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• Please contact your account manager to enable Federation on your OnApp Cloud.
• The information in this guide covers the functionality for the latest OnApp release. If some features described at this guide are missing at your Control Panel, most probably, you are running an earlier version of OnApp.

Here is the sorted list of the documentation currently available for Federation.
1 Sellers

- Seller Rules
- Selling Walk-through
- Configure Cloud
- Add Zones to Federation
- Seller Pricing Tiers for Compute Zones
- Edit Federated Zone
- Manage Notifications for a Zone
- Make Federated Zone Private
- Disable And Remove Zone From Federation
2 Buyers

- Market Pricing
- Buying Walk-through
- Subscribe to Federated Zone
- Request Location
- Manage User VSs
- Trust Tokens and Private Federated Zone
- Notifications
- Unsubscribe from Federated Zone
- Virtual Service Providers
3 Users

- Create VS in Federated Zone
- Deploying Servers Walk-through
4 Other

- How It Works
- How Support Works
- General FAQ
- Seller FAQ
- Buyer FAQ
5 API

- Sellers API
- Buyers API
6 What's New

The information in this guide covers the functionality for the latest OnApp release. If some features described in this guide are missing on your Control Panel, most probably, you are running an earlier version of OnApp.

6.1 OnApp 6.3

Updated Marketplace Terms and Conditions for Buyers and Sellers.

6.2 OnApp 6.0

Implemented the default acceleration for federation virtual servers.

6.3 OnApp 5.9

- Added possibility for buyers to assign recipes to multiple virtual servers in Federation.
- Added possibility to purge content for accelerated virtual servers in Federation.

6.4 OnApp 5.7

Adapted Federation billing plans to the buckets functionality to enable managing resource allocation and prices of a federated VS through the Access Control and Rate Card.

6.5 OnApp 5.6

Improved federated template behavior. Now if a seller deletes a template on which at least one VS is running from a group, the template will not be removed from buyer’s federated template group.

6.6 OnApp 5.5

- Added ability to add backup server zone and pricing for backups during Adding zone to Federation
- Added ability to view seller’s transaction ID in buyer’s logs
- Added ability to enable acceleration for federated VS
- Added ability to create vCenter VSS in Federation
6.7 OnApp 5.4

- Added ability to configure recipes and custom recipe variables for VSs created in Federation.
- Added resources ratios for VSs built on public federated zones.
- Added ability to install SSH Keys for federated virtual servers.
- Improved Cloud Motion functionality.
- Fixed several bugs.

6.8 OnApp 5.3

- Implemented certificates for zones added to Federation. Certificates are selected during the publishing process and are visible to buyers in the Marketplace. If you want to add certificates to a zone published prior to OnApp 5.3, you need to contact our support team.
- Added notifications on template group changes.
- Fixed the issue when template pricing was showing incorrectly to end customer in certain situations.
- Fixed several bugs.

6.9 OnApp 5.2

- Implemented Cloud motion functionality, which allows buyers and users to move virtual servers between locations.
- Improved Cloud Score design and updated calculation of scores for federated zones.
- Fixed several bugs.

6.10 OnApp 5.1

- Improved network port speed limiting: during VS creation you can not set bigger network port speed, than indicated by seller during adding zone to federation.
- Fixed several bugs.

6.11 OnApp 5.0

**September, 2016**

- Implemented tier pricing for federated zones. Tier pricing applies only to public zones. A Seller selects the required tier when adding a zone to Federation. The Marketplace screen for Buyers has also undergone changes. They can now filter the zone's list according to the pricing tier, the cloud score or additional options available in the zone.
- Report a Problem button moved to Tools
- Fixed several bugs.
6.12 OnApp 4.3

May, 2016

- Fixed several bugs.

6.13 OnApp 4.2

February, 2016

- Added possibility to view the list of federated zones you are subscribed to and to unsubscribe from federated zone if needed
- Added notification alerts when you remove zone from Federation
- Added possibility reset root password, change owner and manage auto-backups for federated VSs
- Added possibility to integrate WHMCS for OnApp VSP
- Implemented management of VS failed actions notifications
- Added uptime graph
- Added locations for federated zones

6.14 OnApp 4.1

August, 2015

- Added possibility to make federated zone private.
- Implemented the possibility to manage notifications for a zone.
- Added possibility to edit billing plan for federated zone.
- Added possibility to measure performance benchmarks regarding CPU, bandwidth and disk operations for federated zones.
- Added Manage Trust Tokens section.
- Changes to terminology and the user interface. The following terminology changes have been made in the 4.1 version of the OnApp Cloud: hypervisors have been renamed as compute resources and hypervisor zones - as compute zones. Compute resources is a collective name for hypervisors, vCloud hypervisors and other hypervisor types.

6.15 OnApp 4.0

9th June, 2015

- Added possibility to generate trust tokens. Only the buyers who have a trust token from the seller can access the zone.
  - Implemented possibility to add disks to a federated virtual server.
  - Added possibility to delete disks on a federated virtual server.
  - Added possibility to rebuild a federated virtual server with a new template.
  - Added the FAQ chapter.
6.16 OnApp 3.5

19th February, 2015

- Added possibility to edit virtual server disks. You can only resize disks. Add/change/delete options are not available. The resize will fail if your current usage is greater than the new size you request. Note, that any changes on disk size will lead to reboot of your VS.
- Added Report a Problem with VS chapter. There is a possibility for Sellers and Buyers to report a problem VS directly into OnApp support portal with a click of a button.

6.17 OnApp 3.4

December, 2014

- Added Firewall rules management option.
- Implemented resource synchronization between Seller and Buyer.
- Added Display accurate Zone resources option.
- Added Suspend a Published Zone option.
- Added Display of Wholesale Pricing for Buyer option.
- Added Index to show the overall rating of the zones available for subscription.
- Added a warning message on virtual server creation page, clarifying that the resources available are spread across multiple hypervisors.
- Once the buyer has unsubscribed, the templates associated with that federated zone are removed from the buyer's template list.
- Error messages became more informative and indicate the reason of the failure.
- Fixed the performance of virtual server's console via API.
- Ensured basic virtual server's operations when Hypervisor Zone is closed on the Seller's side.
- Fixed the statistics calculation for buyer's virtual servers.

6.18 OnApp 3.3.1

October, 2014

- Added possibility to edit VSs in Federation like normal OnApp VSs: now it is possible to resize VS RAM, CPU, CPU priority.
- Added the option to filter activity logs. The OnApp Dashboard lists all the transactions/logs related to Federation. Use the Hide Successful Market Notifications button in the Activity Log to remove successful items from the list. Click the button again to show the full list.
- Seller's versioning. The buyer has the functionality appropriate for the version of the OnApp cloud which seller is running. When a buyer is running more recent version of the cloud, the functionality will still be pertinent to the seller's CP version.
- Implemented templates synchronization:
  a. When a seller adds a template to a template group published to Federation, the template appears in buyer's CP in respective template group.
  b. When a seller removes a template from a template group published to Federation, the template is also removed from the buyer's CP in respective template group.
c. The seller cannot delete a template on which VSs are already built.
d. The buyer cannot make any changes to the templates in the template group provided by seller. To set their own price, the buyer should copy the templates to their own (local) template groups.

- Fixed the problem with the way the Dashboard licensing fetches the number of HV cores for Federation reseller.
- Fixed the issue when seller had access to a VS through web console if buyer opened and logged into console.
- Fixed the problem when IP addresses are duplicated in virtual network after buyer has removed VSs from subscribed Hypervisor zone.
- Implemented network port speed limitation on the Market.
- Fixed pagination for the Settings > Federated Resources > Unsubscribed hypervisor zones screen.
- Market logs are now shown at CP.
- Fixed the problem when seller could reset password for buyer’s VSs.
- Blocked the possibility to remove a subscribed template store for buyer.
7 Document Revisions

June, 2020
- Added Marketplace Terms and Conditions section
- Removed Seller Rules and SLA&MLA sections

October, 2019
- Updated Manage Template Groups in Template Store section
- Updated Create VS in Federated Zone section
- Updated Manage User VSs section

April, 2019
- Updated Licensing section
- Updated Selling Walk-through section
- Updated Configure Cloud section
- Updated Edit Federated Zone section
- Updated Make Federated Zone Private section
- Updated Manage Notifications for a Zone section
- Updated Disable and Remove Zone from Federation section
- Updated Buying Walk-through section
- Updated Subscribe to Federated Zone section
- Updated Trust Tokens and Private Federated Zone section
- Updated Manage User VSs section
- Updated Request Location section
- Updated Notifications section
- Updated Suspend/Unsuspend Federated Zone section
- Updated Unsubscribe from Federated Zone section
- Updated Manage Template Groups in Template Store section
- Updated Create VS in Federated Zone section
- Updated Move VS to Another Location section

October, 2018
- Updated Manage Notifications for a Zone section
- Updated Notifications section

February, 2018
- Updated Edit Federated Zone section
- Updated Create VS in Federated Zone section

November, 2017
- Updated Manage Template Groups in Template Store section
- Updated Add Zones to Federation section

August, 2017
- Updated Create VS in Federated Zone section
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- Updated Buying Walk-through section
- Updated Create VS in Federated Zone section
- Updated Manage User VSS section

May, 2017
- Updated Create VS in Federated Zone section
- Updated Deploying Server Walk-through section
- Updated Move VS to Another Location section
- Updated Add Zones to Federation, Configure Cloud and Limitations/Prerequisites sections

January, 2017
- Updated Add Zones to Federation section
- Updated Selling Walk-through section
- Updated Subscribe to Federated Zone section
- Updated Create VS in Federated Zone section
- Updated Manage Template Groups in Template Store section

December, 2016
- Added Move VS to Another Location section
- Added How Cloud Motion Works section
- Updated Buying Walk-through section
- Updated Unsubscribe from Federated Zone section
- Updated Subscribe to Federated Zone section
- Updated Configure Cloud section
- Updated Selling Walk-through section
- Updated Edit Federated Zone section
- Updated Add Zones to Federation section
- Updated Get List of Federated Resources section
- Updated Get Federated Resource Details section
- Updated Deploying Servers Walk-through section
- Updated Create VS in Federated Zone section
- Updated Manage User VSS section

October, 2016
- Updated Manage User VSS, Create VS in Federated Zone sections

September, 2016
- Updated Manage User VSSs, How Federation Support Works, VSP Configuration sections
- Updated Add Zones To Federation section
- Updated Edit Federated Zone section
- Updated Make Federated Zone Private section
- Updated Add Public Zone to Federation section
- Updated Selling Walk-through section
• Updated **Buying Walk-through** section
• Updated **Subscribe to Federated Zone** section
• Updated **Get Federated Resource Details** section
• Updated **Get List of Federated Resources** section
• Updated **Unsubscribe from Federated Zone** section

February, 2016

• Added **WHMCS Integration for VSP** section
• Added **Get Zone Uptime Graph** section
• Updated **Disable And Remove Zone From Federation** section
• Updated **Create VS in Federated Zone** section
• Updated **Subscribe to Federated Zone** section
• Updated **Unsubscribe from Federated Zone** section
• Updated **Manage User VSs** section
• Updated **Selling Walk-through** section

August, 2015

• Added **Make Federated Zone Private** section
• Added **Manage Notifications for a Zone** section
• Added **Notifications** section
• Added **Cloud Score** section
• Added **Manage Trust Tokens** section
• Updated **Buying** section
• Updated **Deploying Servers** section
• Updated **Subscribe to Federated Zone** section
• Updated **Create VS in Federated Zone** section
• Updated **Supported Functionality** section

June 9th, 2015

• Added **Supported Functionality** section
• Added **Add Trust Token - Seller** section
• Added **Get List of Trust Tokens - Seller** section
• Added **Remove Trust Token** section
• Added **Add Trust Token - Buyer** section
• Added **Get List of trust Tokens - Buyer** section
• Added **Generate Trust Tokens** section
• Updated **Subscribe to Federated Zone** section
• Updated **Add Zones to Federation** section
• Updated **Permissions** section
• Updated **Add Zone to Federation** section
June 04th, 2015
• Added the General FAQ, Seller FAQ, Buyer FAQ sections

April 20th, 2015
• Added Add VS in Federation section with the example of API calls.

January 9th, 2015
• Added Edit Virtual Server Disks option: added possibility to resize Virtual Server Disk.
• Added Report a Problem with VS section: added possibility to report a problem with VS.

September 10th, 2014
• Added the info that federated VS can be edited now like normal VSs to Manage User VSs section: added possibility to resize RAM, CPU, CPU priority.
• Updated the Add Zones to Federation section with the info on how to hide successful notifications and template group synchronization.

March 31st, 2014
• Removed the backups from the Limitations/Prerequisites section as the backups are now supported for the VS created in Federation.
• Removed View VSs in Federation section as this possibility is no longer supported.
• Added info on incremental backups which should be enabled to Subscribe to Federated Zone and Add Zones to Federation.
• Updated View VSs in Federation section

December 20th, 2013
• Initial version
8 Supported Functionality

The following table illustrates the functions that are available or unavailable in Federation for sellers and buyers. Generally, the end-users have the same functionality range as buyers limited by the permissions set.

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Seller</th>
<th>Buyer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version 5.5 and up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purge Content for Accelerated VS</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Assign Recipe to Multiple Servers</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Add vCenter Compute Zone to Federation</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>Create vCenter VS</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Manage vCenter VSs in Federation</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Unavailable Functionality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segregate VS / Autoscale VS / Suspend VS</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Set VS VIP status</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Set SSH keys</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Configure VS network interface</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Edit VS network speed</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Convert VS Backup to template</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VS CPU Utilization</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
### 9 How It Works

OnApp Federation is a central trading system that connects sellers, buyers, and users to create the largest federated compute cloud in the world and gives each OnApp Hosting Partner a global reach and almost unlimited capacity. Fully integrated with the OnApp Control Panel, any accredited seller can sell resources through the marketplace, and any OnApp hosting partner can access the global market of supply.

- **OnApp sellers** can submit under-utilized compute zones to the marketplace, specifying the 'buy price' they wish to charge.
- **OnApp buyers** can subscribe to remote compute zones and publish them through their Control Panel as if they were a local zone.
- **Users** (customers of a buyer) can deploy virtual servers in the zones (local and remote) provided by buyers.

The following visuals show the model of how Federation works for sellers and buyers.

**Proceed to Selling Walk-through/Buying Walk-through/Deploying Servers Walk-through chapters for the step-by-step instructions on how to configure Federation.**
9.1 How Cloud Motion Works

Cloud Motion allows buyers and users to move virtual servers between locations. This requires them to be subscribed to two federated zones which have CloudBoot Integrated storage. When buyers or users move their virtual server, a target server is built from the same template as the source VS and with the same configuration, but at the selected location. Then, the disk of the source VS is replicated to the target VS. After the replication process is complete, the source VS is deleted from the source cloud.

The Cloud Motion functionality relates to all participants of the Federation:

- **Sellers** supply zones with CloudBoot Integrated storage to the Federation. When publishing such zones to, sellers mark them as supporting Cloud Motion. If a seller has published a zone with CloudBoot Integrated storage prior to OnApp 5.2, it will be automatically marked as suitable for Cloud Motion functionality.

- **Buyers** subscribe to at least two federated zones with CloudBoot Integrated storage. Such zones have Cloud Motion listed among their features. Buyers also can move their VSs between Cloud Motion compatible zones to which they have subscribed.

- **Users** create virtual servers at Cloud Motion compatible locations by selecting the Cloud Motion option at the first step of the VS creation wizard. Later from the Tools menu of the VS, they can move their server to another location. Cloud Motion statuses are displayed in the Control Panel and after the process is complete users can manage their VS on the new location.

9.2 How Federation Support Works

Within the OnApp Compute Federation, members (Buyers and Sellers) have a relationship with OnApp, not directly with each other. For Support situations tickets are handled by OnApp initially then, as required, are sent to the Seller.

OnApp Buyers must open a support ticket using the **Report a Problem** button (VS label > Tools > Report a Problem) to start the Support process.

This is an overview of how the Support flow works within the Compute Federation (click to enlarge):
Federation Support

Buyer

OnApp

Seller

Buyer Contacts OnApp

Initial Response from OnApp to Buyer 15-60 mins

OnApp fixes issue

OnApp reports fix to Buyer - ticket closed

Or

OnApp contacts Buyer “We’re looking into this”

Initial Response from OnApp to Buyer 15-60 mins

OnApp contacts Seller for support

Seller Responds to OnApp

Initial Response from Seller to OnApp 15-60 mins

Seller investigates

Seller Notifies OnApp - Inquiry

OnApp notifies Buyer (use ticket instructions)

Seller Fixes issue

Seller Reports fix to OnApp

OnApp reports fix to Buyer - ticket closed
Figure 1 report.PNG
## 10 Limitations/Prerequisites

The following limitations and prerequisites exist for OnApp Federation:

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Limitations and prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>OnApp customers will need to run version 3.5 of the OnApp Control Panel. OnApp v6.0 is recommended. Sellers running on versions prior to OnApp 5.0 can no longer publish new zones to Federation.</td>
</tr>
<tr>
<td>Backups</td>
<td>OnApp supports both normal and incremental backups. Incremental backups occupy less disk space. Backup type, available for buyers, depends on settings made by sellers.</td>
</tr>
<tr>
<td>CDN</td>
<td>Access CDN Marketplace for consuming bandwidth globally.</td>
</tr>
<tr>
<td>Control Panel</td>
<td>Please, be advised, it is required that both buyer and seller have the latest version of OnApp Control Panel for the latest features to be available.</td>
</tr>
<tr>
<td>Currency</td>
<td>USD is the currency of the Federation. As OnApp Federation is a global market place, this keeps pricing simple across geographies.</td>
</tr>
<tr>
<td>Compute resources</td>
<td>Currently, Xen, KVM, and vCenter compute resources are available.</td>
</tr>
<tr>
<td>IP addresses</td>
<td>Sellers should not use private IP addresses in the networks associated with published Compute Zone.</td>
</tr>
<tr>
<td>Overcommit</td>
<td>In the first release, there is no protection against CPU overcommit (running multiple VSs per CPU core).</td>
</tr>
<tr>
<td>Payment method</td>
<td>Buyers must be using Credit Card as their payment method to OnApp to enter the Federation. If you need to place a Credit Card on your account, please contact us.</td>
</tr>
<tr>
<td>Pricing</td>
<td>Sellers can set prices according to the selected Tier. See Seller Pricing Tiers for Compute Zones.</td>
</tr>
<tr>
<td>SSL Certificates</td>
<td>A valid SSL certificate signed by a trusted authority is an absolute requirement for a Seller. Please monitor your SSL certificates expiration. Otherwise, your Control Panel will be inaccessible.</td>
</tr>
<tr>
<td>SLA</td>
<td>All Sellers must agree and adhere to the Seller SLA and the Marketplace T&amp;C, including Seller notification requirements.</td>
</tr>
<tr>
<td>Templates</td>
<td>Currently, Windows and Linux templates are available. You can add/remove templates to the published Compute Zone by adding or removing templates from the associated template group.</td>
</tr>
<tr>
<td>Windows VSs</td>
<td>Windows virtual machines are supported with MAK licensing only. A buyer might not have any licenses but seller MUST have at least one free.</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>Sellers must give a minimum of 28 days notice before removing a zone from the market and terminating end-user workloads. See here for details.</td>
</tr>
<tr>
<td>VMware</td>
<td>VMware zones (seller side) are not supported currently.</td>
</tr>
<tr>
<td>Virtual servers</td>
<td>See the Supported Functionality section to learn what Virtual Server functionality is available</td>
</tr>
<tr>
<td>Cloud Motion</td>
<td>Only zones with CloudBoot Integrated Storage are compatible with Cloud Motion functionality. Additionally, OnApp currently supports moving virtual servers with one IP address and one disk (not including the swap disk).</td>
</tr>
</tbody>
</table>
11 Permissions

11.1 Federation

OnApp Administrators can control users' ability to create different tiers of service with Federation. Depending on the permissions set, users can act as sellers or buyers.

- Any actions on federation resources - the user can perform all actions on federated zones
- Add compute zone to federation - the user can provide resources to Federation. If this permission is enabled, it also lets users manage trust tokens and publish private and public zones to Federation.
- View unsubscribed federation resources - the user can view all compute zones that are available on Federation
- Remove compute zone from federation - the user can remove a compute zone from Federation
- Activate or deactivate compute zone for federation - the user can deactivate a compute zone from Federation so that customers could not create any more VSs on that zone; the zone can be activated at any time later
- Unsubscribe from the compute zone - the user can unsubscribe from federated zone
- Subscribe to the compute zone - the user can subscribe to a federated zone so that to create VSs in this zone
- Report a federation problem on any virtual server - buyer can report a problem on any VS. We strongly recommend not to enable this permission for your end customers, who you have provided a Federated VS to.
- Report a federation problem on user's own virtual server - buyer can report a problem on their own VS. We strongly recommend not to enable this permission for your end customers, who you have provided a Federated VS to.
- Move any virtual server to another federated location - the user can change any virtual server's federated location
- Move own virtual server to another federated location - the user can change their own virtual server's federated location

11.2 Federation Failed Action

OnApp administrators can control users' ability to manage federated VSs failed actions through the Control Panel's Roles menu. You can set the following federated VSs failed actions permissions for user roles:

- Any actions on federation failed actions - the user can perform any action on failed actions
- Clean all federation failed actions - the user can clean all failed actions
- Clean own federation failed actions - the user can clean only those failed actions that refer to the VSs they have built
- Read all federation failed actions - the user can view all failed actions
- Read own federation failed actions - the user can view only those failed actions that refer to the VSs they have built
12 Marketplace T&C

All users of OnApp Federation accept Marketplace Terms and Conditions (MTCs). MTCs include Buyers' and Sellers' rules that state the desired way of using the service.

12.1 Sellers' Rules

As a Seller on Marketplace, you accept Sellers' Rules. We rate the capacity you provide on Marketplace using the scoring mechanism. Your scoring results are compared with the results of other sellers and then we assign your cloud a rating. The higher your rating, the closer to the top of the providers' list your cloud appears on Marketplace.

<table>
<thead>
<tr>
<th>Tier</th>
<th>Country</th>
<th>City</th>
<th>Cloud Score</th>
<th>Features</th>
<th>Provider</th>
<th>Seller Page</th>
<th>Certificates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>United Kingdom</td>
<td>London</td>
<td></td>
<td>HA, SSD, Windows License, IPv6, DNS, Cloud Motion</td>
<td>Seller 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>United States</td>
<td>Phoenix</td>
<td></td>
<td>HA, Windows License</td>
<td>Seller 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>United States</td>
<td>Santa Clara</td>
<td></td>
<td>HA, SSD, Windows License, DDOS protection, IPv6, DNS, Cloud Motion</td>
<td>Seller 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For us to be able to score your capacity, you should run an OnApp version that is under current support. If you want to upgrade your cloud, see Upgrade Guides. If you need our help with the upgrade, get in touch with your Account Manager.

12.2 Buyers' Rules

As a Buyer on Marketplace, you accept Buyers' Rules. You are responsible for maintaining a copy of your and your users' content and accept the OnApp payment rules applicable to the pricing tier you selected.
13 Licensing

Federation is enabled upon request. Please contact your Account Manager to register interest. After the Federation has been enabled, the details of your license will be displayed in OnApp Cloud.

13.1 View License Details

To view the license details:
1. Log in to your OnApp Cloud
2. Go to Admin > Settings > License.
3. On the page that appears, you will see the status of your Federation setup for Seller and Buyer roles.
14 Market Pricing

Market pricing is available in Tiers. Dev, Pro, or Enterprise workload needs can be met across a range of global cloud locations with specific pricing and performance options.

Dev tier: for non-critical workloads

The Dev tier is designed for non critical/development hosting. Virtual Servers can be locally hosted or provided with failover enabled. The zone might have backups available.

Pro Tier: for production environments

This tier is designed for production ready customer applications and data. This tier always offers failover for the Virtual Servers you buy. Storage performance can range, but we suggest SSD from our providers. You’ll be able to take backups of your Virtual Servers.

Enterprise Tier: for enterprise workloads/mission-critical data*

For high end use cases, Enterprise buyers need all of what the Pro tier can offer plus the highest performance storage solution and the confidence that they can host critical data perfectly.

*Enterprise tier launch: TBC

On this page:

Hourly Pricing

How to learn about pricing details

14.1 For public zones, the Federation SLA provides a 100% Network & Compute Resource Uptime.

14.2 Hourly Pricing

<table>
<thead>
<tr>
<th>Resource</th>
<th>Dev Tier</th>
<th>Pro Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU/Cores</td>
<td>$0.0000001</td>
<td>$0.0001</td>
</tr>
<tr>
<td>RAM/Memory</td>
<td>$0.000008</td>
<td>$0.00001</td>
</tr>
<tr>
<td>Storage/Disk</td>
<td>$0.000005</td>
<td>$0.0005</td>
</tr>
<tr>
<td>IP Address</td>
<td>$0.00001</td>
<td>$0.001</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>$0.01/GB</td>
<td>$0.02/GB</td>
</tr>
</tbody>
</table>

14.3 Pricing Details

Federation price calculator is available at Control Panel > Compute Federation > Marketplace. You can use it to learn hourly and monthly prices by moving the
sliders to set the amount of CPU (cores), RAM (MB), disk size (GB), and number of IP address you require as depicted below.

Find out where you can buy from at OnApp Federation.
A Virtual Service Provider sells Cloud resources where all of the infrastructure is sourced from the OnApp Federation.

For the overview of how to Buy Federation resources as a VSP, refer to the Buying and Buyers guides.

The Virtual Service Provider (VSP) edition of OnApp has the tools you need to build and manage your virtual cloud service, and comes with a ready-to-run control panel to make it as easy as possible to go to market.

A VSP is a Buyer only license with OnApp.

- OnApp buyers can subscribe to remote compute zones and publish them through their Control Panel as if they were a local zone.
- Users (customers of a buyer) can deploy virtual servers in the zones (local and remote) provided by buyers.

OnApp Federation is a global network of OnApp clouds

- Each cloud connects to a central infrastructure marketplace
- So you can sell cloud infrastructure to other providers
- And buy remote infrastructure, to make it available to your clients
15.2 How It Helps You

Now you have the world’s biggest cloud:
- Add / remove locations on demand
- No need to build DCs, install colo, lease hardware or form new partnerships
- Instant scale & reach, no capex

Host clients where they need it
- To deploy close to users, enter new markets, comply with data legislation
- Or just more price/performance options

For the overview of how to Buy Federation resources as a VSP, refer to the Buying and Buyers guides.

For the information about market prices, refer to the Market Pricing section of this guide.

If you have any questions about our VSP programme, please contact us

15.3 VSP Configuration

Please ensure you read this page carefully after being sent your log-in details.

15.3.1 It is recommended to take the following three steps ASAP to configure your VSP Cloud:

On this page:

- Navigation
- Entering Federation as VSP
- Federation access
- Support
• **Updates**

1. Whitelist your IP

When you log in, you need to Whitelist your IP. You will see a pop up as you log in. Please ensure you click the **Add Current IP** button.

2. Update your System Host and Email Alert recipient

Update your System host and from **onapp.com** to an appropriate one. Also change the alerts email address from **support@onapp.com** to another one. You can do this in **Settings > Configuration**:

3. Check that there is an OnApp Support user set up

When needed, we can access your OnApp Web UI to troubleshoot, replicate and resolve any issues you may report in a support ticket.

We will set up an OnApp Support user for you. If you don’t mind, please don’t remove this.

**15.3.2 Navigation**

For more information about navigation around the VSP UI refer to the **Administration Guide**.
15.3.3 Entering Federation as VSP
A Virtual Service Provider sells Cloud resources where all of the infrastructure is sourced from the OnApp Federation. For more details refer to the VSP section of this guide.

15.3.4 Federation access
To access the Federation:
1. Go to your Control Panel's Settings menu.
2. Click the Federation icon. You will see available Federation Zones.

General Support is available by phone and our helpdesk, with a 15 minute SLA (emergency tickets).

Helpdesk: help.onapp.com
Telephone: +44 (0)20 3318-5364 / +1 (888) 876-8666

Don’t forget your support token, please visit OnApp Support Portal for more information.

15.3.6 Updates
To update to the latest version of OnApp please submit an update request via Support.

15.4 VSP Supported Functionality
The following table illustrates the functions that are available or unavailable for Virtual Service Providers. End-users have the same functionality range but can be limited by the permissions set available within the Role you have given the end user.
<table>
<thead>
<tr>
<th>Functionality</th>
<th>VSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Virtual Server IP Addresses</td>
<td>✓</td>
</tr>
<tr>
<td>View Notifications</td>
<td>✓</td>
</tr>
<tr>
<td>Edit Notifications</td>
<td>✓</td>
</tr>
<tr>
<td>Notify Users about Notifications from the Sellers</td>
<td>✓</td>
</tr>
<tr>
<td>Edit Trust Token (To access Private Federation zones)</td>
<td>✓</td>
</tr>
<tr>
<td>Delete Trust Token (To access Private Federation zones)</td>
<td>✓</td>
</tr>
<tr>
<td>Create Virtual Server Disks</td>
<td>✓</td>
</tr>
<tr>
<td>Delete Virtual Server Disks</td>
<td>✓</td>
</tr>
<tr>
<td>Reboot Virtual Server in Recovery</td>
<td>✓</td>
</tr>
<tr>
<td>Rebuild Virtual Server Manually</td>
<td>✓</td>
</tr>
<tr>
<td>Add IP Addresses</td>
<td>✓</td>
</tr>
<tr>
<td>Report a Problem with Virtual Server (Access Support)</td>
<td>✓</td>
</tr>
<tr>
<td>Edit Virtual Server Disks</td>
<td>✓</td>
</tr>
<tr>
<td>Hourly Virtual Server Billing Statistics (Overall Compute usage)</td>
<td>✓</td>
</tr>
<tr>
<td>Hourly Virtual Server Network Interface Statistics (Bandwidth)</td>
<td>✓</td>
</tr>
<tr>
<td>Hourly Virtual Server Disk IOPS Statistics (Storage)</td>
<td>✓</td>
</tr>
<tr>
<td>Set Virtual Server Firewall Rules</td>
<td>✓</td>
</tr>
<tr>
<td>Virtual Server Integrated Console</td>
<td>✓</td>
</tr>
<tr>
<td>View Virtual Server Backups</td>
<td>✓</td>
</tr>
<tr>
<td>Delete Virtual Server Backup</td>
<td>✓</td>
</tr>
<tr>
<td>Restore Virtual Server Backup</td>
<td>✓</td>
</tr>
<tr>
<td>Edit Virtual Server Backup Note</td>
<td>✓</td>
</tr>
<tr>
<td>Edit Virtual Server</td>
<td>✓</td>
</tr>
<tr>
<td>Delete Virtual Server</td>
<td>✓</td>
</tr>
<tr>
<td>Reboot Virtual Server</td>
<td>✓</td>
</tr>
<tr>
<td>Edit Virtual Server Administrator's Note</td>
<td>✓</td>
</tr>
<tr>
<td>Display Network Speed for Network Interfaces</td>
<td>✓</td>
</tr>
<tr>
<td>Rebuild Virtual Server Network</td>
<td>✓</td>
</tr>
<tr>
<td>Startup Virtual Server</td>
<td>✓</td>
</tr>
<tr>
<td>Startup Virtual Server on Recovery</td>
<td>✓</td>
</tr>
</tbody>
</table>
15.5 WHMCS Integration for OnApp VSP

This section is designed to show you how to connect your OnApp VSP Account to the WHMCS User module. This page also shows you how a user orders a product, logs into OnApp and sees their usage.

15.5.1 OnApp Users Module for WHMCS

To begin with, you need to ensure you download the correct module. The OnApp Users module for WHMCS allows you to create, suspend and activate users directly from WHMCS. Clients then log directly into OnApp to build and manage their VSs with WHMCS handling billing.

You can download the WHMCS OnApp Users module from GitHub.

For information on the WHMCS OnApp Users module, refer to the OnApp WHMCS Users Module Guide.

On this page:

- OnApp Users Module for WHMCS
- Installation
- Configuring Integration
- How End User Signs Up via WHMCS
- How End User Logs into OnApp
- How Usage is Reported in WHMCS

See also:

- Virtual Service Providers
- VSP Configuration

15.5.2 Installation

For information on installing the OnApp Users module for WHMCS, refer to the installation instructions.
15.5.3 Configuring Integration

Before you can create a product, you need to add an OnApp server to WHMCS.
You can also place your servers into a particular server group. This step is optional. For more information, refer to Creating a Server Group.

15.5.3.1 Add Server

To add a server:
1. Go to Setup > Products/Services > Servers
2. Click Add Server.
3. Give a name to your server.
4. Add your VSP UI IP.
5. Proceed to Server Details.
6. Choose Onappusers as the Type.
7. Add your Username and Password to your OnApp VSP UI.
8. Click Save Changes.
9. Look for the notice 'Server Added Successfully!'

When you create a product based on the OnApp users module, you connect WHMCS to the OnApp server, and specify the properties and settings of the user which will be created in OnApp once the product has been ordered and activated. Each product must be assigned to a group which can either be visible or hidden from the order page (products may also be hidden individually).

Now proceed to creating a group.

15.5.3.2 Create Group

To create a group:
1. Go to Setup > Product/Services > Product/Services in your WHMCS Control Panel.
2. Click the Create a New Group link.
3. Fill in the form that appears.
4. Click Create Group button.

Next you will need to create a new product and assign it to the already created product group.
15.5.3.3 Create Product

To create a product:

1. Go to Setup > Product/Services > Product/Services in your WHMCS Control Panel.
2. Click the Create a New Product link and fill in the form that appears.
3. Choose the type of product. We recommend to use Other type.

The Reseller Account product type is not applicable for OnApp module.

4. Go to Module Settings.
5. Add the module called Onappusers.
6. Add a Server Group. You can select when a product is set up, there are 4 options:
   o Automatically setup the product as soon as an order is placed
   o Automatically setup the product as soon as the first payment is received
   o Automatically setup the product when you manually accept a pending order
   o Do not automatically setup this product

After you select an option, the system will require some time to save your setting.

7. Add a Billing plan.
8. Set a Role.
9. Feel free to set Time Zones/Locales.

15.5.3.4 Find Shopping Cart Links

After you create a product, you can retrieve links you can use for your sales webpage:

1. Once you have created a product, click Back to Product List. You will see a list of products you’ve created.
2. Click the Edit icon.
3. Click the Links tab, here you will see links you can use for your sales webpage.

15.5.4 How End User Signs Up via WHMCS

From the Shopping Cart page, your user selects the Product and starts the Order Now process:
- They click **Order Now** which takes them to the **Choose a Domain** section.
- Once they have entered a domain they are taken to a **Review & Checkout** page.
- Here they can go to the Checkout, Apply a Promo Code or Empty Cart.
- Next they will be asked to add payment details.
- Once **Complete Order** is clicked they will be shown their **Order Confirmation**.

Next they can elect to **Continue To Client Area** where they will see an overview of their purchases.

### 15.5.5 How End User Logs into OnApp

From the Customer Portal within WHMCS the user can directly access OnApp:

- The user starts by clicking **Services**.
- The user then selects the relevant **Product/Service**.
- Next they scroll down to the **Open Control Panel** button. OnApp will open in their window.
- Next they will see the UI for the first time, this offers a Quick Tutorial.

Now your User can begin provisioning Virtual Servers through the Build Wizard.

### 15.5.6 How Usage is Reported in WHMCS

From the Customer Portal within WHMCS the user can see their Usage:

- The User starts by clicking **Services**.
- The User then needs to select the relevant **Product/Service**.
- Next they scroll down to the Outstanding Details section.
- Users can select a date range, click **Apply** and their spend will appear.
16 Sellers

Sellers are OnApp customers who publish compute zones to the OnApp Federation, along with associated storage and network. The Seller selects from pricing tiers for their zone and competes with other Sellers on geography, service level and performance. Sellers can publish public and private zones to Federation:

- When publishing public zones to Federation, sellers select a pricing tier which determines the prices for the zone's resource. Public zones are visible to all buyers in the Federation. If required public zones can be switched to private.
- When publishing private zones to Federation, sellers can set their own prices for the zone's resources. These zones are visible only to a limited number of buyers who have received a trust token from the seller. Private zones cannot be switched to public.

Selling through Federation is an easy, out-of-the-box process, fully supported by the OnApp software, with no additional technical integration.

To become a Seller, contact your account manager. Sellers can of course also be Buyers.

Here is the sorted list of the documentation currently available for Sellers.

16.1 Configuration

Configure Cloud
Selling Walk-through

16.2 Federated Zone Management

Marketplace T&C
Seller Pricing Tiers for Compute Zones
Add Zones to Federation
Edit Federated Zone
Make Federated Zone Private
Manage Notifications for a Zone
Disable And Remove Zone From Federation

16.3 API

Sellers API

16.4 Selling Walk-through

This document applies to sellers. Otherwise, refer to the Buyers or Users sections of this guide.
This is the quick step-by-step demonstration of the actions required to set up the Federation and start selling zones. Sellers publish un-used or lightly-used compute zones to the Federation in OnApp Control Panel. Each zone has CPU/Memory/Disk/Network/Templates costs and capacities configured.

16.4.1 Step 1. View compute zones

Go to Admin > Settings > Compute zones. The page that loads shows the list of all compute zones in your cloud.

16.4.2 Step 2. Select zone

Select the zone you want to add to the Federation. To publish a zone, just click the Actions button and choose Add to Federation.

On this page:

- **Step 1. View compute zones**
- **Step 2. Select zone**
- **Step 3. Set compute zone properties**
- **Step 4. Select pricing tier**
- **Step 5. Select certificates**
- **Step 6. Specify limits for compute zone resources**
- **Step 7. Review prices for compute zone resources**
- **Step 8. Confirm settings**
- **Step 9. View federated zone details**

See also:

- Add Zones To Federation
- Make Federated Zone Private
- Disable And Remove Zone From Federation
- Edit Federated Zone
- Manage Notifications for a Zone
- Sellers API
- Sellers (FAQ)

16.4.3 Step 3. Set compute zone properties

Fill in the zone's properties:
• provider
• data store zone
• backup server zone
• network zone
• template group
• whether the zone is private or not
• description

16.4.4 Step 4. Select pricing tier
Currently, you can choose between the DEV and PRO pricing tiers. The page also shows the prices for zone's resources depending on the selected tier. If you are adding a private zone, there is no tier selection, but you can still specify the configurations for your zone.

16.4.5 Step 5. Select certificates
Select the certificates you have and their expiration date.

16.4.6 Step 6. Specify limits for compute zone resources
Fill in the compute zone resource Limits. You need to choose the compute resource, data store and network limits.

16.4.7 Step 7. Review prices for compute zone resources
This step appears in the wizard only if you are adding a private zone. Fill in the compute zone Pricing. You need to set the compute resource, data store and network resource pricing.

16.4.8 Step 8. Confirm settings
Review the details of the federated zone. If you are satisfied with your federated zone configuration click Add to Federation.

16.4.9 Step 9. View federated zone details
That's it: your zone is now available on the Federation and buyers can subscribe to it.

16.5 Configure Cloud

This document applies to Sellers.
You need to configure your cloud properly to be able to publish compute zones to Federation. For this, follow the listed procedure step by step:

You need to be running OnApp 5.0 or higher to add compute zones to Federation. Sellers running on versions prior to OnApp 5.0 can no longer publish new zones.

16.5.1 1. Add Location Group(s)

The first step is to add location group(s) to your cloud. Location groups are the locations registered in OnApp dashboard on the Dashboard Cloud License screen. The location group ties compute resource, network, data store and backup server zones into the same location group.

On this page:

- 1. Add Location Group(s)
- 2. Configure Compute Resources
- 3. Configure Data Stores
- 4. Configure Networks
- 5. Configure Backup Servers
- 6. Create Template Store
- 7. Configure Relations Between Entities
- 8. Ensure SSL Certificates Are Valid
- 9. Configure CloudBoot Integrated Storage

See also:

- Location Groups
- Compute Zones Settings
- Compute Resources
- Data Store Zones Settings
- Network Zones Settings
- Template Store

16.5.2 2. Configure Compute Resources

To publish zones to Federation, you need to add compute zones and compute resources to your cloud. When adding a compute zone, select the location group you added in Step 1. After that, attach the newly created compute resource to the compute zone you’ve added.
You can only publish zones of the virtual type to Federation. For more information refer to Zone Types.

16.5.3 3. Configure Data Stores

To provide your federated zone with storage space, you need to configure data store zones and data stores. When adding a data store zone, select the location group you added in Step 1. You should also attach the new data store to the data store zone you’ve added.

Do not select a local compute resource during the creation process. Otherwise, you will not be able to add the data store zone to the compute zone.

16.5.4 4. Configure Networks

To provide IP address(es) to your federated zone, you need to perform the necessary network configurations. To do this, create network zones and networks. While creating a network zone, select the location group you added in Step 1. When adding the network, select the network zone you’ve created. The network will be automatically attached to the network zone you chose during creation.

IP addresses in the network(s) should be public, as only public IPs can be used for Federation.

16.5.5 5. Configure Backup Servers

You should use a backup server to store templates, ISO and OVA images, and backups of virtual servers. First, you create a backup server and then a backup server zone. Next, you assign the backup server to the backup server zone.

16.5.6 6. Create Template Store

Next, you need to add a template store. The template store enables you to organize individual templates into groups. Users who will subscribe to your federated zone will be able to choose among the templates from this template store to create virtual servers.

Additionally, you need to add the Debian 7.8 x64 Compute Performance Test template to your template store for zone evaluation. Every zone published to the market is automatically tested every two weeks for performance benchmarks regarding CPU, bandwidth and disk operations.
The test scores are recalculated into an index by comparing the scores of all other zones on the market.

OnApp service will subscribe as a buyer to your zone, deploy a special testing virtual server and conduct a test. After the test virtual server will be deleted and the service will unsubscribe.

The main requirement is that any published zone has a template _Debian 7.8 x64 Compute Performance Test_. On your CP dashboard menu, go to **Cloud > Templates > Template list > System Templates > Available**, search for the above template and download it. This template should be in the Template Group selected while publishing the zone.

**Do not change the name of template Debian 7.8 x64 Compute Performance Test.**

Make sure your SSL certificates are valid.

### 16.5.7 7. Configure Relations Between Entities

You should associate the networks, data stores, and backup servers with the compute zone, not compute resource. Data stores, networks, and backup servers associated with compute resources are not available in Federation.

Once you’ve added all the necessary resources to your cloud, you need to associate them with the compute zone you’ve created in Step 2. For this, assign the data store (Step 3), network (Step 4), and backup server (Step 5) to the compute zone (Step 2).

Each data store can be associated with only one compute zone.

### 16.5.8 8. Ensure SSL Certificates Are Valid

If you’re using SSL certificates, make sure that they are valid. Otherwise, the Control Panel may be inaccessible. You must ensure that SSL is valid and is renewed when prompted by the SSL provider.

Invalid SSL certificates mean:

- New Buyers will not be able to access your resources
- Buyers already accessing your resources will be unable to manage their Virtual Servers
- OnApp cannot collect usage, meaning you may lose revenue for loss of billing
- The Cloud Score cannot be measured
16.5.9 9. Configure CloudBoot Integrated Storage

If you want to provide buyers with the Cloud Motion functionality, the zone you publish to Federation should have CloudBoot Integrated Storage configured. The Cloud Motion feature allows users to migrate their virtual servers from one federated compute zone to another. For more information on CloudBoot Integrated Storage, refer to OnApp Storage.

If you have published a zone with CloudBoot Integrated storage prior to OnApp 5.2, it will be automatically marked as suitable for Cloud Motion functionality.

16.6 Seller Pricing Tiers for Compute Zones

In order to provide a Compute Zone to the public Federation, Sellers must select a pricing tier and provide the necessary requirements for that zone, as provided below.

All Sellers must agree and adhere to the Seller SLA and the Seller Rules, including Seller notification requirements.

On this page:

- Dev Tier: For Non-Critical Workloads
- Pro Tier: For Production Environments
- Enterprise Tier: For Enterprise Workloads/Mission-Critical Data
- Tier Requirements
- Want to set your own pricing?

16.6.1 Dev Tier: For Non-Critical Workloads

The Dev tier is designed for non-critical/development hosting. You can oversell resources, supply Virtual Servers with failover or host from local storage, and provide backups if you like. Dev tier Sellers must provide a 100% network and compute resource uptime guarantee.

Sells a small Virtual Server* for ~$4/month
16.6.2 Pro Tier: For Production Environments

This tier is designed for production ready customer applications and data. You'll need a SAN or OnApp Storage, so your Virtual Servers can failover. We'd prefer SSDs for storage performance to be as high as possible. You'll need the ability to provide backups, which you can charge for. Pro tier sellers must provide a 100% network and compute resource uptime guarantee.

*Sells a small Virtual Server* for ~$11/month
16.6.3 Enterprise Tier: For Enterprise Workloads/Mission-Critical Data

For high end use cases, our Enterprise buyers who need all of what the Pro tier can offer plus the highest performance storage solution and the confidence that they can host critical data perfectly. Enterprise tier Sellers must provide a 100% network and compute resource uptime guarantee.

The Enterprise tier will be launched in one of the future releases.

*Small Virtual Server is 512MB RAM, 1 vCPU, 20GB Disk, 100MB Transfer.
All Sellers must agree and adhere to the Seller SLA and the Seller Rules, including Seller notification requirements.

### 16.6.4 Tier Requirements

<table>
<thead>
<tr>
<th></th>
<th>Dev</th>
<th>Pro</th>
<th>Enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA or Local</td>
<td>Optional</td>
<td>HA</td>
<td>HA</td>
</tr>
<tr>
<td>SLA</td>
<td>1 x Payout</td>
<td>10 x Payout</td>
<td>TBAX Payout</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Network &amp; Compute resource uptime</td>
<td>Optional</td>
<td>SSD preferred</td>
<td>SSD or Enterprise SAN</td>
</tr>
<tr>
<td>Storage Performance</td>
<td>Optional</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Backups</td>
<td>Optional</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Selection by Seller</td>
<td>Latest Linux and Windows</td>
<td>Latest Linux and Windows</td>
<td></td>
</tr>
<tr>
<td>Templates</td>
<td>templates from OnApp</td>
<td>templates from OnApp Repo + Custom on request</td>
<td></td>
</tr>
<tr>
<td>Windows License</td>
<td>Optional</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cross Location Replication</td>
<td>No</td>
<td>No</td>
<td>Optional (requires OnApp Storage)</td>
</tr>
<tr>
<td>DDos Protection</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>IPv6</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>DNS</td>
<td>No</td>
<td>Optional</td>
<td>Optional</td>
</tr>
</tbody>
</table>

### 16.6.5 Want to set your own pricing?

Sure, thing - you will need to create a [private zone](#) and when we receive an inquiry from a Buyer we will let you know. You will need to [generate a Trust Token](#) to provide access to the Buyer.

All Seller zones are subject to our Pre-Flight check, where our team will be assessing your Compute zone and ensuring this is set up according to the tier you have chosen.
16.7 Edit Federated Zone

This document applies to sellers. Otherwise, refer to the Buyers or Users sections of this guide.

You can change the zone's parameters and the price of a federated zone after it is published. If you reduce the price for the resource, the change takes place immediately. However, if you increase the pricing, the change will take effect after 28 days.

- If you have published a zone with CloudBoot Integrated storage prior to OnApp 5.2, it will be automatically marked as suitable for Cloud Motion functionality.
- If you want to add certificates to a zone published prior to OnApp 5.3, you need to contact our support team.

16.7.1 Edit Federated Zone

On this page:

- Edit Federated Zone
- Edit Buckets for Federated Zone

See also:

- Selling Walk-through
- Add Zones to Federation
- Make Federated Zone Private
- Disable And Remove Zone From Federation

Please be advised, for the changes to take effect on the Buyer's side, the Seller must remove the compute zone from the federation and supply it again.

To edit Federated compute zones:
1. Go to your Control Panel > Admin > Settings menu, and click the Compute Zones icon.
2. The screen that appears will show all zones currently set up in the cloud.
3. Click the Actions button next to the required compute zone, then click Edit. You can edit the following compute zone details:
   - Label - the compute zone's name
   - Location group - the compute zone's location group
   - Release resource type - the compute zone's resource type. This option allows to free up the compute resources and over-commit RAM, CPU, and CPU shares by means of the virtual servers that are shut down. By default, the compute zone is
created with the Memory Guarantee option enabled. In this case, the over-committing cannot be used. To enable resource releasing, choose either the Ballooning or Only Started VS option.

- **Memory guarantee** - the actual free compute resource memory is calculated. All virtual servers residing on the compute resource will be able to start.

- **Ballooning (KVM compute resources only)** - free compute resource memory is calculated with the ability to use memory over-committing. Note: a virtual server may be migrated to another compute resource if there is not enough memory for it to start up on the compute resource with the ballooning option enabled.

  Do not use the ballooning option if there is at least one edge or storage server within the compute zone.

- **Only started VS** - only the memory of running virtual servers is calculated.

- **Max VS to start at once** - the maximum number of virtual servers that can be started simultaneously on this compute resource (5 recommended). This option ensures that virtual servers with VIP status will be booted prior to other servers.

- **Placement type** - specify the compute resource selection algorithm, that will be used on virtual server provisioning and recovery, per compute zone:
  
  - **Take HV with maximum free RAM (Round Robin)** - set this type to select the compute resource with maximum free RAM during the VS recovery. This option allows to perform faster migration of virtual servers with the lesser number of iterations during the failover.

  Note: this option behaves in different ways, depending on the event:
  - On provisioning, the round-robin algorithm will be used on compute resource selection.
  - On recovery, the compute resource with maximum free RAM will be selected.

  - **Take HV with minimum required free RAM** - with this type the system selects the compute resource with minimum required free RAM. This option allows filling compute resource as tightly as possible before starting to use next compute resource in the zone.

- **Failover timeout** - a time period for which the iterations will run during the failover if the compute resource does not respond

- **CPU Units** - edit the amount of CPU units assigned to each compute resource in this zone by default

- **Update compute resource CPU units** - move the slider to apply the edited number of CPU units to all the compute resources in this zone

- **CPU guarantee** - move the slider to the right to ensure there is enough CPU on the compute zone to create a new VS

- **Disable failover** - move the slider to the right to enable the VS migration to another compute resource if the compute resource on which it is running goes offline
• When you assign compute resource to the new compute zone without any compute resources, the disable failover zone’s parameter automatically takes the value of the compute resource.
• When all compute resources within the zone have the same value, the compute zone’s disable failover status will be the same, otherwise the compute resources zone’s failover status will be set to disabled.
• When you change the compute zone’s disable failover value, this change will be applied to all compute resources within this zone.

- **Run Sysprep** - enable or disable Windows virtual server deployment without running Sysprep

  It is not possible to set VS password when creating a Windows-based VMware virtual server without running a Sysprep.

- **Extended CPU Flags** - move the slider to the right to enable the usage of extended CPU flags

- **Instance Package VSs** - move the slider to the right to enable the usage of instance packages to build VVs

  If you enable the Instance Package VSs option, this compute zone will be available to create VVs using only instance packages.

- **Custom Config** - specify any custom commands you want to run when a compute zone is booted. This parameter is applicable only to CloudBoot compute resources.

4. Click the **Save** button to save your changes.

16.7.2 **Edit Buckets for Federated Zone**

You can change the bucket’s limits and pricing for private federated zones. However, for public federated zones, you can only change resource limits.

To edit the billing for a federated zone:

1. Go to your **Control Panel > Admin > Settings** menu, and click the **Compute Zones** icon. The screen that appears will show all zones currently set up in the cloud.
2. Click the label of the federated zone you are interested in.
3. On the page that loads, click the name of the bucket in the **Being sold** field.
4. Edit limits and pricing for compute zone(s), data store zone(s), and network zone(s). For more information, refer to the corresponding sections of the Configure Resource Allocation and Prices page.
The buyers subscribed to this zone will receive a notification if the pricing for the zone was changed. Such notification will list the new pricing from the seller, showing in parentheses how the price was modified.

16.8 Federation Capacity Pricing

This document applies to sellers. Otherwise refer to the Buyers or Users sections of this guide.

The OnApp Federation enables you to sell your compute cloud infrastructure on an open and totally transparent global marketplace. Through the marketplace, service providers all over the world can buy your infrastructure on a pay-for-usage basis, and use it to host apps and content for their clients.

It's a new way to sell infrastructure, and for many service providers it can be tricky to price the infrastructure you sell through the OnApp Federation. This section helps you work out the optimal price for the compute zones you publish.

16.8.1 Traditional Pricing Model

The OnApp Federation is, in many ways, similar to infrastructure reselling you're used to:

Breakdown of traditional hosting pricing, per customer:

- Cost of Hardware
- Cost of Infrastructure (DC, bandwidth, etc.)
- Cost of Logistics (HR, offices, etc.)
- Cost of Support
- Cost Per Acquisition (CPA: sales & marketing)

These points constitute the Total Cost A.

*Direct Price = Total cost A x Profit %*

On this page:

- Traditional Pricing Model
OnApp Federation Pricing

See also:
- Selling Walk-through
- Add Zones to Federation
- Make Federated Zone Private
- Disable And Remove Zone From Federation
- Edit Federated Zone
- Manage Notifications for a Zone
- Sellers API
- Sellers (FAQ)

16.8.2 OnApp Federation Pricing

Pricing the zones you publish to the OnApp Federation is quite straightforward. However, when you sell on the OnApp Federation, there are three key differences that you need to take into consideration:

Don’t include CPAs or support

Your Federation zone pricing should not include sales and marketing costs (CPAs) or support costs, because the OnApp Federation takes care of that for you.

Transparency

Transparent performance and uptime data is the keystone of the OnApp Federation. We benchmark and monitor uptime for every zone published, and provide this alongside price and location data, so that buyers can make an informed decision about the infrastructure they will use.

Therefore, infrastructure with a high cost per hour will compare unfavorably with lower-priced infrastructure, unless there is a clear benefit to the buyer. That benefit can come in many forms: an unusual location, exceptional bandwidth, uptime or compute power, outstanding storage throughput and (in the future) other metrics like privacy, DC certifications and carbon neutrality.

Favor long game
You should also consider reducing the margin you usually work towards for your Federation zones. In a transparent, on-demand marketplace, there is more benefit to have large numbers of buyers use your infrastructure in the long term, by offering them additional margin, than there is in trying to maintain the margins you work towards for direct clients.

### How to price for OnApp Federation

Taking that into consideration, your Federation pricing calculation should look like this:

- Cost of Hardware
- Cost of Infrastructure (DC, bandwidth, etc.)
- Cost of Logistics (reduced, as it does not cover support and CPA related activities)

These points constitute the Total Cost B.

\[ \text{Federation Price} = \text{Total cost B} \times \text{Profit \% (possibly lower than normal)} \]

For information on how to add a zone to OnApp Federation, refer to the [Add Zones to Federation](#) section.

If you get stuck, please visit the [OnApp support portal](#). Before doing so, please, take a look at our [FAQs](#), you may find the answer to your query there.

### 16.9 Make Federated Zone Private

This document applies to sellers. Otherwise refer to the [Buyers](#) or [Users](#) sections of this guide.

With OnApp it is also possible to provide your cloud infrastructure only to selected buyers. For this, you can use the functionality of making a federated zone private. If a zone is private, only the specified buyers will be able to access this zone. The other buyers will not see the private zones in the list of federated resources. When adding a private zone, you also set your own pricing for the zone’s resources. If a zone is made public, it will be supplied to the market for general consumption and all buyers will be able to see the zone and subscribe to it.

Should you require, you can make a zone private either immediately when [adding a zone to Federation](#), or at any time later after you publish the zone. Note that a private zone cannot be switched to public.

On this page:

- Making Zone Private Workflow
- Make Zone Private
- Generate Trust Token
- Configure Prices
- See also:
  - Selling Walk-through
• Add Zones to Federation

• Disable And Remove Zone From Federation

• Edit Federated Zone

16.9.1 Making Zone Private Workflow

This diagram displays the steps you need to perform to make a federated zone private.

16.9.2 Make Zone Private

To restrict the federated zone usage to a limited number of buyers after the zone was added to Federation, switch a published zone to private:

1. Go to your Control Panel > Admin > Settings > Compute Zones menu.
2. Click the Actions button next to a required zone and select Make private. You will be asked for confirmation before the zone is switched to private.

When you switch a public zone to private:
• The buyers who have previously subscribed to the zone will remain subscribed. All virtual servers created previously on this zone will continue to exist.
• Only those buyers who have a trust token will be able to subscribe to the zone.

After you make a zone private you need to generate trust token(s) for the appropriate buyer(s) so that they could subscribe to your zone.

16.9.3 Generate Trust Token

To enable your customers view and subscribe to your private federated zone, you need to generate a trust token and provide it to your buyers. If you wish to supply a private zone to more than one buyer, you have to generate a new trust token. To generate a token:

1. Go to Control Panel > Admin > Settings > Compute Zones and click the label of the private federated zone.
2. In the Tools menu, choose the Manage tokens option.
3. The page that loads shows the list of your generated tokens for this zone. Click the “+” icon to generate a new token.
4. Fill in the receiver of the token and click Generate.
5. On the following page, you will see the list of trust tokens you have requested with the indication whether they were used or not. To see the new token you need to supply to the buyer, reload the page. The token can be used only once.

If the token is no longer required, you can delete it:

1. Go to Control Panel > Admin > Settings > Compute Zones and click the label of the private federated zone.
2. In the Tools menu, choose the Manage tokens option.
3. The page that loads shows the list of your generated tokens for this zone. Click the Delete icon next to the token you want to remove. You will be asked for confirmation before the token is deleted.

If you delete a trust token before it is used, the buyer you forwarded this token to, will not be able to use it.

16.9.4 Configure Prices

After you switch the zone from public to private you can set your own prices for the zone’s resources. To set your prices you need to edit the zone’s billing plan:

1. Go to Control Panel > Admin > Settings > Compute Zones.
2. Click the label of the required zone. The page that loads shows the details of your federated zone.

3. Click the zone's billing plan label displayed in the *Being sold* field.

4. On the page that loads, click the name of the billing plan in the *Being sold* field.

5. Edit limits and pricing for compute zone(s), data store zone(s) and network zone(s). For more information, refer to the corresponding sections of the Set Billing Plan Prices And Resource Limits page.

After you change the pricing for the zone, the price will apply for all your buyers, including those who have subscribed to the zone when it was public. Subscribed buyers will receive a notification that the prices for federated resources have changed.

16.10 Manage Notifications for a Zone

This document applies to sellers. Otherwise refer to the Buyers or Users sections of this guide.

You can post notifications about events in your federated zone(s) to all buyers subscribed to that zone. In their turn, buyers can forward these notifications to their users, if required. Once you post a notification, it will be attached to the zone until it expires, so that new subscribers will see it.

Once the buyer's Control Panel receives your notification, an email will be sent to the buyer CP admin.

You can notify all the buyers who have subscribed to your zone in case of any event such as, for example:

- compute resource/network/datastore maintenance
- a federated zone will be removed from the market
- any other events

You can also access a log file that records events related to tier and ratio services on your federated zones. The file is located at `log/production_market.log` on your Control Panel server.

On this page:

- View Notifications
- Create Notification
- Delete Notification

See also:

- Selling Walk-through
• Add Zones to Federation

• Make Federated Zone Private

• Disable And Remove Zone From Federation

• Edit Federated Zone

• Sellers API

• Sellers (FAQ)

### 16.10.1 View Notifications

To view the list of current notifications you posted to a zone:

1. Go to Control Panel > Admin > Settings > Compute Zones. The following page displays the list of all compute zones in your system.

2. Click the number in the Notification column next to the zone you are interested in. The page that loads, displays the list of notifications you have posted for the selected zone with their messages and the time period they refer to.

### 16.10.2 Create Notification

To create a new notification for a zone:

1. Go to Control Panel > Admin > Settings > Compute Zones. The following page displays the list of all compute zones in your system.

2. Click the number in the Notification column next to the zone you are interested in. The page that loads, displays the list of notifications you have posted for the selected zone.

3. Click the "+" button.

4. On the page that loads fill in the notification text and its start and end time and date.

5. Click Submit to post the notification. After you create a notification, it will be sent to all the buyers who are subscribed to the selected zone.

All notifications need to have a start and end time. You cannot create a notification without indicating its end time.
16.10.3 Delete Notification

To delete a notification you posted for a zone:

1. Go to Control Panel > Admin > Settings > Compute Zones. The following page displays the list of all compute zones in your system.
2. Click the number in the Notification column next to the zone you are interested in. The page that loads, displays the list of notifications you have posted for the selected zone.
3. Click the Delete button next to the notification you want to delete. You will be asked for confirmation.

Notifications are deleted automatically after their end time expires.

16.11 Disable And Remove Zone From Federation

This document applies to sellers. Otherwise refer to the Buyers or Users sections of this guide.

- As a Seller on the OnApp Federation you have agreed to adhere to the full Seller Rules. This page will provide you with the information on when and how you should notify OnApp.
- For information on notifications in OnApp, refer to Manage Notifications for a Zone page.

Failure to notify OnApp and your Buyers will impact your Cloud Score and may result in the suspension or termination of your ability to continue as a Seller temporarily or permanently.

This page describes how you can disable and remove a published zone from Federation. When you disable a federated zone, users will no longer be able to create new virtual servers there. All existing VSs running in that zone will still be able to scale as usual. If you remove a zone, it will be completely deleted from Federation. The VSs that remain on that zone will be deleted.

On this page:

- Disable Federated Zones
- Remove Zones from Federation

See also:
- Selling Walk-through
16.11.1 Disable Federated Zones

Disabling a zone will stop users from adding any more VSs to the federated zone. All existing VSs running in that zone will still be able to scale as usual.

To disable a federated zone:
1. Go to your Control Panel > Admin > Settings > Compute Zones menu.
2. Move the Enable Federation slider to the left next to a required zone.
3. Confirm deactivation of a zone.
   After you disable a federated zone, you can remove a zone from Federation if required.

16.11.2 Remove Zones from Federation

If you want to remove a zone from Federation, you should check if any buyers are subscribed to that zone and whether VSs are created within that zone or not. Depending on the situation, the zone removal procedure will differ.

If your cloud is upgraded to OnApp 4.1 version you will receive both notifications and emails. For older versions you will receive emails only.

16.11.2.1 No buyers are subscribed to the zone

If no buyers are subscribed to the zone yet, take the following steps to remove:
1. Go to your Control Panel > Admin > Settings > Compute Zones menu.
2. Move the Enable Federation slider to the left next to a required zone.
3. Confirm deactivation of a zone.
4. Click the Actions icon next to the zone.
5. Choose Remove from Federation.
16.11.2.2 One or more buyers are subscribed to the zone but there are no VSs within this zone

If one or more buyers are subscribed to the zone, but there are no VSs yet, take the following steps:

1. Go to your Control Panel > Admin > Settings > Compute Zones menu.
2. Move the Enable Federation slider to the left next to a required zone.
3. Confirm deactivation of a zone.
4. Click the Actions icon next to the zone.
5. Choose Remove from Federation.

After that a notification box will appear with the following message: "There are still Buyers subscribed to this zone. Zone will be removed in 1 day". All buyers subscribed to the zone will be automatically notified via email/notification. After one day the zone will be removed from Federation.

16.11.2.3 One or more buyers are subscribed to the zone and there are VSs within this zone

If one or more buyers are subscribed to the zone, and there are VSs within this zone, take the following steps:

1. Go to your Control Panel > Admin > Settings > Compute Zones menu.
2. Move the Enable Federation slider to the left next to a required zone.
3. Confirm deactivation of a zone.
4. Click the Actions icon next to the zone.
5. Choose Remove from Federation.

After that a notification box will appear with the following message: "There are virtual servers deployed on this zone. Zone will be removed in 1 month". All buyers subscribed to the zone will be automatically notified via email/notification.

The system will check every six hours whether VSs still remain on the zone you want to remove. As soon as VSs are deleted from the zone, it will be removed from Federation.

After 28 days, the system will attempt to delete the remaining VSs during a three-hour period. If for some reason the remaining VSs cannot be deleted, the system will automatically create a Zendesk ticket to our support team, so that they remove the VSs. The ticket will contain the following description: "Zone [label] was recalled by Seller 1 month ago and had to be removed from market. All VSs provisioned on that zone should have been deleted. Please manually delete listed VSs on seller's CP, then remove the zone from Federation. [list of main VSs attributes]"

As soon as all VSs are deleted from the zone, it will be removed from Federation.

16.12 Add Zones to Federation

This document applies to Sellers. If you're a Buyer, refer to the Buyers section of this guide.

To add zones to Federation, at first you need to configure all the necessary resources in your cloud. After that you can proceed to adding compute zones to Federation.

When publishing a zone, you indicate the backup, network and data store zones that will supply storage and IP address to you federated compute zone. You also indicate the limits for the
zone's compute, network, backup and data store resources. After you publish a zone, buyers will be able to subscribe to your federated zone and use its resources.

If you are adding a public zone to the Federation, the pricing for the zone's resources are set according to the pricing tier you select. If required, you can later switch your zone from public to private.

If you wish to set your own pricing for the zone you add to the Federation, you can publish a private zone. In this case, only the buyers you provide with a trust token will be able to subscribe to your zone. Other buyers will not see this zone in Federation. Note that you can not change the zone from private to public after you publish the zone. However, if required you can remove the zone from Federation and publish it again as public.

After you publish a zone you can change pricing and resource limits for private zones. For public zones, you can only change resource limits. For more information refer to Edit Federated Zone.

- You need to be running OnApp 5.0 or higher to add compute zones to Federation. Sellers running on versions prior to OnApp 5.0 can no longer publish new zones.
- You can only publish zones of the virtual type to Federation. For more information refer to Zone Types.
- vCenter compute zones can only be published as private federated zones.
- If you want to disable prices completely you can do so by enabling the Disable billing slider at the Edit System Configuration page. It is possible to disable billing only if there are no compute zones that are added to Federation or any compute zones subscribed from the Federation on your OnApp CP.

On this page:

- Add Zone to Federation
  - Step 1 of 5. Start
  - Step 2 of 6. Tiers
  - Step 3 of 6: Certificates
  - Step 4 of 6. Limits
  - Step 5 of 6. Pricing
  - Step 6. Confirmation

See also:
- Selling Walk-through
- Make Federated Zone Private
- Disable And Remove Zone From Federation
- Edit Federated Zone
16.12.1 Add Zone to Federation

To sell a compute zone to Federation:

Before you add a zone, please ensure you have reviewed the Seller Pricing Tiers for Compute Zones section.

1. **Configure your cloud.**
2. When the compute zone is created, the list of all compute zones will be displayed at Control Panel > Settings > Compute Zones. Click Actions > Add to federation next to a required zone.
3. Configure the federated zone in the wizard that appears:

16.12.1.1 Step 1 of 5. Start

Fill in the following fields:

- **Provider** - enter the provider name
- **Data store zone** - select a data store zone from the drop-down box. Make sure that selected data store zone has no data stores attached to compute resources directly. The data stores should be attached to compute zones.
- **Backup server zone** - select a backup server zone from a drop-down box.
- **Network zone** - select a network zone from a drop-down box. Make sure that selected network zone has no networks attached to compute resources directly. The networks should be attached to compute zones.
- **Template group** - select a template group from the drop-down box. All the templates which are added to this group will be available to buyers who sign up for this federated zone. Later you can add templates to this template group after the zone is published to buyer. In this situation the templates will be synchronized and appear in respective buyer's template group. If a seller deletes a template from a group, the template will not be removed from buyer's federated template group.
- Move the **Private** slider to the right if you want to make this Federated zone private. Otherwise, the zone will be public and all buyers in the Federation will be able to view and subscribe to this zone. If the zone is made private, only those buyers who have received a trust token from the seller can access the zone. For more information see Make Federated Zone Private. vCenter compute zones can only be published as private federated zones.
- **Description** - add a necessary description.
Select the pricing tier for your zone if you are adding a public zone:

- **DEV** - a tier for non-critical workload
- **PRO** - a tier for production environments
- **ENTERPRISE** - a tier for enterprise workloads and/or mission critical data. This tier is currently unavailable.

For public zones, this step also displays the pricing for the zone's resources depending on the selected tier:

- **CPU (Cores)** - the price per CPU core/per hour, for VSs powered on/off
- **RAM (MB)** - the price per RAM (MB) per hour, for VSs powered on/off
- **Disk (GB)** - the price per GB of disk space per hour for VSs powered on/off
- **IP** - the price per IP address/per hour for VSs powered on/off
- **Data sent (GB)** - the price per GB of data sent/per hour for VSs
- **Data received (GB)** - the price per GB of data received/per hour for VSs

For both public and private zones, configure the following options for your zone. The configuration of tier options does not influence the pricing for the public zones. The default value for the tier options is 'NO'.

- **HA** - whether HA is available for the compute zone. For the DEV tier you can select **HA** meaning that HA is available, or **Local** indicating that High Availability is not provided for the zone. For PRO and ENTERPRISE tiers HA is available by default.
- **SLA** - this parameter indicates the number by which the cost of the resources provided to the buyer will be multiplied in case of downtime. You will need to compensate the cost of resource multiplied by this number to your buyers in case of downtime. This option applies only to public zones.
- **Storage Performance** - select the storage that will be provided for the federated zone: SSD or HDD.
- **Backups** - whether backups will be available in the federated zone. For PRO and ENTERPRISE tiers backups are available by default. You can select whether backups are available or not for the DEV tier.
- **Templates** - the templates that will be available in the federated zone. For the DEV tier, buyers will have access to the templates you have selected. For the PRO tier, buyers will have access to all templates from the OnApp repository. For the PRO tier, buyers will have access to all templates from the OnApp repository and can also request custom templates.
- **Windows licence** - whether Windows licence will be available in the federated zone. For PRO and ENTERPRISE tiers Windows licence is available by default. You can select whether Windows licence will be available or not for the DEV tier.
- **DDOS protection** - whether DDOS protection will be available for the federated zone.
- **IPv6** - whether IPv6 will be available for the federated zone.
- **DNS** - whether DNS will be available for the federated zone.
- **Cloud Motion** - whether your zone has CloudBoot Integrated storage. By publishing zones with CloudBoot Integrated storage you can provide your users with the ability to migrate their virtual servers between locations. If customers subscribe to two or more Cloud Motion compatible federated zones they can later move their VSs from one such zone to another. The **Cloud Motion** option applies only to zones with CloudBoot Integrated storage. For more information refer to [How Cloud Motion Works](#).
• **Cross Location Replication** - whether cross location replication will be available for the federated zone. This option is not available for the DEV and PRO tiers.

• **Network & Compute resource uptime** - the uptime provided by the federated zone. 100% uptime is indicated for all three tiers. This option applies only to public zones.

For more information on pricing tiers refer to [Seller Pricing Tiers for Compute Zones](#).

16.12.1.3 Step 3 of 6: Certificates

For both private and public zones you can indicate the certificates you have and their expiration date. Click in the date field next to the required certificate to indicate its expiration date. You will be required to present your certificates to our support team or your account manager before your zone is available for buyers to subscribe. You can indicate the following certificates:

• **ISO 27001** - an information security standard which is published by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC).

• **HIPAA** - the federal Health Insurance Portability and Accountability Act of 1996. The primary goal of the law is to make it easier for people to keep health insurance, protect the confidentiality and security of healthcare information and help the healthcare industry control administrative costs.

• **PCI/DSS** - a proprietary information security standard for organizations that handle branded credit cards from the major card schemes including Visa, MasterCard, American Express, etc.

• **SOX** - a United States federal law that set new or expanded requirements for all U.S. public company boards, management and public accounting firms.

• **Ssae16** - a regulation created by the Auditing Standards Board (ASB) of the American Institute of Certified Public Accountants (AICPA) for redefining and updating how service companies report on compliance controls

• **Tier 1/Tier 2/ Tier 4/ Tier 4** - levels in a thorough, quantifiable manner published by Telecommunications Infrastructure Standard for Data Centers in the ANSI/TIA-942 or Uptime Institute independent certifications
Note that when you set limits for resources, you indicate the quantity of resources that will be available to all buyers who subscribe to the zone. For example, if you set the Memory limit to 1024, the combined RAM of all VSs in the zone authored by all the buyers who have subscribed to the zone cannot exceed 1024.

Set the following limits for resources:

**Compute Resource Limits**
- **CPU** - the maximum number of CPU cores the users can request when signed up for this federated zone
- **CPU share** - the maximum CPU share % the users can request when signed up for this federated zone
- **Memory** - the maximum RAM (MB) they can request when signed up for this federated zone

**Data Store Limits**
- **Disk Size** - the maximum disk size the users can request when signed up for this federated zone

**Network Limits**
- **IP Address** - the maximum number of IP addresses the users can request when signed up for this federated zone.
- **Port Speed** - the maximum port speed (Mbps) the users can request when signed up for this federated zone.

**Backup Limits**
- **Backups** - the maximum amount of backups the users can request when signed up for this federated zone.
- **Backup Disk Size** - the maximum backup disk size the users can request when signed up for this federated zone

**16.12.1.5 Step 5 of 6. Pricing**

If you are adding a public zone, review the pricing for the resources in the federated zone. The prices are not editable and are set according to the pricing tier you have selected at the Tiers step.

If you are adding a private zone, set the pricing for the resources in the federated zone.

**Compute Resource Pricing**
- **CPU** - the price per CPU core/per hour, for VSs powered on/off
- **CPU share** - the price per CPU share % per hour, for VSs powered on/off
- **Memory** - the price per RAM (MB) per hour, for VSs powered on/off

**Data Store Pricing**
- **Disk Size** - the price per GB of disk space per hour for VSs powered on/off
- **Data Read** - the price for data read per GB/per hour
- **Data Written** - the price for data written per GB/per hour
- **Input Requests** - the price for input requests per hour. Input requests are measured in millions and priced per million requests.
- **Output Requests** - the price for output requests per hour. Output requests are measured in millions and priced per million requests.

**Network Pricing**
- **IP Address** - the price per IP address/per hour for VSs powered on/off
- **Port Speed** - the price for Mbps/per hour of port speed
- **Data Received** - the price per GB of data received/per hour for VSs
- **Data Sent** - the price per GB of data sent/per hour for VSs

**Backup Pricing**
- **Backups** - the price per backup per hour
- **Backup Disk Size** - the price per GB of backup disk space per hour

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16.12.1.6 Step 6. Confirmation

Review the details of the federated zone.

If you want to change any of the details click the **Previous** button to edit the data you added on the previous steps of the wizard.

If you are satisfied with your federated zone configuration click **Add to Federation**.

The OnApp Dashboard will list all the transactions/logs related to Federation. Use the **Hide Successful Market Notifications** button to remove successful items from the list. Click the button again to show the full list.
Make sure your SSL certificates are valid

If you're using SSL certificates, make sure that they are valid. Otherwise, the Control Panel may be inaccessible. You must ensure that SSL is valid and is renewed when prompted by the SSL provider.

Invalid SSL certificates mean:

- New Buyers will not be able to access your resources
- Buyers already accessing your resources will be unable to manage their Virtual Servers
- OnApp cannot collect usage, meaning you may lose revenue for loss of billing
- The Cloud Score cannot be measured
17 Buyers

Buyers can subscribe to global clouds via the OnApp Federation and offer a world-class cloud hosting service without having to buy new hardware in new locations. They can charge their customers whatever they wish by creating their own billing plan for the resources they buy and resell. OnApp buyers can very quickly scale their business with no additional investment and minimal risk. From a buyer’s perspective, Federation is just a selection of clouds which can be offered to their end users.

To become a buyer, contact your account manager to enable this functionality in OnApp Dashboard for your license.

Here is the sorted list of the documentation currently available for Sellers.

17.1 Federated Zone Management
- Subscribe to Federated Zone
- Suspend/Unsuspend Federated Zone
- Unsubscribe from Federated Zone

17.2 Other
- Manage Template Groups in Template Store
- Manage User VSs
- Trust Tokens and Private Federated Zone
- Notifications
- Request Location

17.3 Configuration
- Buying Walk-through

17.4 API
- Buyers API

17.5 Buying Walk-through

This document applies to buyers. Otherwise refer to the Sellers or Users sections of this guide.
This is the quick step-by-step demonstration of the actions required to set up the Federation and start buying zones. Buyers browse the Federation and subscribe to the zones of interest in OnApp Control Panel. Once subscribed, buyers can obtain real-time capacities for each zone and add the subscribed zones to existing billing plans. Buyers are billed for the zone resources their customers have used according to the pricing specified by the seller.

17.5.1 Step 1. View list of zones in Federation

Go into your Control Panel left navigation pane Admin > Compute Federation > Marketplace to search for federated compute zones. The page that loads shows the list of available zones.

On this page:

- Step 1. View list of zones in Federation
- Step 2. Filter through list of available zones
- Step 3. View pricing for zone
- Step 4. Subscribe to zone
- Step 5. Fill in zone's details
- Step 6. Review details

See also:

- Subscribe to Federated Zone
- Suspend/Unsuspend Federated Zone
- Trust Tokens and Private Federated Zone
- Manage Template Groups
- Manage User VSs

17.5.2 Step 2. Filter through list of available zones

Using the sliders and check-boxes on the the left you can filter through the zones available in the Federation to select the ones that comply with your requirements. You can also arrange the list of zones according to the Cloud/CPU/IOPS/Bandwidth score by clicking the Cloud Score column name and selecting a score type. The zones with the highest indicator of the selected score will be shown first.

If you want your users to have access to Cloud Motion functionality, check whether the zone to which you want to subscribe has Cloud Motion listed among its features.
17.5.3 Step 3. View pricing for zone

Using the pricing calculator you can determine the hourly and monthly price for the resources you require.

17.5.4 Step 4. Subscribe to zone

Subscribe to the zone you have selected by clicking the **Actions** button next to it and selecting **Subscribe**.

17.5.5 Step 5. Fill in zone’s details

OnApp treats the Federation zone in the same way as the local zones. So, now you just have to complete a few fields.

- compute zone label
- compute resource label
- data store zone label
- data store label
- network zone label
- network label
- template group label

You can fill in the compute zone label only, then all other fields will be auto-filled with the same label.

Click **Subscribe** to finish.

17.5.6 Step 6. Review details

The page that loads shows the details of the zone you have just subscribed to.

That’s it: the subscribed zone appears as a compute zone on your cloud.

If you need to know seller transaction ID details, go to your Control Panel **Logs** menu and click the label of specific log item. At the log info part
among details you will find *Cloned Transaction* field, which specifies seller's transaction ID.

17.6 Subscribe to Federated Zone

This document applies to buyers. Otherwise, refer to the Sellers or Users sections of this guide.

Buyers can subscribe to federated zones and sell cloud resources to customers. If allowed by your license, you can search the marketplace and subscribe to a federated zone added by sellers.

After you subscribe to a compute zone in Federation, the virtual compute resource/data store/network zones are added to your cloud with the names you specified in the wizard and you can view the details of this federated zone.

You can select what federated zones are visible to you at Admin > Control Panel > Marketplace: all federated zones or only the private zones for which you have a trust token. By default, this page contains both public and private zones available to you. If you want this page to enlist only the private zones for which you have a trust token, go to Admin > Control Panel > Settings > Configuration > Federation tab, move the *Only private federated resources* slider to the right and click *Save configuration*.

On this page:

- Subscribe to Federated Zone
- View Federated Zone

See also:

- Buying Walk-through
- Request Location
- Manage User VSs
- Manage Template Groups in Template Store
- Trust Tokens and Private Federated Zone

17.6.1 Subscribe to Federated Zone

To subscribe to a federated zone:

1. Go to Admin > Control Panel left navigation pane Compute Federation > Marketplace. The screen that appears will show a map containing markers for all the zones on a Federation with their details. Click the zone's marker on the map to
select it. This zone will appear at the beginning of the list of zones. You need to click the marker of a private zone to view its pricing.

- **Tier** - the zone’s pricing tier: DEV, PRO or PRIVATE
- **Country** - the country where this zone is located
- **City** - the city where this compute zone is located
- **Cloud Score** - the relative number which is the average of the IOPS/Bandwidth/CPU scores for this zone. You can arrange the list of zones according to the Cloud/CPU/IOPS/Bandwidth score by clicking the Cloud Score column name and selecting a score type from the drop-down list. The zones with the highest indicator of the selected score will be shown first.

You might see a different Cloud Score value if you apply the tier filter for the list of available zones. The reason being that in a list with no tier filter applied, a zone is compared to all other zones available in Federation. However, if you apply the tier filter, the zone is compared only to the zones of the selected tier and the cloud score is based on that comparison.

- **Features** - additional functionality provided by the zone. This parameter will list only the functionality provided by the zone. A zone can provide the following features: High Availability, backups, cross-location replication, SSD or HDD storage, Windows license, DDOS protection, DNS, IPv6, Cloud Motion.
- **Provider** - the name of the seller to whom the zone belongs

If you want your users to have access to **Cloud Motion** functionality, check whether the zone to which you want to subscribe has **Cloud Motion** listed among its features.

2. Using the sliders and check-boxes on the left you can filter through the zones available in the Federation to select the ones that comply with your requirements. The following filter options are available:

- **Tiers** - select the zones with which pricing tier you are interested in: all tiers, Dev, Pro, Enterprise or private.
- **Search bar** - enter a search word to filter through the available zones. This can be a country, city or a provider name.
- **Price calculator** - move the sliders to set the amount of CPU (cores), RAM (MB), disk size (GB) and number of IP address you require. The boxes with the information on the three tiers are available under the map and will show the hourly and monthly price for the selected resources in zones belonging to different tiers.
- **Region** - select the zones from which region you are interested in: Europe, Asia, Northern America, South America, Africa or Oceania.
- **Cloud Score** - move the slider to the right to select the required cloud score
- **Features** - tick the check-boxes next to the features you require. You can filter among zones with the following feature(s): HA, SSD, Windows license, DDOS protection, IPv6 and DNS.
- **Certificates** - tick the check-boxes next to the certificates you require. You can filter among zones with the following certificate(s):
  - **ISO 27001** - an information security standard which is published by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC).
- **HIPAA** - the federal Health Insurance Portability and Accountability Act of 1996. The primary goal of the law is to make it easier for people to keep health insurance, protect the confidentiality and security of healthcare information and help the healthcare industry control administrative costs.

- **PCI/DSS** - a proprietary information security standard for organizations that handle branded credit cards from the major card schemes including Visa, MasterCard, American Express, etc.

- **SOX** - a United States federal law that set new or expanded requirements for all U.S. public company boards, management and public accounting firms.

- **Ssae16** - a regulation created by the Auditing Standards Board (ASB) of the American Institute of Certified Public Accountants (AICPA) for redefining and updating how service companies report on compliance controls.

- **Tier 1/Tier 2/ Tier 4/ Tier 4** - levels in a thorough, quantifiable manner published by Telecommunications Infrastructure Standard for Data Centers in the ANSI/TIA-942 or Uptime Institute independent certifications.

3. Click the **Actions** icon next to the appropriate zone, and choose **Subscribe**.

4. On the screen that appears, enter the following details:
   - **Compute zone label** - the compute zone with the label specified will be created in your cloud.
   - **Compute resource label** - the compute resource with the label specified will be created in your cloud.
   - **Datastore zone label** - the datastore zone with the label specified will be created in your cloud.
   - **Datastore label** - the data store with the label specified will be created in your cloud.
   - **Backup server group** - INSPECT and INSERT.
   - **Backup server label** - INSPECT and INSERT.
   - **Network zone label** - the network zone the label specified will be created in your cloud.
   - **Network label** - the network with the label specified will be created in your cloud.
   - **Template group label** - the template group with the desired label will be created in your cloud.

   If you want the same label for all instances, mentioned above, you can fill in compute zone label only, and all other fields will be auto-filled with the same label.

5. Click the **Subscribe** button.

   Now the federated zone should appear under the **Settings > Compute zones** menu and you will be able to create VSs in this zone. Be aware that resources in this zone are spread across multiple compute resources.

To enable your customers create virtual servers in a federated zone, create a bucket with this zone and other resources included.
The zone with the greatest performance gets the highest cloud score. The score is the relative number calculated by the following formula:

$\text{score} = \left( \frac{\text{resource benchmark}}{\text{max resource benchmark}} \right) \times 100$

If no tier filter is applied, a zone's score for different parameters is calculated against all other federated zones. If the tier filter is applied, a zone's scores are calculated against the zones within the same tier.

Click the Cloud Score button next to the zone you are interested in and select the corresponding tab to view how the zone's cloud score/CPU benchmark and score/disk IOPS and score/bandwidth speed and score/Uptime developed over time.

To zoom into a time period drag the chart by holding down the left mouse button and moving the mouse. Click the Reset Zoom button to zoom out again.
17.6.2 View Federated Zone

To view a federated compute zone:

1. Log in to your Control Panel.
2. Go to Admin > Settings > Compute zones menu.
3. On the page that loads, you will see the list of compute zones in your cloud with the options to suspend and unsubscribe from a federated zone.

4. Click the compute zone Label to see the compute zone details including:
   - the compute resource with the label you specified in the wizard when subscribing to a zone.
   - the amount of VSs created within this zone.
   - the total amount of CPU cores, the number of CPU cores available and used.
   - the total and free RAM for this compute resource.

5. Click the Tools button at the top right corner of the screen and choose Manage Data Stores.

6. The page with the virtual federated data store will load with the following details:
   - data store identifier
   - disk usage (GB)
   - disk capacity (GB)

To view the details of the federated network that is attached to your federated compute zone:

1. Go to Admin > Settings > Compute zones menu
2. Click the label of the required compute resource.
3. Click the Tools button at the top right corner of the screen and choose Manage Networks
4. The page that loads will list the following details:
   - network interface name
   - label
   - network interface identifier

Also, there is another way to access the list of federated zones you are subscribed to:

1. Go to Control Panel > Admin > Subscribed Zones. The screen that appears will show the federated zones you have subscribed to with their details.
2. Click the Actions button next to the required zone. Select Unsubscribe if you want to unsubscribe from the federated zone. Select Local zone to proceed to the compute zone overview page.
17.7 Trust Tokens and Private Federated Zone

This document applies to buyers. Otherwise refer to the Sellers or Users sections of this guide.

Sellers can publish private and public zones to Federation. If a zone is public, it is supplied to the market for general consumption and all buyers can see and subscribe to it. In case of a private zone, only the buyers who have a trust token from the seller can access the zone. If you received a trust token from the seller, you can view and subscribe to their private federated zone.

After the trust token is used it is stored in the database and cannot be deleted. After you delete a trust token you will still be able to see the private zone it was associated with.

17.7.1 Subscribe to Private Federated Zone

On this page:

- Subscribe to Private Federated Zone
- Edit Trust Token
- Delete Trust Token

See also:

- Subscribe to Federated Zone
- Buying Walk-through
- Request Location
- Manage User VSs
- Notifications from Seller

To subscribe to a private federated zone:

1. Go to Control Panel > Admin > Compute Federation > Trust tokens.
2. On the page that loads, click the “+” icon to add a new trust token.
3. Add the sender and the token provided by the seller.
4. Click Use token. On the page that loads you will see the list of the trust tokens you have used.
5. Proceed to normal procedure of subscribing to Federated zone. The private federated zone will be now available for subscription.

17.7.2 Edit Trust Token
To edit a trust token:
1. Go to Control Panel > Admin > Compute Federation > Trust tokens.
2. The page that loads shows the list of all trust tokens you have added. Click the Edit button next to the token you are interested in.
3. On the following page, make the required changes in the Sender field.
4. Click Save.

17.7.3 Delete Trust Token
To delete a trust token:
1. Go to Control Panel > Admin > Compute Federation > Trust tokens.
2. The page that loads shows the list of all trust tokens you have added. Click the Delete button next to the token you are interested in. You will be asked for confirmation before the trust token is deleted.

17.8 Request Location
This document applies to buyers. Otherwise refer to the Sellers or Users sections of this guide.

If you do not see a compute zone in a location you require in OnApp Federation, you can request the location you need. This will forward a letter to OnApp sales who will process your request and do everything possible to add the location you need.

To request a federated zone in a location of your choice:
1. Go to Admin > Settings > Federation.
2. Click the Request Location button in the top right corner.
3. Fill in the form that appears:
   o Company name - enter your company's name
   o Email - fill in your email
   o Location required - fill in the location you need
   o Why do you need this - enter the reason you request this location. This field is optional.
   o When do you need this - enter a time period when you need this location to be available. This field is optional.
17.9 Notifications

This document applies to buyers. Otherwise refer to the Sellers or Users sections of this guide.

In case there are any important events that relate to the federated zone you are subscribed to, you will receive notifications from the seller. When your Control Panel receives a notification, you will be informed about it via email. You can view notifications, edit them or notify users about new notifications.

You can also access a log file that records events related to tier and ratio services on zones you are subscribed to. The file is located at log/production_market.log on the Control Panel server.

17.9.1 View Notifications

To view the list of notifications for the federated zones to which you are subscribed:

1. Go to Control Panel > Admin > Settings > Compute Zones. The following page displays the list of all compute zones in your system.

2. Click the number in the Notification column next to the zone you are interested in. The page that loads, will display the list of notifications that relate to this zone.

On this page:

- View Notifications
- Edit Notifications
- Notify Users

See also:

- Buying Walk-through
• Subscribe to Federated Zone

• Request Location

• Manage User VSs

17.9.2 Edit Notifications

You can change the message of the notification to other text you find appropriate. To edit the text of a notification:

1. Go to Control Panel > Admin > Settings > Compute Zones. The following page displays the list of all compute zones in your system.

2. Click the number in the Notification column next to the appropriate zone. The page that loads, displays the list of current notifications that relate to this zone.

3. Click the Actions button next to the notification and select Edit.

4. Edit the text of the message.

5. Click Save.

17.9.3 Notify Users

To inform your users about new notifications:

1. Go to Control Panel > Admin > Settings > Compute Zones. The following page displays the list of all compute zones in your system.

2. Click the number in the Notification column next to the zone you are interested in. The page that loads, displays the list of current notifications that relate to this zone.

3. Click the Actions button next to the notification you want to inform you users about and select Notify Users. You will be asked for confirmation before the notification is forwarded to your users. Your users will receive the notifications you forward to them via e-mail.

When you unsubscribe from a zone, all notifications that relate to it will be removed.

Notifications are deleted automatically after they expire.

17.10 Suspend/Unsuspend Federated Zone

This document applies to buyers. Otherwise refer to the Sellers or Users sections of this guide.

To prevent your users from creating any more VSs on a federated zone, you can suspend this zone and unsuspend it at any time later. All existing VSs running in that zone will be limited to basic options - on/off, reboot and delete. To enable your users to create VSs in a federated compute zone you can unsuspend this zone.
17.10.1 Suspend Federated Zone

To suspend a federated zone:
1. Go to your Control Panel > Admin > Settings > Compute Zones menu.
2. Click the Actions icon next to a required zone and select Close.

On this page:

- Suspend Federated Zone
- Unsuspend Federated Zone

See also:

- Subscribe to Federated Zone
- Buying Walk-through
- Request Location

17.10.2 Unsuspend Federated Zone

To unsuspend a federated compute zone:
1. Go to your Control Panel > Admin > Settings > Compute Zones menu.
2. Click the Actions icon and select Open.

17.11 Unsubscribe from Federated Zone

This document applies to buyers. Otherwise refer to the Sellers or Users sections of this guide.

You can unsubscribe from federated zone if needed. Before unsubscribing from a federated zone, make sure that all VSs are manually migrated if data is to be retained and then deleted.

To unsubscribe from a federated zone:
1. Go to Control Panel > Admin > Subscribed Zones. The screen that appears will show the federated zones you have subscribed to with their details:
   - Tier - the zone’s pricing tier: DEV, PRO or PRIVATE
   - Country - the country where this zone is located
   - City - the city where this compute zone is located
- **Cloud Score** - the relative number which is the average of the IOPS/Bandwidth/CPU scores for this zone.
- **Features** - additional functionality provided by the zone. This parameter will list only the functionality provided by the zone. A zone can provide the following features: High Availability, backups, cross location replication, SSD or HDD storage, Windows licence, DDOS protection, DNS, IPv6.
- **Provider** - name of the seller to whom the zone belongs

2. Click the **Actions** icon next to the appropriate zone, and choose **Unsubscribe**.

Also there is another way to unsubscribe from a federated zone:

1. Go to your **Control Panel > Admin > Settings** menu.
2. Click the **Compute zones** icon.
3. On the page that appears, click the **Actions** button and choose **Unsubscribe**.
4. Confirm deleting a zone.

**See also:**

- Buying Walk-through
- Subscribe to Federated Zone
- Request Location

### 17.12 Manage Template Groups in Template Store

This document applies to buyers. Otherwise refer to the **Sellers** or **Users** sections of this guide.

When you subscribe to a federated zone, all of the templates added by seller to that zone become available to you. A special federated template group is created in your CP and can be accessed from the Template Store menu.

Be aware that you can edit only the federated template group's label.

If you want to use templates from federated template group in other template groups, you can take the following steps:

1. create your own (local) template group,
2. copy there templates from a federated template group,
3. assign your own prices per each template and use this group as a paid billing plan resource.

When the seller adds to/removes templates from the federated template group the templates will be also updated in your Control Panel.

If you and the seller are running OnApp 5.3 or higher, a template's price will be updated if it was changed by the seller and the administrator of your CP will receive an email with the list of changes the seller made to the federated template group.

If a seller deletes a template on which at least one VS is running from a group, the template will not be removed from buyer's federated template group.
The following instructions refer to creation of an own (local) template group.

On this page:

- Add Local Template Group to Template Store
- Assign Template to Local Template Group
- Remove Template from Local Template Group
- Change Template Price
- View/Edit/Delete Local Template Group
- Add Local Template Group to User's Bucket

See also:

- Subscribe to Federated Zone
- Buying Walk-through
- Request Location
- Trust Tokens and Private Federated Zone
- Notifications from the Seller
- Suspend/Unsuspend Federated Zone
- Unsubscribe from Federated Zone

17.12.1 Add Local Template Group to Template Store

To add a template group to the Template Store:
1. Go to your Control Panel > Admin > Template Store menu.
2. Click the "+" button in the upper right corner of the page.
3. Give a name to your group.
4. Specify the Windows Licensing type: MAK, KMS, or User license.
5. For KMS licensing, set the following parameters:
   - Server label – the name of the KMS server
   - KMS server host – the hostname of the licensing server
   - KMS server port – the port used to connect to the licensing server
6. Click Save.
7. You can add child template groups to your template group by clicking the "+" button > Add Child next to your template group.
17.12.2 Assign Template to Local Template Group

To assign a template to a template group:

1. Go to your Control Panel > Admin > Template Store menu.
2. Click the "+" button next to the required child group's label, then select Add Template.
3. Choose the template from the drop-down box at the Add a template section. The drop-down list will show all available templates grouped in local and federated zones respectively.
4. Click Add a template to a group button to confirm. Now the selected template is copied to the current template group.

17.12.3 Remove Template from Local Template Group

To remove a template from a template group:

1. Go to your Control Panel > Admin > Template Store menu.
2. Click the template group's label, then click the name of the template group from which you wish to remove a template.
3. Click the Delete icon next to a template you want to remove.
4. Confirm the deletion.

17.12.4 Change Template Price

To change the template price:

1. Go to your Control Panel > Admin > Template Store menu.
2. Click the name of the template group.
3. Click the Edit icon next to the template which price you want to change.
4. Enter the price value and click Save.

17.12.5 View/Edit/Delete Local Template Group

To view/edit/delete a template group:

1. Go to your Control Panel > Admin > Template Store menu.
2. On the page that follows, you'll see the list of all template groups created within your cloud:
   - Click the group's label, then click the child group label to see the list of templates assigned to this group.
   - Click the Edit icon next to a group to edit its name.
• Click Delete icon to delete a group.

17.12.6 Add Local Template Group to User’s Bucket

Once you configure your template store and set prices for the templates, you can use this group as a paid bucket resource. When you add template store limits to a bucket, you limit the number of preconfigured system templates available to users signed up for this bucket – they can only choose among templates from the added template store(s). To add a template store to the user’s bucket:

1. Go to your Control Panel > Admin > Buckets menu.
2. The screen that appears shows all buckets currently available. Click the label of the the bucket in question.
3. You will be redirected to the Access Control tab of the bucket.
4. Click the Rate Card tab.
5. Click the the + button next to the Pricing For Templates Store.
6. When the new windows pops up, set limits for resources.

For more information on resources allocation and pricing, refer to Configure Resource Allocation and Prices.

17.13 Manage User VSs

This document applies to buyers. Otherwise, refer to the Sellers or Users sections of this guide.

OnApp allows you to monitor the virtual servers created by your customers on federated zones. When customers create VSs in federated zones, you can view and moderate these VSs. Also there is a possibility to report a problem VS directly into OnApp support portal with a click of a button.

17.13.1 View User VSs

To view virtual servers, created by users within federated zone:

1. Go to your Control Panel > Cloud > Virtual Servers menu to view the list of all VSs created on federated zones and their details:
   - operating system - the OS of the virtual server
   - label - the name of the virtual server
   - VIP - whether the VIP status is enabled or disabled. Click the icon to enable/disable VIP status of a particular VS.
   - IP addresses - the IP addresses of the virtual server
   - disk size - disk size allocate to this virtual server
   - RAM - the amount of RAM available for this virtual server
   - backups - the number of backups and the space these backups take.
2. Click the virtual server's label to view its details.

On this page:

- View User VSs
- Manage User VSs
- Manage User vCenter VSs
- Accelerate VS
- Purge Content
- Report Problem with VS
- Virtual Server Failed Actions
- IP Report

See also:

- Buying Walk-through
- Subscribe to Federated Zone
- Request Location
- Manage Own Template Group
- Trust Tokens and Private Federated Zone

17.13.2 Manage User VSs

When your customers create VSs in federated zones, you can view and moderate these VSs under the Virtual Servers menu as normal VSs of your users. Refer to corresponding sections of Administration Guide for details.

<table>
<thead>
<tr>
<th>Virtual Server Options</th>
<th>Power Options</th>
<th>Administrative Options</th>
<th>Networks</th>
<th>Backups</th>
<th>Recipes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create</td>
<td>Reboot</td>
<td>Reset Root Password</td>
<td>View network interface</td>
<td>View</td>
<td>Recipes</td>
</tr>
<tr>
<td>Destroy</td>
<td>Startup</td>
<td>Integrated console</td>
<td>Set virtual server firewall rules</td>
<td>Delete backup</td>
<td></td>
</tr>
<tr>
<td>Edit</td>
<td>Shut down</td>
<td>Change owner</td>
<td>Edit virtual server network speed</td>
<td>Restore backup</td>
<td></td>
</tr>
</tbody>
</table>
Be aware, that during VS creation you cannot set greater network port speed than indicated by seller when adding zone to federation.

### 17.13.3 Manage User vCenter VSs

When your customers create vCenter VSs in federated zones, you can view and moderate these VSs under the Virtual Servers menu as normal vCenter VSs of your users. Refer to corresponding sections of the vCenter Implementation Guide for details.

<table>
<thead>
<tr>
<th>vCenter Virtual Server Options</th>
<th>Power Options</th>
<th>Administrative Options</th>
<th>Networks</th>
<th>Disks</th>
<th>Snapshots</th>
<th>Statistics</th>
<th>Recipes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edit</td>
<td>Reboot</td>
<td>Change Owner</td>
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</tr>
<tr>
<td>Rebuild manually</td>
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</tr>
<tr>
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<td></td>
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<td></td>
<td>Disk IOPS statistics</td>
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<td></td>
</tr>
<tr>
<td>Startup</td>
<td></td>
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</tbody>
</table>

### 17.13.4 Accelerate VS

If you are running OnApp 6.0, the federated virtual servers are accelerated by default. After the upgrade, virtual servers created in previous versions become accelerated as well.
If you and the seller you are subscribed to are running OnApp version 5.5 or later, you can turn on acceleration for virtual servers in Federation. Acceleration empowers any websites/VSS hosted on OnApp Cloud to use CDN. It provides all the benefits of a global CDN without any of the hassle of configuring and maintaining a CDN platform. Acceleration requires no modifications to the web applications running on virtual servers. All optimization is entirely automatic, and using minification & lossless compression of pages, scripts and images, will not modify or reduce the quality of the source content.

You can enable/disable acceleration for existing VSs at Control Panel > Cloud > Virtual Servers > Label by using the Accelerate slider.

Acceleration can be enabled on a federated VS in a case there is at least one accelerator VS in the same network the original VS is using. You can check it using API: POST virtual_machines/accelerator_presence?ip_id=X where X is VS IP. If it returns true - you can enable acceleration on a VS.

For more information refer to CDN Accelerator.

---

When acceleration is enabled by a buyer, OnApp will bill directly the buyer. The price is $10/month/VS.

The Accelerate slider is available if the following conditions are met:

- Accelerator is available in the network
- IP Address, selected during VS creation, is in the same network as Accelerator
- VS is created by setting own virtual server's resources, not by selecting a predefined instance package
- The Show IP address selection for new VS slider is activated in the Control Panel > Admin > Settings menu > Configuration
- Only HTTP is supported. Other protocols, including HTTPS, will be passed through to the VS directly.
- In order to route the VS’s traffic, the VS must be on the same network with the Accelerator.
- CDN Accelerator does not support the Internet Protocol version 6 (IPv6).

---

17.13.5 Purge Content

When acceleration is enabled for a virtual server, you can remove cache content for this VS. You can purge all content or particular files. When you want to purge particular files, the system will compare the checksum of the cached file and the new one. The cached file will be purged only if the checksums vary, that is the files are different. If the checksum of the two files is the same, the cached file will not be purged. When you purge all content, the checksums of the cached and new files are not taken into account.

Limitations and prerequisites:

- The purge tool applies only to virtual servers with acceleration enabled.
• You need to have the Allow to purge content of all Virtual Servers or the Allow to purge content of Own Virtual Servers permissions enabled to use this feature. For more information, refer to List of all OnApp Permissions.

• If several users accelerate their VSs using one Accelerator, they can purge each other's files, provided that they enter the correct URL.

To purge a single file:
1. Go to your Control Panel > Cloud > Virtual Servers menu.
2. Click a label of an accelerated virtual server.
3. Click Acceleration Settings > Purge.
4. In the Paths to Purge box, specify the destination path(s). You can enter only one path per line. You can enter either the original URL (the one prior to acceleration) or the accelerated URL.
5. Click the Submit button to purge files.

To purge all content:
1. Go to your Control Panel > Cloud > Virtual Servers menu.
2. Click a label of an accelerated virtual server.
3. Click Acceleration Settings > Purge.
4. Click the Purge All Contents of This Site button to purge all content.

17.13.6 Report Problem with VS

To report a problem with virtual server:
1. Go to your Control Panel > Cloud > Virtual Servers menu.
2. Click the Label of appropriate VS.
3. Go to the Tools menu.
4. Click the Report A Problem button.
5. On the screen that appears describe a problem and click Submit.

The Report A Problem button will fire an email to Federation support. The email will contain:
• Reporter's login
• Reporter's email
• IP address or hostname of reporter's CP
• Label, IP adress and hostname of reporter's virtual server
• IP address or hostname of supplier/seller
• IP address or hostname of trader/buyer
• Message with problem description

We strongly recommend that you do not enable Report a federation problem on any virtual server and Report a federation problem on user's
own virtual server permissions for your end customers, who you have provided a Federated VS to. For more details refer to the Permissions section.

17.13.7  Virtual Server Failed Actions

After a VS is built, any action you or your user schedules are executed on the Seller CP. In case any of the scheduled actions fail, the Failed Actions screen will enlist them. You can view the list of failed actions either for a particular virtual server, or for all VSs you or your users have built.

17.13.7.1  Failed Actions on All Virtual Servers

To view the list of failed actions for all virtual servers built, go to Dashboard > Sysadmin > Failed Actions tab. The page that loads shows the list of failed actions for the servers with the following details:

- **Ref** - the ID of the failed action. Click the Ref number to see the log details.
- **Date** - the date when the failure occurred
- **Action** - the name of the action that failed
- **Virtual Server** - the label of the VS on which the action failed. Click the VSs label to see its Overview page.

If required, you can clean the failed actions for all virtual servers in the cloud, by clicking the Clean failed actions button. For this action, you require the necessary permissions.

17.13.7.2  Failed Action on Particular Virtual Server

You can view the list of failed actions for a particular VS. To view the last 10 failed actions that occurred on a specific virtual server:

1. Go to Dashboard > Cloud > Virtual Servers > VS label.
2. On the page that loads under the Notes section, you will see the Failed Actions section that enlists the last 10 failed actions on that virtual server. The failed actions are displayed with the following details:

- **Ref** - the ID of the failed action. Click the Ref number to see the log details.
- **Date** - the date when the failure occurred
- **Action** - the name of the action that failed
Note that information about the last 10 failed actions of a particular VS becomes unavailable the next day. Still, you can view this info from the list of all failed actions accessed at VS label > Overview tab > Failed Actions.

To view all the failed actions that occurred on a specific virtual server since it’s been built:
1. Go to Dashboard > Cloud > Virtual Servers > VS label > Overview tab > Failed Actions.
2. The page that loads shows all the failed actions that occurred on that virtual server with the following details:
   - *Ref* - the ID of the failed action. Click the Ref number to see the log details.
   - *Date* - the date when the failure occurred
   - *Action* - the name of the action that failed

If required, you can clean the failed actions for the virtual server, by clicking the Clean failed actions button. For this action, you require the necessary permissions.

**17.13.8  IP Report**

**IP reporting** gives possibility to track the IP history, view when the IP addresses were assigned or unassigned to a particular user and so prevent the illegal activity such as spamming or hacking.

The IP usage report contains the history of the IP address usage and provides information about:
- IP address assign/unassign to the VS
- IP address assign/unassign to the User

To view the IP usage report:
2. Insert the IP address in the corresponding field.
3. You can filter the statistics by time - select the time period from the drop-down menu and click the Apply button.
4. You will get the statistics divided into several sections:
   - *From* - time and date from which IP address was assigned
   - *To* - time and date from to which IP address was assigned
   - *Full name* - user’s first and last name
   - *Username* - the user to whom the IP address is assigned
   - *Email* - user email
   - *VS hostname* - the name of your host
   - *VS identifier* - the VS identifier
- **NIC identifier** - the identifier of the network interface
- **NIC MAC** - MAC address of the network interface

By default, the statistics is stored for no less than six months and is kept on file for easy access by law enforcement and/or other authorities who request this information.

To export the statistics in csv format, click the **Download CSV** button.
18 Users

With OnApp Federation, users receive a broader range of services from their chosen OnApp hosting partner, having a single point of contact for technical support, SLA and billing. They no longer need to shop around to find the service that best meets their requirements.

From an end-user's perspective, there is very little difference between a federated zone and a local zone provided by their local seller. With Federation when creating a VS, users choose a federated location and a VS is created on a federated compute zone.

Here is the list of the documentation currently available for Users:

- Create VS in Federated Zone
- Deploying Servers Walk-through
- Move VS to Another Location

18.1 Deploying Servers Walk-through

This document applies to end users. Otherwise refer to the Sellers or Buyers sections of this guide.

Users signed up for the corresponding billing plan of the buyer, may create the virtual servers in Federated zones. Users are not aware that remote zones are operated by another OnApp partner. They are not able to select compute resources/data stores/networks during the virtual server creation. Provisioning operations are logged in to the Federation for billing and audit purposes.

18.1.1 Create Server from Wizard

Before you can deploy, you need to add the federated zone to your user's billing plan. Then you can just create a server from the wizard, as usual. If you want to use Cloud Motion functionality, click the Cloud Motion checkbox at the bottom of the screen. The map will then show only the zones which are configured for Cloud Motion.

On this page:

- Create Server from Wizard
- Configure Resources
- Add Recipes
- Confirmation

See also:

- Manage User VSs
• Create VS in Federated Zone
• FAQ

18.1.2 Configure Resources

The server is created from the specific template group. Server resources are configured the same way as local servers are configured.

18.1.3 Add Recipes

If required, users configure recipes and custom recipe variables for their virtual servers.

18.1.4 Confirmation

Users complete the wizard and the server is ready to go.

18.2 Move VS to Another Location

This document applies to end users. Otherwise refer to the Sellers or Buyers sections of this guide.

Cloud Motion allows you to move virtual servers between locations. This requires you to be subscribed to two federated zones which have CloudBoot Integrated storage. When you move your virtual server, a target server is built from a similar template as the source VS and with the same configuration, but at the selected location. Then, the disk of the source VS is replicated to the target VS. After the replication process is complete, the source VS is deleted from the source cloud.

Besides the VSs that are created with the Cloud Motion checkbox enabled in the creation wizard, you can also move the VSs built on a Cloud Motion compatible location that do not have this checkbox enabled. For this you need to run the following rake task:

```
rake federation:sync_motion POSSIBILITY_WITH_MARKET
```

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OnApp currently supports moving virtual servers with one IP address and one disk (not including the swap disk).

You can migrate a virtual server only if you have access to a template on the target zone with the same distro and version as the template from which the source VS is built on.

On this page:

- Create virtual server at location that supports Cloud Motion
- Initialize Cloud Motion

See also:

- Deploying Servers Walk-through
- Create VS in Federated Zone

18.2.1 Create virtual server at location that supports Cloud Motion

If you want to be able to move your virtual server to another location you need to build it at a location that supports Cloud Motion. To create a VS on a location compatible with Cloud Motion click the Cloud Motion checkbox at the Cloud Locations step of the VS creation wizard at Control Panel > Cloud > Virtual Servers > Create Virtual Server. The map will then show only the locations that support Cloud Motion.

For more information on creating virtual servers refer to Create VS in Federated Zone.

Click the Cloud Motion checkbox when selecting a location for the VS to ensure you are creating the VS in a Cloud Motion compatible location, this will give the ability to move it to another location in the future. If you do not click this checkbox during VS creation, you need to run the following rake task to be able to move such a virtual server built in a compatible location:

```
rake federation:sync_motion_possibility_with_market
```

18.2.2 Initialize Cloud Motion

If you need to move your virtual server to another location you can do that from the VS overview page.
1. Go to Control Panel > Cloud > Virtual Servers > Label > VS Tools
2. Select the Move to another location option
3. On the page that loads, from the drop-down list select the location to which you want to move the server
4. Click Next to move the VS
5. The next page will display the status of the Cloud Motion process. The following statuses will appear:
   - Control panel has scheduled the creation of target virtual server and the motion process - the Cloud Motion process has been initialized
   - Market has accepted request to perform motion - the replication transaction has been scheduled on the seller CP
   - Tunnel keys have been generated on source and inserted into target - tunnel keys have been configured successfully. These keys are used by the source CP to connect to the target VS for the purpose of disk replication.
   - Target is being started - the target VS is being started
   - Target has started - the target VS has stared successfully
   - The replication process from source to target has started - the disk of the source VS is being replicated to the target VS
   - Replication has successfully finished - the disk of the source VS has been replicated successfully
   - Replication process is stopped - the replication process is finished
   - Target is being shutdown - the target VS is being shut down. It is required to shut down the target VS to rebuild its network.
   - Target has been shutdown - the target VS has been shut down successfully
   - Rebuilding network on target - the target VS’s network is being rebuilt
   - Target’s network has been rebuilt. Target started - the target VS’s network has been rebuilt successfully. The target VS has started.
   - Destroying source - the source VS is being deleted
   - Motion finished. Waiting for source to be destroyed - all transactions except the source VS destruction were finished successfully
   - Motion has been complete - the Cloud Motion process is complete

You can view the status of Cloud Motion transactions at Control Panel > Cloud > Virtual Servers > status of the required server. The status of a VS that is being moved changes to In motion. If you click this status, you will be forwarded to the Motion Steps activity log.

6. Click Go to moved VS to see the overview page of the target VS
18.3 Create VS in Federated Zone

This document applies to end users. Otherwise refer to the Sellers or Buyers sections of this guide.

For users, creating a virtual server in Federation is almost the same procedure as creating a VS on local buyer's compute zones. Virtual servers are created from templates. Depending on the location chosen (remote seller's location or local buyer's), the virtual server will be created locally or in Federation. The system automatically checks this and the VS creation wizard alters accordingly.

Starting with OnApp 5.5 you can create vCenter virtual servers if you are subscribed to a private vCenter compute zone. To create such a VS, select a template of the 'VCENTER' virtualization type in the server creation wizard. The creation process for a vCenter VS is the same as for regular OnApp virtual servers.

When a virtual server is provisioned, the public keys of the Control Panel and your public SSH keys (if you have SSH keys added) are set for the server.

To create a virtual server on a federated compute zone:

1. Go to your Control Panel > Admin > Virtual Servers menu and press the “+” button, or click the Create New Virtual Server button at the bottom of the screen.

2. Fill in the VS creation form step by step. Each of these steps is described in the corresponding sections below.

3. Click the Create Virtual Server button to start the creation process. You will be taken to the virtual server details screen.

On this page:

- Step 1 of 6. Cloud Locations
- Step 2 of 6. Templates
- Step 3 of 6. Virtual Server Properties
- Step 4 of 5. Resources
- Step 5 of 6. Recipes
- Step 6 of 6. Confirmation

See also:

- Deploying Servers Walk-through
- Move VS to Another Location
- FAQ

18.3.1 Step 1 of 6. Cloud Locations

If there is only one location available this step will be skipped. The wizard will start with the Templates step. The Cloud Locations step is present in the wizard if the following requirements are satisfied:
• All compute zones that are added to a user’s bucket are assigned to location groups.
• Compute zones that are added to a user’s bucket are not assigned to the same location group.

At this step you choose cloud location for VS creation. The location predefines the available configurations of VS resources in the following steps of the wizard. If the chosen location is associated with a local compute zone, the VS creation procedure will be standard. Refer to Create VS section of OnApp User Guide for details. If the selected location is provided in Federation, the VS will be created remotely. Below are the instructions for completing the wizard if the chosen location is associated with a federated compute zone:

1. If you want to use Cloud Motion functionality, click the Cloud Motion checkbox. The map will then show only the zones which are configured for Cloud Motion.
2. Indicate your virtual server’s cloud location: country and city.
3. Click Next to proceed to the following step of the wizard.

• It is required to click the Cloud Motion checkbox when selecting a location for the VS if you want to be able to move this VS later, otherwise you will not be able to use Cloud Motion for the VS.
• If you select a dashboard location at this step, only local buyer templates will be available in the VS creation wizard. If you select a federated location, only the templates that come with the federated zone you have selected will be available for selection.

18.3.2 Step 2 of 6. Templates

At this step, specify the template from which your virtual server will be built.

To choose a template:
1. Click the required group icon on the right (Windows, Linux, FreeBSD etc.) to expand the list of templates on the left. Every template contains the following info:
  o Template’s label
  o Min memory size, required to create a VS from this template
  o Min disk size, required to create a VS from this template
  o Virtualization type (XEN, KVM, VCENTER)

  To create a vCenter VS, select a ’VCENTER’ virtualization type template. This applies only if you are subscribed to a vCenter compute zone.

  o Price per hour
2. Select the template.
3. Click Next.

Only the templates that come with the federated zone you have selected at Step 1 are available for selection.
Note that the template group associated with the selected location will be present in the wizard only if all the resources (template group, data store zone, compute zone, network zone, backup server zone) of that compute zone are added to the bucket of the current user.

18.3.3 Step 3 of 6. Virtual Server Properties

At this step you need to:

- Give your virtual server a label.
- Give your virtual server a hostname. The hostname should consist of letters [A-Za-z], digits [0-9] and dash [-]. For more info on hostname validation, refer to RFC standard documentation.
- Specify the domain for this VS. The default value is localdomain. This parameter is not applicable for Windows virtual servers.

For example:

- test.onapp.com - specify 'test' as hostname, 'onapp.com' as domain.
- If you leave the domain field blank, the default value 'localdomain' will be used and you will get the following - test.onapp.com.localdomain.

- Give your virtual server a secure password. It can consist of 6-99 characters, letters [A-Za-z], digits [0-9], dash [-] and lower dash [ _]. You can use both lower- and uppercase letters.
- Click Next.

18.3.4 Step 4 of 5. Resources

You can create a virtual server from a ready-made instance package or select all the necessary resources manually. The availability of instance packages depends on your permissions and bucket settings. Therefore, the Resources step can provide two options: Instance Packages or Create Your Own. If you select an instance package, then click the Create Your Own tab and proceed to the next step, the system applies resources from Create Your Own even if you don't select any resources.

18.3.4.1 Instance Packages

Before you create a virtual server from an instance package, consider the following:

- If an instance package applies only to certain compute zones in a bucket, a virtual server is created on one of the compute resources within one of those zones. If an instance package is not limited to certain zones, the compute zone and compute resource are selected automatically from the ones available to a user.
- Instance package virtual servers can be created only in compute zones where all compute resources are assigned the same number of CPU units. If there are compute resources with different number of CPU units, it's not possible to create instance package virtual servers in such zones. The reason is that CPU priority for instance package virtual servers in this configuration cannot be set to 100%, which is the default value for such virtual servers.
• If there are no available IP addresses, all instance packages are dimmed in the wizard.
• Instance packages that have resources incompatible with the available compute zones are dimmed in the wizard.

To create a virtual server from an instance package, click a box for a corresponding package. The instance package box includes the following details:

• **Memory** - the number of RAM in MB or GB available in the instance package
• **CPUs** - the number of CPU cores available in this instance package
• **Disk Size** - the number of disk size in MB or GB available in this instance package
• **Bandwidth** - the number of bandwidth in MB or GB available in this instance package
• **Price per Hour:**
  o **Mode ON** - an estimated hourly price if the virtual server is powered on
  o **Mode OFF** - an estimated hourly price if the virtual server is powered off
• **Price per Month:**
  o **Mode ON** - an estimated monthly price if the virtual server is powered on
  o **Mode OFF** - an estimated monthly price if the virtual server is powered off

After you click an instance package box, it becomes highlighted in green. Click **Next** to proceed to the following step of the wizard.

18.3.4.2 Create Your Own
Set the resources needed for this VS: RAM, CPU cores, CPU priority.

**Primary disk**
• Set the primary disk size

**Swap disk**
• Set the swap disk size. There is no swap disk for Windows-based VSs. In all other cases, swap disk size must be greater than zero. There is no swap disk for vCenter virtual servers.

**Network configuration**
• Set the port speed for this VS or choose unlimited
• Click **Next**.

• Be aware, that during VS creation you can not set greater network port speed than indicated by seller when adding zone to federation.
• There are the following resources ratios for VSs built on public federated zones:
  o a 4:1 ratio for CPU cores and RAM. For example, if you are building a VS with 8 CPU cores, you need to allocate at least 2 GB of RAM to it. The RAM value in the wizard will be adjusted automatically according to the number of CPU cores you set.
  o a 20:1 ratio for storage and RAM. For example, if you are building a VS with 5 GB of storage, you need to allocate at least 256 MB
of RAM to it. The RAM value in the wizard will be adjusted automatically according to the storage size you set.

- a 20:1 ratio for primary and swap disks, if swap disks apply to your VS. For example, if you set a 1GB swap disk for a VS, the primary disk cannot exceed 19GB.

### 18.3.5 Step 5 of 6. Recipes

- The recipes step will be missing in the wizard if there are no recipes created in the cloud. For information on adding recipes to the cloud refer to the Recipes section of the User Guide.
- Recipes on the disk resize event are supported only if the seller who provides the resources runs OnApp version 5.4 and up. Recipes on the network interface added event are not supported for VSs in Federation.

At this step you need to indicate the recipes you want to assign to your virtual server. This step is optional. You can create a virtual server without choosing recipes and add them later if required.

1. Choose a recipe you want to assign to this virtual server by dragging the required recipe to the Assigned recipes pane.
2. To add a custom variable, click the "+" button next to the Custom recipe variables title bar, then specify variable details:
   - Specify the recipe name and its value.
   - Move the Enabled slider to the right to allow use of this variable.
3. Click Next to proceed to the next step of the wizard that completes the virtual server creation process.

### 18.3.6 Step 6 of 6. Confirmation

At the Confirmation step you can find the configuration summary of VS, which will be created. You can view template's name, RAM size, number of networks, primary disk and swap disk size, number of cores.

Move the Boot Virtual Server slider to the right if you want the system to automatically build the VS. If you leave this box blank, you will have to build your server manually after it is created.

After you set up these parameters, click the Create Virtual Server button to start the creation process.
19 Buyers API

This chapter provides requests for buyers.

19.1 Get List of Federated Resources

As a buyer, you can get the list of all compute zones in Federation with their details. To do so, use the following request:

GET /federation/hypervisor_zones/unsubscribed.xml
GET /federation/hypervisor_zones/unsubscribed.json

**XML Request Example**

```bash
curl -i -X GET
http://onapp.test/federation/hypervisor_zones/unsubscribed.xml -u
user:pass
```

**JSON Request Example**

```bash
curl -i -X GET
http://onapp.test/federation/hypervisor_zones/unsubscribed.json -u
user:pass
```

**XML Output Example**
<hypervisor_zones type="array">
  <hypervisor_zone>
    <provider_name>Test</provider_name>
    <seller_page_url nil="true"/>
    <description/>
    <federation_id>resource:compute:onapp-test</federation_id>
    <country>Ukraine</country>
    <city>Lviv</city>
    <uptime_percentage type="integer">0</uptime_percentage>
    <tier>enterprise</tier>
    <latitude type="float">49.839683</latitude>
    <longitude type="float">24.029717</longitude>
    <cpu_score type="integer">0</cpu_score>
    <cpu_index type="integer">0</cpu_index>
    <bandwidth_score type="integer">0</bandwidth_score>
    <bandwidth_index type="integer">0</bandwidth_index>
    <disk_score type="integer">0</disk_score>
    <disk_index type="integer">0</disk_index>
    <cloud_index type="integer">0</cloud_index>
  </hypervisor_zone>
</hypervisor_zones>

<hypervisor_zone_pricing>
  <cpu_on>0</cpu_on>
  <cpu_off>0</cpu_off>
  <cpu_priority_on>0</cpu_priority_on>
  <cpu_priority_off>0</cpu_priority_off>
  <memory_on>22</memory_on>
  <memory_off>0</memory_off>
  <cpu_max nil="true"/>
  <cpu_priority_max nil="true"/>
</hypervisor_zone_pricing>

<data_store_zone_pricing>
  <disk_size_on>22</disk_size_on>
  <disk_size_off>0</disk_size_off>
  <data_read>0</data_read>
  <data_write>0</data_write>
  <input_requests>0</input_requests>
  <output_requests>0</output_requests>
  <disk_size_max nil="true"/>
</data_store_zone_pricing>

<network_zone_pricing>
  <ip_addresses_on>900</ip_addresses_on>
  <ip_addresses_off>0</ip_addresses_off>
  <port_speed>0</port_speed>
  <data_read>0</data_read>
  <data_sent>0</data_sent>
  <ip_addresses_max nil="true"/>
  <port_speed_max nil="true"/>
</network_zone_pricing>

<user_virtual_server_pricing>
  <auto_scaling>0</auto_scaling>
  <template_backup_store>0</template_backup_store>
  <backup>0</backup>
  <template>0</template>
  <auto_scaling_max nil="true"/>
  <template_backup_store_max nil="true"/>
  <backup_max nil="true"/>
  <template_max nil="true"/>
</user_virtual_server_pricing>

<tier_options>
  <ha type="boolean">true</ha>
  <sla type="boolean">true</sla>
  <storage_performance type="boolean">true</storage_performance>
  <backups type="boolean">true</backups>
  <templates type="boolean">true</templates>
  <windows_license type="boolean">true</windows_license>
<ddos_protection type="boolean">true</ddos_protection>
<ipv6 type="boolean">false</ipv6>
<dns type="boolean">true</dns>
<motion type="boolean">true</motion>
<replication type="boolean">true</replication>
</tier_options>
</hypervisor_zone>
</hypervisor_zones>

Where:

label - federated zone name
provider_name - the provider name
seller_page_url - the link to the seller's website. Currently, this parameter is not applicable.
description - the description of the zone
federation_id - ID of the Zone in Federation
country - the country where this zone is located
city - the city where this zone is located
uptime_percentage - the zone's uptime percentage
tier - the zone's tier: dev, pro, enterprise
latitude - the latitude coordinates of the zone's location
longitude - the longitude coordinates of the zone's location
cpu_score - zone's CPU score
cpu_index - zone's CPU index
bandwidth_score - zone's bandwidth score
bandwidth_index - zone's bandwidth index
disk_score - zone's disk score
disk_index - zone's disk index
cloud_index - zone's cloud index
hypervisor_zone_pricing - the array of parameter related to the pricing for the zone for compute zone resources:

cpu_on - the price per CPU core/per hour, for VSs powered on
cpu_off - the price per CPU core/per hour, for VSs powered off
cpu_priority_on - the price per CPU priority % per hour, for VSs powered on
cpu_priority_off - the price per CPU priority % per hour, for VSs powered off
memory_on - the price per RAM (MB) per hour, for VSs powered on
memory_off - the price per RAM (MB) per hour, for VSs powered off
cpu_max - maximum number of CPU cores the users can request when signed up for this federated zone
cpu_priority_max - the maximum CPU priority % the users can request when signed up for this federated zone
memory_max - the maximum RAM (MB) they can request when signed up for this federated zone
**data_store_zone_pricing** - the array of parameter related to the pricing for the zone for data store zone resources:

- **disk_size_on** - the price per GB of disk space per hour for VSs powered on
- **disk_size_off** - the price per GB of disk space per hour for VSs powered off
- **data_read** - the price for data read per GB/per hour
- **data_write** - the price for data written per GB/per hour
- **input_requests** - the price for input requests per hour. Input requests are measured in millions and priced per million requests.
- **output_requests** - the price for output requests per hour. Output requests are measured in millions and priced per million requests.
- **disk_size_max** - the maximum disk size the users can request when signed up for this federated zone

**network_zone_pricing** - the array of parameter related to the pricing for the zone for network zone resources:

- **ip_addresses_on** - the price per IP address/per hour for VSs powered on
- **ip_addresses_off** - the price per IP address/per hour for VSs powered off
- **port_speed** - the price for Mbps/per hour of port speed for VSs
- **data_rxed** - the price per GB of data received/per hour for VSs
- **data_sent** - the price per GB of data sent/per hour for VSs
- **ip_addresses_max** - the maximum number of IP addresses the users can request when signed up for this federated zone
- **port_speed_max** - the maximum port speed (Mbps) the users can request when signed up for this federated zone

**user_virtual_server_pricing** - the array of parameter related to the pricing for the zone for user resources:

- **auto_scaling** - parameter reserved for future use
- **template_backup_store** - the price for backups&templates
- **backup** - the price per user backup per hour
- **template** - the price per user template per hour
- **auto_scaling_max** - parameter reserved for future use
- **template_backup_store_max** - the maximum amount of disk space (GB) customers can use for backups and templates when signed up for this federated zone
- **backup_max** - the maximum number of user backups which can be created when signed up for this federated zone, according to their template&backup storage space limit
- **template_max** - the maximum number of user templates which can be created when signed up for this federated zone, according to their template&backup storage space limit

**tier_options** - array of parameters related to zone configuration:

- **ha** - ‘true’ if HA is available for the compute zone, otherwise ‘false’
- **sla** - the number by which the cost of the resources provided to the buyer will be multiplied in case of downtime. The seller will need to compensate the cost of resource multiplied by this number to the buyers in case of downtime.
- **storage_performance** - ‘true’ if the zone provides SSD storage, ‘false’ if the zone provides HDD storage
backups - ‘true’ if backups are available for the compute zone, otherwise ‘false’

templates - the templates that are available in the federated zone

windows_license - ‘true’ if Windows licence is available for the compute zone, otherwise ‘false’

ddos_protection - ‘true’ if DDOS protection is available for the compute zone, otherwise ‘false’

ipv6 - ‘true’ if IPv6 is available for the compute zone, otherwise ‘false’

dns - ‘true’ if DNS available for the compute zone, otherwise ‘false’

motion - ‘true’ if the zone has CloudBoot Integrated Storage configured, otherwise ‘false’. For more information refer to Move VS to Another Location.

replication - ‘true’ if cross location replication is available for the compute zone, otherwise ‘false’

19.2 Get Federated Resource Details

As a buyer you can find a particular federated resource to see its details. To do so, use the following request:

GET /federation/hypervisor_zones/unsubscribed.xml?q=query
GET /federation/hypervisor_zones/unsubscribed.json?q=query

**XML Request Example:**

```
curl -i -X GET
user:userpass
```

**JSON Request Example:**

```
curl -i -X GET
user:userpass
```

**Where:**

query - part of the name of compute zone’s label, location country or city

**XML Response Example:**
<hypervisor_zones type="array">
  <hypervisor_zone>
    <provider_name>Test</provider_name>
    <seller_page_url nil="true"/>
    <description/>
    <federation_id>resource:compute:onapp-test</federation_id>
    <country>Ukraine</country>
    <city>Lviv</city>
    <uptime_percentage type="integer">0</uptime_percentage>
    <tier>enterprise</tier>
    <latitude type="float" type="float">49.839683</latitude>
    <longitude type="float">24.029717</longitude>
    <cpu_score type="integer">0</cpu_score>
    <cpu_index type="integer">0</cpu_index>
    <bandwidth_score type="integer">0</bandwidth_score>
    <bandwidth_index type="integer">0</bandwidth_index>
    <disk_score type="integer">0</disk_score>
    <disk_index type="integer">0</disk_index>
    <cloud_index type="integer">0</cloud_index>
    <hypervisor_zone_pricing>
      <cpu_on>0</cpu_on>
      <cpu_off>0</cpu_off>
      <cpu_priority_on>0</cpu_priority_on>
      <cpu_priority_off>0</cpu_priority_off>
      <memory_on>22</memory_on>
      <memory_off>0</memory_off>
    </hypervisor_zone_pricing>
    <data_store_zone_pricing>
      <disk_size_on>22</disk_size_on>
      <disk_size_off>0</disk_size_off>
      <input_requests>0</input_requests>
      <output_requests>0</output_requests>
    </data_store_zone_pricing>
    <network_zone_pricing>
      <ip_addresses_on>900</ip_addresses_on>
      <ip_addresses_off>0</ip_addresses_off>
      <port_speed>0</port_speed>
      <data_read>0</data_read>
      <data_write>0</data_write>
    </network_zone_pricing>
    <user_virtual_server_pricing>
      <auto_scaling>0</auto_scaling>
      <template_backup_store>0</template_backup_store>
      <backup>0</backup>
      <template>0</template>
      <auto_scaling_max nil="true"/>
      <template_backup_store_max nil="true"/>
      <backup_max nil="true"/>
      <template_max nil="true"/>
    </user_virtual_server_pricing>
  </hypervisor_zone>
</hypervisor_zones>
<ddos_protection type="boolean">true</ddos_protection>
<ipv6 type="boolean">false</ipv6>
<dns type="boolean">true</dns>
<motion type="boolean">true</motion>
<replication type="boolean">true</replication>
</tier_options>
</hypervisor_zone>

Where:

- **label** - federated zone name
- **provider_name** - the provider name
- **seller_page_url** - the link to the seller's website. Currently, this parameter is not applicable.
- **description** - the description of the zone
- **federation_id** - ID of the Zone in Federation
- **country** - the country where this zone is located
- **city** - the city where this zone is located
- **uptime_percentage** - the zone's uptime percentage
- **tier** - the zone's tier: dev, pro, enterprise
- **latitude** - the latitude coordinates of the zone's location
- **longitude** - the longitude coordinates of the zone's location
- **cpu_score** - zone's CPU score
- **cpu_index** - zone's CPU index
- **bandwidth_score** - zone's bandwidth score
- **bandwidth_index** - zone's bandwidth index
- **disk_score** - zone's disk score
- **disk_index** - zone's disk index
- **cloud_index** - zone's cloud index
- **hypervisor_zone_pricing** - the array of parameter related to the pricing for the zone for compute zone resources:
  - **cpu_on** - the price per CPU core/per hour, for VSs powered on
  - **cpu_off** - the price per CPU core/per hour, for VSs powered off
  - **cpu_priority_on** - the price per CPU priority % per hour, for VSs powered on
  - **cpu_priority_off** - the price per CPU priority % per hour, for VSs powered off
  - **memory_on** - the price per RAM (MB) per hour, for VSs powered on
  - **memory_off** - the price per RAM (MB) per hour, for VSs powered off
  - **cpu_max** - maximum number of CPU cores the users can request when signed up for this federated zone
  - **cpu_priority_max** - the maximum CPU priority % the users can request when signed up for this federated zone
  - **memory_max** - the maximum RAM (MB) they can request when signed up for this federated zone
- **data_store_zone_pricing** - the array of parameter related to the pricing for the zone for data store zone resources:
disk_size_on - the price per GB of disk space per hour for VSs powered on

disk_size_off - the price per GB of disk space per hour for VSs powered off

data_read - the price for data read per GB/per hour

data_write - the price for data written per GB/per hour

input_requests - the price for input requests per hour. Input requests are measured in millions and priced per million requests.

output_requests - the price for output requests per hour. Output requests are measured in millions and priced per million requests.

disk_size_max - the maximum disk size the users can request when signed up for this federated zone

network_zone_pricing - the array of parameter related to the pricing for the zone for network zone resources:

ip_addresses_on - the price per IP address/per hour for VSs powered on

ip_addresses_off - the price per IP address/per hour for VSs powered off

port_speed - the price for Mbps/per hour of port speed for VSs

data_rxed - the price per GB of data received/per hour for VSs

data_sent - the price per GB of data sent/per hour for VSs

ip_addresses_max - the maximum number of IP addresses the users can request when signed up for this federated zone

port_speed_max - the maximum port speed (Mbps) the users can request when signed up for this federated zone

user_virtual_server_pricing - the array of parameter related to the pricing for the zone for user resources:

auto_scaling - parameter reserved for future use

template_backup_store - the price for backups&templates

backup - the price per user backup per hour

template - the price per user template per hour

auto_scaling_max - parameter reserved for future use

template_backup_store_max - the maximum amount of disk space (GB) customers can use for backups and templates when signed up for this federated zone

backup_max - the maximum number of user backups which can be created when signed up for this federated zone, according to their template&backup storage space limit

template_max - the maximum number of user templates which can be created when signed up for this federated zone, according to their template&backup storage space limit

tier_options - array of parameters related to zone configuration:

ha - ‘true’ if HA is available for the compute zone, otherwise ‘false’

sla - the number by which the cost of the resources provided to the buyer will be multiplied in case of downtime. The seller will need to compensate the cost of resource multiplied by this number to the buyers in case of downtime.

storage_performance - ‘true’ if the zone provides SSD storage, ‘false’ if the zone provides HDD storage

backups - ‘true’ if backups are available for the compute zone, otherwise ‘false’
templates - the templates that are available in the federated zone
windows_license - ‘true’ if Windows licence is available for the compute zone, otherwise ‘false’
ddos_protection - ‘true’ if DDOS protection is available for the compute zone, otherwise ‘false’
ipv6 - ‘true’ if IPv6 is available for the compute zone, otherwise ‘false’
dns - ‘true’ if DNS available for the compute zone, otherwise ‘false’
motion - ‘true’ if the zone has CloudBoot Integrated Storage configured, otherwise ‘false’. For more information refer to Move VS to Another Location.
replication - ‘true’ if cross location replication is available for the compute zone, otherwise ‘false’

19.3 Subscribe to Federated Zones

As a buyer you can subscribe to compute zones available in Federation. To do so, use the following request:
POST /federation/hypervisor_zones/:id/subscribe.xml
POST /federation/hypervisor_zones/:id/subscribe.json

XML Request Example

curl -i -X POST http://onapp.test/federation/hypervisor_zones/12/subscribe.xml -u user:userpass -d ''

Json Request Example

curl -i -X POST http://onapp.test/federation/hypervisor_zones/12/subscribe.json -u user:userpass -d ''

Where
id - federated compute zone ID which you can find using GET request (e.g. resource:compute:onapp-KpY4wXq2N)

19.4 Unsubscribe from Federated Zones

As a buyer, you can unsubscribe from a federated zone so that your users could create no more VSs in a zone. To do so, use the following request:
DELETE /federation/hypervisor_zones/:id/unsubscribe.xml
DELETE /federation/hypervisor_zones/:id/unsubscribe.json

XML Request Example

curl -i -X DELETE http://onapp.test/federation/hypervisor_zones/12/unsubscribe.xml -u user:userpass
JSON Request Example

```bash
curl -i -X DELETE
http://onapp.test/federation/hypervisor_zones/:id/unsubscribe.json -u
user:userpass
```

Where:
`id*` - hypervizor zone ID

### 19.5 Suspend Zone

As a buyer, you can prevent your users from creating any more VSs on a federated zone. To suspend this zone and unsuspend it at any time later, use the following request:

PUT /federation/hypervisor_zones/:id/close.xml
PUT /federation/hypervisor_zones/:id/close.json

XML Request Example

```bash
curl -i -X PUT http://onapp.test/federation/hypervisor_zones/12/close.xml
-u user:userpass
```

JSON Request Example

```bash
curl -i -X PUT http://onapp.test/federation/hypervisor_zones/12/close.json
-u user:userpass
```

Where:
`id*` - hypervizor zone ID

### 19.6 Unsuspend Zone

As a buyer, you can unsuspend a suspended federated zone. To do so, use the following request:

PUT /federation/hypervisor_zones/:id/open.xml
PUT /federation/hypervisor_zones/:id/open.json

XML Request Example

```bash
curl -i -X PUT http://onapp.test/federation/hypervisor_zones/12/open.xml
-u user:userpass
```

JSON Request Example

```bash
curl -i -X PUT http://onapp.test/federation/hypervisor_zones/12/open.json
-u user:userpass
```
Where
id* - hypervisor zone ID

19.7 Add Trust Token

As a buyer, you can register trust tokens to access private zones. To do so, use the following request:

POST /federation/trader_tokens.xml
POST /federation/trader_tokens.json

Once you have used the token, you cannot remove it.

XML Request Example

curl -i -X POST -H 'Content-type: application/xml' http://onapp.test/federation/trader_tokens.xml -u user:userpass -d '<token><token>6c877224081ac0f224e63aaddd0b12dd7c9b6220658953ed9951bf65136bbf</token><sender>seller_name</sender></token>'

JSON Request Example

curl -i -X POST -H 'Content-type: application/json' http://onapp.test/federation/trader_tokens.json -u user:userpass -d '{"token":{"token":"a11d1cdb6f92525898458b93c10a4f87f359701478e108b24e329039e3252443", "sender":"seller_name"}}'

Where:
token - the token that lets you access private zones
sender - the name of the seller who generated the token

19.8 Edit Trust Token

As a buyer, you can edit the sender of the trust token. To do so, use the following request:

PUT /federation/trader_tokens/:id.xml
PUT /federation/trader_tokens/:id.json

XML Request Example


JSON Request Example

---
19.9 Delete Trust Token

As a buyer, you can remove trust tokens that you have added. To do so, use the following request:

DELETE /federation/trader_tokens/:id.xml
DELETE /federation/trader_tokens/:id.json

XML Request Example

```bash
```

JSON Request Example

```bash
```

Where:

- **sender** - the seller who send you the trust token

19.10 Get List of Trust Tokens

As a buyer, you can view the list of trust tokens you have used:

GET /federation/trader_tokens.xml
GET /federation/trader_tokens.json

XML Request Example:

```bash
```

JSON Request Example:

```bash
curl -i -X GET -H 'Content-type: application/json' http://onapp.test/federation/trader_tokens.json -u user:userpass
```

XML Response Example:
Where:

- **id** - ID of the token
- **sender** - the name of the seller who generated the token
- **token** - the token itself, use this string to access the private zone

### 19.11 Add VS in Federation

To add a VS based on a federated zone, use the following request:

**POST /virtual_machines.xml**

**POST /virtual_machines.json**

**XML Request Example**

```bash
curl -i -X POST -H 'Accept: application/xml' -H 'Content-type: application/xml' -u user:userpass -d
  '<virtual_machine><template_id>8</template_id><label>zaza</label><hostname>
zaza</hostname><initial_root_password>ehgebhvktwh</initial_root_password>
.memory>128</memory><cpus>1</cpus><cpu_shares>1</cpu_shares><primary_disk_size>5</primary_disk_size><swap_disk_size>1</swap_disk_size><rate_limit>1
.required_virtual_machine_build>1</required_virtual_machine_build><recipe_joins_attributes><1506004212431><recipe_id>3</recipe_id><1506004212431></recipe_joins_attributes><required_virtual_machine_startup>1</required_virtual_machine_startup></virtual_machine>' --url http://onapp.test/virtual_machines.xml
```

**JSON Request Example**

```bash
curl -i -X POST -H 'Accept: application/json' -H 'Content-type: application/json' -u user:userpass -d
  '{"virtual_machine":{"template_id":"8", "label":"zaza", "hostname":"zaza", "initial_root_password":"tyrhsgj657th", "memory":"128", "cpus":"1", "cpu_shares":1", "primary_disk_size":"5", "recipe_joins_attributes":{"1506004212431":{"recipe_id":"3"}}, "swap_disk_size":"1", "rate_limit":1", "required_virtual_machine_build":"1", "required_virtual_machine_startup":1" }}' --url http://onapp.test/virtual_machines.json
```

**Where:**

- **memory** - amount of RAM assigned to the VS

There are the following resources ratios for VSs built on public federated zones:
• a 4:1 ratio for CPU cores and RAM. For example, if you are building a VS with 8 CPU cores, you need to allocate at least 2 GB of RAM to it.
• a 20:1 ratio for storage and RAM. For example, if you are building a VS with 5 GB of storage, you need to allocate at least 256 MB of RAM to it.

If you do not allocate the required amount of RAM to the VS the build process will fail.

cpus* - number of CPUs assigned to the VS

cpu_shares* - required parameter. For KVM compute resource the CPU priority value is always 100. For XEN, set a custom value. The default value for XEN is 1

hostname* - set the host name for this VS

label* - user-friendly VS description

primary_disk_size* - set the disk space for this VS

swap_disk_size* - set swap space. There is no swap disk for Windows-based VSs

rate_limit - set max port speed. Optional parameter: if none set, the system sets port speed to unlimited

required_virtual_machine_build * - set 1 to build VS automatically

required_virtual_machine_startup - set 1 to start up the VS automatically, otherwise set 0 (default state is "1")

template_id * - the ID of a template from which a VS should be built

recipe_id - the ID of the recipe you wish to assign to this VS

initial_root_password - the root password for a VS. Optional, if none specified, the system will provide a random password. It can consist of 6-32 characters, letters [A-Za-z], digits [0-9], dash [-] and lower dash [ _]. You can use both lowercase and uppercase letters

The following characters are not allowed for Windows-based virtual servers:

• percent sign [%]
• double quotation marks ['"]
• brackets [<,>]
• vertical bar [[]]
• caret [^]
• ampersand [&]
• parentheses [(,)]

19.12 Report a Problem with a VS

To report a problem with a virtual server, use the following request:

POST /federation/virtual_machines/:vm_identifier/report_a_problem.xml
POST /federation/virtual_machines/:vm_identifier/report_a_problem.json

XML Request Example
OnApp Cloud 6.4 Edge 1 Federation Guide

JSON Request Example

"federation_problem[body]"="text_problem"
' 'http://onapp.test/federation/virtual_machines/12/report_a_problem.json'

Where:

**body** - the description of the problem

19.13 Get Zone Cloud Score

To get the cloud score graph for a zone, use the following request:

GET /federation/hypervisor_zones/:federation_id/scores.xml
GET /federation/hypervisor_zones/:federation_id/scores.json

XML Request Example

curl -X GET -H "Accept: application/xml" -H "Content-Type: application/xml" -u user:userpass
'http://onapp.test/federation/hypervisor_zones/12/scores.xml'

JSON Request Example

curl -X GET -H "Accept: application/json" -H "Content-Type: application/json" -u user:userpass
'http://onapp.test/federation/hypervisor_zones/12/scores.json'

XML Output Example

```xml
<hypervisor_zone_scores type="array">
  <hypervisor_zone_score>
    <cpu_score type="integer">10</cpu_score>
    <disk_score type="integer">20</disk_score>
    <bandwidth_score type="integer">30</bandwidth_score>
    <cpu_index type="integer">75</cpu_index>
    <disk_index type="integer">90</disk_index>
    <bandwidth_index type="integer">19</bandwidth_index>
    <cloud_index type="integer">67</cloud_index>
    <created_at>2015-08-14T13:30:38.065Z</created_at>
  </hypervisor_zone_score>
  ...
</hypervisor_zone_scores>
```

Where:
cpu_score - zone's CPU score  
disk_score - zone's disk score  
bandwidth_score - zone's bandwidth score  
cpu_index - zone's CPU index  
disk_index - zone's disk index  
bandwidth_index - zone's bandwidth index  
cloud_index - zone's CPU index  
created_at - time in [YYYY][MM][DD][hh][mm][ss]Z format

19.14 Set Default Firewall Rules

To set default firewall rules, use the following request:

PUT /virtual_machines/:virtual_machine_id/firewall_rules/update_defaults.xml

PUT /virtual_machines/:virtual_machine_id/firewall_rules/update_defaults.json

XML Request Example

```bash
curl -i -X PUT -u user:userpass -H 'Accept: application/xml' -H 'Content-type: application/xml' -d '
<network_interfaces><159><default_firewall_rule>ACCEPT</default_firewall_rule></159></network_interfaces>' --url http://onapp.test/virtual_machines/12/firewall_rules/update_defaults.xml
```

JSON Request Example

```bash
```

Where:

network_interfaces - the array of VS network interfaces. To set default firewall rules for a VS (either DROP or ACCEPT), you need to set the rule for each network interface the VS is using.

default_firewall_rule - set default firewall rule for the particular VS network interface – either DROP or ACCEPT

19.15 Edit a Notification for a Zone

To edit a notification for a zone, use the following request:

PUT /federation/hypervisor_zones/:hypervisor_group_id/announcements/:id.xml

PUT /federation/hypervisor_zones/:hypervisor_group_id/announcements/:id.json
### XML Request Example

```
curl -i -X PUT -H 'Accept: application/xml' -H 'Content-type: application/xml' -u user:userpass -d '<announcement><created_at>2015-07-28T14:28:36+03:00</created_at><federation_id>announcement:onapp-resource:compute:onapp-U1zyxCOZHs5F-LRfqdKVMb0mDl-jw5zIzaIkcCdxm71c0FqAqUYyw</federation_id><finish_at>2017-02-12T00:00:00+03:00</finish_at><hypervisor_group_id>2810</hypervisor_group_id><id>78</id><kind /><start_at>2016-02-12T00:00:00+03:00</start_at><text>new_text</text><updated_at>2015-07-28T14:34:15+03:00</updated_at></announcement>' --url http://onapp.test/federation/hypervisor_zones/12/announcements/3.xml
```

### JSON Request Example

```
curl -i -X PUT -H 'Accept: application/json' -H 'Content-type: application/json' -u user:userpass -d '{"announcement":{"created_at":"2015-07-28T14:28:36+03:00","federation_id":"announcement:onapp-resource:compute:onapp-U1zyxCOZHs5F-LRfqdKVMb0mDl-jw5zIzaIkcCdxm71c0FqAqUYyw","finish_at":"2017-02-12T00:00:00+03:00","hypervisor_group_id":2810,"id":78,"kind":null,"start_at":"2016-02-12T00:00:00+03:00","text":"new_text","updated_at":"2015-07-28T14:34:15+03:00"}}' --url http://onapp.test/federation/hypervisor_zones/12/announcements/3.json
```

Where:

- **created_at** - the time in the [YYYY][MM][DD][hh][mm][ss]Z format
- **federation_id** - the ID of a compute zone at the market
- **finish_at** - the time and date when the notification expires
- **hypervisor_group_id** - the ID of the compute zone associated with the notification
- **kind** - parameter reserved for future use
- **start_at** - the notification start time and date
- **text** - the text of the notification
- **updated_at** - the time in the [YYYY][MM][DD][hh][mm][ss]Z format

### 19.16 Notify Users

To inform your users about new notifications, use the following request:

```text
POST /federation/hypervisor_zones/:hypervisor_group_id/announcements/:id/notify_users.xml
```

```text
POST /federation/hypervisor_zones/:hypervisor_group_id/announcements/:id/notify_users.json
```

### XML Request Example

```
```
JSON Request Example


19.17 Add a Firewall Rule

To add a firewall rule, use the following request:

POST /virtual_machines/:virtual_machine_id/firewall_rules.xml
POST /virtual_machines/:virtual_machine_id/firewall_rules.json

XML Request Example


JSON Request Example


Where:

address - the IP address for which this rule is active.

• Leave the empty field to apply this rule to all IPs
• Enter hyphen-separated IPs to apply the rule to an IP range (e.g. 192.168.1.1-192.168.1.10)
• Enter the IPs with slash to apply the rule to CIDR (e.g. 192.168.1.1/24)

command - the command to ACCEPT or DROP the abovementioned IPs

• Leave the empty field to apply the rule to all ports
• Enter colon-separated ports to apply the rule to a port range (e.g. 1024:1028)
• Enter comma-separated ports to apply the rule to the list of ports (e.g. 80,443,21)
19.18 Apply Firewall Rules

To apply firewall rules for a virtual server, use the following request:

**POST /virtual_machines/:virtual_machine_id/update_firewall_rules.xml**
**POST /virtual_machines/:virtual_machine_id/update_firewall_rules.json**

**XML Request Example**
```
```

**JSON Request Example**
```
```

19.19 Save Default Firewall Rules

To save default firewall rules for a VS (either DROP or ACCEPT), use the following request:

**PUT /virtual_machines/:virtual_machine_id/network_interfaces/:network_interface_id.xml**
**PUT /virtual_machines/:virtual_machine_id/network_interfaces/:network_interface_id.json**

**XML Request Example**
```
```

**JSON Request Example**
```
```

**Where:**

*default_firewall_rule* - set default firewall rule for the particular VS network interface – either DROP or ACCEPT

19.20 Add IP Address

To add an IP address, use the following request:
POST /virtual_machines/:virtual_machine_id/ip_addresses.xml
POST /virtual_machines/:virtual_machine_id/ip_addresses.json

XML Request Example

```
curl -i -X POST -u user:userpass -H 'Accept: application/xml' -H 'Content-type: application/xml' -d '
<ip_address_join><network_interface_id></network_interface_id></ip_address_join>' --url http://onapp.test/virtual_machines/12/ip_addresses.xml
```

JSON Request Example

```
```

Where:

*network_interface_id* - specify the ID of network interface to which the IP address should be added

19.21 Delete IP Address

To delete an IP address, use the following request:

DELETE /virtual_machines/:virtual_machine_id/ip_addresses/:id.xml
DELETE /virtual_machines/:virtual_machine_id/ip_addresses/:id.json

XML Request Example

```
```

JSON Request Example

```
```

19.22 Rebuild VS Network

To rebuild the network for a particular VS, use the following request:

POST /virtual_machines/:virtual_machine_id/rebuild_network.xml
POST /virtual_machines/:virtual_machine_id/rebuild_network.json

XML Request Example

```
```

JSON Request Example

```
```
curl -i -X POST -u user:userpass -H 'Accept: application/xml' -H 'Content-Type: application/xml' -d
'<!--shutdown_required>true</shutdown_required><shutdown_type>graceful</shutdown_type><required_startup>1</required_startup><!--url
http://onapp.test/virtual_machines/jkfghngcdhyg/rebuild_network.xml

JSON Request Example

curl -i -X POST -u user:userpass -H 'Accept: application/json' -H 'Content-Type: application/json' -d
'{"is_shutdown_required":"true","shutdown_type":"graceful","required_startup":"1"}' --url
http://onapp.test/virtual_machines/jkfghngcdhyg/rebuild_network.json

Where:

is_shutdown_required - true, if shutdown is needed to rebuild the network; otherwise, false
shutdown_type - type of the VS shutdown: hard, graceful or soft
required_startup - set 1 to start up the VS automatically after build; otherwise, set 0

19.23 Get Zone Uptime Graph

To get the uptime graph for a zone, use the following request:
GET /federation/hypervisor_zones/:federation_id/uptime.xml
GET /federation/hypervisor_zones/:federation_id/uptime.json

XML Request Example

```
curl -X GET -H "Accept: application/xml" -H "Content-Type: application/xml" -u user:userpass
'http://onapp.test/federation/hypervisor_zones/12/uptime.xml'
```

JSON Request Example

```
curl -X GET -H "Accept: application/json" -H "Content-Type: application/json" -u user:userpass
'http://onapp.test/federation/hypervisor_zones/12/uptime.json'
```

XML Output Example
```xml
<hypervisor_zone_uptimes type="array">
    <hypervisor_zone_uptime>
        <date>2015-10-13</date>
        <uptime_percentage type="float">99.4186046511628</uptime_percentage>
    </hypervisor_zone_uptime>
    <hypervisor_zone_uptime>
        <date>2015-10-14</date>
        <uptime_percentage type="float">100.0</uptime_percentage>
    </hypervisor_zone_uptime>
    <hypervisor_zone_uptime>
        <date>2015-10-15</date>
        <uptime_percentage type="float">100.0</uptime_percentage>
    </hypervisor_zone_uptime>
</hypervisor_zone_uptimes>
```

Where:

date - the date when the zone's uptime was measured
uptime_percentage - zone's uptime percentage

## 19.24 Failed Actions

### 19.24.1 Get List of Failed Actions

As a buyer, you can view the list of failed actions for all virtual servers deployed by you or your users. To do so, use the following request:

GET /federation/failed_actions.xml

GET /federation/failed_actions.json

**XML Request Example:**

```
```

**JSON Request Example:**

```
```

**XML Output Example**
<federation_failed_actions type="array">
    <federation_failed_action>
        <action>OnappMarket::Trader.release_ip</action>
        <created_at type="datetime">2015-11-20T11:33:05+03:00</created_at>
        <data>
            <errors>
                <base type="array">
                    <base>Invalid login or password.</base>
                </base>
            </errors>
            <id type="integer">19</id>
            <updated_at type="datetime">2015-11-20T11:33:05+03:00</updated_at>
            <virtual_machine_id type="integer">321</virtual_machine_id>
        </data>
    </federation_failed_action>
</federation_failed_actions>

Where:

- **action** - the name of the action that failed
- **created_at** - time in [YYYY][MM][DD][T][hh][mm][ss][Z] format
- **errors** - the error(s) that occurred
- **id** - the ID of the failed action
- **updated_at** - time in [YYYY][MM][DD][T][hh][mm][ss][Z] format
- **virtual_machine_id** - the ID of the VS on which the action failed

19.24.2 Get List of Failed Actions for VS

As a buyer you can view the list of failed actions for a particular virtual server deployed by you or your users. To do so, use the following request:

GET /federation/virtual_machines/:virtual_machine_id/failed_actions.xml
GET /federation/virtual_machines/:virtual_machine_id/failed_actions.js

**XML Request Example**

```
```

**JSON Request Example**

```
```

Where:

- **virtual_server_id** - the ID of the VS for which you want to view the failed actions list

**XML Output Example**
Where:

- **action** - the name of the action that failed
- **created_at** - time in [YYYY][MM][DD][T][hh][mm][ss][Z] format
- **errors** - the error(s) that occurred
- **id** - the ID of the failed action
- **updated_at** - time in [YYYY][MM][DD][T][hh][mm][ss][Z] format
- **virtual_machine_id** - the ID of the VS on which the action failed

### 19.24.3 Get Failed Action Details

As a buyer, you can view the details of a failed action for any virtual server deployed by you or your users. To do so, use the following request:

GET /federation/failed_actions/:failed_action_id.xml
GET /federation/failed_actions/:failed_action_id.json

**XML Request Example**

```
```

**JSON Request Example**

```
```

Where:

- **failed_action_id** - ID of the failed action for which you want to view details

**XML Output Example**

```xml
<federation_failed_actions type="array">
  <federation_failed_action>
    <action>OnappMarket::Trader.release_ip</action>
    <created_at type="datetime">2015-11-20T11:33:05+03:00</created_at>
    <data>
      <errors type="array">
        <base>Invalid login or password.</base>
      </errors>
    </data>
    <id type="integer">19</id>
    <updated_at type="datetime">2015-11-20T11:33:05+03:00</updated_at>
    <virtual_machine_id type="integer">321</virtual_machine_id>
  </federation_failed_action>
</federation_failed_actions>
```
<federation_failed_action>
  <action>OnappMarket::Trader.release_ip</action>
  <created_at type="datetime">2015-11-20T11:33:05+03:00</created_at>
  <data>
    <errors>
      <base type="array">
        <base>Invalid login or password.</base>
      </base>
    </errors>
    <id type="integer">19</id>
    <updated_at type="datetime">2015-11-20T11:33:05+03:00</updated_at>
    <virtual_machine_id type="integer">321</virtual_machine_id>
  </data>
</federation_failed_action>

Where:

action - the name of the action that failed
created_at - time in [YYYY][MM][DD][hh][mm][ss]Z format
errors - the error(s) that occurred
id - the ID of the failed action
updated_at - time in [YYYY][MM][DD][hh][mm][ss]Z format
virtual_machine_id - the ID of the VS on which the action failed

19.24.4 Get Failed Action Details for VS

As a buyer, you can view the list of failed actions for a particular virtual server deployed by you or your users. To do so, use the following request:

GET /federation/virtual_machines/:virtual_server_id/failed_actions/:failed_action_id.xml
GET /federation/virtual_machines/:virtual_server_id/failed_actions/:failed_action_id.json

XML Request Example

```
```

JSON Request Example

```
```

Where:

virtual_server_id - the ID of the VS for which you want to view the failed action details
failed_action_id - the ID of the failed action for which you want to view the details

XML Output Example
<federation_failed_action>
  <action>OnappMarket::Trader.release_ip</action>
  <created_at type="datetime">2015-11-20T11:33:05+03:00</created_at>
  <data>
    <errors>
      <base type="array">
        <base>Invalid login or password.</base>
      </base>
    </errors>
    <id type="integer">19</id>
    <updated_at type="datetime">2015-11-20T11:33:05+03:00</updated_at>
    <virtual_machine_id type="integer">321</virtual_machine_id>
  </data>
</federation_failed_action>

Where:

- action - the name of the action that failed
- created_at - time in [YYYY][MM][DD][T][hh][mm][ss]Z format
- errors - the error(s) that occurred
- id - the ID of the failed action
- updated_at - time in [YYYY][MM][DD][T][hh][mm][ss]Z format
- virtual_machine_id - the ID of the VS on which the action failed

### 19.24.5 Delete Failed Actions for VS

As a buyer, you can delete the list of failed actions for a particular virtual server deployed by you or your users. To do so, use the following request:

```
DELETE /federation/virtual_machines/:virtual_machine_id/failed_actions.xml
```

**XML Request Example**

```
```

**JSON Request Example**

```
```

Where:

- virtual_server_id - the ID of the VS for which you want to delete the failed actions list

### 19.24.6 Delete Failed Actions

As a buyer, you can delete the list of failed actions for all virtual servers deployed by you or your users. To do so, use the following request:

```
DELETE /federation/failed_actions.xml
```

Where:

- virtual_server_id - the ID of the VS for which you want to delete the failed actions list
DELETE /federation/failed_actions.json

XML Request Example


JSON Request Example


19.25 Manage Virtual Server Recipes

Use the following API calls to view, assign and delete recipes for your virtual servers in Federation.

19.25.1 Get List of Virtual Server Recipes

To get the list of federated virtual server recipes, use the following request:

GET /virtual_machines/:virtual_machine_id/recipe_joins.xml
GET /virtual_machines/:virtual_machine_id/recipe_joins.json

XML Request Example


curl -i -X GET -u user:userpass

JSON Request Example


curl -i -X GET -u user:userpass

XML Output Example
<recipes>
  <recipe>
    <compatible_with>unix</compatible_with>
    <created_at type="datetime">2012-10-22T12:46:49+00:00</created_at>
    <description>Create initial folder structure</description>
    <id type="integer">1</id>
    <label>Create folders</label>
    <script_type>vbs</script_type>
    <updated_at type="datetime">2012-10-22T12:46:49+00:00</updated_at>
    <user_id type="integer">2</user_id>
    <recipe_steps type="array">
      <recipe_step>
        <created_at type="datetime">2012-10-22T12:46:49+00:00</created_at>
        <fail_anything_else type="boolean">true</fail_anything_else>
        <fail_values/>
        <failure_goto_step type="integer">2</failure_goto_step>
        <id type="integer">1</id>
        <number type="integer">1</number>
        <on_failure>goto_step</on_failure>
        <on_success>proceed</on_success>
        <pass_anything_else type="boolean">false</pass_anything_else>
        <pass_values type="boolean">true</pass_values>
        <recipe_id type="integer">1</recipe_id>
        <result_source>exit_code</result_source>
        <script>mkdir /tmp</script>
        <success_goto_step nil="true"/>
        <updated_at type="datetime">2012-10-22T12:46:49+00:00</updated_at>
      </recipe_step>
    </recipe_steps>
  </recipe>
</recipes>

Where:

compatible_with - recipe compatibility: windows or unix

created_at — the date when the recipe was created in the [YYYY][MM][DD][hh][mm][ss]Z format

description - recipe description

id - recipe ID

label - recipe label

script_type - script type for Windows-compatible recipes:
  - bat
  - vbs
  - powershell (PowerShell v1.0)

updated_at — the date when the recipe was updated in the [YYYY][MM][DD][hh][mm][ss]Z format

use_on_hv_zones - true, if the recipe can be used on compute zones, otherwise false

use_on_vms - true, if the recipe can be used on virtual servers, otherwise false

user_id — the ID of a recipe owner

recipe_steps - an array of recipe steps with the following details:
  - created_at — the date when the step was created in the [YYYY][MM][DD][hh][mm][ss]Z format
updated_at — the date when the step was updated in the [YYYY][MM][DD][hh][mm][ss]Z format

fail_anything_else - set true, if you have specified the recipe pass value, otherwise set false

You can only specify behavior for one scenario: for example, if the fail_anything_else = false, pass_anything_else must be set to true.

fail_values - recipe fail value

failure_goto_step - if the on_failure parameter = goto_step, specify the step to proceed to. If you specify the nonexistent step, the recipe will be stopped.

id - step ID

number - step number

on_failure - step behavior in case of failure:
  o proceed - proceed to the next step.
  o fail - terminate the recipe and mark it as failed.
  o stop - terminate the recipe and mark it as successful.
  o go_to_step - specify the step to proceed to. If you specify the nonexistent step, the recipe will be stopped.

on_success - step behavior in case of success:
  o proceed - proceed to the next step.
  o fail - terminate the recipe and mark it as failed.
  o stop - terminate the recipe and mark it as successful.
  o go_to_step - specify the step to proceed to. If you specify the nonexistent step, the recipe will be stopped.

pass_anything_else - set true, if you have specified the recipe fail value, otherwise set false

pass_values - recipe pass value

recipe_id - ID of a recipe the step belongs to

result_source - step result source:
  o exit_code - an exit status, e.g. 0 will be returned on success
  o std_out - standard output
  o std_err - standard error
  o std_out_and_std_err - standard output and standard error

success_goto_step - if the on_success parameter = goto_step, specify the step to proceed to. If you specify the nonexistent step, the recipe will be stopped.

19.25.2 Assign Recipe to Virtual Server

To assign a recipe to a federated virtual server, use the following request:

POST /virtual_machines/:virtual_machine_id/recipe_joins.xml
POST /virtual_machines/:virtual_machine_id/recipe_joins.json

XML Request Example
JSON Request Example

```
curl -i -X POST -H "Accept: application/xml" -H "Content-type:application/xml" -d
'<?xml version="1.0"?>
<recipe_join>
  <recipe_id>6</recipe_id>
  <event_type>vm_provisioning</event_type>
</recipe_join>' -u user:userpass
http://onapp.test/virtual_machines/9/recipe_joins.xml
```

19.25.3 Remove Recipe from Virtual Server

To remove a recipe from a federated virtual server, use the following request:

```
DELETE /virtual_machines/:virtual_machine_id/recipe_joins/:recipe_join_id.xml
DELETE /virtual_machines/:virtual_machine_id/recipe_joins/:recipe_join_id.json
```

XML Request Example

```
curl -i -X DELETE -H "Accept: application/xml" -H "Content-type:application/xml" -u user:userpass
http://onapp.test/virtual_machines/h76rawyvphxx6/recipe_joins/1.xml
```

JSON Request Example

```
curl -i -X DELETE -H "Accept: application/json" -H "Content-type:application/json" -u user:userpass
http://onapp.test/virtual_machines/h76rawyvphxx6/recipe_joins/1.json
```

In the URL, specify the ID of a virtual server and the ID of a recipe you want to remove.
19.25.4 Run Recipe on Multiple Virtual Servers

To run a recipe on multiple federated virtual servers, use the following request:

```plaintext
POST /recipes/:recipe_id/run.xml
POST /recipes/:recipe_id/run.json
```

**XML Request Example**

```bash
```

**JSON Request Example**

```bash
```

Where:

- `vm1_identifier` - replace this with the identifier of a virtual server you want to run the recipe on.
- ID of the required recipe in the URL.

This request returns the multi status code - 207.

When applying one recipe to several servers via API, there is a possibility to run the recipe incompatible with the server type (Unix recipe on Windows server or vice versa). In this case, the transaction will be scheduled and completed, but the recipe will not do anything.

19.26 Enable Accelerator for Virtual Server

If you are running OnApp 6.0, the federated virtual servers are accelerated by default.

To enable acceleration for VS, use the following request:

```plaintext
POST /virtual_machines/:id/accelerate.xml
POST /virtual_machines/:id/accelerate.json
```

**XML Request Example**

```bash
```

**JSON Request Example**

```bash
```

**JSON Request Example**


### 19.27 Disable Accelerator for Virtual Server

If you are running OnApp 6.0, the federated virtual servers are accelerated by default.

To disable acceleration for VS, use the following request:

POST /virtual_machines/:id/decelerate.xml
POST /virtual_machines/:id/decelerate.json

**XML Request Example**


**JSON Request Example**


### 19.28 Purge Files

This action is available only for accelerated virtual servers.

To purge one or several files, the system will compare the checksum of the cached file and the new one. The cached file will be purged only if the checksums vary, that is, the files are different. If the checksum of the two files is the same, the cached file will not be purged.

To purge one or several cached files, use the following request:

POST /virtual_machines/:virtual_machine_id/purge.xml
POST /virtual_machines/:virtual_machine_id/purge.json
XML Request Example

```bash
```

JSON Request Example

```bash
```

Where:

- **purge_path** - the path to the file that you want to purge

If you need to purge all content, refer to Purge All Content.

19.29 Purge All Content

This action is available only for accelerated virtual servers.

To purge all cached content, use the following request:

- POST `/virtual_machines/:virtual_machine_id/purge_all.xml`
- POST `/virtual_machines/:virtual_machine_id/purge_all.json`

XML Request Example

```bash
```

JSON Request Example

```bash
```

If you need to purge only certain files, refer to Purge Files.
20 Sellers API

This chapter provides requests for sellers.

20.1 Add Public Zone to Federation

As a seller, you can submit a public zone to Federation. To add a public zone, use the following request:

POST /federation/hypervisor_zones/:id/add.xml

POST /federation/hypervisor_zones/:id/add.json

XML Request Example

```
curl -i -X POST -H 'Content-type: application/xml' http://onapp.test/federation/hypervisor_zones/12/add.xml -u user:userpass -d
  '<hypervisor_zone><provider_name>test</provider_name><data_store_zone_id>5</data_store_zone_id><network_zone_id>4</network_zone_id><template_group_id>1</template_group_id><backup_server_group_label>12</backup_server_group_label><backup_server_label>9</backup_server_label><private>0</private><description></description>< hypervisor_zone_pricing_attributes><cpu_max></cpu_max><cpu_priority_max></cpu_priority_max><memory_max></memory_max></hypervisor_zone_pricing_attributes><data_store_zone_pricing_attributes><disk_size_max></disk_size_max></data_store_zone_pricing_attributes><network_zone_pricing_attributes><ip_addresses_max></ip_addresses_max><port_speed_max></port_speed_max></network_zone_pricing_attributes><tier>dev</tier><tier_options_attributes><ha>1</ha><storage_performance>1</storage_performance><backups>1</backups><windows_license>1</windows_license><replication>1</replication><ddos_protection>1</ddos_protection><ipv6>1</ipv6><dns>0</dns><tier_options_attributes></hypervisor_zone>'
```

JSON Request Example

```
curl -i -X POST -H 'Content-type: application/json' http://onapp.test/federation/hypervisor_zones/12/add.json -u user:userpass -d '{"hypervisor_zone":{"provider_name":"test", "data_store_zone_id":"5", "network_zone_id":"4", "template_group_id":"1", "backup_server_group_label":"12", "backup_server_label":"9", "private":0, "description":null, "hypervisor_zone_pricing_attributes":{"cpu_max":null, "cpu_priority_max":null, "memory_max":null}, "data_store_zone_pricing_attributes":{"disk_size_max":null, "disk_size_on":222}, "network_zone_pricing_attributes":{"ip_addresses_max":null, "port_speed_max":null}, "tier":"dev", "tier_options_attributes":{"ha":1, "storage_performance":1, "backups":1, "windows_license":1, "replication":1, "ddos_protection":1, "ipv6":1, "dns":0}}}'
```

Where:

- **provider_name** - enter the provider name
- **data_store_zone_id** - ID of the data store zone assigned to the compute zone
- **network_zone_id** - ID of the network zone assigned to the compute zone
- **template_group_id** - ID of the template store assigned to the compute zone
- **backup_server_group_label** - the label of backup server group
backup_server_label - the label of backup server
private - set '0' if you want to add a public zone to the Federation
description - add an optional description

hypervisor_zone_pricing_attributes - array of parameters related to compute zone resources:
cpu_max - the maximum number of CPU cores the users can request when signed up for this federated zone
cpu_priority_max - the maximum CPU priority % the users can request when signed up for this federated zone
memory_max - the maximum RAM users can request when signed up for this federated zone

data_store_zone_pricing_attributes - array of parameters related to data store zone resources:
disk_size_max - the maximum disk size users can request when signed up for this federated zone

network_zone_pricing_attributes - array of parameters related to data store zone resources:
ip_addresses_max - the maximum number of IP addresses the users can request when signed up for this federated zone
port_speed_max - the maximum port speed the users can request when signed up for this federated zone

tier - the pricing tier for the zone: dev or pro
tier_options_attributes - array of parameters related to zone configuration:

The default value for the tier options is '0'.

ha - set to '1' if HA is available for the compute zone, otherwise, set '0'
storage_performance - set '1' if the zone provides SSD storage, set '0' if the zone provides HDD storage
backups - set to '1' if backups are available for the compute zone, otherwise, set '0'
windows_license - set to '1' if Windows licence is available for the compute zone, otherwise, set '0'
replication - set to '1' if cross location replication is available for the compute zone, otherwise, set '0'
ddos_protection - set to '1' if DDOS protection is available for the compute zone, otherwise, set '0'
ipv6 - set to '1' if IPv6 is available for the compute zone, otherwise, set '0'
dns - set to '1' if DNS available for the compute zone, otherwise, set '0'
id - compute zone ID

20.2 Add Private Zone to Federation

As a seller, you can submit a zone to Federation. To add a zone, use the following request:

POST /federation/hypervisor_zones/:id/add.xml
POST /federation/hypervisor_zones/:id/add.json

XML Request Example
OnApp Cloud 6.4 Edge 1 Federation Guide

curl -i -X POST -H 'Content-type: application/xml'
http://onapp.test/federation/hypervisor_zones/12/add.xml -u user:userpass -d
"<hypervisor_zone><provider_name>test</provider_name><data_store_zone_id>5</data_store_zone_id><network_zone_id>4</network_zone_id><template_group_id>1</template_group_id><backup_server_group_label>12</backup_server_group_label><backup_server_label>9</backup_server_label><description><hypervisor_zone_pricing_attributes><cpu_max></cpu_max><cpu_priority_max></cpu_priority_max><memory_max></memory_max><cpu_on>222</cpu_on><cpu_off>0</cpu_off><cpu_priority_on>0</cpu_priority_on><cpu_priority_off>0</cpu_priority_off><memory_on>0</memory_on><memory_off>0</memory_off></hypervisor_zone_pricing_attributes><data_store_zone_pricing_attributes><disk_size_max></disk_size_max><disk_size_on>222</disk_size_on><disk_size_off>0</disk_size_off><data_read>0</data_read><data_write>0</data_write><input_requests>0</input_requests><output_requests>0</output_requests><ip_addresses_max></ip_addresses_max><ip_addresses_on>222</ip_addresses_on><ip_addresses_off>0</ip_addresses_off><port_speed></port_speed><data_rxed>0</data_rxed><data_sent>0</data_sent><ip_addresses></ip_addresses><ip_addresses_on>222</ip_addresses_on><ip_addresses_off>0</ip_addresses_off><port_speed></port_speed><data_rxed>0</data_rxed><data_sent>0</data_sent><network_zone_pricing_attributes><ip_addresses_max></ip_addresses_max><ip_addresses_on>222</ip_addresses_on><ip_addresses_off>0</ip_addresses_off><port_speed></port_speed><data_rxed>0</data_rxed><data_sent>0</data_sent><ip_addresses></ip_addresses><ip_addresses_on>222</ip_addresses_on><ip_addresses_off>0</ip_addresses_off><port_speed></port_speed><data_rxed>0</data_rxed><data_sent>0</data_sent><data_store_zone_pricing_attributes><network_zone_pricing_attributes><ip_addresses_max></ip_addresses_max><ip_addresses_on>222</ip_addresses_on><ip_addresses_off>0</ip_addresses_off><port_speed></port_speed><data_rxed>0</data_rxed><data_sent>0</data_sent><ip_addresses></ip_addresses><ip_addresses_on>222</ip_addresses_on><ip_addresses_off>0</ip_addresses_off><port_speed></port_speed><data_rxed>0</data_rxed><data_sent>0</data_sent></network_zone_pricing_attributes></tier><tier_options_attributes><ha>1</ha><storage_performance>1</storage_performance><windows_license>1</windows_license><replication>1</replication><ddos_protection>1</ddos_protection><ipv6>1</ipv6><dns>0</dns></tier_options_attributes><hypervisor_zone>""

JSON Request Example

curl -i -X POST -H 'Content-type: application/json'
cpu_max - the maximum number of CPU cores the users can request when signed up for this federated zone

cpu_priority_max - the maximum CPU priority % the users can request when signed up for this federated zone

memory_max - the maximum RAM users can request when signed up for this federated zone

cpu_on - the price per CPU core per hour, for VSs powered on. This parameter is applicable only if you are adding a private zone.

cpu_off - the price per CPU core per hour, for VSs powered off. This parameter is applicable only if you are adding a private zone.

cpu_priority_on - the prices per CPU priority % per hour, for VSs powered on. This parameter is applicable only if you are adding a private zone.

cpu_priority_off - the prices per CPU priority % per hour, for VSs powered off. This parameter is applicable only if you are adding a private zone.

memory_on - the price per Mb/hour for RAM when a VS is on. This parameter is applicable only if you are adding a private zone.

memory_off - the price per Mb/hour for RAM when a VS is off. This parameter is applicable only if you are adding a private zone.

data_store_zone_pricing_attributes - array of parameters related to data store zone resources:

disk_size_max - the maximum disk size users can request when signed up for this federated zone

disk_size_on - the price per GB of disk space for VSs powered on. This parameter is applicable only if you are adding a private zone.

disk_size_off - the price per GB of disk space for VSs powered off. This parameter is applicable only if you are adding a private zone.

data_read - the price for data read per GB. This parameter is applicable only if you are adding a private zone.

data_write - the price for data written per GB. This parameter is applicable only if you are adding a private zone.

input_requests - the price for input requests. Input requests are measured in millions and priced per million requests. This parameter is applicable only if you are adding a private zone.

output_requests - the price for output requests. Output requests are measured in millions and priced per million requests. This parameter is applicable only if you are adding a private zone.

network_zone_pricing_attributes - array of parameters related to data store zone resources:

ip_addresses_max - the maximum number of IP addresses the users can request when signed up for this federated zone

port_speed_max - the maximum port speed the users can request when signed up for this federated zone

ip_addresses_on - the price per IP address/per hour for VSs powered on. This parameter is applicable only if you are adding a private zone.

ip_addresses_off - the price per IP address/per hour for VSs powered off. This parameter is applicable only if you are adding a private zone.

port_speed - the price per Mb per second of port speed. This parameter is applicable only if you are adding a private zone.

data_read - the price per GB of data received. This parameter is applicable only if you are adding a private zone.
data_sent - the price per GB of data sent. This parameter is applicable only if you are adding a private zone.

tier - the pricing tier for the zone. Set 'private' to add a private zone.

tier_options_attributes - array of parameters related to zone configuration:

The default value for the tier options is '0'.

ha - set to '1' if HA is available for the compute zone, otherwise, set '0'
storage_performance - set '1' if the zone provides SSD storage, set '0' if the zone provides HDD storage
backups - set to '1' if backups are available for the compute zone, otherwise, set '0'
windows_license - set to '1' if Windows licence is available for the compute zone, otherwise, set '0'
replication - set to '1' if cross location replication is available for the compute zone, otherwise, set '0'
ddos_protection - set to '1' if DDOS protection is available for the compute zone, otherwise, set '0'
ipv6 - set to '1' if IPv6 is available for the compute zone, otherwise, set '0'
dns - set to '1' if DNS available for the compute zone, otherwise, set '0'

id - compute zone ID

20.3 Enable Federated Zone

As a seller, you can enable a federated zone. To do so, use the following request:

POST /federation/hypervisor_zones/:id/activate.xml
POST /federation/hypervisor_zones/:id/activate.json

XML Request Example

curl -i -X POST
http://onapp.test/federation/hypervisor_zones/12/activate.xml -u
user:userpass

JSON Request Example

curl -i -X POST
http://onapp.test/federation/hypervisor_zones/12/activate.json -u
user:userpass

Where:

id - hypervisor zone ID
20.4 Disable Federated Zone

As a seller, you can disable a zone to prevent users from adding any more VSs to the federated zone. To disable a zone, use the following request:

POST  /federation/hypervisor_zones/:id/deactivate.xml

POST  /federation/hypervisor_zones/:id/deactivate.json

XML Request Example

```
curl -i -X POST
http://onapp.test/federation/hypervisor_zones/12/deactivate.xml -u
user:userpass
```

JSON Request Example

```
curl -i -X POST
http://onapp.test/federation/hypervisor_zones/12/deactivate.json -u
user:userpass
```

Where:

* `id` - hypervisor zone ID

20.5 Remove Zone from Federation

As a seller, you can remove a zone from Federation. To do so, use the following request:

DELETE /federation/hypervisor_zones/:id/remove.xml

DELETE /federation/hypervisor_zones/:id/remove.json

If you want to remove a zone from Federation, you should check if any buyers are subscribed to that zone and whether VSs are created within that zone or not. Depending on the situation, the zone removal procedure will differ:

- If no buyers are subscribed to the zone yet, the zone will be removed at once.
- If one or more buyers are subscribed to the zone, but there are no VSs yet, the zone will be removed in one day.
- If one or more buyers are subscribed to the zone, and there are VSs within this zone, the zone will be removed after 28 days.

For more information, refer to [Disable And Remove Zone from Federation](#).

XML Request Example
curl -i -X DELETE
http://onapp.test/federation/hypervisor_zones/12/remove.xml -u
user:userpass

**JSON Request Example**

curl -i -X DELETE
http://onapp.test/federation/hypervisor_zones/12/remove.json -u
user:userpass

Where:

*id* - hypervisor zone ID

### 20.6 Add Trust Token

As a seller, you can add new trust tokens for your private zones. To do so, use the following request:

**XML Request Example**

curl -i -X POST -H 'Content-type: application/xml'
http://onapp.test/federation/hypervisor_zones/12/supplier_tokens.xml -u
user:userpass -d '<token><receiver>buyer_name</receiver></token>'

**JSON Request Example**

curl -i -X POST -H 'Content-type: application/json'
http://onapp.test/federation/hypervisor_zones/12/supplier_tokens.json -u
user:userpass -d '{"token":{"receiver":"buyer_name"}}'

Where:

*receiver* - the name of the buyer for whom the token is generated

### 20.7 Get List of Trust Tokens

As a seller, you can view the list of trust tokens. To do so, use the following request:

**XML Request Example**

curl -i -X POST -H 'Content-type: application/xml'
http://onapp.test/federation/hypervisor_zones/12/supplier_tokens.xml -u
user:userpass -d '<token><receiver>buyer_name</receiver></token>'

**JSON Request Example**

curl -i -X POST -H 'Content-type: application/json'
http://onapp.test/federation/hypervisor_zones/12/supplier_tokens.json -u
user:userpass -d '{"token":{"receiver":"buyer_name"}}'
curl -i -X GET -H 'Content-type: application/xml'
http://onapp.test/federation/hypervisor_zones/12/supplier_tokens.xml -u user:userpass

JSON Request Example

curl -i -X GET -H 'Content-type: application/json'
http://onapp.test/federation/hypervisor_zones/12/supplier_tokens.json -u user:userpass

XML Output Example

```xml
<tokens type="array">
  <token>
    <hypervisor_group_id type="integer">3</hypervisor_group_id>
    <id type="integer">5</id>
    <receiver>new</receiver>
    <token>8bd7fbe18b8acf505dfcbcd18d707b8ea57cb4d26f1421de7666908a325e977</token>
    <used type="boolean">false</used>
  </token>
  <token>...</token>
</tokens>
```

Where:

- **hypervisor_group_id** - the ID of the compute resource group for which the token was created
- **id** - ID of the token
- **receiver** - name of the buyer for whom the token was made
- **token** - the token itself, the buyer uses this string to access the private zone
- **used** - whether the token has been used or not

## 20.8 Remove Trust Token

As a seller, you can remove trust tokens that were generated for your private zones. To do so, use the following request:

DELETE /federation/hypervisor_zones/:hypervisor_zone_id/supplier_tokens/:token_id.xml

DELETE /federation/hypervisor_zones/:hypervisor_zone_id/supplier_tokens/:token_id.json

Once the token has been used by the buyer, you cannot remove it.
curl -i -X DELETE -H 'Content-type: application/xml'
http://onapp.test/federation/hypervisor_zones/12/supplier_tokens/3.xml -u user:userpass

JSON Request Example

curl -i -X DELETE -H 'Content-type: application/json'
http://onapp.test/federation/hypervisor_zones/12/supplier_tokens/3.json -u user:userpass

Where:

- **hypervisor_zone_id** - the ID of the compute resource group for which the token was created
- **token_id** - ID of the token

20.9 Get Federated Cloud Version

Both sellers and buyers can get federated cloud version. To get the federated zone details, use the following request:

GET /settings/hypervisor_zones.xml
GET /settings/hypervisor_zones.json

XML Request Example

```bash
curl -i -X GET -H 'Accept: application/xml' -H 'Content-type: application/xml' -u user:userpass --url
http://onapp.test/settings/hypervisor_zones.xml
```

JSON Request Example

```bash
curl -i -X GET -H 'Accept: application/json' -H 'Content-type: application/json' -u user:userpass --url
http://onapp.test/settings/hypervisor_zones.json
```

XML Output Example
<hypervisor-groups type="array">
  <hypervisor_group>
    <created_at type="datetime">2013-04-11T11:39:01+03:00</created_at>
    <default_gateway>127.0.0.1</default_gateway>
    <failover_timeout type="integer">15</failover_timeout>
    <id type="integer">1</id>
    <label>XEN4</label>
    <location_group_id type="integer">38</location_group_id>
    <max_vms_start_at_once type="integer">2</max_vms_start_at_once>
    <network_failure type="boolean">false</network_failure>
    <prefer_local_reads type="boolean">false</prefer_local_reads>
    <recovery_type>roundrobin</recovery_type>
    <release_resource_type>memory_guarantee</release_resource_type>
    <run_sysprep type="boolean">true</run_sysprep>
    <server_type>virtual</server_type>
    <storage_channel type="integer">2</storage_channel>
    <updated_at type="datetime">2013-05-08T11:00:02+03:00</updated_at>
    <vlan nil="true"/>
    <max_host_free_memory type="integer">6435</max_host_free_memory>
    <max_host_cpu type="integer">4</max_host_cpu>
    <cpu_units type="integer">282</cpu_units>
    <supplier_version nil="true"/>
    <supplier_provider nil="true"/>
  </hypervisor_group>
</hypervisor_groups>

Where:

supplier_version - the version of the OnApp cloud running.
supplier_provider - who provides the resource (the company).

20.10 Report Problem with VS

To report a problem with a virtual server, use the following request:

POST /federation/virtual_machines/:vm_identifier/report_a_problem.xml
POST /federation/virtual_machines/:vm_identifier/report_a_problem.json

XML Request Example

curl -i -X POST -H 'Content-type: application/xml'
'<?xml version="1.0" encoding="UTF-8"?>
  <federation_problem>
    <body>:text_problem</body>
  </federation_problem>
</account>'

JSON Request Example

'federation_problem[body]=:text_problem'

Where:
20.11 Create Notification for Zone

To create a new notification for a zone, use the following request:

POST /federation/hypervisor_zones/:hypervisor_zone_id/announcements.xml

POST /federation/hypervisor_zones/:hypervisor_zone_id/announcements.json

**XML Request Example**

```bash
curl -i -X POST -H 'Accept: application/xml' -H 'Content-type: application/xml' -u user:userpass -d '<announcement><created_at>2015-02-12T17:16:36+03:00</created_at><finish_at>2017-02-12T00:00:00+03:00</finish_at><start_at>2016-02-12T00:00:00+03:00</start_at><text>:new_text</text><updated_at>2015-02-12T17:16:37+03:00</updated_at></announcement>' --url http://onapp.test/federation/hypervisor_zones/12/announcements.xml
```

**JSON Request Example**

```bash
curl -i -X POST -H 'Accept: application/json' -H 'Content-type: application/json' -u user:userpass -d '{"announcement":{"created_at":"2015-02-12T17:16:36+03:00","finish_at":"2017-02-12T00:00:00+03:00","start_at":"2016-02-12T00:00:00+03:00","text":":new_text","updated_at":"2015-02-12T17:16:37+03:00"}}' --url http://onapp.test/federation/hypervisor_zones/12/announcements.json
```

Where:
- `created_at` - the time in the [YYYY][MM][DD][hh][mm][ss]Z format
- `finish_at` - the time and date when the notification expires
- `start_at` - the notification start time and date
- `text` - the text of the notification
- `updated_at` - the time in the [YYYY][MM][DD][hh][mm][ss]Z format

20.12 Delete Notification for Zone

To delete a notification for a zone, use the following request:

DELETE /federation/hypervisor_zones/:hypervisor_zone_id/announcements/:id.xml

DELETE /federation/hypervisor_zones/:hypervisor_zone_id/announcements/:id.json

**XML Request Example**

```bash
```

**JSON Request Example**

```bash
```
20.13 Switch Public Zone to Private

To switch a public federated zone to private, use the following request:

**XML Request Example**

```
```

**JSON Request Example**

```
```
21 General FAQ

• **What Version of OnApp Do I Need to Be Using to Enter the Federation?**

  Federation is compatible with OnApp version 3.5 and above. We suggest you upgrading to the latest version of OnApp to experience the most recent features and new UI.

• **How Do I Set Up as a Buyer?**

  You need to set up Buyer Balances and review then sign our latest Master License Agreement - contact us to help you to get started. Please also ensure you take a look here: [What Do I Need to Become a Buyer?](#)

• **Why Should I Use a Federated Market?**

  Not only can you supply your customers with new locations to host their applications worldwide but you now can start to attract new customers on a global scale. Our marketplace allows you to compete with industry giants without having to invest $millions into building your own DCs globally. There are no commitments when buying, so you can consume capacity for as long as your customers require it.

• **How Do I Set Up as a Seller?**

  Follow our [Federation Guide](#) for quick and easy deployment.

• **Can I Set Up a Private Zone for Selected Buyers Only?**

  Yes, you can give specific Buyers (inside your organization or externally) exclusive access via [Trust Tokens and Private Federated Zone](#).

• **How Does My Zone Receive a Cloud Score on the Market?**

  Every zone published to the market is automatically tested regularly for performance benchmarks regarding CPU, bandwidth and disk operations. The test scores are recalculated into an index by comparing the scores of all other zones on the market. Our service will subscribe as a Buyer to your zone, deploy a special testing virtual server and conduct a test. After the test, the virtual server will be deleted and the service will unsubscribe.

• **I am a vCD OnApp Customer, Can I Join the Federation?**

  Not yet, but we will let you know when you can.

• **I Need to Buy From a Location That Is Not Available, Can You Provide This?**

  We will always do our best to find a Seller in a location our Buyers need it - contact us to request a location and we will get to work.

• **Do I Need to Be Using OnApp Storage to Sell on the Federation?**

  No, you can use any storage solution.

• **Will I Need to Be Using Incremental Backups to Be a Seller in the Federation?**

  Yes, we need Incremental backups in place in your Cloud.
22 Buyer FAQ

- **What Do I Need to Become a Buyer?**
  We’ll need to ensure your Payment method for all OnApp services is by Credit Card, that you’re paying in US Dollars, and that you have 0-day payment terms (i.e. the credit card transaction is on the date of invoice).
  Then you’ll need to set up Balances in your account as follows:
  • Buyer Balance
  • Top Up Amount
  • Low Balance
  • Suspend Balance
  You may see our [Buyers’ Rules](#) in Appendix A to MTC on the website.

- **What Is a Buyer’s Balance?**
  This is the monetary balance to be maintained by you on your account. We suggest a minimum of $100 to get started.

- **What Is the Top Up Amount?**
  This is the amount we will debit from your credit card when your account needs a boost.

- **What Happens When I Reach the Low Balance?**
  We’ll apply to your credit card for the Top Up Amount and apply it to your OnApp account so you can continue using our services.

- **What Happens When I Reach the Suspend Balance?**
  This can happen if your Buyer balance is not maintained, perhaps your payment failed when we tried to take a Top Up Amount. Your Capacity will be shut down until your Buyer’s Balance is back to normal.

- **Do I Need to Have a Credit Card on File With You to Use the Federation as a Buyer?**
  Yes, you do. We only accept Credit Cards as a payment method for the Federation. If you need to supply us with a new credit card for payments, please [contact us](#).

- **When Will I Be Charged?**
  We will track your balance and apply for the Top Up Amount if you start falling short. When a payment is taken, we’ll send you a notification.

- **When Will I Receive an Invoice?**
  At the end of every month, we will send you an invoice that details your expenditure in the Federation on the account.

- **How Does the Sales Tax Work?**
  OnApp applies VAT only to the consumption of Buyers who themselves are based within the EU. No VAT or Sales Tax is levied on Buyers based in other jurisdictions. In general, this means VAT is added to the cost of consumption for Buyers based in the UK, and non-VAT-registered Buyers elsewhere in the EU.
• **What If I Want to Change the Top-Up Amounts?**

  You can contact your Account Manager and request a change; we will action this for you. We may also contact you if we feel the frequency of Top-Ups is too great.

• **I'm Paying a Regular Subscription to OnApp for Other Services. Will this Be Charged Against the Balance?**

  Yes, it will. We will invoice you for your subscription on the relevant date, and when due it will be taken from any Balance on the account. If the Balance is too small, then a Top-up will be triggered. Think of your OnApp account as a single sum of money to pay for all the services you from OnApp.
23 Seller FAQ

- **How Do I Become a Seller?**
  Contact your Account Manager, or, if you’re new to OnApp, please contact us to apply. If you’re a successful applicant, we will enable the Federation on your license key. See our Seller Rules.

- **How Do I Get Paid?**
  Within 10 days of the end of the month, OnApp will pay the Seller the credit in excess of the Buyer Balance (subject to a minimum excess credit of $100). Payments will be made to the same credit card from which the Top Up is drawn.

- **Can I Use the Money I Earn to Pay for Other Services?**
  Yes, you can. OnApp will apply credit balances to your purchases from the Market or other subscriptions with OnApp. This will help reduce credit card fees for us all.

- **Who Does the Invoicing?**
  OnApp will raise and send you one invoice per month on your behalf for all resources consumed by the Buyers. No matter how many Buyers consume your resources, it is still just the one invoice. This invoice is from you to OnApp. You should process it at your end just like any other invoice you raise on a customer.

- **How Does Sales Tax Work?**
  OnApp applies VAT only to the services from Sellers who themselves are based within the EU. No VAT or Sales Tax is applied to services of Sellers based in other jurisdictions. In general this means VAT is added to funds earned in the Federation for Sellers based in the UK, and non VAT-registered Buyers elsewhere in the EU. The VAT transaction is between the Seller and OnApp - it is not passed through to the Buyer.

- **How Does My Zone Receive a Cloud Score on the Market?**
  Every zone published to the market is automatically tested regularly for performance benchmarks regarding CPU, bandwidth and disk operations. The test scores are recalculated into an index by comparing the scores of all other zones on the market. Our service will subscribe as a Buyer to your zone, deploy a special testing virtual server and conduct a test. After the test, the virtual server will be deleted and the service will unsubscribe.

<table>
<thead>
<tr>
<th>How the cloud score is calculated</th>
<th>Formula used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud score is the average of the sum of resource scores in the cloud.</td>
<td>cloud score = (CPU score + bandwidth score + disk score)/3</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>How the resource score is calculated</th>
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</thead>
<tbody>
<tr>
<td>1. Counting the resource benchmark</td>
<td>The benchmark for each resource is calculated through a number of tests using unixbench, ipeft, and ioping tools for CPU, bandwidth, and disks respectively.</td>
</tr>
<tr>
<td>2. Counting the maximum resource benchmark, which is the maximal value among all the clouds in your tier.</td>
<td></td>
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</table>
How the cloud score is calculated

<table>
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<tr>
<th>3. Getting the resource score</th>
<th>Formula used</th>
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<tbody>
<tr>
<td>The resource benchmark is compared to the maximal resource benchmark with the formula:</td>
<td>resource score = (resource benchmark/max resource benchmark) * 100</td>
</tr>
</tbody>
</table>

- **How Do I Price Federation Capacity?**

Pricing the zones you publish to the OnApp Federation is quite straightforward. However, when you sell on the OnApp Federation, there are three key differences that you need to take into consideration:

1. **Don't include CPAs or support**

Your Federation zone pricing should not include sales and marketing costs (CPAs) or support costs, because the OnApp Federation takes care of that for you.

2. **Transparency**

Transparent performance and uptime data is the keystone of the OnApp Federation. We benchmark and monitor uptime for every zone published, and provide this alongside price and location data, so that buyers can make an informed decision about the infrastructure they will use.

Therefore, infrastructure with a high cost per hour will compare unfavorably with lower-priced infrastructure, unless there is a clear benefit to the buyer. That benefit can come in many forms: an unusual location, exceptional bandwidth, uptime or compute power, outstanding storage throughput and (in the future) other metrics like privacy, DC certifications and carbon neutrality.

3. **Favor the long game**

You should also consider reducing the margin you usually work towards for your Federation zones. In a transparent, on-demand marketplace, there is more benefit to have large numbers of buyers use your infrastructure in the long term, by offering them additional margin, than there is in trying to maintain the margins you work towards for direct clients.

How to price for the OnApp Federation

Taking that into consideration, your Federation pricing calculation should look like this:

- Cost of Hardware
- Cost of Infrastructure (DC, bandwidth, etc.)
- Cost of Logistics (reduced, as it does not cover support and CPA related activities)

These points constitute the Total Cost B. **Federation Price = Total cost B x Profit % (possibly lower than normal)**