



OnApp
Cloud v2.2

Deployment Guide

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	list of changes

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1. Overview

This document describes the OnApp Cloud deployment process.

There are four main activities involved in a deployment:

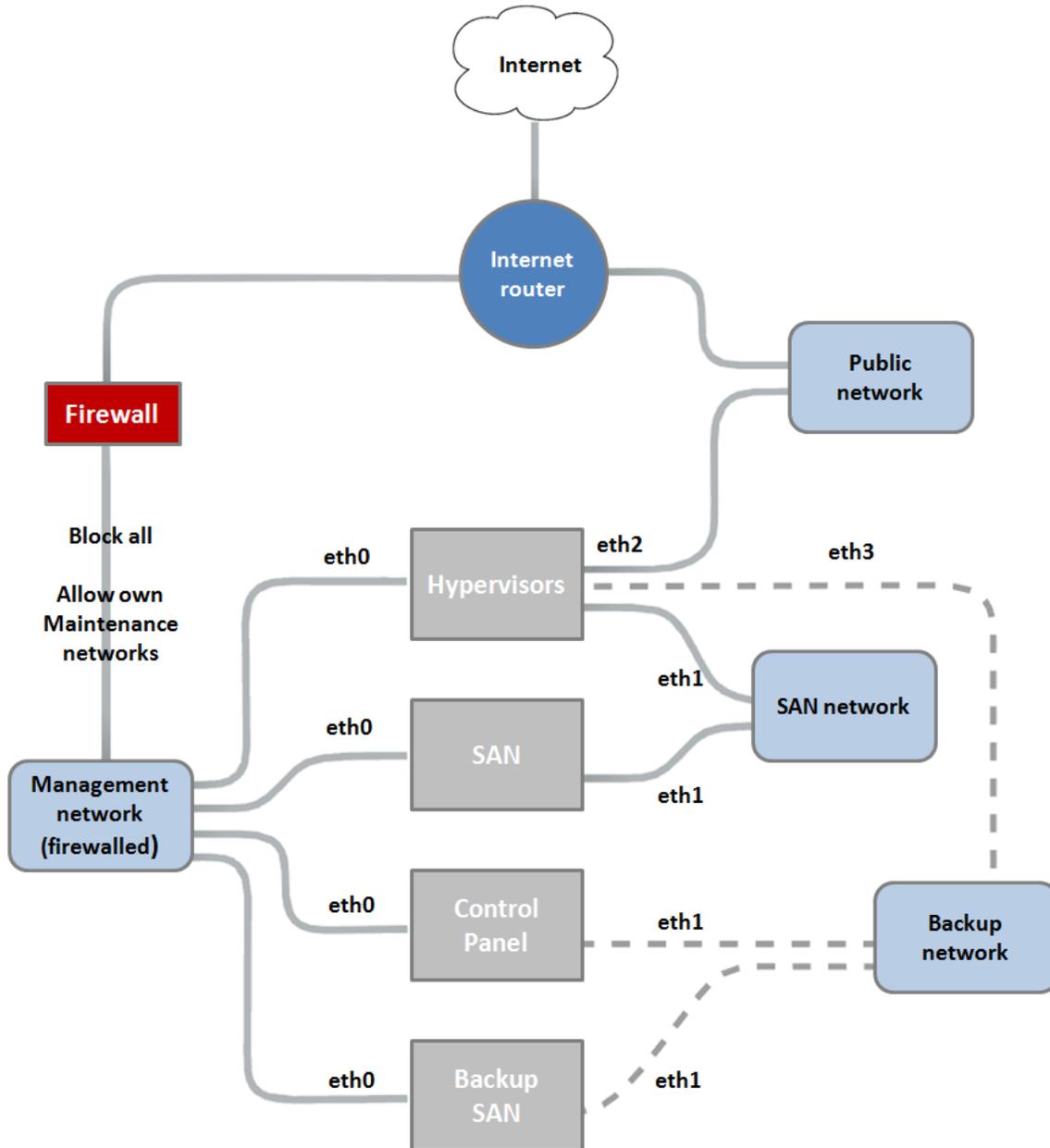
1. Network configuration (*you, with our help if required*)
2. Server configuration (*you, with our help if required*)
3. Handing over your configuration details (*you*)
4. Raising an installation ticket and performing the install (*OnApp*)

Please review the configuration details in each section carefully, as they are vital to the smooth operation of OnApp Cloud.

If you need help at any time, please get in touch with your OnApp integration specialist.

2. Network configuration

OnApp Cloud requires a specific network configuration to ensure maximum stability. There are four core networks: SAN, management, backup and public, as illustrated below:



It is very important to separate the four core networks. In the configuration shown above this is done physically, using different switches. However, it is also possible to isolate the networks using VLANs if your network supports it.

2.1 SAN network

This network provides the connection between the SAN and the hypervisors. It handles the iSCSI, Fibre Channel or ATAoE traffic. This must be a local network.

We recommend this network runs at least 1Gbit; however, to you may want to consider 10Gbit to achieve maximum performance.

To achieve better performance and redundancy over 1Gbit you should consider NIC teaming/bonding and LACP or MPIO over multiple subnets .

It is important that the switch connecting the hypervisors to the SAN supports jumbo frames: the SAN network on the hypervisors and the SAN(s) must have MTU set to 9000.

2.2 Management network

This network connects all aspects of the cloud together. OnApp Cloud uses this network for internal communication between the Control Panel server and the hypervisors, so its stability is crucial to the cloud.

- This network should be Internet-facing to enable remote access to the server for installation and ongoing maintenance. We recommend firewalling it down to your sysadmin team once the installation is complete, allowing only access to the OnApp web interface on port 80/http or 443/https.
- It is also possible to use a local network here if you have the necessary NAT rules in place on your network to get in and out.
- We recommend this network runs at least 1Gbit.
- The IP addresses that are assigned to each node should not overlap with the IP addresses range for public networking: see the Public Network/VM networking section for more information.

ⓘ If your management network is behind a firewall, please make sure that ports 22/80/30000-40000 are open to the world for the Control Panel server, and port 22 for all other servers.

2.3 Backup SAN network

This network connects the backup SAN to the Control Panel and the hypervisors. It is used for the OnApp backup service that backs up VMs.

- This network is recommended for optimum performance within the cloud, but is optional: backups can also be performed over the management network if required.
- We recommend this network runs at least 1Gbit.

2.4 Public network/VM networking

The public network interface is used for VM networking only. It is assigned a pool of external IP addresses, which OnApp Cloud then assigns to VMs as they are provisioned.

It is important to understand that this interface will not provide the actual hypervisor OS installation with an Internet connection, since the public interface is managed fully by OnApp Cloud and so by default requires a blank config - for example:

```
/etc/sysconfig/network-scripts/ifcfg-ethX
ONBOOT=no
BOOTPROTO=none
```

OnApp Cloud will bridge this port and assign virtual interfaces to it as VMs are provisioned and/or additional network interfaces are added to VMs from the Web UI, or via the OnApp API.

As part of the OnApp Cloud installation requirements we will need you to configure the network interface file, as above, and include the name of the interface in your final handover. This could either be a standard physical interface (e.g. eth1) or a bonded interface (e.g. bond1). It *cannot* be a sub-interface (e.g. eth1:1) or a VLANNed sub-interface (e.g. eth1.665).

You will also need to supply us with an Internet-facing IP address range for use on the public interfaces.

ⓘ Note that all hypervisors will have this public interface, so the IP address range must be portable between hypervisors.

Some hosting companies have limitations and the transfer of IP addresses between servers can sometimes require manual interventions - a change on their users portal, for example - so if you are leasing hosting server solutions it is worth double-checking with your host that this will be possible.

3. Server configuration

This section lists the server types needed for an OnApp Cloud installation. For minimum hardware specs, see <http://www.onapp.com/onapp-requirements>. All servers are installed as CentOS 5.5 / 5.6 x86_64 (base installation only - must be 64-bit) fully updated with 'yum -y update'.

ⓘ Full root access: please do not create the user 'onapp' since this is created as part of the RPM installation.

3.1 Controller Server server

- 1 x Control Panel server
- 1/2 NICs (depending on backup network):
 - NIC1 - management network
 - NIC2 – backup SAN network

3.2 Backup server

- 1 x backup server (recommended, but the Control Panel server can also do this job)
- 1 x locally connected SAN
- 1/2 NICs (depending on backup network):
 - NIC1 - management network
 - NIC2 - backup SAN network
- An empty storage array available over NFS

3.3 Hypervisor servers

- 2+ hypervisors
- 3/4 NICs (depending on backup network):
 - NIC1 - management network
 - NIC2 - SAN network
 - NIC3 - public network
 - NIC4 - backup SAN network

3.4 SAN

- 1+ SANs
- 2 NICs (recommended configuration):
 - NIC1 - management network
 - NIC2 - SAN network
- An empty storage array

4. Handing over

It is essential that you've met all of the network and server requirements described in the previous sections. Next, you'll hand over details of your network and server config to us, so we can begin the installation process.

1. Download and complete the deployment template:
<http://onapp.com/files/onapp-deployment-template.txt>
2. Email the completed template to your OnApp integration specialist.
3. Once we have double-checked your details we will open an installation ticket with our technical team. The installation will usually be completed within 48 hours.
4. If you have any questions, please let your OnApp integration specialist know.

Appendix: document revisions

v0.4, 12th August 2011

- Cosmetic changes only

v0.3, 6th July 2011

- Clarified SAN and management network configuration information
- Minor editing & formatting changes

v0.2, 5th July 2011

- Minor editing & formatting changes

V0.1, 1st July 2011

- First release