector in CloudPortal Business Manager. 
4.	In **Global Settings**, search for the word '**api**'. Click on the **Edit** icon next to **integration.api.port** and add the value '**8096**'.  Click ✓ to save the change. Click **OK** on the warning message.
5.	Restart the CloudStack service. SSH to the Citrix CloudPlatform Linux server, log in and type the command: ***service cloudstack-management restart***

Step	Action
6.	Install Network Time Protocol. Type the following command: ***yum install ntp*** Type '**y**' to confirm download of packages and wait for the installation to complete. Type the following commands: ***service ntpd start*** ***chkconfig ntpd on***

7.	Install the Cloud Usage server on CloudPlatform (if not installed already):
	SSH to the CloudStack server and locate the extracted Citrix CloudPlatform installer directory (if you do not have this folder please re-download the Citrix CloudPlatform installer, place it on the CloudStack server and extract it with tar –xzf <file_name>) and run the following:
	./install.sh
	
	You will see the CloudPlatform install menu appear
	`A) Install the Agent`
	`B) Install BareMetal Agent`
	`S) Install the Usage Monitor`
	`U) Upgrade the CloudStack packages installed on this computer`
	`R) Stop any running CloudStack services and remove the CloudStack packages from this computer`
	`E) Remove the MySQL server (will not remove the MySQL databases)`
	`Q) Quit`
	`>`
	Choose option '**S**' and hit '**ENTER**' key.
	Answer '**Y**' and hit '**ENTER**' key.
	
	After the installation is complete, start the cloud-usage server by typing this command:
	service cloudstack-usage start

8.	Configure CloudPlatform database to support CloudPortal Business Manager. In this step, we will create a new MySQL user and configure the proper permissions for this user, this will allow CloudPortal Business Manager to access the CloudPlatform database. We will use the DB user **cpbm** but you can create any username you wish and use your own password. Login to MySQL by typing this command in your SSH session: ***mysql –u root*** (use **–p** if you defined password for the MySQL root user) Issue the following commands at the **mysql** prompt: ***create user cpbm identified by 'ANY PASSWORD';*** Then type: ***GRANT ALL PRIVILEGES ON *.* TO 'cpbm'@'%' WITH GRANT OPTION;*** Then type: ***FLUSH PRIVILEGES;*** Exit MySQL by typing to command: ***quit***

Step	Action
9.	Configuring iptables on CloudPlatform. We need to allow incoming TCP ports 8096, 20400 and 3306 on the Citrix CloudPlatform Server. From your SSH or Console session, run this command to edit the iptables file: ***vi /etc/sysconfig/iptables*** and add the following 3 lines: **-A INPUT -p tcp -m tcp --dport 3306 -j ACCEPT** **-A INPUT -p tcp -m tcp --dport 8096 -j ACCEPT** **-A INPUT -p tcp -m tcp --dport 20400 -j ACCEPT** Save and exit the file. Restart the iptables service with the following command: ***service iptables restart***

3 Install and Configure CloudPortal Business Manager

3.1 Requirements

The following are the requirements to install CloudPortal Business Manager 2.2:

- Operating system: CentOS 5.6, 6.0, 6.2, 6.3 or RHEL 6.3 (**NOTE**: CloudPortal Business Manager cannot be installed on the same server as Citrix CloudPlatform)
- MySQL (will be installed by CloudPortal Business Manager installer)
- Architecture: 64-bit x86
- CPU: 4 vCPU
- Memory: 8GB minimum
- Disk: 40GB minimum
- 1 NIC with Static IP
- Internet connection
- SMTP server access

3.2 Install CloudPortal Business Manager

In this step you will install and configure CloudPortal Business Manager, MySQL Database and configure proxy services.

3.2.1 Verify Networking Settings on CloudPortal Business Manager Server

In this step, we will verify networking settings on CloudPortal Business Manager server.

Step	Action
1.	SSH to the VM you plan to install **CloudPortal Business Manager server**.
2.	Verify that the VM can connect to the internet by pinging www.google.com.
3.	Confirm the server has a valid host name by typing:

	Hostname --fqdn If the command does not return a valid hostname, edit the files **/etc/sysconfig/network** (and **etc/hosts** if the hostname is not defined in local DNS servers), and make sure to restart the server after making the changes.

3.2.2 Obtain CloudPortal Business Manager Installer

Step	Action
1.	Navigate to **http://www.citrix.com/downloads/cloudportal/product-software.html**
2.	Download **CloudPortal Business Manager 2.2** (login required) and save the file to your desktop.
3.	Copy the **CloudPortal Business Manager installer file** to the **CloudPortal Business manager server** AND to the **Citrix CloudPlatform server** (you can use WinSCP or Filezilla or any other tools you are comfortable with).

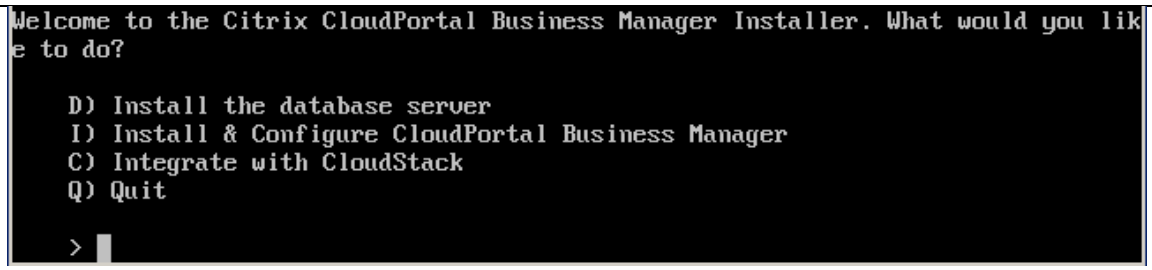
3.2.3 Install Network Time Protocol on CloudPortal Business Manager Server

Install Network Time Protocol on the **CloudPortal Business Manager server** to ensure it has the same date/time as CloudPlatform.

Step	Action
1.	Type the following command: ***yum install ntp*** Type '**y**' to confirm download of packages and wait for the installation to complete.
2.	Type the following commands: ***service ntpd start*** ***chkconfig ntpd on***

3.2.4 Install and Configure MySQL Database

Step	Action
1.	Locate and un-tar the CloudPortal Business Manager installer file copied in step 3.2.2 by typing this command: ***tar –xzf CloudPortal-2.2.0-1-centos.tar.gz***
2.	Change directory to the CloudPortal Business Manager: ***cd CloudPortal-2.2.0-1-centos***
3.	Launch the install script: ***./install.sh***
4.	Agree to the **EULA** by hitting '**ENTER'** once, than '**q**' and then '**y**' and '**ENTER'**, you will be presented with CloudPortal Business Manager Installer menu.

	 Type '**D**' and '**ENTER**' to install the database server.
5.	During the installation of the database server you will be prompt to enter a user and password for the database, please use the following: Database user: **cpbm** (or any other user you wish to use) Database password: **<YOUR PASSWORD>** Verify that the installation of the database completed without errors. Click '**q**' to exit the installer.
6.	Confirm you can access the remote CloudPlatform MySQL from the CloudPortal Business Manager server. SSH to CloudPortal Business Manager server and type: ***mysql –u cpbm –h <Citrix CloudPlatform IP> -p*** Type in the **CloudPortal Business Manager DB password** when prompt. If no error is displayed and you are able to see the **mysql>** prompt, you have access. Next type the below in the **MySQL** command prompt: ***Use cloud;*** If no error is displayed, quite MySQL by typing: ***exit***
7.	Edit /etc/my.cnf Database File. Use vi to edit the **/etc/my.cnf** file and add the following line under the **[mysqld]** section: ***default-time-zone='+00:00'*** ***max_connections=200*** The file should look like: *[mysqld]* *datadir=/var/lib/mysql* *socket=/var/lib/mysql/mysql.sock* *user=mysql* *# Disabling symbolic-links is recommended to prevent assorted security risks* *symbolic-links=0* *default-time-zone='+00:00'* *max_connections=200* *[mysqld_safe]* *log-error=/var/log/mysqld.log* *pid-file=/var/run/mysqld/mysqld.pid*

	Save the file. Restart the mysql service: **service mysqld restart**

3.2.5 Install and Configure CloudPortal Business Manager

Step	Action

1.	Launch the CloudPortal Business Manager install script (e.g. ***./install.sh)*** and agree to the EULA by hitting '**ENTER**' once, than '**q**' and then '**y**' and '**ENTER**'. You will be presented with CloudPortal Business Manager Installer menu.
	`Welcome to the Citrix CloudPortal Business Manager Installer. What would you like to do?`
	`D) Install the database server`
	`I) Install & Configure CloudPortal Business Manager`
	`C) Integrate with CloudStack`
	`Q) Quit`
	`>`
	Type '**I**' to install & configure CloudPortal Business Manager.

2.	During the installation you will be presented with a few questions / options. Use the following values: **CAS –** type **'n'** for No (This cookbook does not use CAS, if you plan to use CAS please refer to the CloudPortal Business Manager eDocs for additional configuration steps). The installer will start to download and install packages. **Change Server to UTC time zone –** type **'y'** for Yes. `It is recommended to run all servers on UTC. This server is currently running on EDT. Do you wish to change this server to run on the UTC timezone (y/n)? y`
3.	**Configure CloudPortal startup Encryption key** - Click '**n**' for No `Do you want to configure CloudPortal startup Encryption Key [y/N]: n`

4.	**CloudPortal Database Encryption Key : 1234567890citrix** (this can be any 16 character string, please use your own key for security)
	`CloudPortal Database Encryption key configuration`
	`---`
	`CloudPortal Database Encryption Key []: 1234567890citrix`
	`You have set Encryption Key as 1234567890citrix`

5.	**CloudPortal database Configuration**
	Host Name: **localhost**
	`Provide CloudPortal Database configuration`
	`---`
	`Enter Database Host Name []: localhost`
	`Setting Host as localhost`
	Database user: **cpbm** (or any user you created in the DB install step)
	Database password: **<Your Password used for cloud DB user>**
	
	Note: database password is not visible

6.	Configure Mail sender (SMTP/SMTPS). You need to provide your SMTP information for CloudPortal Business Manager to function properly. if no SMTP is available in your POC lab, you can use the below Gmail information and provide your own Gmail account. However, it is highly recommended to use your own local SMTP setup. If using Gmail, please note they have implemented enhanced security measures which requires enabling Application-specific passwords (see Gmail site for more information). **GMAIL Example:** Mail Protocol: **smtps** Mail Host : **smtp.gmail.com** Mail Host Port : **465** Mail user : **YOUR GMAIL@gmail.com** Mail Password : **YOUR GMAIL Special APPLICATION PASSWORD**

7.	**LDAP Server Information**
	Do you want to configure LDAP – type '**n**' for No
	`LDAP Server information`
	`---`
	`Do you want to configure LDAP [y/N]: n`

8.	**Tax percentage** – use your desired Tax percentage, for example '**10.00**' `Tax Percentage[10.00]: 10.00`

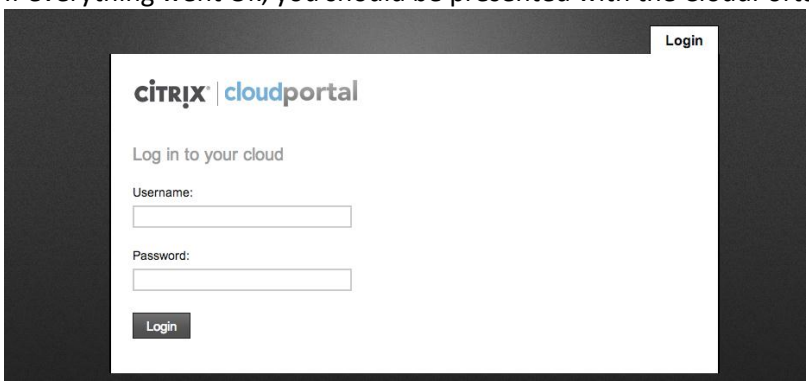
9.	**Active Currency Codes** – Type in the currency code, for example '**EUR, USD**' (multiple codes can be used separated by comma ',')
	`Give a comma separated list of Currency Codes`
	`Active Currency Codes [USD]: USD,EUR`
	If you entered more than once currency please select the default currency for your installation, for example '**USD**'.
	`Select one Default Currency for your installation from the above active currency code: USD`
	`Keeping Default Currency code for installation as: 'USD'`

10.	**Recaptcha configuration** – Enter Recaptcha public key and private key. You can obtain Recaptcha keys from http://www.google.com/recaptcha. If you want to use CPBM in intranet mode (i.e. you want to turn off Recaptcha), hit '**Enter**' when keys are asked and follow instruction later during CPBM configuration to use intranet only.
11.	Click '**q**' to exit the installer menu. All of the above setting are located in this file: **/usr/share/vts3/repository/prop/cloud.properties** You can edit the file if you made mistakes during the configuration step.

3.2.6 Start CloudPortal Business Manager Service for The First Time

When CloudPortal Business Manager service starts for the first time it creates the database schema and other configurations, this process can take a few minutes and can be viewed by looking at the log files.

Step	Action
1.	SSH to **CloudPortal Business Manager server,** and type:

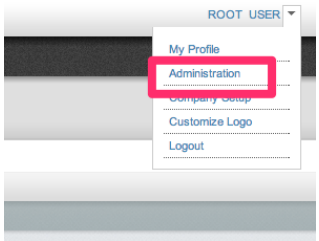
	service cloud-portal start
2.	After the service starts, run the following command to monitor the CloudPortal log: ***tail –f /var/log/cloud/portal/cpbm-server.log*** You will see lots of lines being added. Wait for a few minutes until the log stop progressing.
3.	Open a web browser and type in http://CloudPortal_IP:8080/portal If everything went Ok, you should be presented with the CloudPortal log in screen. 

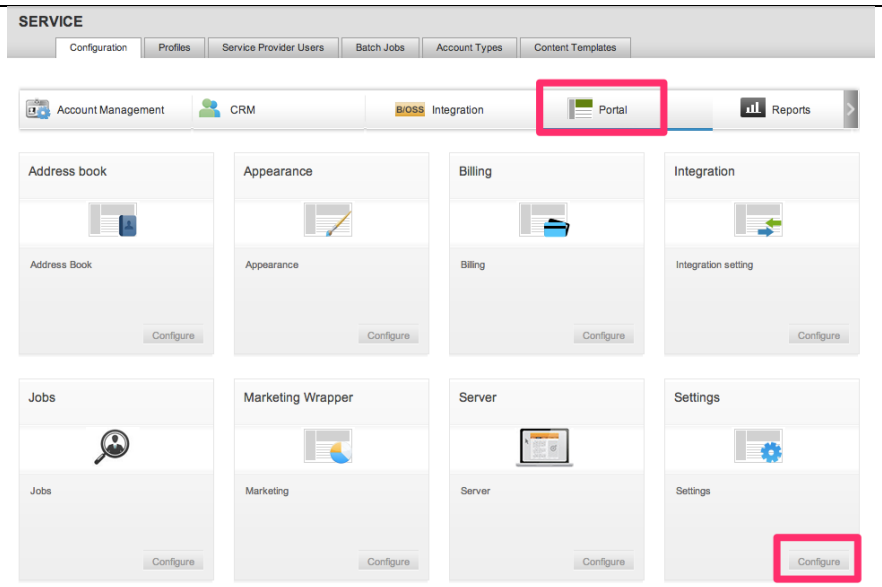
3.3 Configure CloudPortal Business Manager

In this step, you will configure CloudPortal Business Manager email setting, billing setting, intranet mode and customize logo.

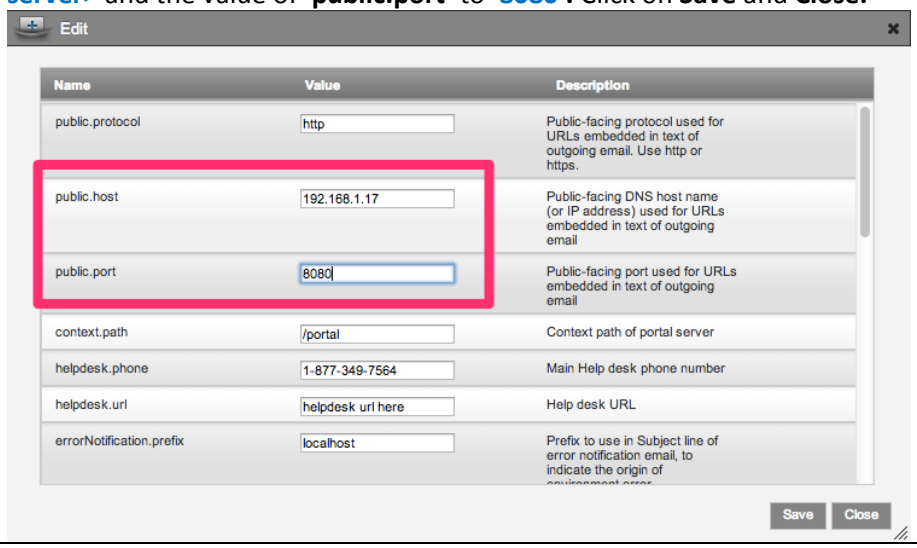
3.3.1 Configure CloudPortal Business Manager Email Setting

CloudPortal Business Manager sends emails to users for various events including account activation emails. In this step, you will configure email settings.

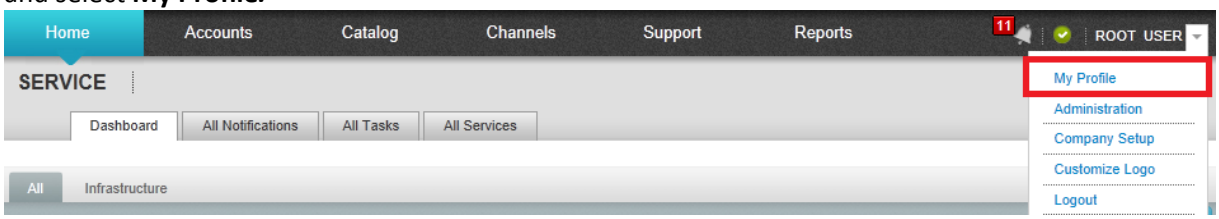
Step	Action
1.	Log in to your CloudPortal Business Manager UI at http://CloudPortal_IP:8080/portal with User: **root** Password: **Portal123#**
2.	Click on **ROOT USER** on the top-right corner and select **Administration.** 
3.	Click on **Portal** option and then on **Configure** under the **Settings** section.



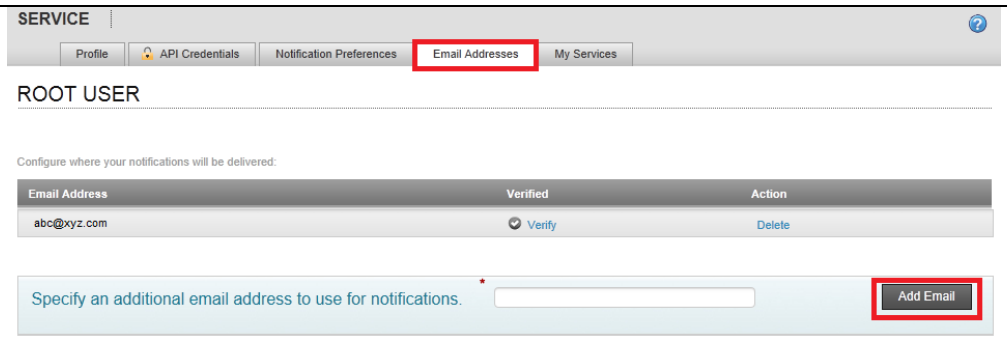
4. Click on **Edit** and change the value of '**public.host'** to the **<IP of the CloudPortal Business Manager server>** and the value of '**public.port'** to '**8080'.** Click on **Save** and **Close.**



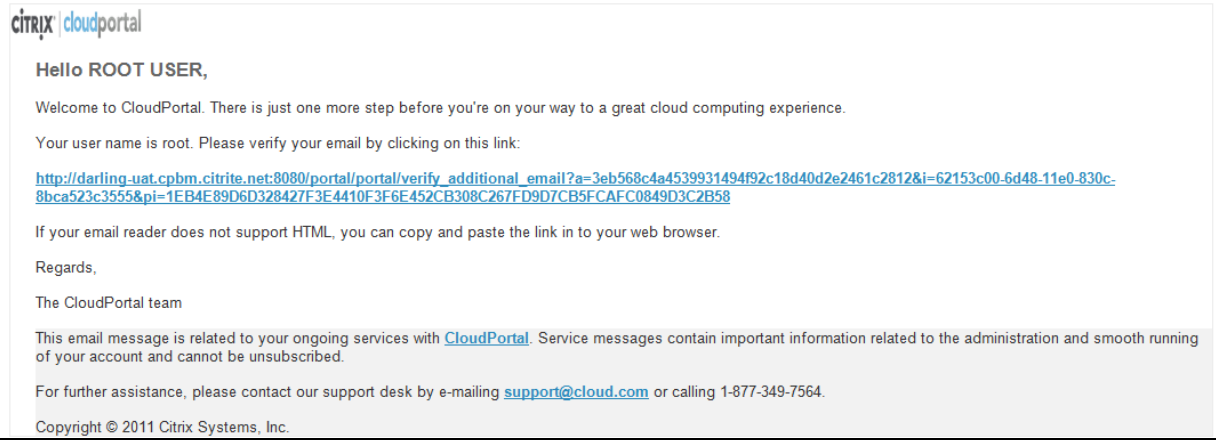
5. Confirming SMTP connectivity and add an Ops Admin user.
Access the CloudPortal Business Manager UI again and click on **ROOT USER** on the top-right corner and select **My Profile.**



Click on **Email Addresses.** Enter an email address and click on **Add Email**. A verification email will be sent to the email address entered.

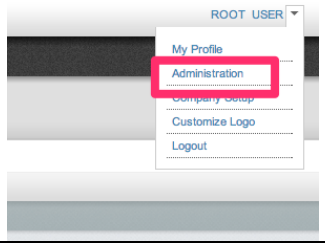


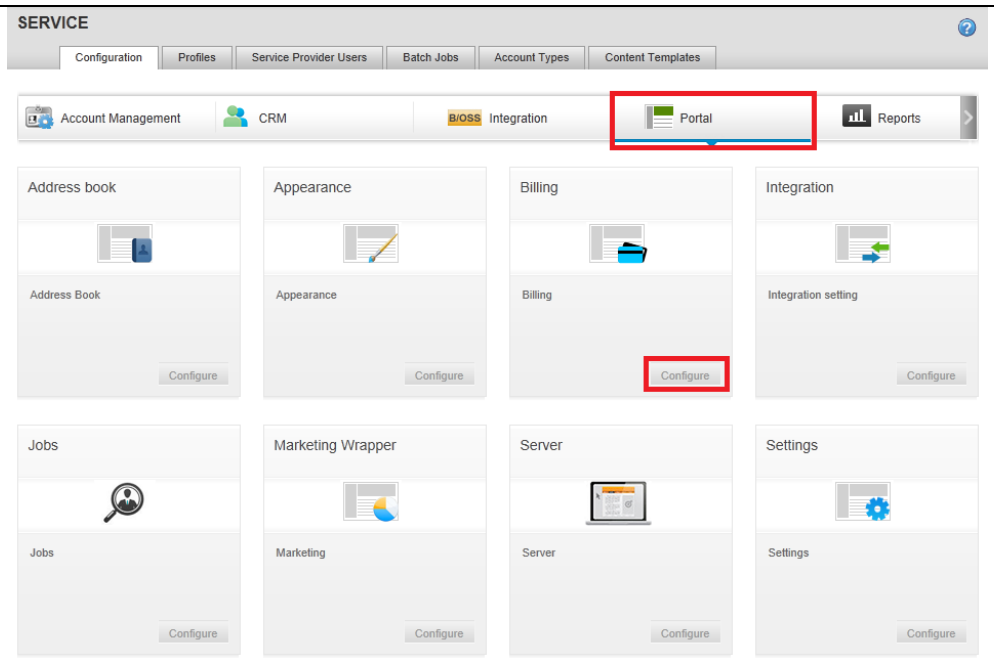
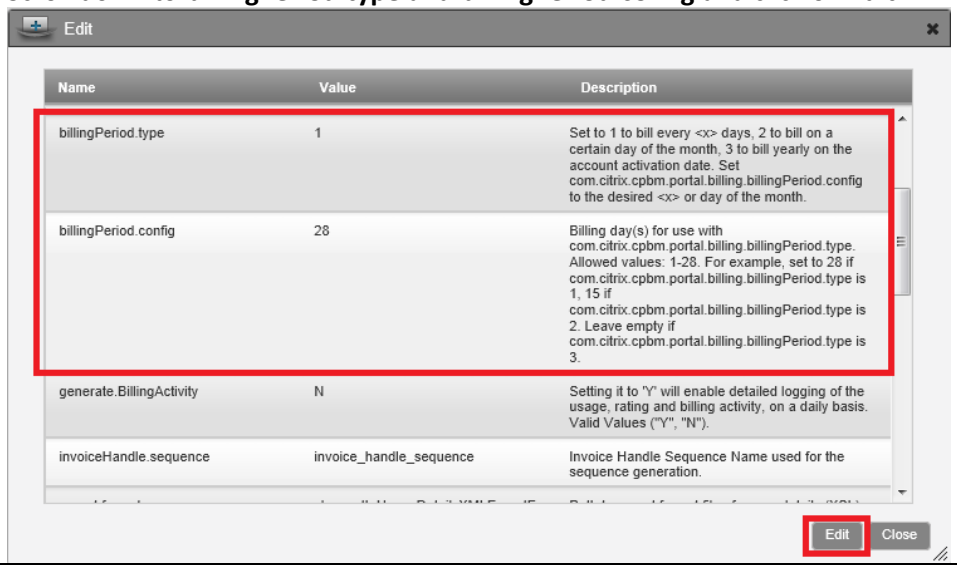
Confirm you received the verification email.



3.3.2 Configure Billing Settings

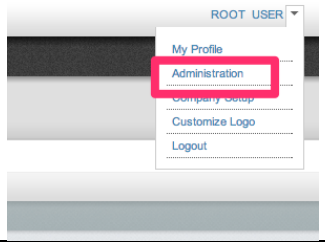
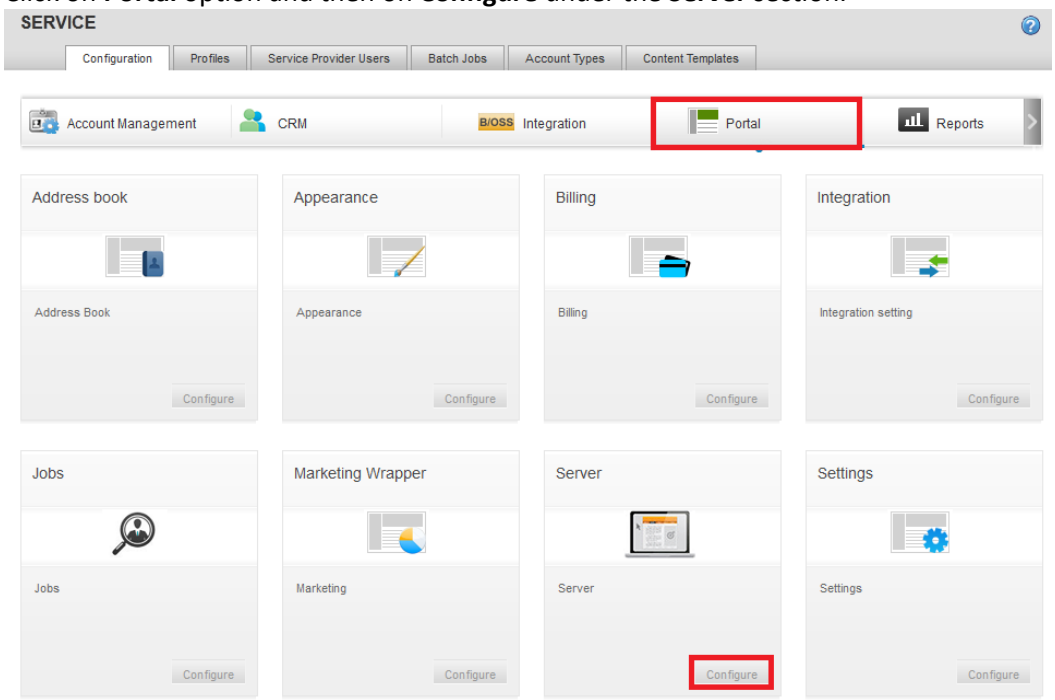
CloudPortal Business Manager sets the default billing period to every 28 days. You can skip this step if it works for you. Billing period should not be changed after accounts are created.

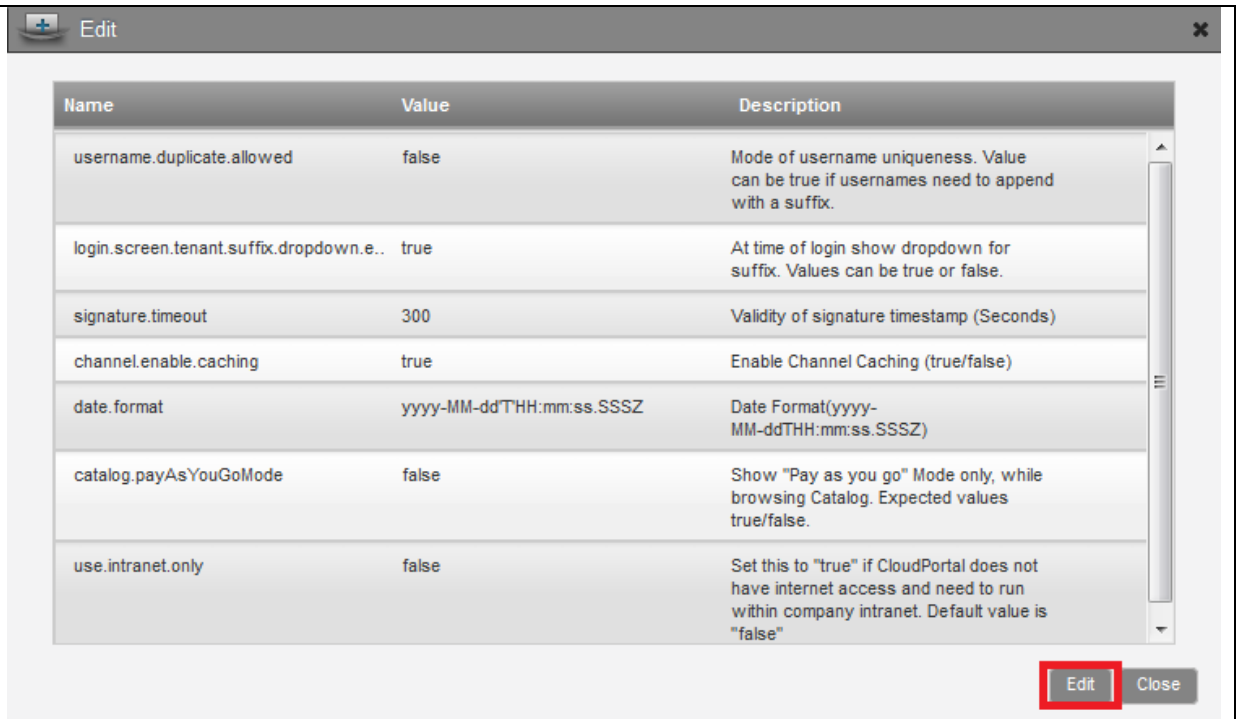
Step	Action
1.	Log in to your CloudPortal Business Manager UI at http://CloudPortal_IP:8080/portal with User: **root** Password: **Portal123#**
2.	Click on **ROOT USER** on the top-right corner and select **Administration.** 
3.	Click on **Portal** option and then on **Configure** under the **Billing** section.

<table>
<tr><td></td><td> 
</td></tr>
<tr><td>4.</td><td>Scroll down to billingPeriod.type and billingPeriod.config and click on Edit.
 
</td></tr>
<tr><td>5.</td><td>Enter your desired billing period and click on Save.
Example 1, bill every 28 days
• billingPeriod.type: 1
• billingPeriod.config: 28
Example 2, bill on the 15th of every month
• billingPeriod.type: 2
• billingPeriod.config: 15
Example 3, bill yearly on the account activation date
• billingPeriod.type: 3
• billingPeriod.config: <empty></td></tr>
</table>

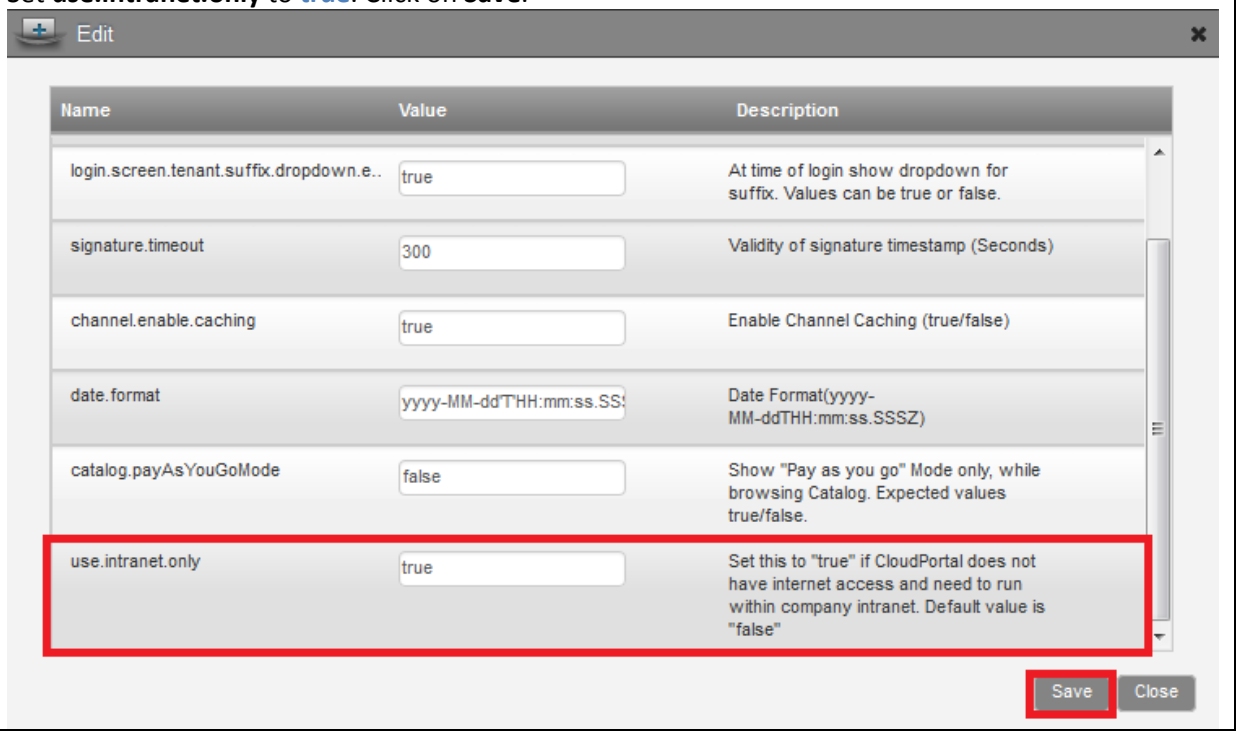
3.3.3 Configure CPBM to use in Intranet Mode

If you did not provide Recaptcha keys previously during installation and want to configure CPBM to use in intranet mode only, follow these instructions. Otherwise, skip this section.

Step	Action
1.	Log in to your CloudPortal Business Manager UI at http://CloudPortal_IP:8080/portal with User: **root** Password: **Portal123#**
2.	Click on **ROOT USER** on the top-right corner and select **Administration.** 
3.	Click on **Portal** option and then on **Configure** under the **Server** section. 
4.	Click on **Edit**.

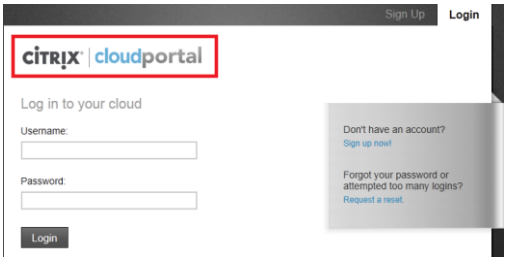


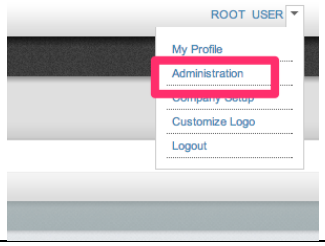
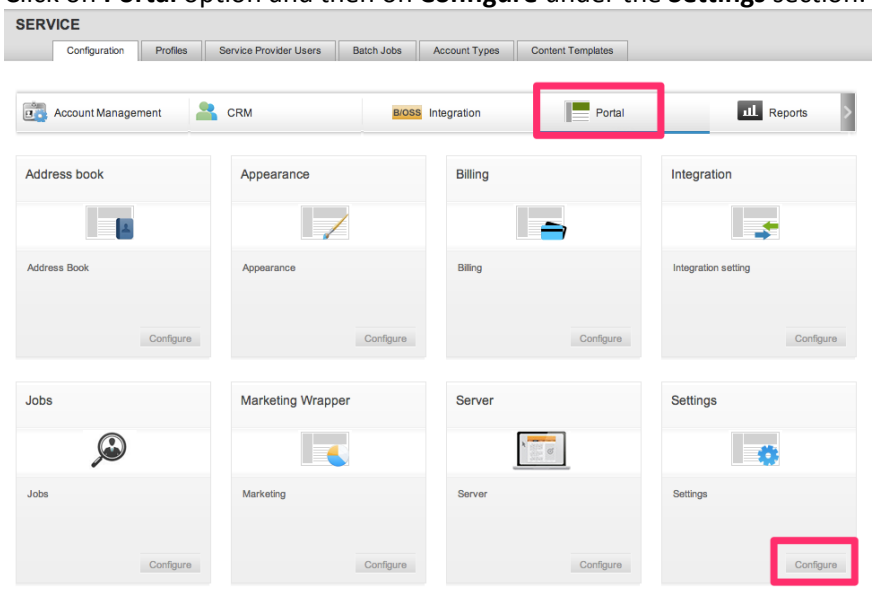
5. Set **use.intranet.only** to **true**. Click on **Save**.

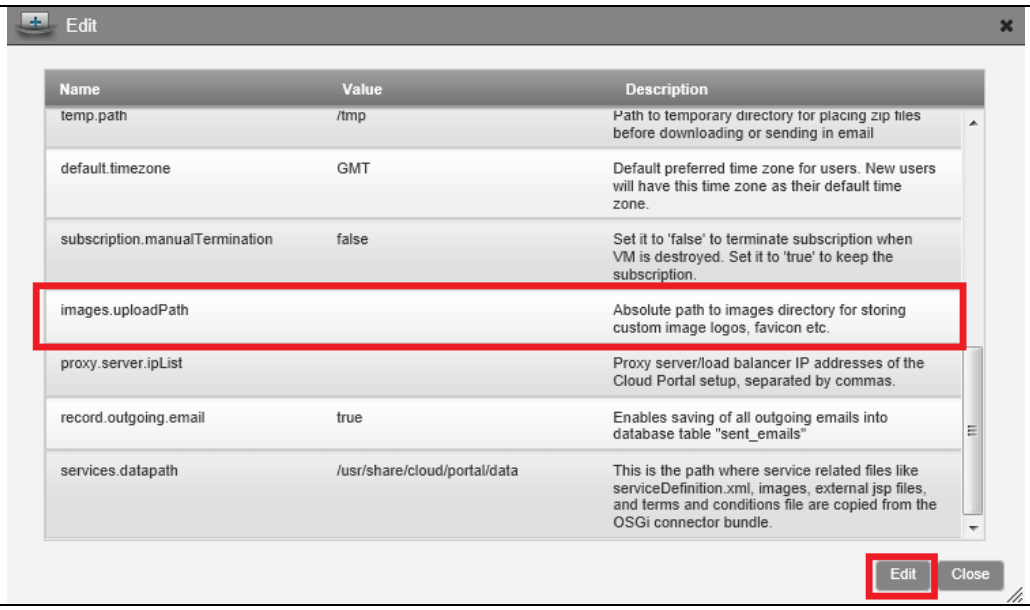


3.3.4 Customize Logo

By default, CloudPortal Business Manager comes with the Citrix CloudPortal logo as shown in figure below. If you do not wish to change logo, skip this section.

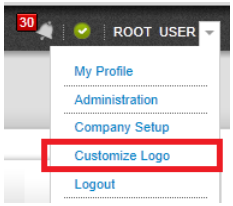


Step	Action
1.	Log into **CloudPortal Business Manager Server** Linux Console. Create a directory (for example, '**logo**'). Assign permission to the folder. ***mkdir logo*** ***chown -Rf cloud:cloud logo*** ***chmod 777 logo***
2.	Log in to your CloudPortal Business Manager UI at http://CloudPortal_IP:8080/portal with User: **root** Password: **Portal123#**
3.	Click on **ROOT USER** on the top-right corner and select **Administration.** 
4.	Click on **Portal** option and then on **Configure** under the **Settings** section. 
5.	Scroll down to **images.uploadPath** and click on **Edit**.

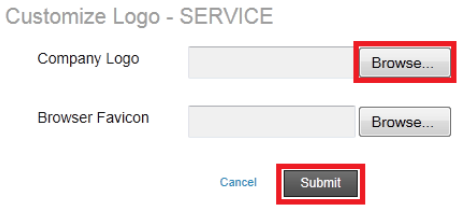


6. Enter **'/logo'** and click on **Save**.

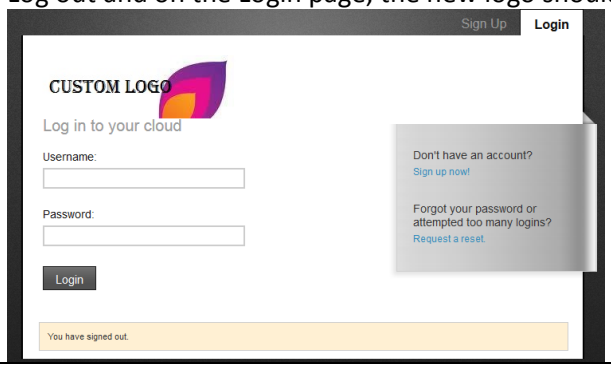
7. Click on **ROOT USER** on the top-right corner and select **Customize Logo.**



8. Click on **Browse** button to upload your company logo and click on **Submit**.



9. Log out and on the Login page, the new logo should appear.



4 Connect CloudPortal Business Manager to CloudPlatform

Now that we have both CloudPlatform and CloudPortal Business Manager up and running, we will go through the steps needed to connector CloudPortal Business Manager with CloudPlatform.

4.1 Prepare CloudPlatform for Admin SSO

This is an optional step needed for the SSO integration between CloudPortal and CloudPlatform (e.g. admins do not need to provide Username and Password when launching the Citrix CloudPlatform UI from CloudPortal UI).

Step	Action

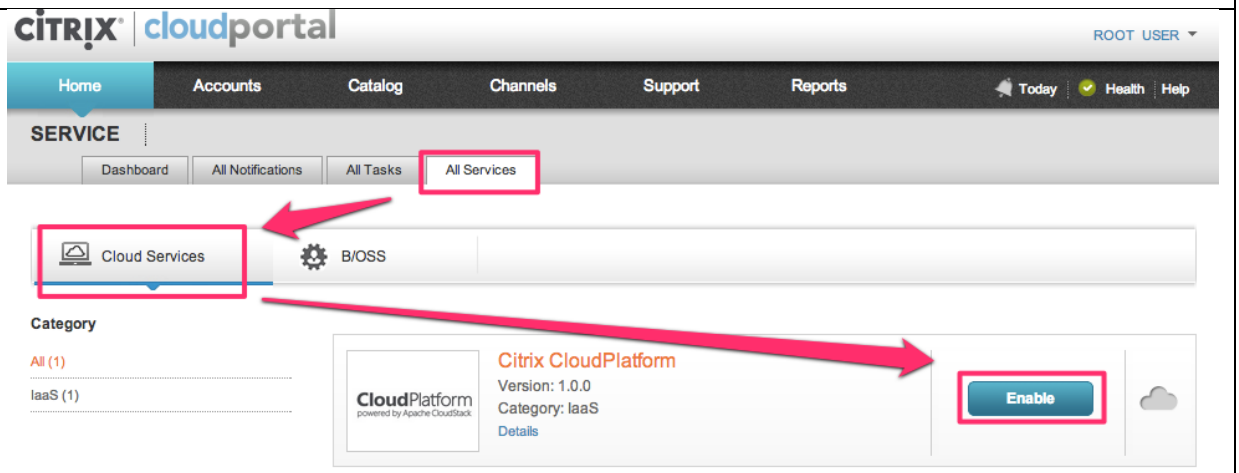
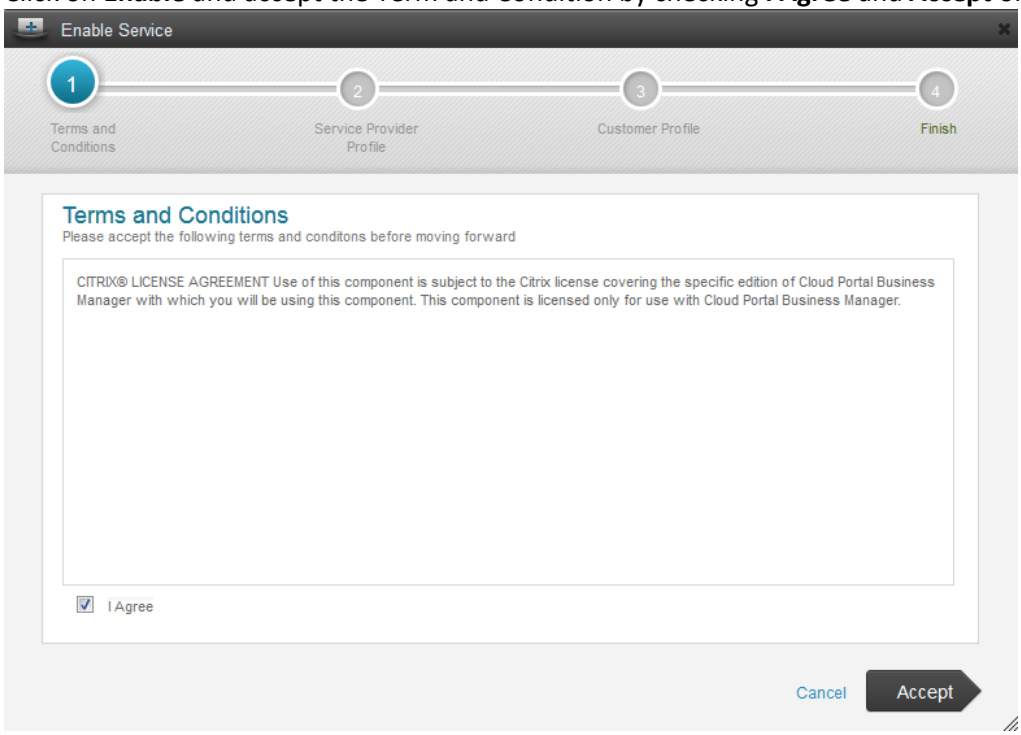
1.	From your **CloudPlatform Management Server** SSH session, locate the **CloudPortal Business Manager Installer** file copied earlier and un-tar the file by running this command:
	tar –xzf CloudPortal-2.2.0-1-centos.tar.gz
	
	Change directory to the CloudPortal Business Manager:
	cd CloudPortal-2.2.0-1-centos
	
	and launch the installer
	./install.sh
	
	Agree to the EULA by hitting '**ENTER**' once, than '**q**' and then '**y**' and '**ENTER**'. You will be presented with CloudPortal Business Manager Installer menu.
	`Welcome to the Citrix CloudPortal Business Manager Installer. What would you like to do?`
	
	`D) Install the database server`
	`I) Install & Configure CloudPortal Business Manager`
	`C) Integrate with Citrix CloudPlatform`
	`Q) Quit`
	
	`> c`
	Choose option '**C**', hit '**ENTER**' and wait for the process to complete. Please note that no confirmation will be displayed. Click '***q***' to exit the installer. This completes the CloudPlatform preparation.
	
	Please note that after running this step you can no longer login to CloudPlatform UI directly using the http://CloudStack_IP:8080/client URL. If you need to access CloudPlatform UI directly, use the following URL http://CloudStack_IP:8080/client/?direct=true

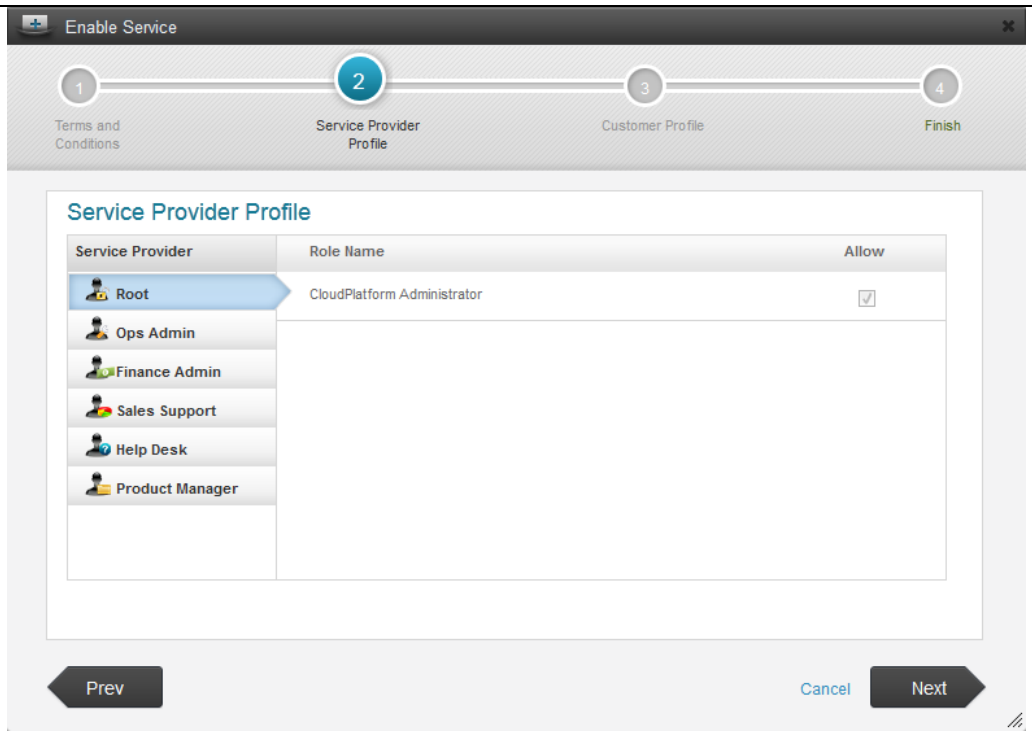
4.2 Configure CloudPortal Business Manager Connector for CloudPlatform

The following information is required for this step.

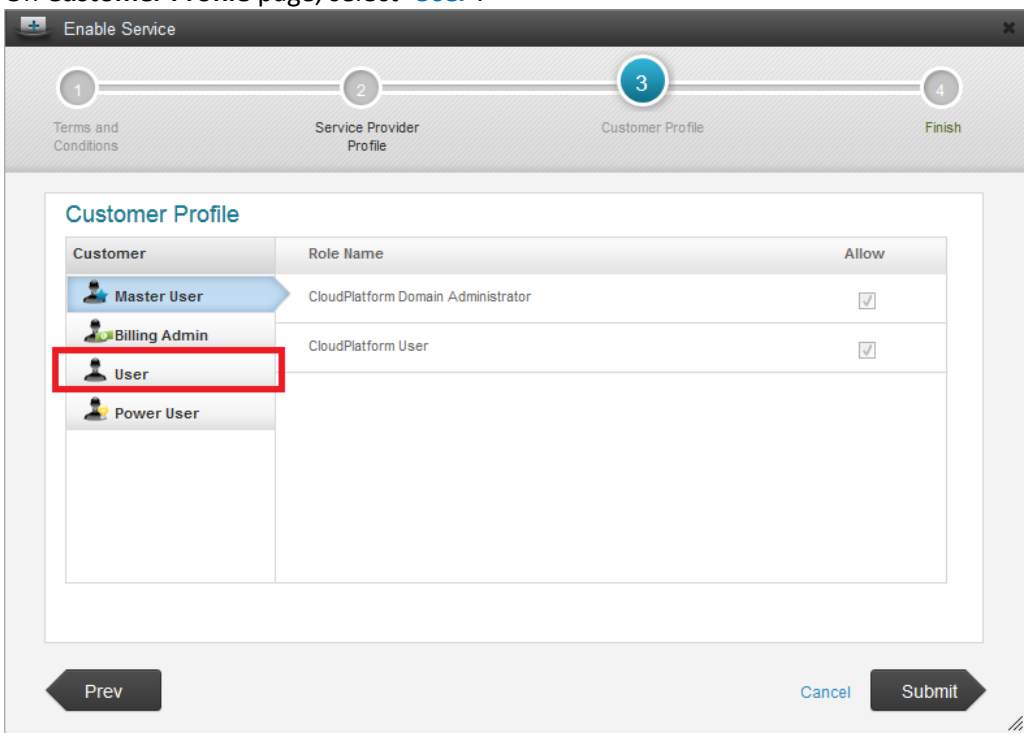
- CloudPlatform IP
- CloudPlatform Database credentials
- CloudPlatform Admin API Key
- CloudPlatform Admin Secret Key
- CloudPlatform Single.Signon key
- Ensure port 8096 is enabled and IPtables is updated on CloudPlatform management server

Step	Action

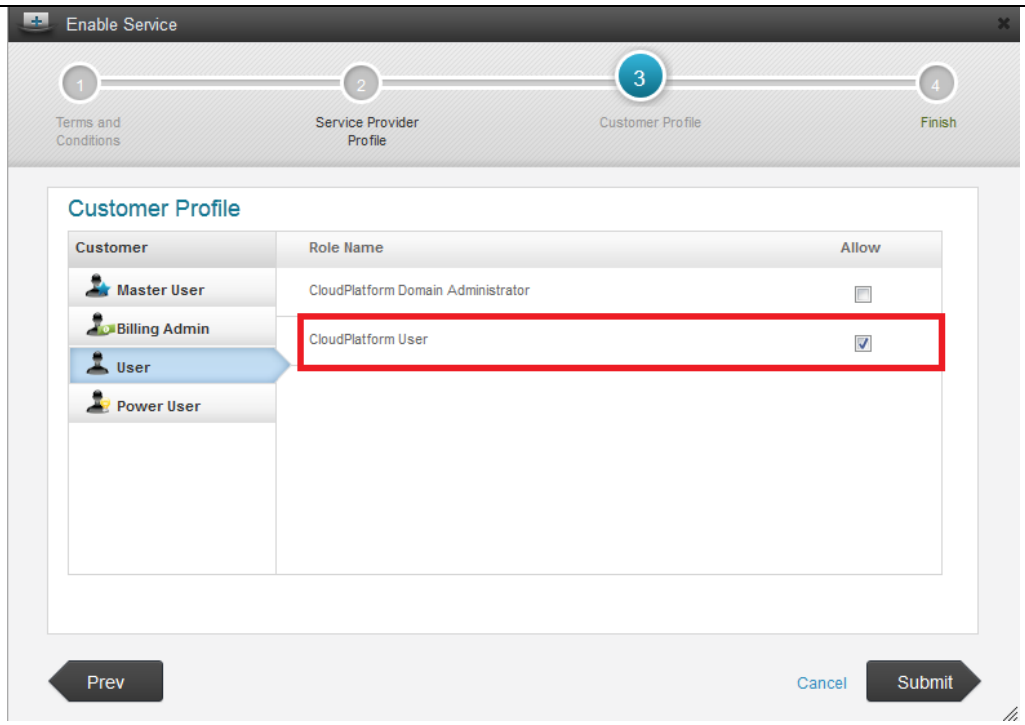
1.	Log in to your CloudPortal Business Manager UI at http://CloudPortal_IP:8080/portal with User: **root** Password: **Portal123#**
2.	Click on **Home**. Click on **All Service** tab. You will see a the **Citrix CloudPlatform Connector** under the **Cloud Services** section
3.	 Click on **Enable** and accept the Term and Condition by checking **I Agree** and **Accept** on the first page.  On the **Service Provider Profile** page, click on **Next**.



On **Customer Profile** page, select '**User**'.



Check '**Allow**' for '**CloudPlatform User**'. Click **Submit**. This allows regular user to have CloudPlatform user privilege. The other role '**CloudPlatform Domain Administrator**' provides CloudPlatform domain admin privilege.



Click **Close** in the confirmation page. This completes the connector configuration.

4. Click **Add** to add an instance of CloudPlatform to the connector.

Under **Service Instance Description**, enter the following information and click on **Next**:

- **Name**: enter display name, for example **'CloudPlatform Cloud'**
- **Code**: enter code, for example **'CloudPlatformCloud'**
- **Description**: enter any description

Under **Configuration**, enter the following information:

- **Protocol**: **http**
- **Public Hostname**: **<IP of CloudPlatform>**
- **Public Port: 8080**
- **Cloud JDBC Hostname**: **<IP of CloudPlatform>**
- **Cloud JDBC username**: **<CloudPlatform DB user created in section 2 (e.g. cpbm)>**
- **Cloud JDBC password**: **< CloudPlatform DB user password>**
- **SSO Key: < CloudPlatform single.signon.key value obtained in section 2>**
- **API Key: <Admin's user API key created in section 2>**
- **Sceret Key: <Admin's user Secret key created in section 2>**
- **Cloud Platform domain uuid: <ID of the CloudPlatform ROOT domain or any other domain you wish to use to create accounts and users.>**
- **CloudPlatform IP List (admin port): <CloudPlatform IP:8096 (e.g 192.168.1.17:8096)>**
- **CloudPLatform IP List: <Citrix CloudPlatform IP:8080 (e.g. 192.168.1.17:8080)>**
- **API Proxy suffix: csapi** (or any other suffix you wish to use)

Click **Advanced Settings,** enter the following information and click on **Next**:

- **Cloud Usage JDBC Hostname: <IP of CloudPlatform>**
- **Cloud Usage JDBC username: <CloudPlatform DB user created in section 2 (e.g. cpbm)>**

- **Cloud Usage JDBC password:** **< CloudPlatform DB user password>**

Under **Default Product Selections**, **check** the following **Usage Types** and select a **Category** for each checked item.

- **Root Volume:** Category **'Infrastructure: Storage - Primary'**
- **Data Volume:** Category **'Infrastructure: Storage - Primary'**
- **IP Address:** Category **'Infrastructure: Networking'**
- **Network Bytes Received:** Category **'Infrastructure: Networking'**
- **Network Bytes Sent:** Category **'Infrastructure: Networking'**

The checked usage types should look like below. Click on **Next**.

Default Product Selections

Please select the product you want to create at the time of creation of service instance

	Usage Type	Product Name	Product Code	Category	Required Product Units
☑	Root Volume	Root Volume	CloudPlatformCloud_ROOT	Infrastructure: Storag	GB-Months
☑	Data Volume	Data Volume	CloudPlatformCloud_VOLU	Infrastructure: Storag	GB-Months
☑	IP Address	IP Address	CloudPlatformCloud_IP_AD	Infrastructure: Netwo	IP-Months
☑	Network Bytes Received	Network Bytes Received	CloudPlatformCloud_NETW	Infrastructure: Netwo	GB
☑	Network Bytes Sent	Network Bytes Sent	CloudPlatformCloud_NETW	Infrastructure: Netwo	GB

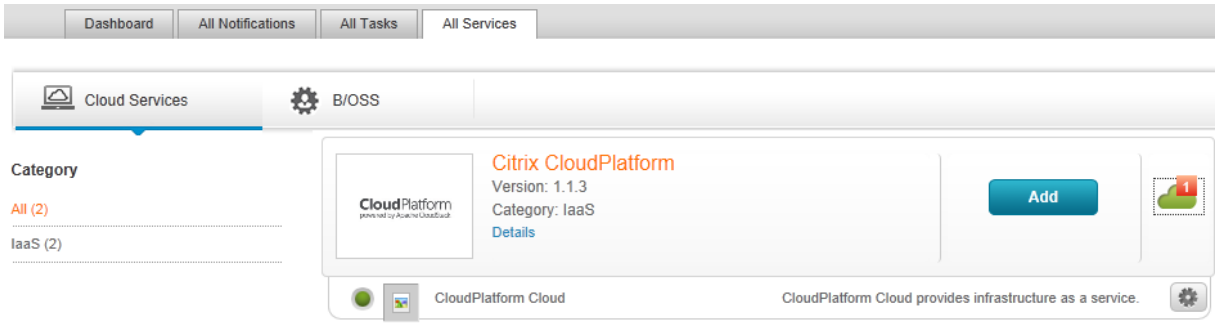
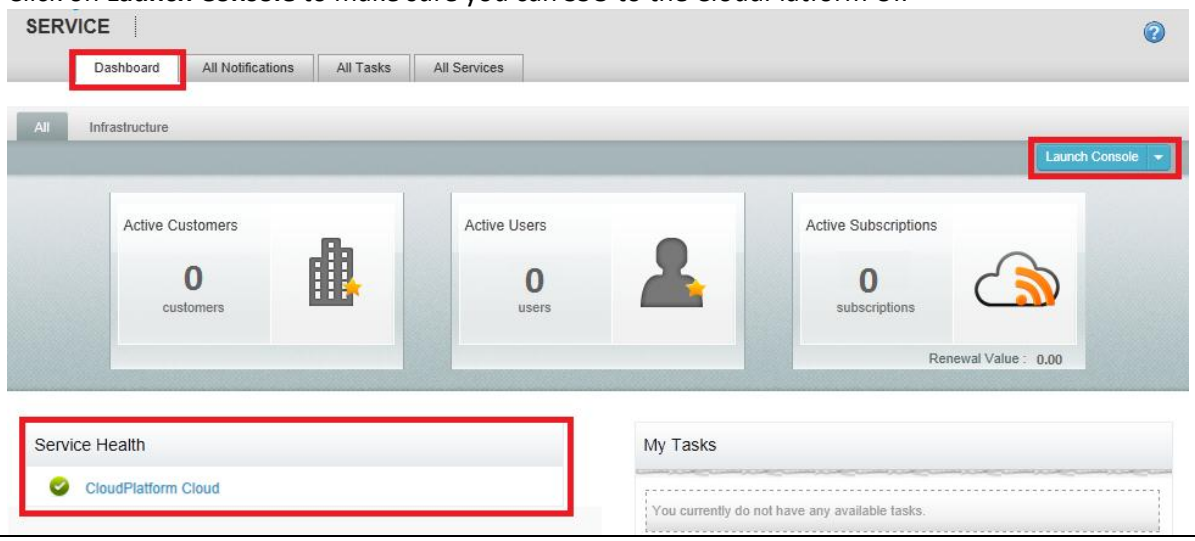
Under **Default Product Charges**, enter the following price.

- Root Volume: EUR '**0.0900**', USD '**0.1200**'
- Data Volume: EUR '**0.0900**', USD '**0.1200**'
- IP Address: EUR '**0.8000**', USD '**1.0000**'
- Network Bytes Received: EUR '**0.0200**', USD '**0.0300**'
- Network Bytes Sent: EUR '**0.0600**', USD '**0.0800**'

After entering prices, the screen should look like below. Click on **Next**:

Product Name	Product Units	EUR (€)	USD ($)
Root Volume Infrastructure: Storage – Primary	GB-Months	* 0.0900	* 0.1200
Data Volume Infrastructure: Storage – Primary	GB-Months	* 0.0900	* 0.1200
IP Address Infrastructure: Networking	IP-Months	* 0.8000	* 1.0000
Network Bytes Received Infrastructure: Networking	GB	* 0.0200	* 0.0300
Network Bytes Sent Infrastructure: Networking	GB	* 0.0600	* 0.0800

Click on **Add**. This adds the CloudPlatform instance. If you expand on the sign, you should see a CloudPlatform Cloud instance.

	
5.	Click on **Dashboard**. You should see the **CloudPlatform Cloud** along with **Service Health Indicator**. Click on **Launch Console** to make sure you can SSO to the CloudPlatform UI. 

5 Create Products, Bundles and Catalogs

In this step, we will create Products and Bundles in CloudPortal Business Manager based on Table 1 and Table 2, and assign Bundles to Channels.

5.1 Create Products

Some products have already been created when the CloudPlatform connector instance is added. They are: IP Address, Network Bytes Sent, Network Bytes Received, Data Volume, Root Volume. In this step, we will create additional products based on table 1. They are: Small Instance, Medium Instance, Secondary Storage, and CentOS 5.6 Template.

The CloudPlatform connector collects usage data for the usage types shown in Table 4. A CloudPortal Business Manager product can be created for one or more usage types.

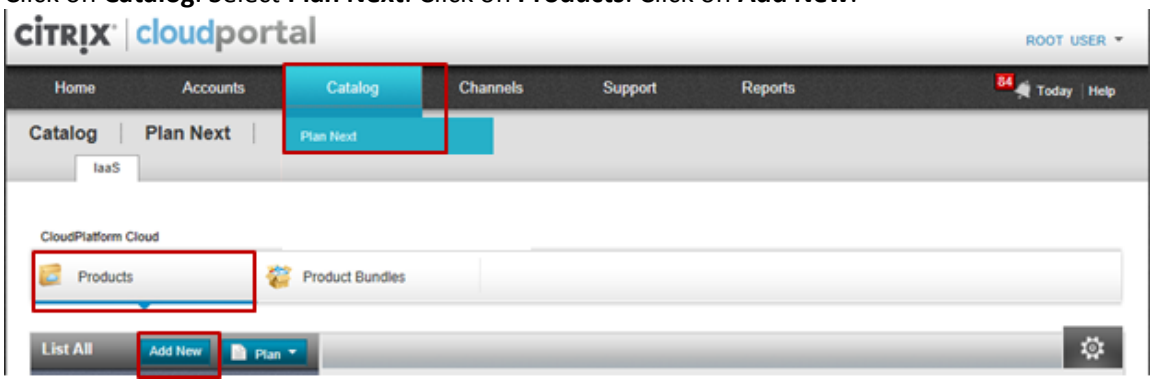
Table 4. CloudPlatform Usage Types

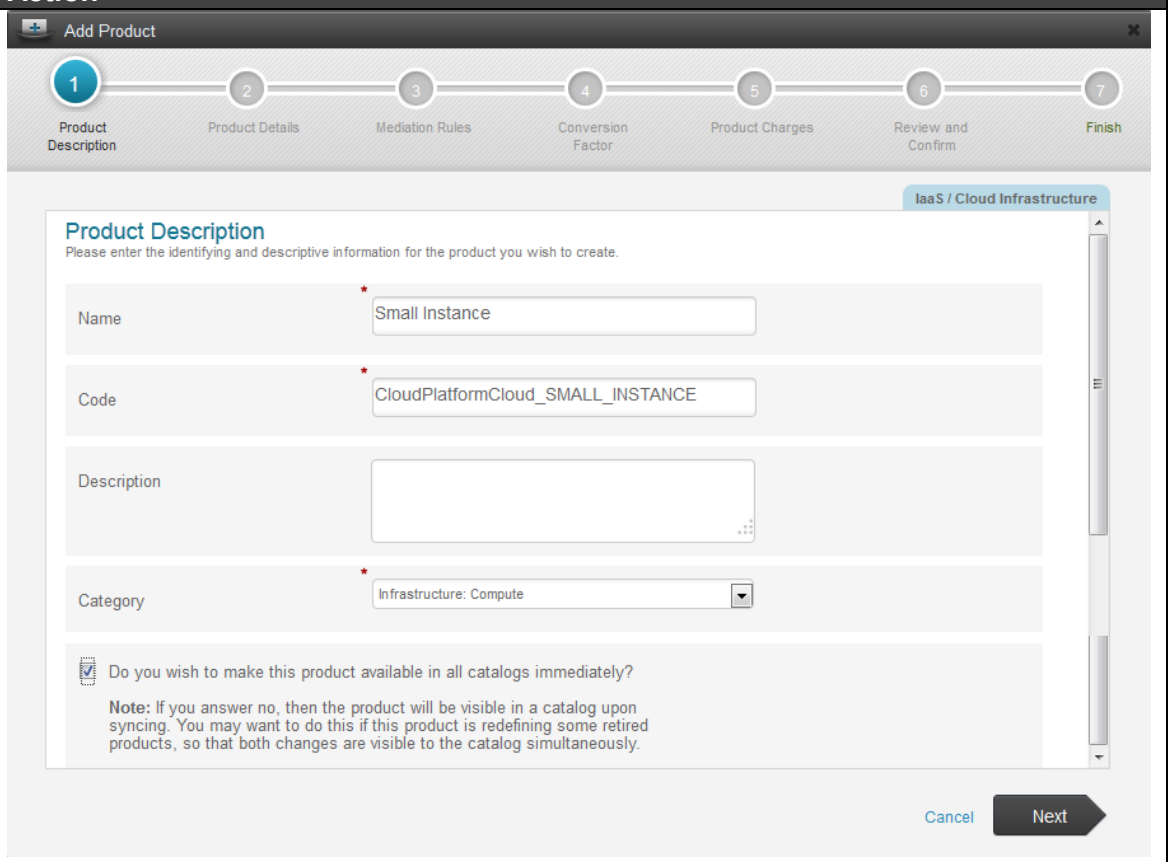
Usage Type	Generates Usage in Units	Description

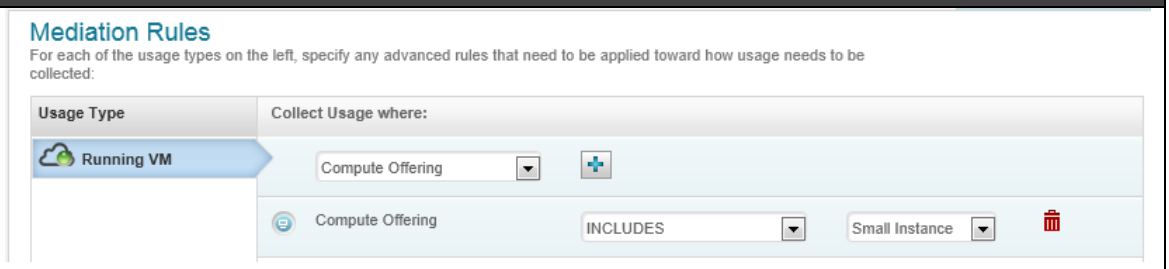
Running VM	Compute-Hours	Running VM
Allocated VM	Compute-Hours	Allocated VM - the VM can be in any state.
IP Address	IP-Hours	Acquired public IP address
Network Bytes Sent	Bytes	Network bytes sent to internet
Network Bytes Received	Bytes	Network bytes received from internet
Data Volume	Byte-Hours	Non-root volume (i.e. data volume) in primary storage
Root Volume	Byte-Hours	Root volume in primary storage
Template Storage	Byte-Hours	Storage consumed by user created templates in secondary storage
ISO Storage	Byte-Hours	Storage consumed by user created ISOs in secondary storage
Snapshot Storage	Byte-Hours	Storage consumed by user created snapshots in secondary storage.
Security Group	SecurityGroup-Hours	Security group
Load Balancer Policy	Policy-Months	Load balancer policy
Port Forwarding Rule	Rule-Months	Port forwarding rule
VPN Users	Vpn-Hours	VPN users

5.1.1 Create 'Small Instance' Product

In this step, we will create a Small Instance product which charges user for the hours the VM is running.

Step	Action
1.	Click on **Catalog**. Select **Plan Next**. Click on **Products**. Click on **Add New**. 
2.	Enter **Product Description.** Make sure to check **Do you wish to make this product available in all catalogs immediately?** Click on **Next**.

Step	Action
	
3.	Enter **Product Details**. Under **Usage Type**, select **Running VM** since we want to charge user for when the VM is running. Under **Aggregation Handling**, select **combine**. Aggregation handles allows you to combine (add) or exclude (subtract) multiple usage types. Click on the **+** sign. A new line item **Running VM** is added. Click on **Next**.
4.	Enter **Mediation Rules**. Mediation rules define scope for the product. In this case, we want to create a product Small Instance. However, Running VM collects usage for all instances regardless of their size. So mediation rule needs to be used to limit the scope to small instance. Under **Collect Usage where**, select **Compute Offering**. Click on **+** sign. A line item **Compute Offering** is added. Next to the **Compute Offering**, select **INCLUDES** and **Small Instance**. In addition to Small Instance, there are also Medium Instance and Large Instance from the drop down box. These are Compute Offerings previously created in CloudPlatform. Click on **Next**.

Step	Action
	
5.	Enter **Conversion Factor** Conversion factor allows you to convert from the **unit generated by the usage type** to the **Product Unit**. **Product Unit** is what's displayed to the customer. In this case, we will keep the default setting **Compute-Hours**. Click on **Next**.
6.	Enter **Product Charges** from Table 1 and click on **Next.**
7.	**Review and Confirm**. Click on **Add**. A new product **Small Instance** is created.

5.1.2 Create a 'Medium Instance' Product

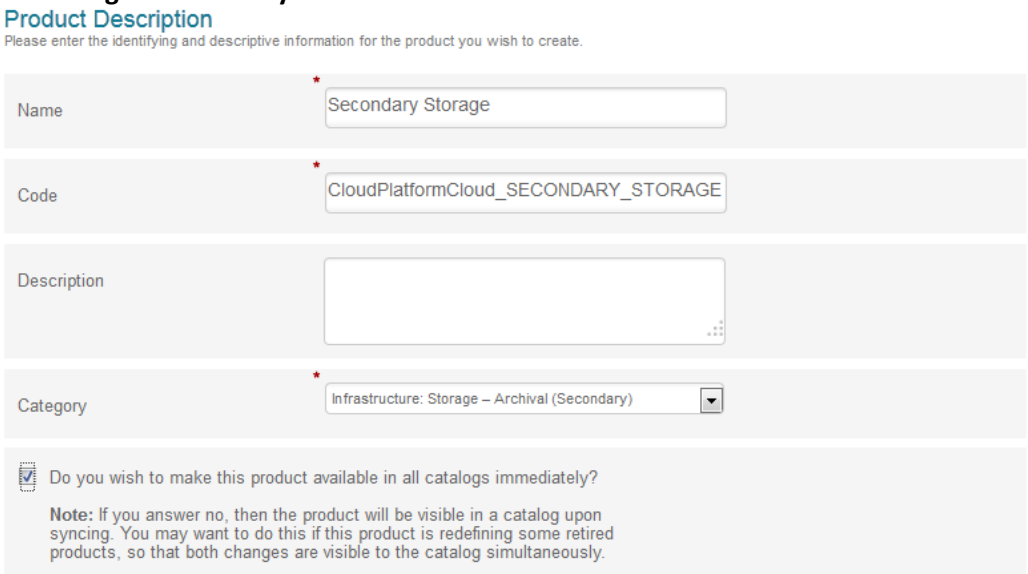
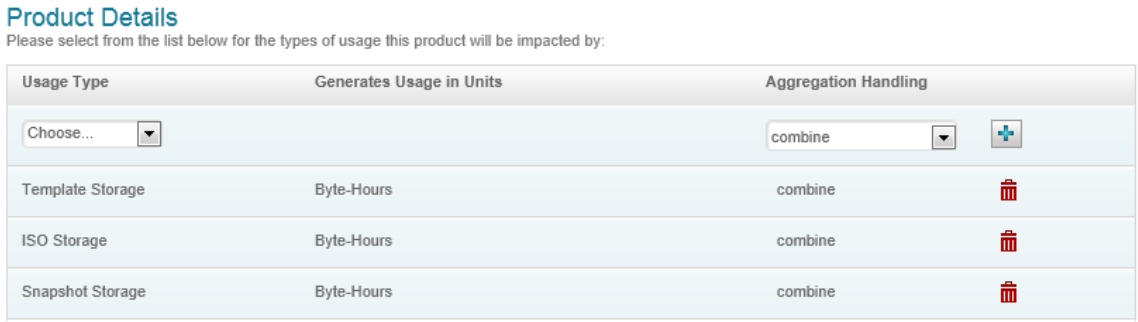
Follow similar step as Small Instance to create a **Medium Instance** product.

Step	Action
1.	Click on **Add New**.
2.	Enter **Product Description**. Make sure to check **Do you wish to make this product available in all catalogs immediately?** Click on **Next**.

Step	Action
	Product Description Please enter the identifying and descriptive information for the product you wish to create. Name * Medium Instance Code * CloudPlatformCloud_MEDIUM_INSTANCE Description Category * Infrastructure: Compute ☑ Do you wish to make this product available in all catalogs immediately? **Note:** If you answer no, then the product will be visible in a catalog upon syncing. You may want to do this if this product is redefining some retired products, so that both changes are visible to the catalog simultaneously.
3.	Enter **Product Details**. Click on **Next**. **Product Details** Please select from the list below for the types of usage this product will be impacted by: Usage Type: Choose... / Generates Usage in Units: / Aggregation Handling: combine Running VM / Compute-Hours / combine
4.	Enter **Mediation Rules**. Click on **Next**. **Mediation Rules** For each of the usage types on the left, specify any advanced rules that need to be applied toward how usage needs to be collected: Usage Type: Running VM Collect Usage where: Compute Offering Compute Offering INCLUDES Medium Instance
5.	Enter **Conversion Factor**. Click on **Next**. **Conversion Factor** Please specify conversion factor for product units. Generates Usage in Units: Compute-Hours Required Product Units: Compute-Hours Conversion Factor: 1
6.	Enter **Product Charges**. Click on **Next**. **Product Charges** Set the utility charge to be used as reference for this product. EUR (€) * 0.0700 USD ($) * 0.0900

Step	Action
7.	**Review and Confirm**. Click on **Add**.

5.1.3 Create a 'Secondary Storage' Product

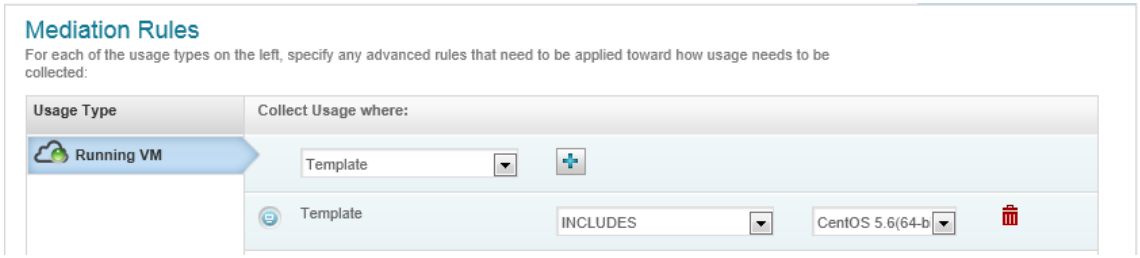
Step	Action
1.	Click on **Add New**.
2.	Enter **Product Description**. Make sure to check **Do you wish to make this product available in all catalogs immediately?** Click on **Next**. 
3.	Enter **Product Details**. In CloudPlatform, templates, ISOs and snapshots are all stored in the secondary storage. Therefore, we can combine these three usage types into a single product. Under **Usage Type**, select **Template Storage**. Under **Aggregation Handling**, select **combine**. Click on the **+** sign. A new line item **Template Storage** is added. Under **Usage Type**, select **ISO Storage**. Under **Aggregation Handling**, select **combine**. Click on the **+** sign. A new line item **ISO Storage** is added. Under **Usage Type**, select **Snapshot Storage**. Under **Aggregation Handling**, select **combine**. Click on the **+** sign. A new line item **Snapshot Storage** is added. Click on **Next**. 
4.	Do not enter any **Mediation Rules**. Click on **Next**.
5.	Enter **Conversion Factor**.

Step	Action
	Use the default GB-Months from the dropdown list. Conversion factor is automatically calculated. Click on **Next**. Conversion Factor Please specify conversion factor for product units. Generates Usage in Units: Byte-Hours Required Product Units: GB-Months Conversion Factor: 798863917056
6.	Enter **Product Charges**. Click on **Next**. Product Charges Set the utility charge to be used as reference for this product. EUR (€) * 0.0700 USD ($) * 0.0900
7.	**Review and Confirm**. Click on **Add**.

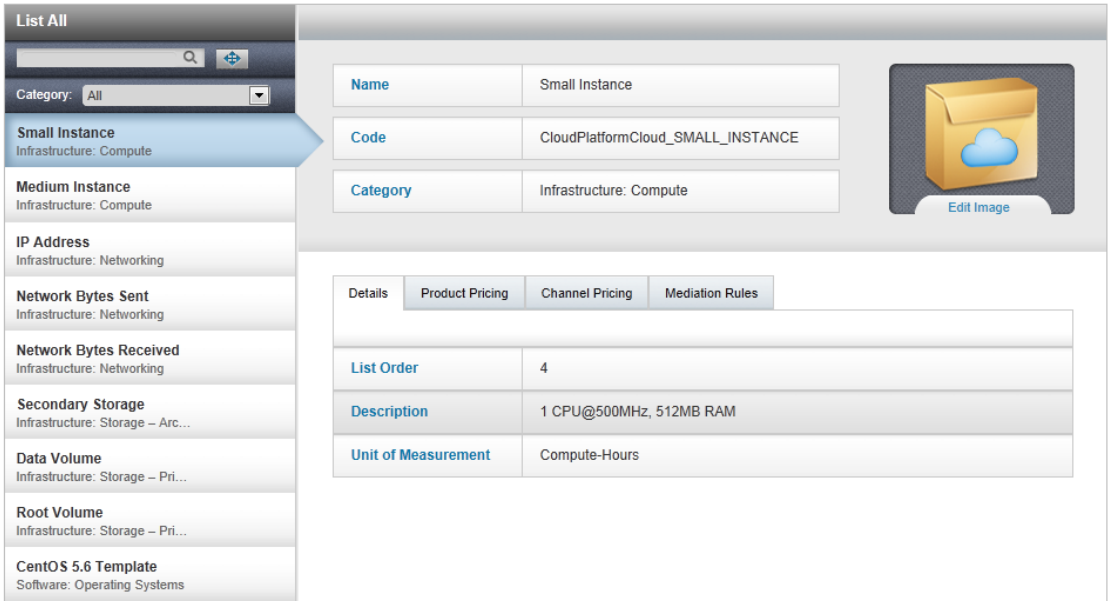
5.1.4 Create a 'CentOS 5.6 Template' Product

CentOS is an open source Linux OS available for free. Here, we use CentOS template as an example to demonstrate how to charge for an operating system.

Step	Action
1.	Click on **Add New**.
2.	Enter **Product Description**. Make sure to check **Do you wish to make this product available in all catalogs immediately?** Click on **Next**. Product Description Please enter the identifying and descriptive information for the product you wish to create. Name * CentOS 5.6 Template Code * CloudPlatformCloud_CENTOS_56_TEMPLATE Description Category * Software: Operating Systems ☑ Do you wish to make this product available in all catalogs immediately? **Note:** If you answer no, then the product will be visible in a catalog upon syncing. You may want to do this if this product is redefining some retired products, so that both changes are visible to the catalog simultaneously.
3.	Enter **Product Details**. Here we want to charge user on the template based on when VM is running. Under **Usage Type**, select **Running VM**. Under **Aggregation Handling**, select **combine**. Click on the **+** sign. A new line item **Running VM** is added. Click on **Next**.

Step	Action
	 Alternatively, you can charge for an operating system based on when the VM is allocated by selecting **Allocated VM** instead of **Running VM** as usage type.
4.	Enter **Mediation Rules**. Under **Collect Usage where**, select **Template**. Click on **+**. This adds a line item **Template**. Next to the **Template**, select **INCLUDES** and **CentOS 5.6(64-bit) no GUI (XenServer)**. Click on **Next**. 
5.	Enter **Conversion Factor**. Click on **Next**.
6.	Enter **Product Charges**. Click on **Next**.
7.	**Review and Confirm**. Click on **Add**.

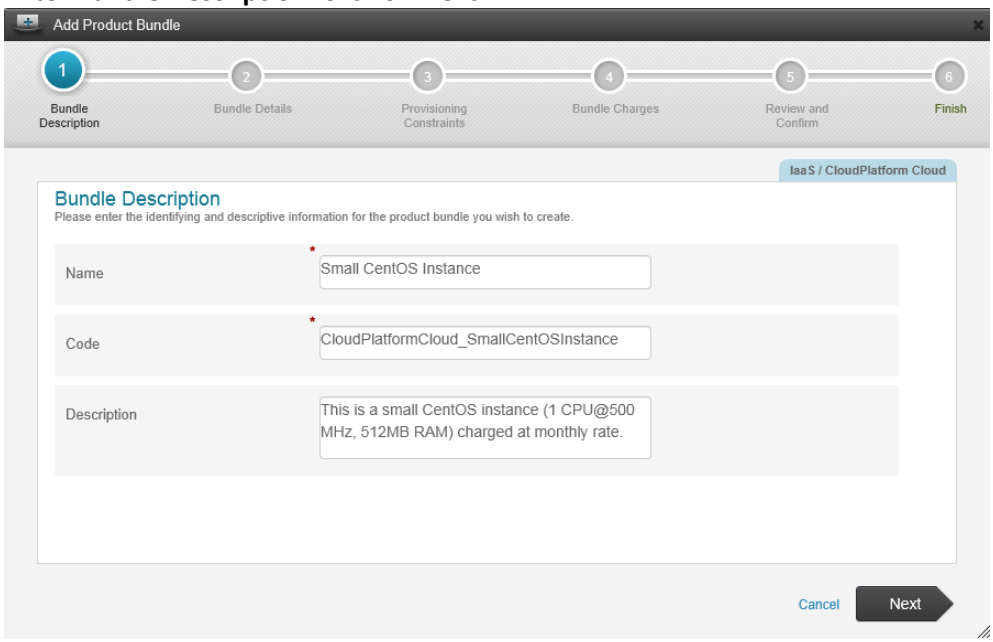
After all these products are created, you should see the following on the screen:



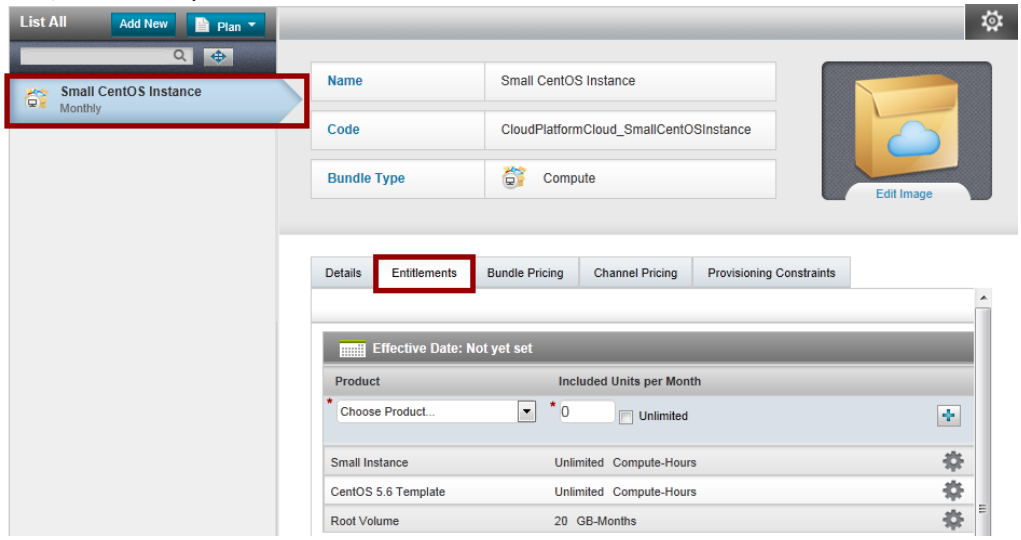
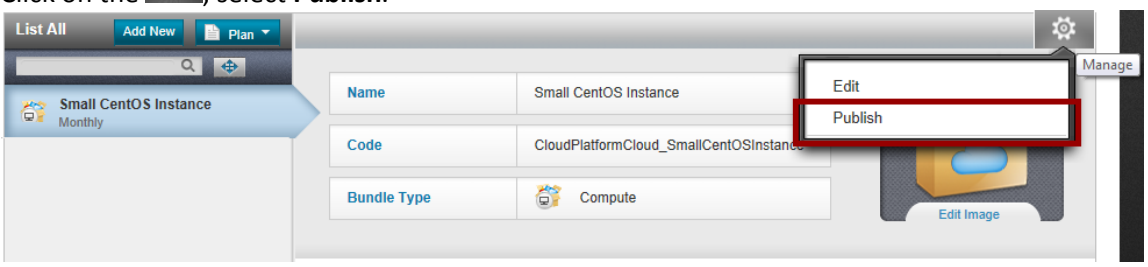
5.2 Create Product Bundles in CloudPortal Business Manager

In this step, we will create product bundles based on Table 2.

5.2.1 Create 'Small CentOS Instance' Product Bundle

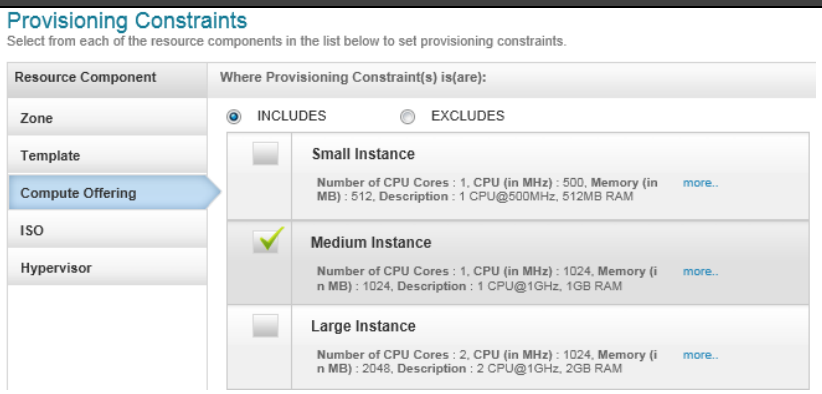
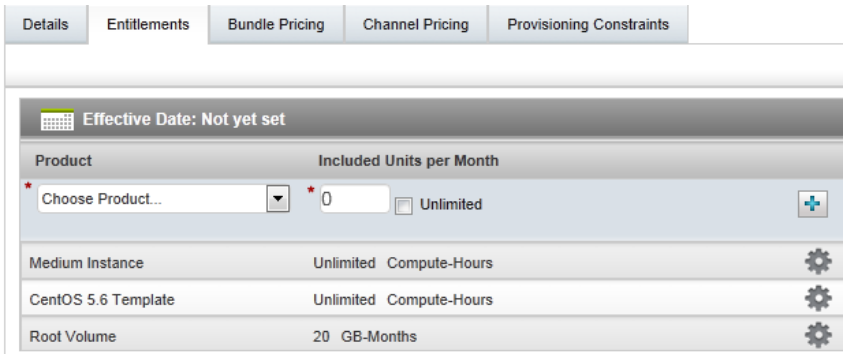
Step	Action
1.	Click on **Product Bundles**. Click on **Add New**.
2.	Enter **Bundle Description**. Click on **Next**. 
3.	Enter **Bundle Details**. For **Resource Type**, select **Compute**. For **Allow Subscriptions**, select **At any level; no limits on number of subscriptions**. For **Charge Frequency**, select **Monthly**. **Check** Eligible for Trial. Click on **Next**.

Step	Action
	Bundle Details Please provide the following core details for this product bundle. Resource Type * Compute Allow Subscriptions * At any level; no limits on number of subscriptions Charge Frequency * Monthly Eligible for Trial ☑ (A trial customer will see only those bundles that have this flag checked.) Enable Notification ☑ (You will get email notification on subscription activation/termination of this product bundle only when this flag is checked)
4.	Enter **Provisioning Constraints**. Click on **Template**, select **INCLUDES**, and check **CentOS 5.6(64-bit) no GUI (XenServer)**. **Provisioning Constraints** Select from each of the resource components in the list below to set provisioning constraints. Resource Component: Zone, Template, Compute Offering, ISO, Hypervisor Where Provisioning Constraint(s) is(are): ◉ INCLUDES ○ EXCLUDES CentOS 5.6(64-bit) no GUI (XenServer) Zone : Advanced-Zone, Description : CentOS 5.6(64-bit) no GUI (XenServer), OS : CentOS 5.3 (64-bit), Size (bytes) : 2147483648, Hypervisor : XenServer more.. Click on **Compute Offering**, select **INCLUDES**, and check **Small Instance**. **Provisioning Constraints** Select from each of the resource components in the list below to set provisioning constraints. Resource Component: Zone, Template, Compute Offering, ISO, Hypervisor Where Provisioning Constraint(s) is(are): ◉ INCLUDES ○ EXCLUDES Small Instance Number of CPU Cores : 1, CPU (in MHz) : 500, Memory (in MB) : 512, Description : 1 CPU@500MHz, 512MB RAM more.. Medium Instance Number of CPU Cores : 1, CPU (in MHz) : 1024, Memory (in MB) : 1024, Description : 1 CPU@1GHz, 1GB RAM more.. Large Instance Number of CPU Cores : 2, CPU (in MHz) : 1024, Memory (in MB) : 2048, Description : 2 CPU@1GHz, 2GB RAM more..
5.	Enter **Bundle Charge** based on Table 2. Click on **Next**. **Bundle Charges** Set one-off and recurring charges to be used as reference for this bundle. Charges: EUR (€) / USD ($) One-time: * 4.0000 / * 5.0000 Recurring: * 20.0000 / * 26.0000
6.	**Review and Confirm**. Click on **Add**.
7.	Enter **Entitlement.**

Step	Action
	After defining a product bundle, you need to add entitlement. Entitlement specifies what is included in the bundle pricing. Select **Small CentOS Instance** from left navigation. Click on **Entitlement**. • Click on the drop down list under **Product**, select '**Small Instance**', check '**Unlimited**' under **Included Units per Month**, click '+' sign. A new line **Small Instance Unlimited Compute-Hours** is added. It means user can use unlimited hours of a small instance in a month for a VM provisioned by this product bundle. Although **Unlimited** is used here as entitlement, it is bound by the number of hours in a month. • Click on the drop down list under **Product**, select '**CentOS 5.6 Template'**, check '**Unlimited**' under **Included Units per Month**, click '+' sign. • Click on the drop down list under **Product**, select '**Root Volume**', enter '**20'** under **Included Units per Month**, click '+' sign. This includes 20 GB-Months of root volume for the VM. **20** is used here since the root disk size of the CentOS 5.6 Template is 20GB. Note that for a bundle of **Compute** resource type, the following usage types can be specified as unlimited: Running VM, Allocated VM and Root Volumes. When unlimited is selected for a product based on these usage type, the entitlement of this product is scoped to the resource (in this case: VM provisioned by the bundled). If unlimited is not selected for a product or if the product does not support unlimited, the entitlement can be used by other resources (in this case, other VMs) that the user owns. 
8.	Click on the , select **Publish**. 

5.2.2 Create 'Medium CentOS Instance' Product Bundle

Step	Action
1.	Click on **Add New**.
2.	Enter **Bundle Description**. Click on **Next**. Bundle Description Please enter the identifying and descriptive information for the product bundle you wish to create. Name: Medium CentOS Instance Code: CloudPlatformCloud_MediumCentOSInstance Description: This is a medium CentOS instance (1 CPU@1GHz, 1GB RAM) charged at monthly rate
3.	Enter **Bundle Details**. Bundle Details Please provide the following core details for this product bundle. Resource Type: Compute Allow Subscriptions: At any level; no limits on number of subscriptions Charge Frequency: Monthly Eligible for Trial: ☑ (A trial customer will see only those bundles that have this flag checked.) Enable Notification: ☑ (You will get email notification on subscription activation/termination of this product bundle only when this flag is checked)
4.	Enter **Provisioning Constraints**. Click on **Template**, select **INCLUDES**, and check **CentOS 5.6(64-bit) no GUI (XenServer)**. Provisioning Constraints Select from each of the resource components in the list below to set provisioning constraints. Resource Component: ISO, Template, Service Offering, Hypervisor Where Provisioning Constraint(s) is(are): INCLUDES / EXCLUDES CentOS 5.6(64-bit) no GUI (XenServer) Click on **Compute Offering**, select **INCLUDES**, and check **Medium Instance**.

Step	Action
	
5.	Enter **Bundle Charge**. Click on **Next**.
6.	**Review and Confirm**. Click on **Add**.
7.	Enter **Entitlement.** Select **Medium CentOS Instance** from left navigation. Click on **Entitlement**. Fill out the entitlement details. 
8.	Click on the , select **Publish**.

5.2.3 Create 'Compute Instance' Product Bundle

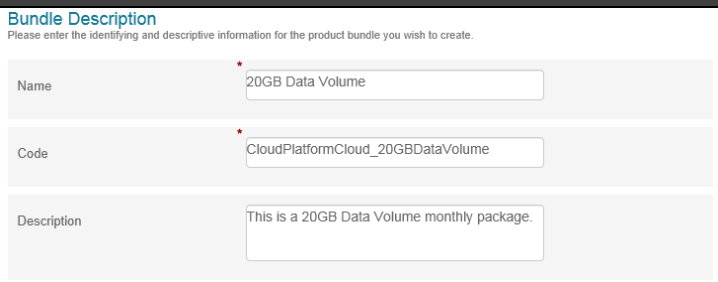
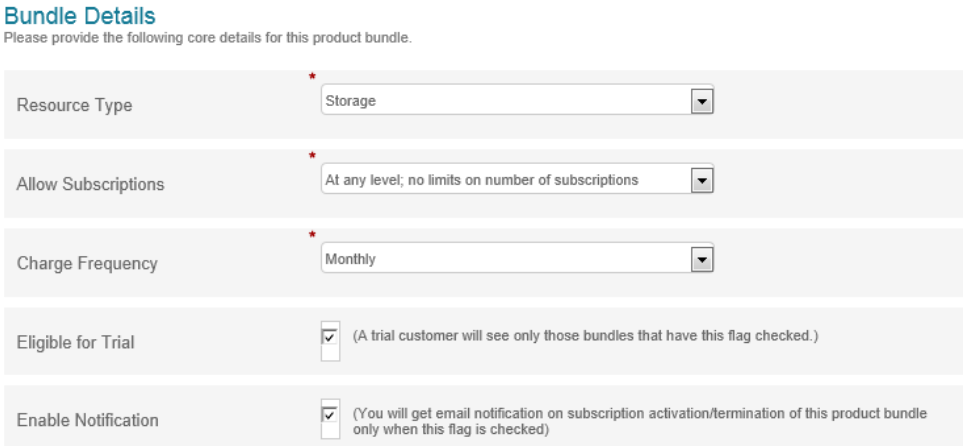
Using the CloudPortal Business Manager connector for CloudPlatform UI, VMs can only be created by subscribing to product bundles. The Small CentOS Instance and Medium CentOS Instance bundles are for users to create CentOS VMs. Some users might want to create VMs based on their own templates. In addition, some users might want to create VMs based on utility rates rather than monthly rate. To meet these requirements, we will create a "Compute Instance" product bundle.

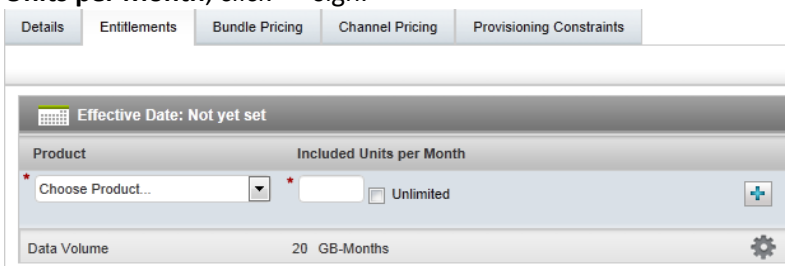
Step	Action
1.	Click on **Add New**.

Step	Action
2.	Enter **Bundle Description**. Click on **Next**. Bundle Description Please enter the identifying and descriptive information for the product bundle you wish to create. Name * Compute Instance Code * CloudPlatformCloud_ComputeInstance Description This creates a compute instance charged at utility rate.
3.	Enter **Bundle Details** as shown below. Select '**Monthly, no minimum recurring charges**' for **Charge Frequency**. This means the billing frequency is monthly, but billed at utility rate. Therefore, there is no minimum recurring charge per month (if user does not consume any resource for that month). Bundle Details Please provide the following core details for this product bundle. Resource Type * Compute Allow Subscriptions * At any level; no limits on number of subscriptions Charge Frequency * Monthly, no minimum recurring charges Eligible for Trial ☑ (A trial customer will see only those bundles that have this flag checked.) Enable Notification ☑ (You will get email notification on subscription activation/termination of this product bundle only when this flag is checked)
4.	Do not enter any **Provisioning Constraints**.
5.	Enter **Bundle Charge**. Click on **Next**. Bundle Charges Set one-off and recurring charges to be used as reference for this bundle. Charges EUR (€) USD ($) One-time * 4.0000 * 5.0000
6.	**Review and Confirm**. Click on **Add**.
7.	Do not enter any **Entitlement.**
8.	Click on the ⚙, select **Publish**.

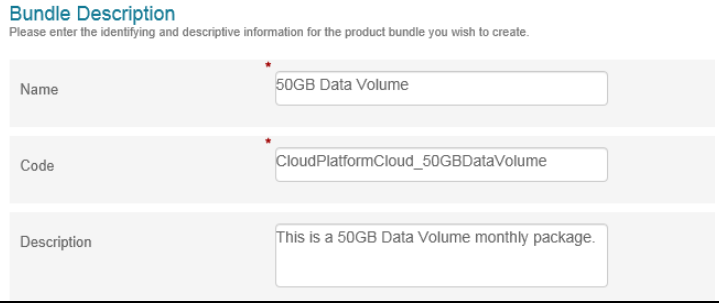
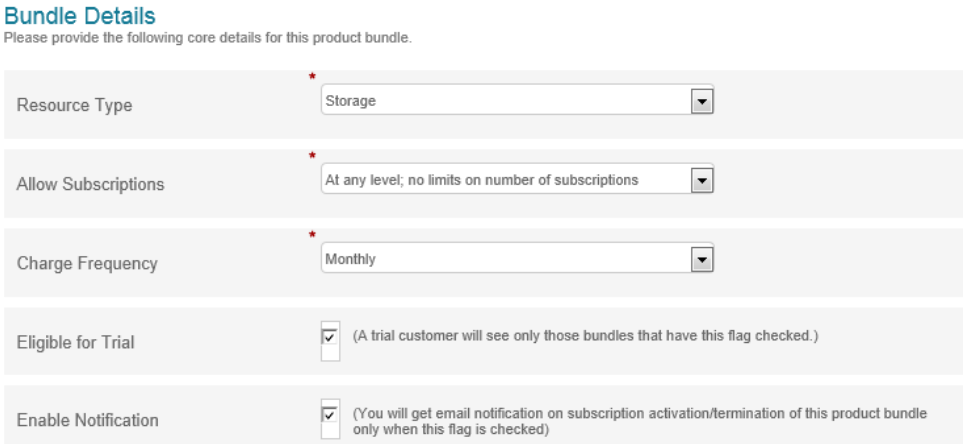
5.2.4 Create '20GB Data Volume' Product Bundle

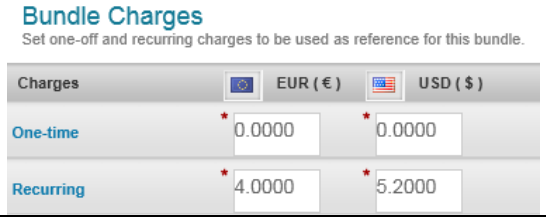
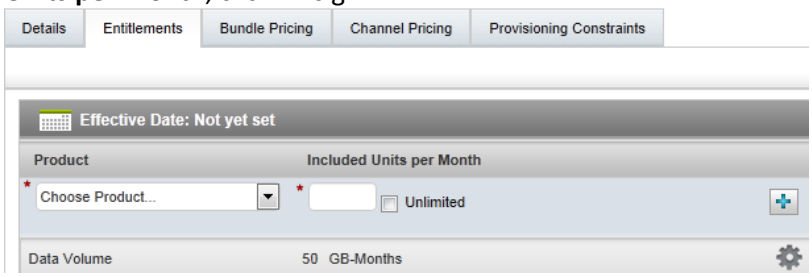
Step	Action
1.	Click on **Product Bundles**. Click on **Add New**.
2.	Enter **Bundle Description**. Click on **Next**.

Step	Action
	
3.	Enter **Bundle Details**. For **Resource Type**, select **Storage**. For **Allow Subscriptions**, select At any level; no limits on number of subscriptions. For **Charge Frequency**, select **Monthly**. **Check** Eligible for Trial. Click on **Next**. 
4.	Do not enter any **Provisioning Constraints**. Click on **Next**. Note that when no provisioning constraints are added, user can provision data volume of any size when subscribing to the bundle. If the data volume provisioned is under 20GB, user will be charged bundle price for the data volume. If the data volume provisioned is larger than 20GB and there is no other data volume entitlements available to the user from other bundles, then the portion over 20GB will be charged at utility rate. Alternatively, you can set provisioning constraint to Disk Offering INCLUDE Medium (20GB). This will limit user to create data volume of only 20GB in size. Note that with CloudPlatform 4.2.1, Medium Disk Offering of 20GB comes out of the box.
5.	Enter **Bundle Charge** based on Table 2. Click on **Next**.
6.	**Review and Confirm**. Click on **Add**.
7.	Enter **Entitlement.** Select **20GB Data Volume** from left navigation. Click on **Entitlement**.

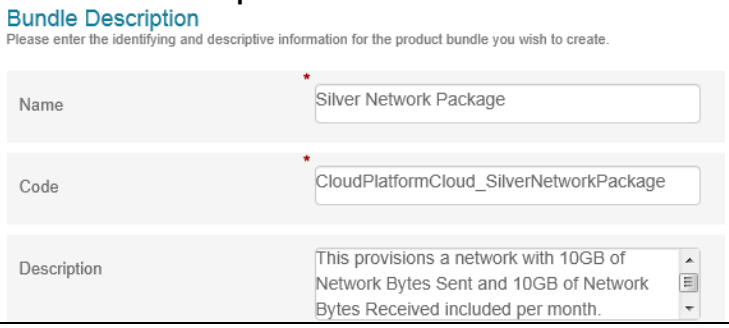
Step	Action
	Click on the drop down list under **Product**, select '**Data Volume**', enter '**20**' under **Included Units per Month**, click '+' sign.  Note that for storage resource (data volume), only product based on usage type Data Volume can be set to unlimited.
8.	Click on the , select **Publish**.

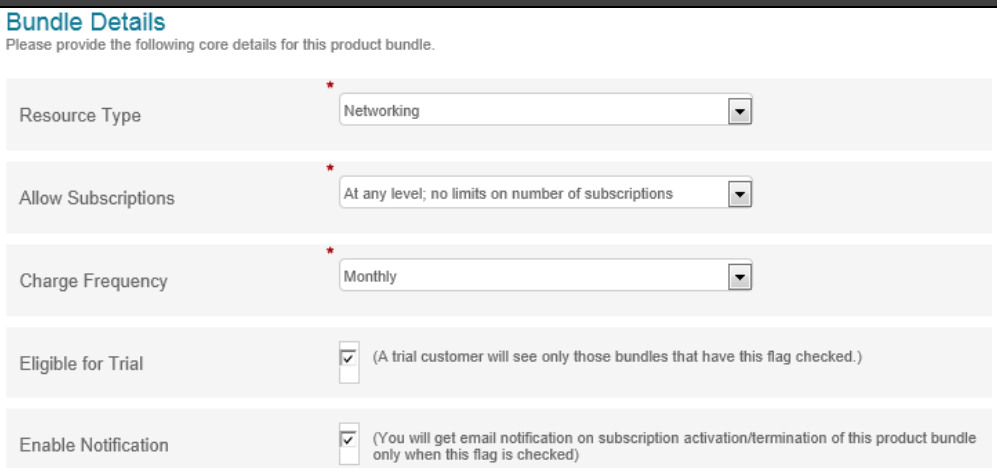
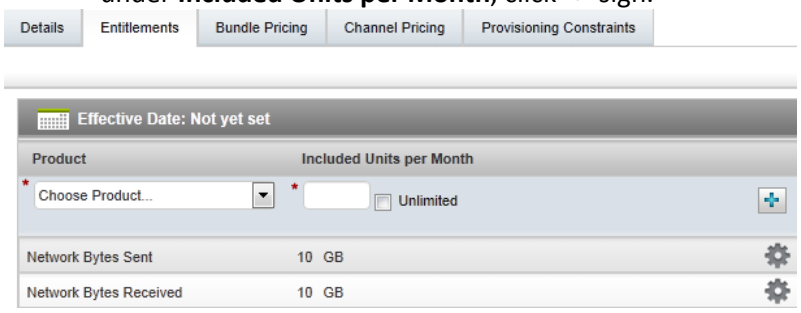
5.2.5 Create '50GB Data Volume' Product Bundle

Step	Action
1.	Click on **Product Bundles**. Click on **Add New**.
2.	Enter **Bundle Description**. Click on **Next**. 
3.	Enter **Bundle Details**. For **Resource Type**, select **Storage**. For **Allow Subscriptions**, select At any level; no limits on number of subscriptions. For **Charge Frequency**, select **Monthly**. **Check** Eligible for Trial. Click on **Next**. 

Step	Action
4.	Do not enter any **Provisioning Constraints**. Click on **Next**.
5.	Enter **Bundle Charge** based on Table 2. Click on **Next**. 
6.	**Review and Confirm**. Click on **Add**.
7.	Enter **Entitlement.** Select **50GB Data Volume** from left navigation. Click on **Entitlement**. Click on the drop down list under **Product**, select '**Data Volume**', enter '**50**' under **Included Units per Month**, click '+' sign. 
8.	Click on the , select **Publish**.

5.2.6 Create 'Silver Network Package' Product Bundle

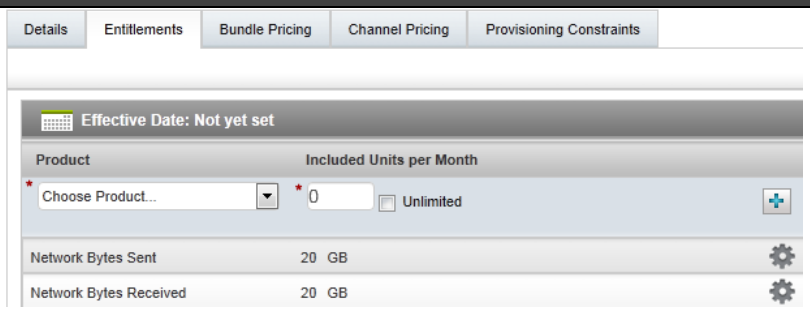
Step	Action
1.	Click on **Product Bundles**. Click on **Add New**.
2.	Enter **Bundle Description**. Click on **Next**. 
3.	Enter **Bundle Details**. For **Resource Type**, select **Networking**. For **Allow Subscriptions**, select **At any level; no limits on number of subscriptions**. For **Charge Frequency**, select **Monthly**. **Check** Eligible for Trial. Click on **Next**.

Step	Action
	
4.	Do not enter any **Provisioning Constraints**. Click on **Next**.
5.	Enter **Bundle Charge** based on Table 2. Click on **Next**.
6.	**Review and Confirm**. Click on **Add**.
7.	Enter **Entitlement.** Select **Silver Network Package** from left navigation. Click on **Entitlement**. • Click on the drop down list under **Product**, select '**Network Bytes Sent**', enter '**10**' under **Included Units per Month**, click '+' sign. • Click on the drop down list under **Product**, select '**Network Bytes Received**', enter '**10**' under **Included Units per Month**, click '+' sign.  Note that for a networking resource (network), only product based on usage types Network Bytes Sent and Network Bytes Received can be set to unlimited.
8.	Click on the , select **Publish**.

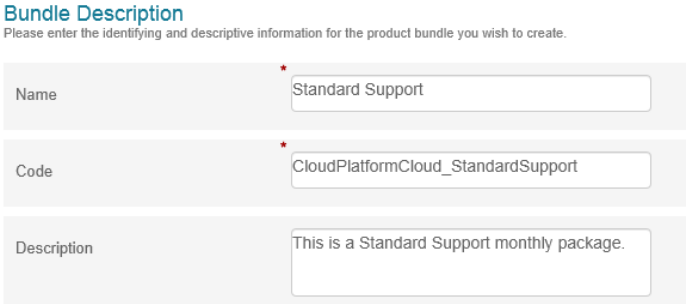
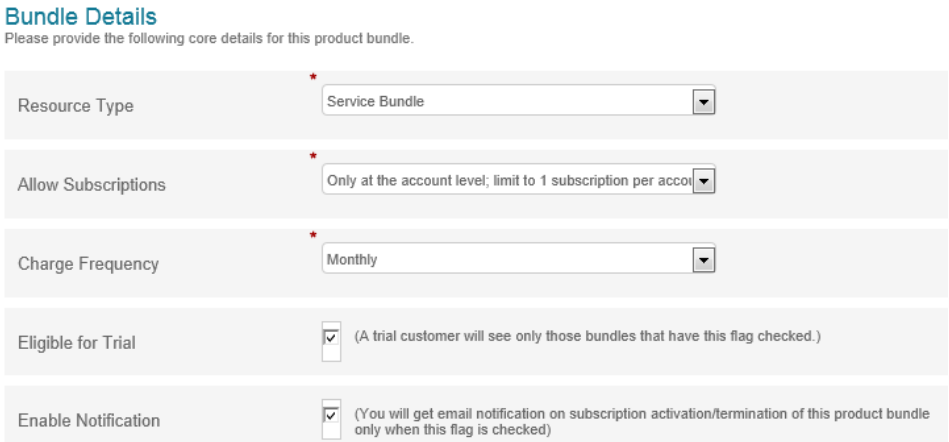
5.2.7 Create 'Gold Network Package' Product Bundle

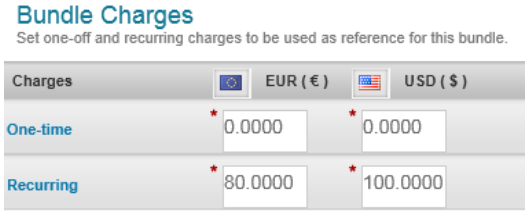
Step	Action
1.	Click on **Product Bundles**. Click on **Add New**.

Step	Action
2.	Enter **Bundle Description**. Click on **Next**. Bundle Description Please enter the identifying and descriptive information for the product bundle you wish to create. Name * Gold Network Package Code * CloudPlatformCloud_GoldNetworkPackage Description This provisions a network with 20GB of Network Bytes Sent and 20GB of Network Bytes Received included per month
3.	Enter **Bundle Details**. For **Resource Type**, select **Networking**. For **Allow Subscriptions**, select **At any level; no limits on number of subscriptions**. For **Charge Frequency**, select **Monthly**. **Check** Eligible for Trial. Click on **Next**. Bundle Details Please provide the following core details for this product bundle. Resource Type * Networking Allow Subscriptions * At any level; no limits on number of subscriptions Charge Frequency * Monthly Eligible for Trial ☑ (A trial customer will see only those bundles that have this flag checked.) Enable Notification ☑ (You will get email notification on subscription activation/termination of this product bundle only when this flag is checked)
4.	Do not enter any **Provisioning Constraints**. Click on **Next**.
5.	Enter **Bundle Charge** based on Table 2. Click on **Next**. Bundle Charges Set one-off and recurring charges to be used as reference for this bundle. Charges | EUR (€) | USD ($) One-time * 0.0000 * 0.0000 Recurring * 1.7000 * 2.2000
6.	**Review and Confirm**. Click on **Add**.
7.	Enter **Entitlement.** Select **Gold Network Package** from left navigation. Click on **Entitlement**. Add Entitlement.

Step	Action
	
8.	Click on the , select **Publish**.

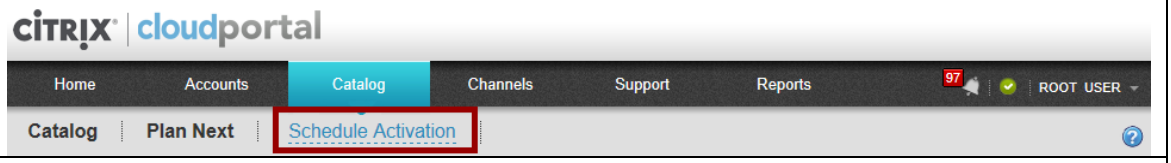
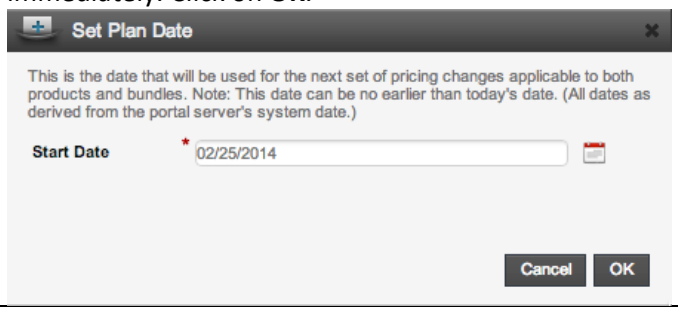
5.2.8 Create 'Standard Support' Product Bundle

Step	Action
1.	Click on **Product Bundles**. Click on **Add New**.
2.	Enter **Bundle Description**. Click on **Next**. 
3.	Enter **Bundle Details**. For **Resource Type**, select **Service Bundle**. Service Bundle does not collect usage information from the underlying cloud service. For **Allow Subscriptions**, select **Only at the account level; limit to 1 subscription per account**. This creates a bundle which can only be subscribed once per account by the master user of the account. For **Charge Frequency**, select **Monthly**. **Check** Eligible for Trial. Click on **Next**. 
4.	Do not enter any **Provisioning Constraints**. Click on **Next**.

Step	Action
5.	Enter **Bundle Charge** based on Table 2. Click on **Next**. 
6.	**Review and Confirm**. Click on **Add**.
7.	Do not enter any **Entitlement.**
8.	Click on the , select **Publish**.

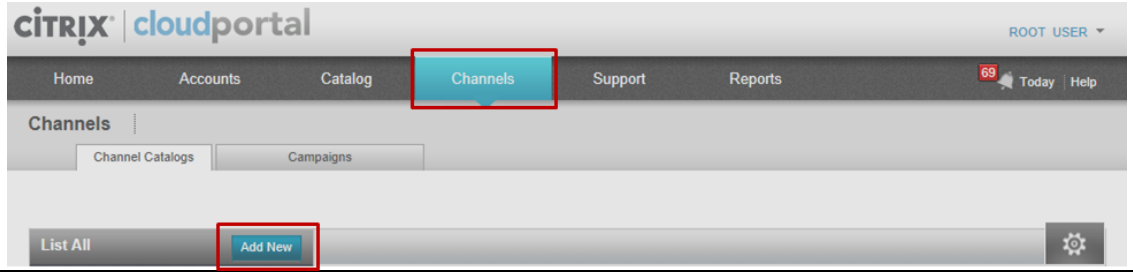
5.3 Activate Catalog

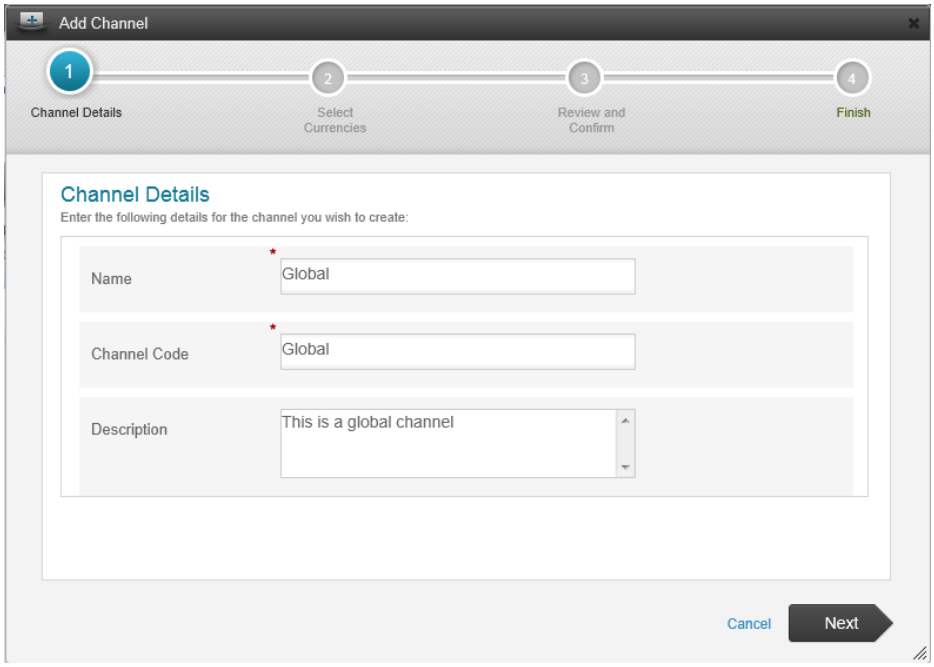
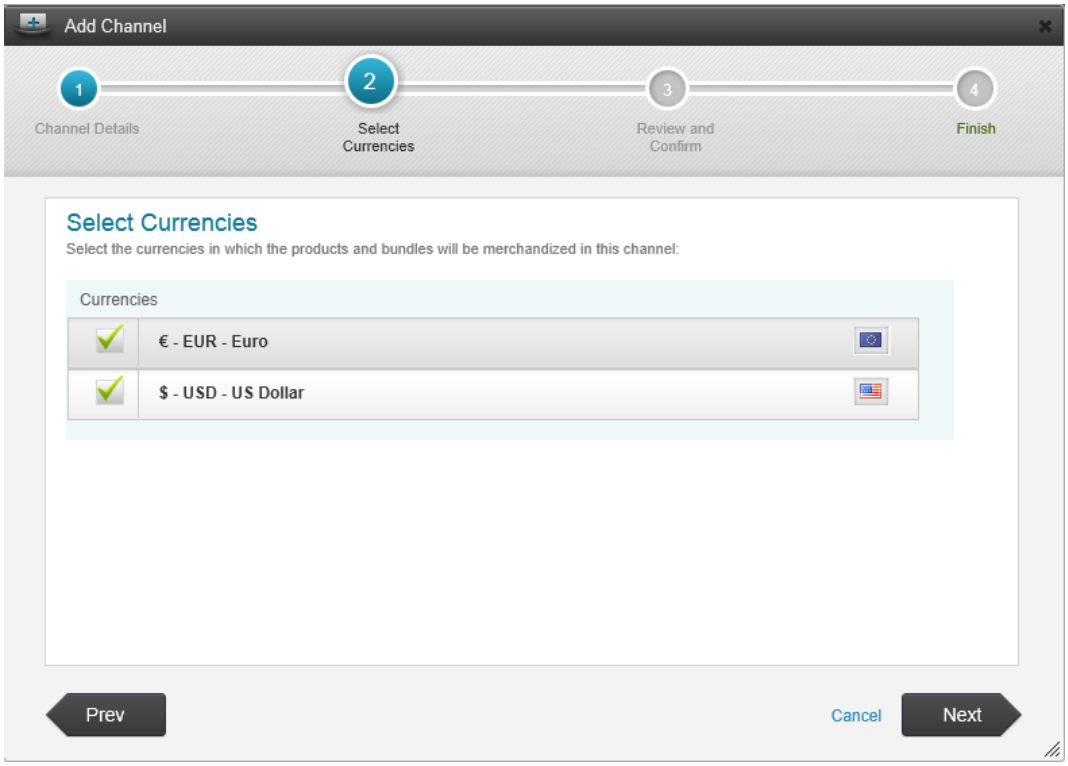
Once products and bundles are defined, we need to activate the catalog, so that they become effective.

Step	Action
1.	Click on **Catalog**. Click on **Schedule Activation**. 
2.	Enter a date the catalog should be activated. Select today's date, so that it will be activated immediately. Click on **OK**. 

5.4 Create A Channel

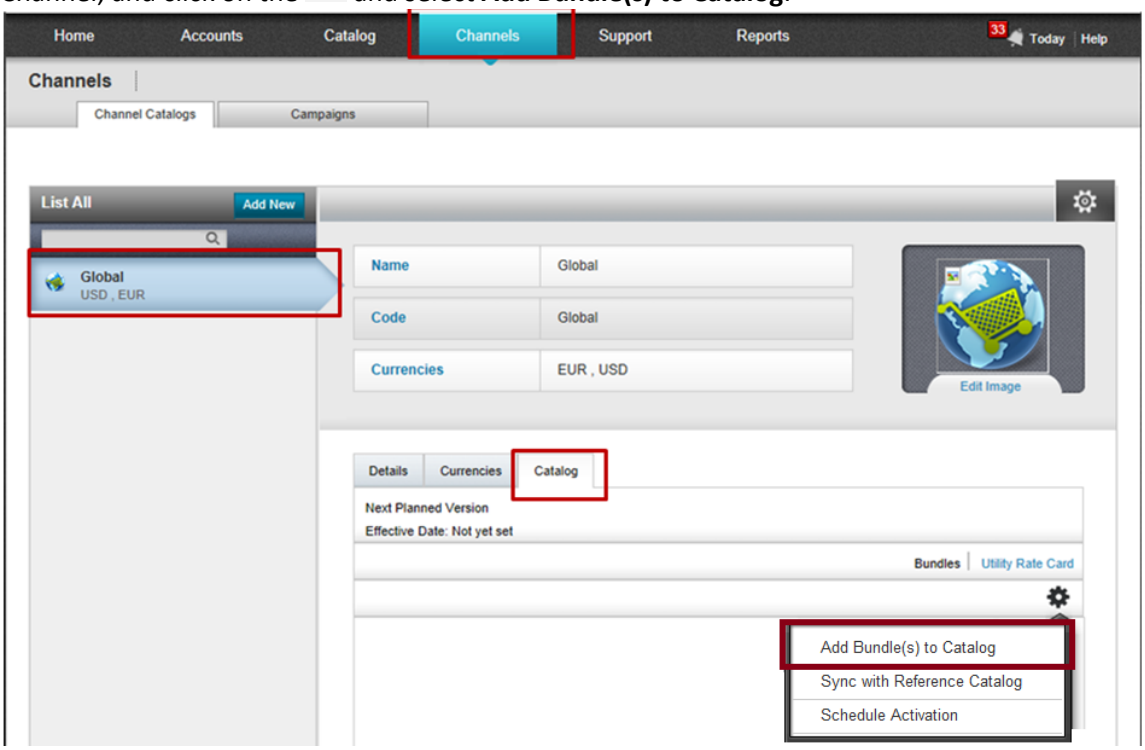
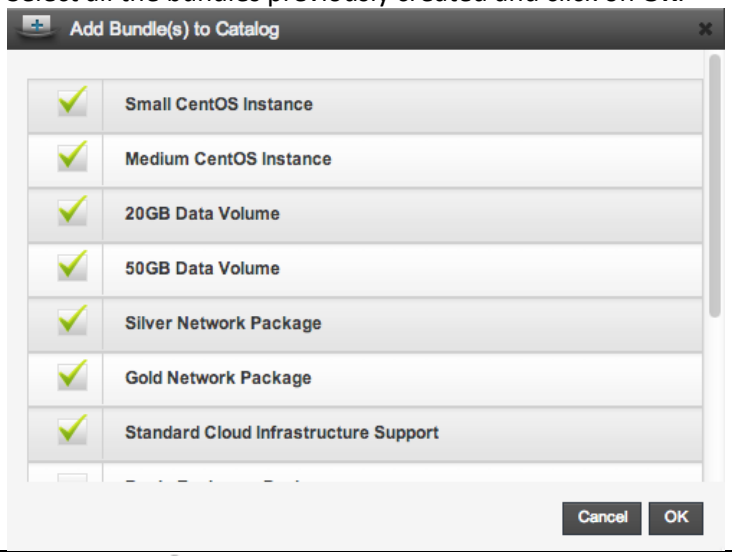
In this step, we will create a Channel named 'Global', with two currencies: Euro and US dollar.

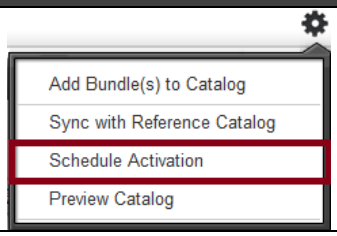
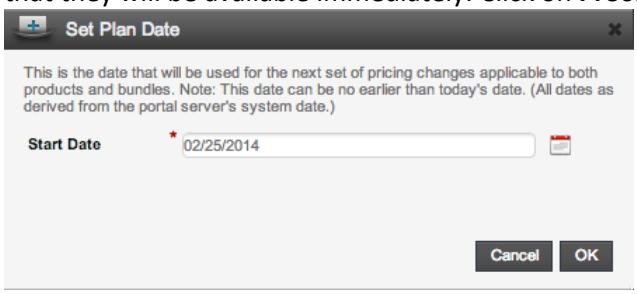
Step	Action
1.	Click on **Channels** from the top navigation. Click on **Add New** from the left navigation. 

Step	Action
2.	Enter **Channel Details** and click on **Next**. 
3.	**Select Currencies** and click on **Next**. 
4.	**Review and Confirm** and click on **Add**.

5.5 Assign Bundles to Channel in CloudPortal Business Manager

Within CloudPortal Business Manager, all products are available to all channels. Product bundles need to be assigned to a channel in order to make it available to the customers belonging to that channel.

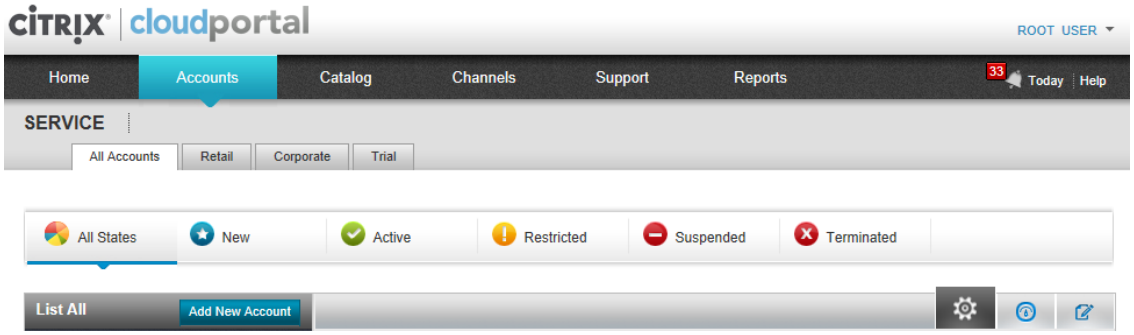
Step	Action
1.	Click on **Channels** from top navigation, select '**Global**', click on **Catalog** within the Global Channel, and click on the ⚙ and select **Add Bundle(s) to Catalog**. 
2.	Select all the bundles previously created and click on **OK**. 
3.	Click on the ⚙ again and select **Schedule Activation**.

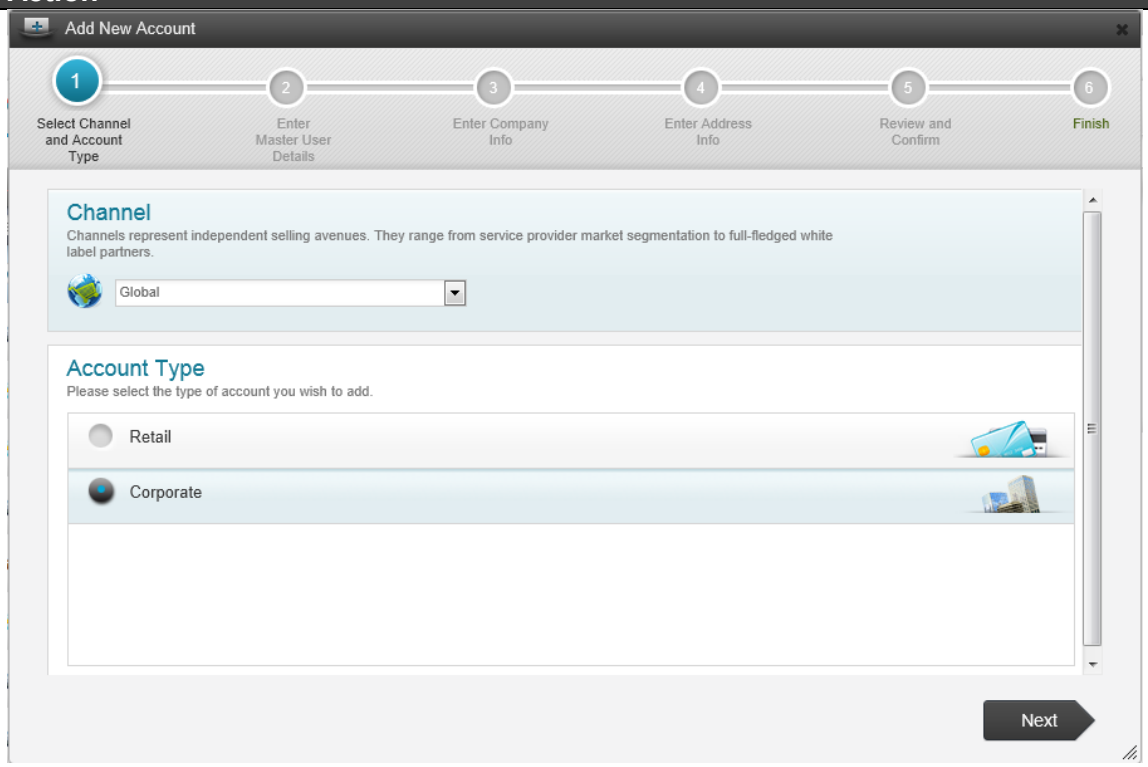
Step	Action
	
4.	Set the date that product and bundles will be effective within a channel. Use today's date so that they will be available immediately. Click on **Proceed**. 

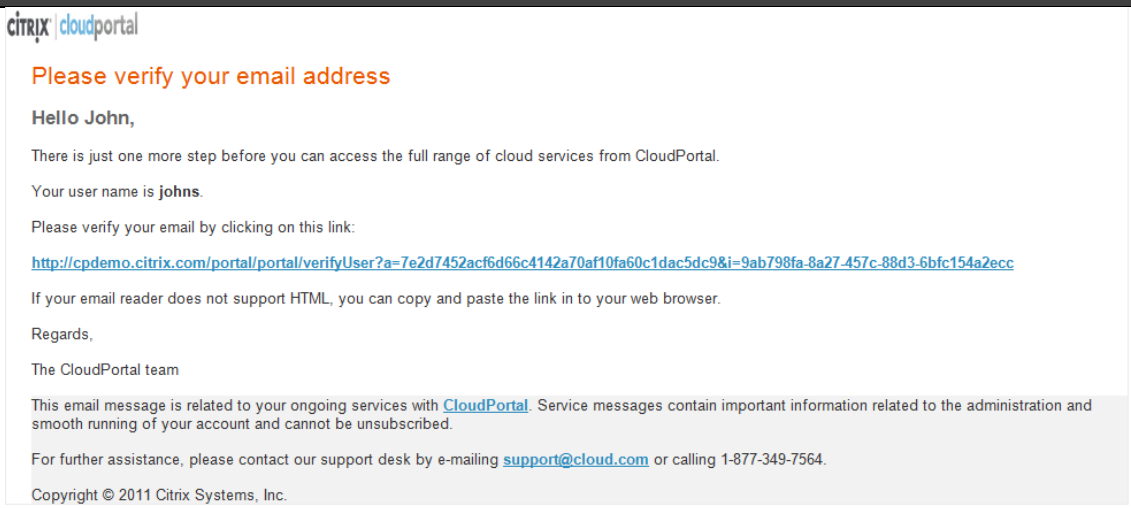
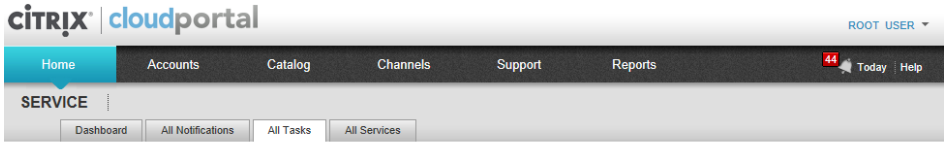
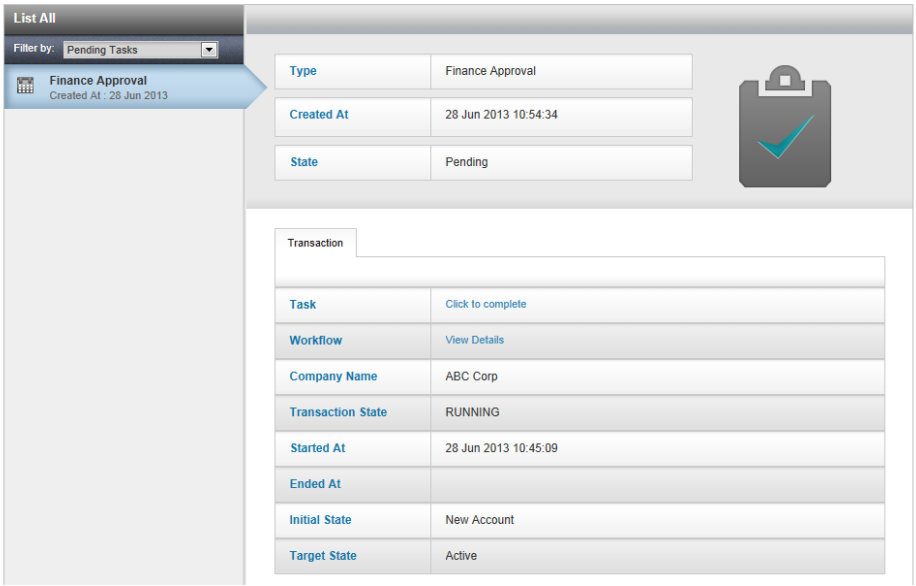
6 Create Accounts and Users

Now we have products, bundles and channels created, we can add accounts and users so that they can start using the CloudPlatform Cloud service.

6.1 Create An Account and Master User

Step	Action
1.	Click on Accounts, and select **Add New Account**. 
2.	Select **Global** as the **Channel**, and **Corporate** as the **Account type**, and click on **Next**. In CloudPortal Business Manager, every account has to be created under a channel. There are two out of the box account types 'Retail' and 'Corporate'. Retail accounts require credit card payment and allow self-service sign up. To support Retail account, you need to set up a payment gateway. Corporate accounts can be created by the service provider only and do not require credit card (hence, no need for payment gateway).

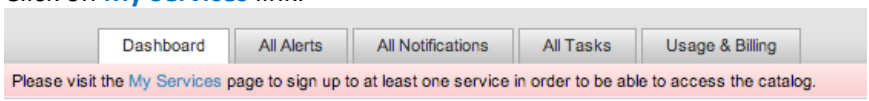
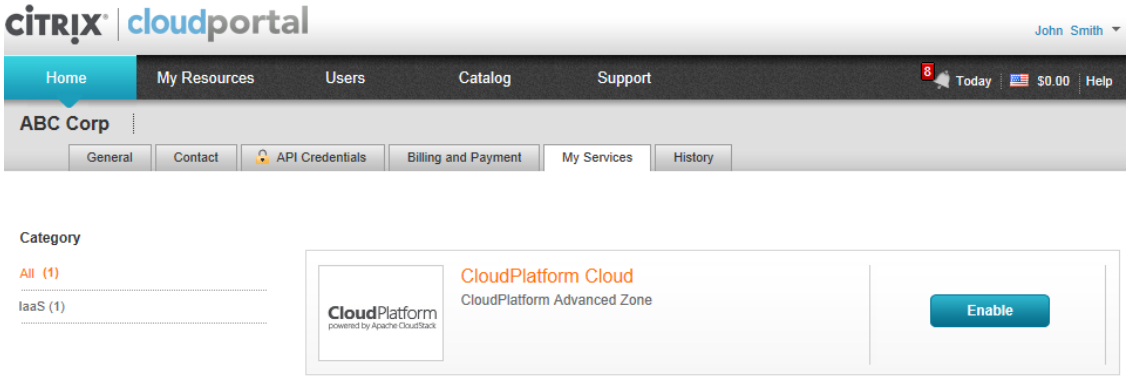
Step	Action
	
3.	Specify **master user** information. Master user is an admin in the customer organization who has more rights than a regular user, including creating users, approving subscriptions, setting spend limits and view billings of all users within the organization. Enter names (for example, **Username** '**johns**', **First Name** '**John**' and **Last Name** '**Smith**'. You can use other names also. Make sure to enter a valid email address, as a verification email will be sent to the user.
4.	Continue to enter **Company** Information, address and create an account (for example, '**ABC Corp**' as the account name). You can use other names also.
5.	After **Account** is created, **master user** will get a verification email looks like below.

Step	Action
	 CITRIX cloudportal Please verify your email address Hello John, There is just one more step before you can access the full range of cloud services from CloudPortal. Your user name is **johns**. Please verify your email by clicking on this link: http://cpdemo.citrix.com/portal/portal/verifyUser?a=7e2d7452acf6d66c4142a70af10fa60c1dac5dc9&i=9ab798fa-8a27-457c-88d3-6bfc154a2ecc If your email reader does not support HTML, you can copy and paste the link in to your web browser. Regards, The CloudPortal team This email message is related to your ongoing services with CloudPortal. Service messages contain important information related to the administration and smooth running of your account and cannot be unsubscribed. For further assistance, please contact our support desk by e-mailing support@cloud.com or calling 1-877-349-7564. Copyright © 2011 Citrix Systems, Inc.
6.	Click on the link to set password for **master user Johns**.
7.	Login to CloudPortal Business Manager as service provider. User: **Root** Password: **Portal123#** Click on **Home** from top navigation, and click on **All Tasks**. You will see a **'Finance Approval'** awaiting.  
8.	Click on **Click to complete** next to **Task** to approve the account. This changes account state from **New Account** to **Active**.

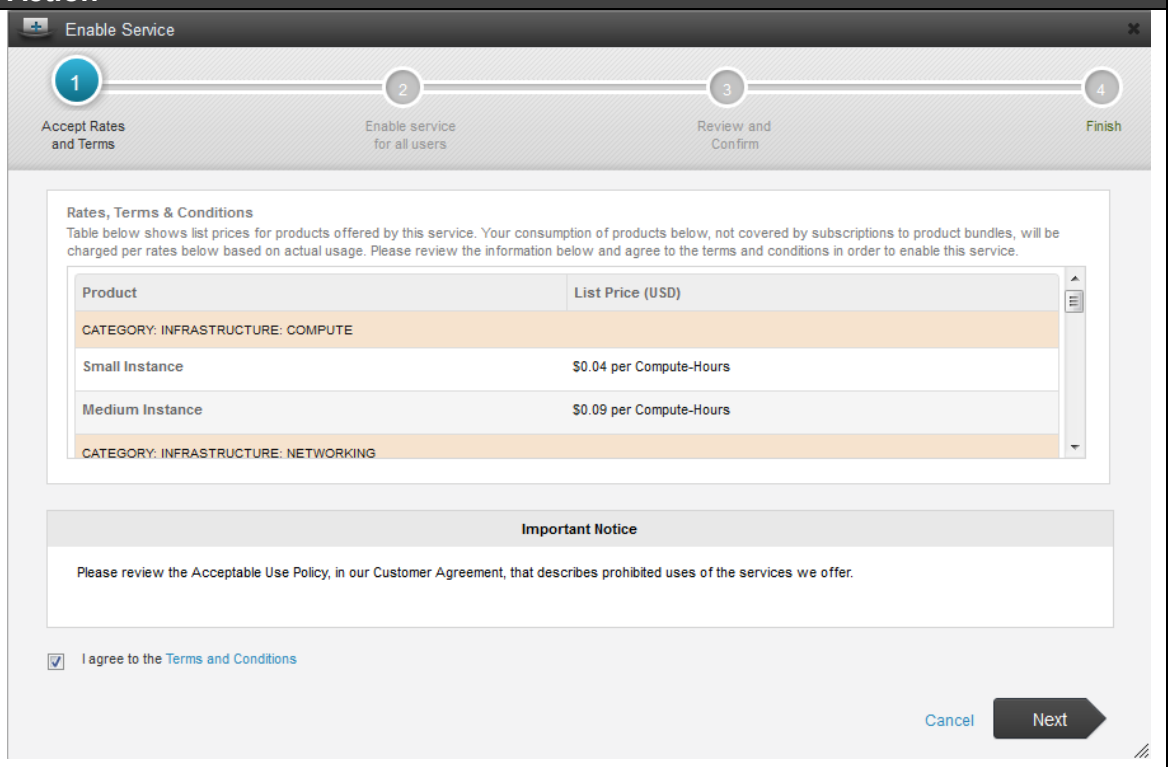
Step	Action
9.	Log out as root.

6.2 Master User Enable Cloud Service

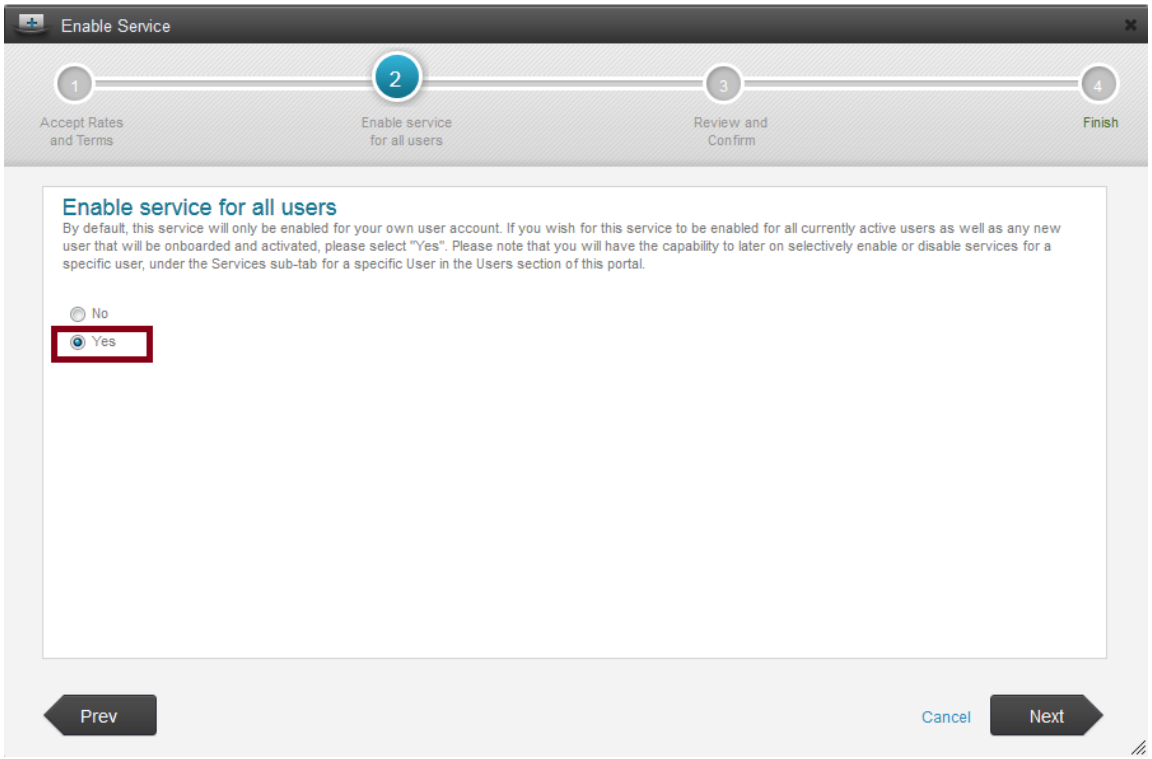
Now the account is active, master user can enable CloudPlatform Cloud service for its organization.

Step	Action
1.	Log in as master user **'johns'**. Click on **My Services** link. 
2.	Click on the green **Enable button** next to **CloudPlatform Cloud** to enable the service. When service is enabled, user account will be created in the CloudPlatform Cloud for each user within the master user's organization. If a new user is added to the master user's organization in the future, a user account will be automatically created in the CloudPlatform Cloud. 
3.	Completed the steps on **Enable Service** wizard. **Accept Rates and Terms.** Make sure to check **I agree to the Terms and Conditions**. Click on **Next**.

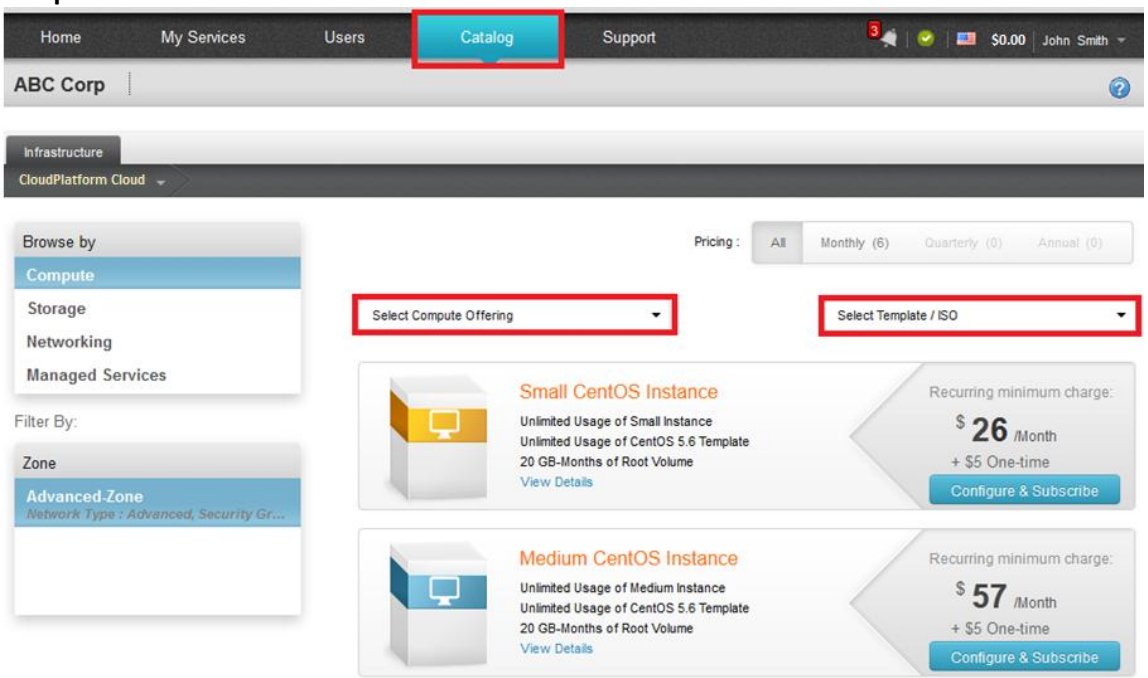
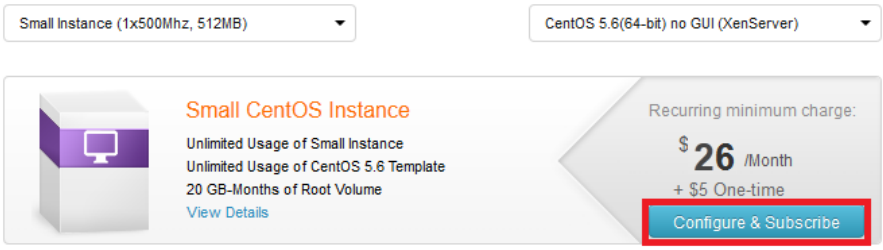
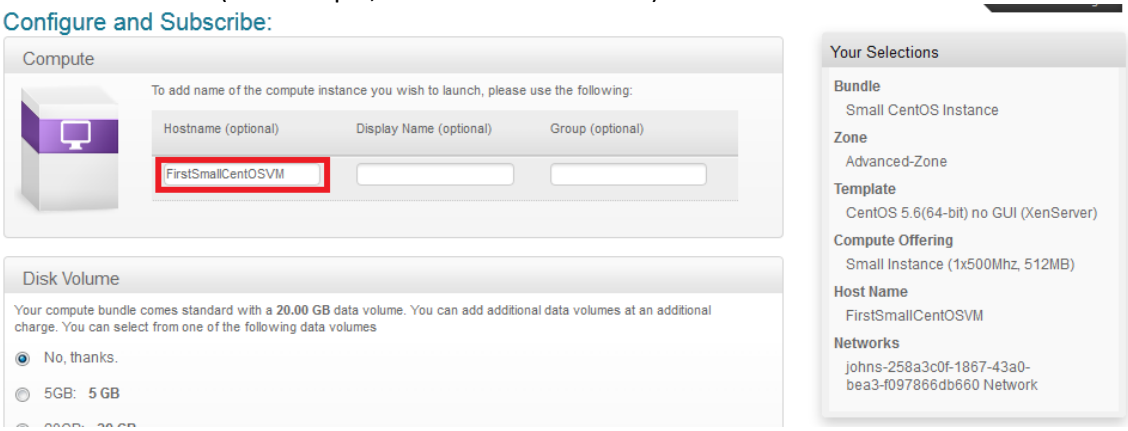
Step	Action

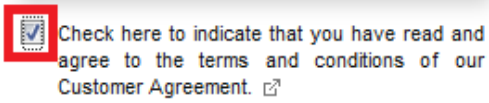
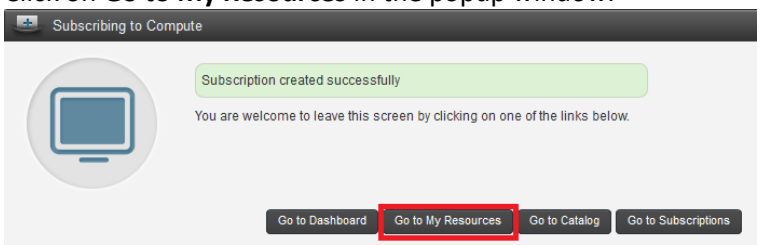
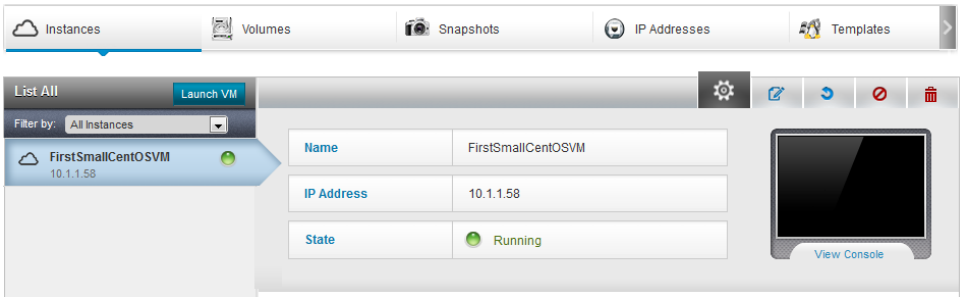


Select '**Yes**' to **Enable service for all users**. If **No** is selected, the service will only be enabled for Master User. Master user will have to go to each individual user later to enable service for each of them. Click on **Next**.



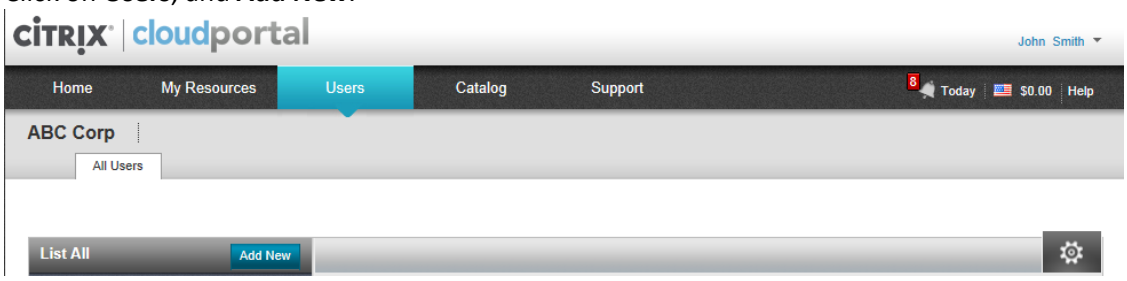
Review and Confirm. Click on **Enable**.

Step	Action
4.	Verify service is enabled successfully by subscribing to a bundle. Click on **Catalog**. Click on **Select Compute Offering** and select **Small Instance**. Click on **Select Template/ISO** and select CentOS 5.6(64-bit) no GUI (XenServer) from **Available Templates**.  Click on **Configure & Subscribe**.  Enter a **Hostname** (for example, '**FirstSmallCentOSVM**'). 

Step	Action
	Scroll down the screen, check that you have read and agree to the terms and conditions.  Click on **Subscribe and provision**. Click on **Go to My Resources** in the popup window.  You should see a new VM been created. 

6.3 Master User Creates More Users

In this step, master user will add one more user to its organization.

Step	Action
1.	Click on **Users**, and **Add New**.  Enter all the required information (for example, **Username** '**maryk**', **First Name** '**Mary**' and **Last Name** '**King**'). You can use other names also. Make sure to enter a valid email address. Select a **Profile** '**User**' from the drop down list to add **Mary** as a regular user.

Step	Action
	Click on **Finish**.
2.	User **Mary** will receive a verification email looks like below. CITRIX cloudportal Please verify your email address **Hello Mary,** There is just one more step before you can access the full range of cloud services from CloudPortal. Your user name is **maryk**. Please verify your email by clicking on this link: http://cpdemo.citrix.com/portal/portal/verifyUser?a=7ab7acc1c1741d50d9bb6111c8938a203261d2c2&i=45fc8f0a-ead4-4c4a-bfae-91c03ecd0e37 If your email reader does not support HTML, you can copy and paste the link in to your web browser. Regards, The CloudPortal team This email message is related to your ongoing services with CloudPortal. Service messages contain important information related to the administration and smooth running of your account and cannot be unsubscribed. For further assistance, please contact our support desk by e-mailing support@cloud.com or calling 1-877-349-7564. Copyright © 2011 Citrix Systems, Inc.
3.	Mary can click on the link to verify email address and set password. Then, Mary can login and start using CloudPlatform Cloud service.

Congratulations! You have successfully completed a POC set up for CloudPortal Business Manager with CloudPlatform to deliver an IaaS business.

7 Appendix

7.1 Appendix A – Example Conversion Factors

The following are some example conversation factors.

Original Units	Converted Units	Conversion Factor	Formula
Hours	Month	744	24*31
Bytes	GB	1073741824	1024*1024*1024
Byte-Hours	GB-month	798863917056	1024*1024*1024*744

7.2 Appendix B – Product Configurations for Table 1.

The following are configurations for products defined in Table 1.

Small Instance		
Product Description		
Name	Small Instance	
Code	CloudPlatformCloud_SMALL_INSTANCE	
Category	Infrastructure: Compute	

Product Details		
Usage Type	Generates Usage in Units	Aggregation Handling
Running VM	Compute-Hours	Combine
Mediation Rules		
Compute Offering	INCLUDES	Small Instance
Conversion Factor		
Generates Usages in Units	Required Product Units	Conversion Factor
Compute-Hours	Compute-Hours	1
Product Charges		
EUR (€)	US ($)	
0.0300	0.0400	
Medium Instance		
Product Description		
Name	Medium Instance	
Code	CloudPlatformCloud_MEDIUM_INSTANCE	
Category	Infrastructure: Compute	
Product Details		
Usage Type	Generates Usage in Units	Aggregation Handling
Running VM	Compute-Hours	Combine
Mediation Rules		
Compute Offering	INCLUDES	Medium Instance
Conversion Factor		
Generates Usages in Units	Required Product Units	Conversion Factor
Compute-Hours	Compute-Hours	1
Product Charges		
EUR (€)	US ($)	
0.0700	0.0900	
IP Address		
Product Description		
Name	IP Address	
Code	CloudPlatformCloud_IP_ADDRESS	
Category	Infrastructure: Networking	
Product Details		
Usage Type	Generates Usage in Units	Aggregation Handling
IP Address	IP-Hours	Combine
Mediation Rules		
None		
Conversion Factor		
Generates Usages in Units	Required Product Units	Conversion Factor

IP-Hours	IP-Months	744
Product Charges		
EUR (€)	US ($)	
0.8000	1.000	
Network Bytes Sent		
Product Description		
Name	Network Bytes Sent	
Code	CloudPlatformCloud_NETWORK_BYTES_SENT	
Category	Infrastructure: Networking	
Product Details		
Usage Type	Generates Usage in Units	Aggregation Handling
Network Bytes Sent	Bytes	Combine
Mediation Rules		
None		
Conversion Factor		
Generates Usages in Units	Required Product Units	Conversion Factor
Bytes	GB	1073741824
Product Charges		
EUR (€)	US ($)	
0.0600	0.0800	
Network Bytes Received		
Product Description		
Name	Network Bytes Received	
Code	CloudPlatformCloud_NETWORK_BYTES_RECEIVED	
Category	Infrastructure: Networking	
Product Details		
Usage Type	Generates Usage in Units	Aggregation Handling
Network Bytes Received	Bytes	Combine
Mediation Rules		
None		
Conversion Factor		
Generates Usages in Units	Required Product Units	Conversion Factor
Bytes	GB	1073741824
Product Charges		
EUR (€)	US ($)	
0.0200	0.0300	
Secondary Storage		
Product Description		

Name	Secondary Storage	
Code	CloudPlatformCloud_SECONDARY_STORAGE	
Category	Infrastructure: Storage - Archival (Secondary)	
Product Details		
Usage Type	Generates Usage in Units	Aggregation Handling
Template Storage	Byte-Hours	Combine
ISO Storage	Byte-Hours	Combine
Snapshot Storage	Byte-Hours	Combine
Mediation Rules		
None		
Conversion Factor		
Generates Usages in Units	Required Product Units	Conversion Factor
Byte-Hours	GB-Months	798863917056
Product Charges		
EUR (€)	US ($)	
0.0700	0.0900	
Data Volume		
Product Description		
Name	Data Volume	
Code	CloudPlatformCloud_DATA_VOLUME	
Category	Infrastructure: Storage - Primary	
Product Details		
Usage Type	Generates Usage in Units	Aggregation Handling
Data Volume	Byte-Hours	Combine
Mediation Rules		
None		
Conversion Factor		
Generates Usages in Units	Required Product Units	Conversion Factor
Byte-Hours	GB-Months	798863917056
Product Charges		
EUR (€)	US ($)	
0.0900	0.1200	
Root Volume		
Product Description		
Name	Root Volume	
Code	CloudPlatformCloud_ROOT_VOLUME	
Category	Infrastructure: Storage - Primary	
Product Details		
Usage Type	Generates Usage in Units	Aggregation Handling

Root Volume	Byte-Hours	Combine
Mediation Rules		
None		
Conversion Factor		
Generates Usages in Units	Required Product Units	Conversion Factor
Byte-Hours	GB-Months	798863917056
Product Charges		
EUR (€)	US ($)	
0.0900	0.1200	
CentOS 5.6 Template		
Product Description		
Name	CentOS 5.6 Template	
Code	CloudPlatformCloud_CENTOS_56_TEMPLATE	
Category	Software: Operating Systems	
Product Details		
Usage Type	Generates Usage in Units	Aggregation Handling
Running VM	Compute-Hours	Combine
Mediation Rules		
Template	INCLUDES	CentOS 5.6(64-bit) no GUI (XenServer)
Conversion Factor		
Generates Usages in Units	Required Product Units	Conversion Factor
Compute-Hours	Compute-Hours	1
Product Charges		
EUR (€)	US ($)	
0.002	0.003	

7.3 Appendix C – Product Bundle Configurations for Table 2.

The following are configurations for product bundles defined in Table 2.

Small CentOS Instance	
Bundle Description	
Name	Small CentOS Instance
Code	CloudPlatformCloud_SmallCentOSInstance
Description	This is a small CentOS instance (1 CPU@500MHz, 512MB RAM) charged at monthly rate.
Bundle Details	
Resource Type	Compute
Allow Subscriptions	At any level; no limits on number of subscriptions
Charge Frequency	Monthly

Eligible for Trial	√	
Enable Notification	√	
Provisioning Constraints		
Template	INCLUDES	CentOS 5.6 (64-bit) no GUI (XenServer)
Compute Offering	INCLUDES	Small Instance
Bundle Charges		
Charges	EUR (€)	US ($)
One-time	4.0000	5.0000
Recurring	20.0000	26.0000
Entitlements		
Small Instance	Unlimited Compute-Hours	
CentOS 5.6 Template	Unlimited Compute-Hours	
Root Volume	20 GB-Months	
Medium CentOS Instance		
Bundle Description		
Name	Medium CentOS Instance	
Code	CloudPlatformCloud_MediumCentOSInstance	
Description	This is a medium CentOS instance (1 CPU@1GHz, 1GB RAM) charged at monthly rate.	
Bundle Details		
Resource Type	Compute	
Allow Subscriptions	At any level; no limits on number of subscriptions	
Charge Frequency	Monthly	
Eligible for Trial	√	
Enable Notification	√	
Provisioning Constraints		
Template	INCLUDES	CentOS 5.6 (64-bit) no G UI (XenServer)
Compute Offering	INCLUDES	Medium Instance
Bundle Charges		
Charges	EUR (€)	US ($)
One-time	4.0000	5.0000
Recurring	44.0000	57.0000
Entitlements		
Medium Instance	Unlimited Compute-Hours	
CentOS 5.6 Template	Unlimited Compute-Hours	
Root Volume	20 GB-Months	
Compute Instance		
Bundle Description		
Name	Compute Instance	
Code	CloudPlatformCloud_ComputeInstance	

Description	This creates a compute instance charged at utility rate.	
Bundle Details		
Resource Type	Compute	
Allow Subscriptions	At any level; no limits on number of subscriptions	
Charge Frequency	Monthly, no minimum recurring charges	
Eligible for Trial	√	
Enable Notification	√	
Provisioning Constraints		
None		
Bundle Charges		
Charges	EUR (€)	US ($)
One-time	4.0000	5.0000
Entitlements		
None		
20GB Data Volume		
Bundle Description		
Name	20GB Data Volume	
Code	CloudPlatformCloud_20GBDataVolume	
Description	This is a 20GB Data Volume monthly package.	
Bundle Details		
Resource Type	Storage	
Allow Subscriptions	At any level; no limits on number of subscriptions	
Charge Frequency	Monthly	
Eligible for Trial	√	
Enable Notification	√	
Provisioning Constraints		
None		
Bundle Charges		
Charges	EUR (€)	US ($)
One-time	0.0000	0.0000
Recurring	1.7000	2.2000
Entitlements		
Data Volume	20 GB	
50GB Data Volume		
Bundle Description		
Name	50GB Data Volume	
Code	CloudPlatformCloud_50GBDataVolume	
Description	This is a 50GB Data Volume monthly package.	
Bundle Details		

Resource Type	Storage	
Allow Subscriptions	At any level; no limits on number of subscriptions	
Charge Frequency	Monthly	
Eligible for Trial	√	
Enable Notification	√	
Provisioning Constraints		
None		
Bundle Charges		
Charges	EUR (€)	US ($)
One-time	0.0000	0.0000
Recurring	4.0000	5.2000
Entitlements		
Data Volume	50 GB	
Silver Network Package		
Bundle Description		
Name	Silver Network Package	
Code	CloudPlatformCloud_SilverNetworkPackage	
Description	This provisions a network with 10GB of Network Bytes Sent and 10GB of Network Bytes Received included per month.	
Bundle Details		
Resource Type	Networking	
Allow Subscriptions	At any level; no limits on number of subscriptions	
Charge Frequency	Monthly	
Eligible for Trial	√	
Enable Notification	√	
Provisioning Constraints		
None		
Bundle Charges		
Charges	EUR (€)	US ($)
One-time	0.0000	0.0000
Recurring	0.9000	1.1000
Entitlements		
Network Bytes Sent	10 GB	
Network Bytes Received	10 GB	
Gold Network Package		
Bundle Description		
Name	Gold Network Package	
Code	CloudPlatformCloud_GoldNetworkPackage	
Description	This provisions a network with 20GB of Network Bytes Sent and 20GB of Network Bytes Received included per month.	

Bundle Details		
Resource Type	Networking	
Allow Subscriptions	At any level; no limits on number of subscriptions	
Charge Frequency	Monthly	
Eligible for Trial	√	
Enable Notification	√	
Provisioning Constraints		
None		
Bundle Charges		
Charges	EUR (€)	US ($)
One-time	0.0000	0.0000
Recurring	1.7000	2.2000
Entitlements		
Network Bytes Sent	20 GB	
Network Bytes Received	20 GB	
Standard Support		
Bundle Description		
Name	Standard Support	
Code	CloudPlatformCloud_StandardSupport	
Description	This is a Standard Support monthly package.	
Bundle Details		
Resource Type	Service Bundle	
Allow Subscriptions	Only at the account level; limited to 1 subscription per account	
Charge Frequency	Monthly	
Eligible for Trial	√	
Enable Notification	√	
Provisioning Constraints		
None		
Bundle Charges		
Charges	EUR (€)	US ($)
One-time	0.0000	0.0000
Recurring	80.0000	100.0000
Entitlements		
None		