HOSTING CONTROLLER

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A Cloud Automation Solution

HC10 Configuration for Hyper-V Failover Cluster

Proprietary Notice

Contents

1) Introduction

HC Hyper-V module is an additional layer above the hypervisor, facilitating easy creation and management of virtual machines through a web-based UI. It strengthens the overall functionality of Hyper-V by furnishing a web platform to Data Centers and VPS Providers, allowing them a firm grip over various configurations of CPU, memory, storage and networking.

This article provides information regarding configuration of a Hyper-V failover cluster in HC panel. The explanation will also show a sample Hyper-V environment and will go over the server level and HC related requirements for the cluster to work seamlessly with HC panel.

2) System Requirements for Hyper-V Failover Cluster

2.1) Hyper-V Front-End Requirements

HC panel gives you the flexibility to design your Hyper-V front-end environment any way you want which suits your business needs. The article will go over the steps in this document using which you can then integrate all your front-end nodes in HC panel and will show how any VM owner related changes at the backend will be reflected in HC panel GUI.

The only requirement from HC's end is that the all the Hyper-V nodes are part of Active Directory Domain and VM migration is not configured against stand-alone servers.

2.2) Failover Storage Configuration Requirements

HC panel has few requirements when it comes to the storage solution implemented for the failover cluster. They are as under:

1. Any sort of central storage needs to be configured such as iSCSI, fiber etc.
2. Cluster Shared Volumes needs to be enabled in the failover cluster. Cluster storage volume path (e.g. **C:\Cluster Storage\Volume\..**) should be visible to all nodes in the cluster.

3) HC Supported Hyper-V Failover Scenarios

Hosting Controller has tailored its Hyper-V solution after going through the feedback provided by many of its valued clients. And based on this feedback, it has provided the support for both Quick Migration and Live Migration in Hosting Controller control panel.

4) Prominent Features and Practices of HC Hyper-V Cluster Implementation

4.1) Practices

1. The storage configurations of all the Hyper-V nodes need to be identical in HC panel.
2. All the nodes of the failover cluster must be added in HC panel and HC Agent installer must be deployed on each of them. HC Agent installation comprises of few clicks only and can be followed on each Hyper-V node by consulting this document: https://help.hostingcontroller.com/hc10/default.aspx#pageid=hc_agent_installation
3. The **HCProvisioningService** (HC Agent service) needs to run under domain\administrator account on all Hyper-V nodes.

4.2) Features

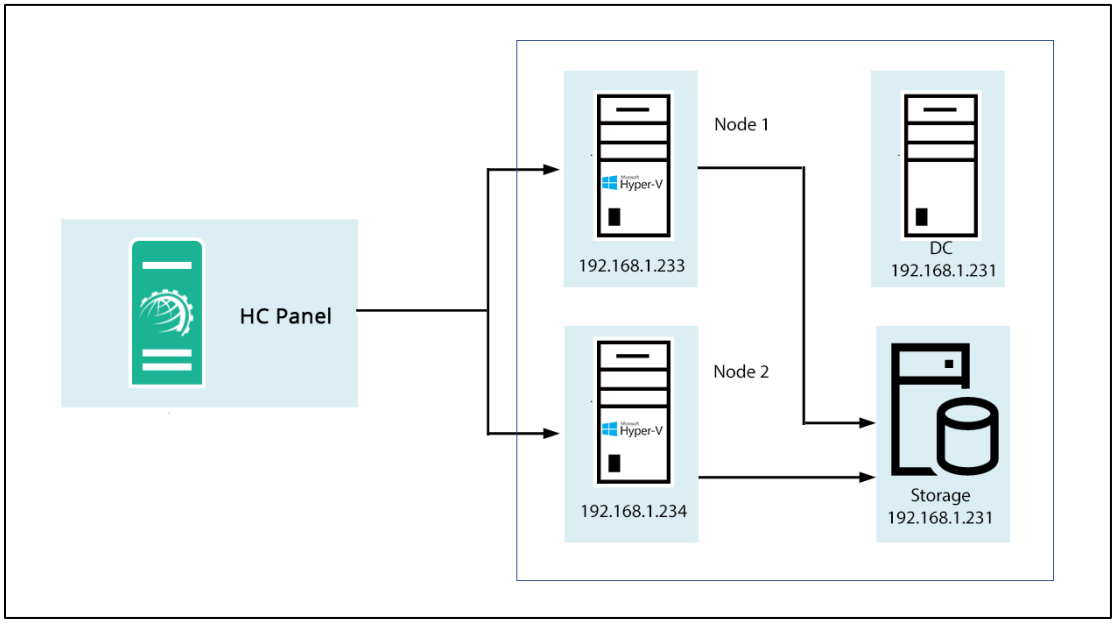
1. After Hyper-V failover cluster has been configured in HC panel, all the future VMs provisioned via the panel will automatically be in a failover state.
2. If a node goes down, Hyper-V cluster then migrates all the VMs located on this node to the next node. This process may include Quick or Live migration. The change of VM owners will be reflected in HC panel and all the VMs will be shown affiliated with the updated Hyper-V node. There is no manual intervention required for the whole process to reflect the changes in HC panel.

5) Lab Environment

The configuration of Hyper-V failover with HC panel can best be explained through a simple Hosting Controller lab environment and demonstrating how it can be configured in the control panel.

The lab consists of the following:

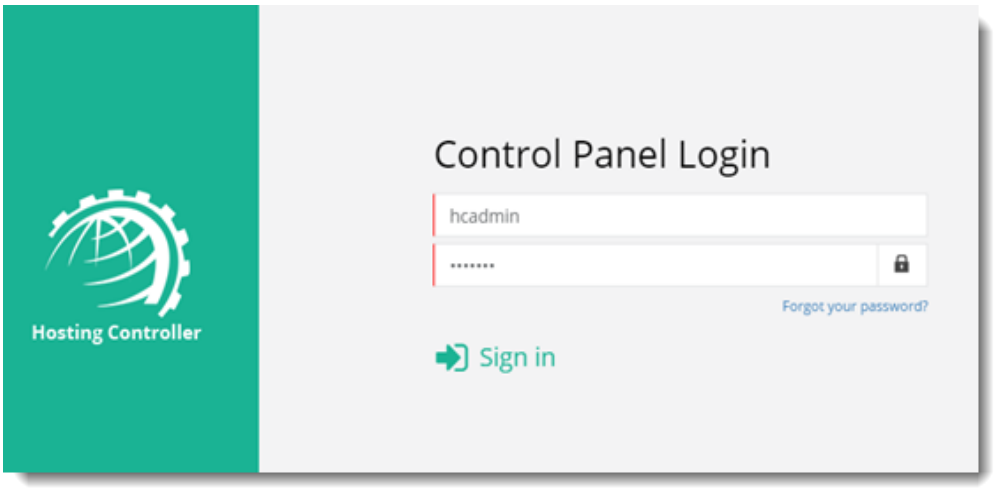
- WS 2016 DC – 192.168.1.231 – Windows Server 2016 Standard is DC for the test lab.
- WS 2016 Storage Server iSCSI Target – 192.168.1.231
- WS 2016 Node 1– 192.168.1.233 – Windows Server 2016 Standard – Failover Cluster Node 1.
- WS 2016 Node 2– 192.168.1.234 – Windows Server 2016 Standard – Failover Cluster Node 2.
- Private Network IP for Failover Cluster is 192.168.1.235



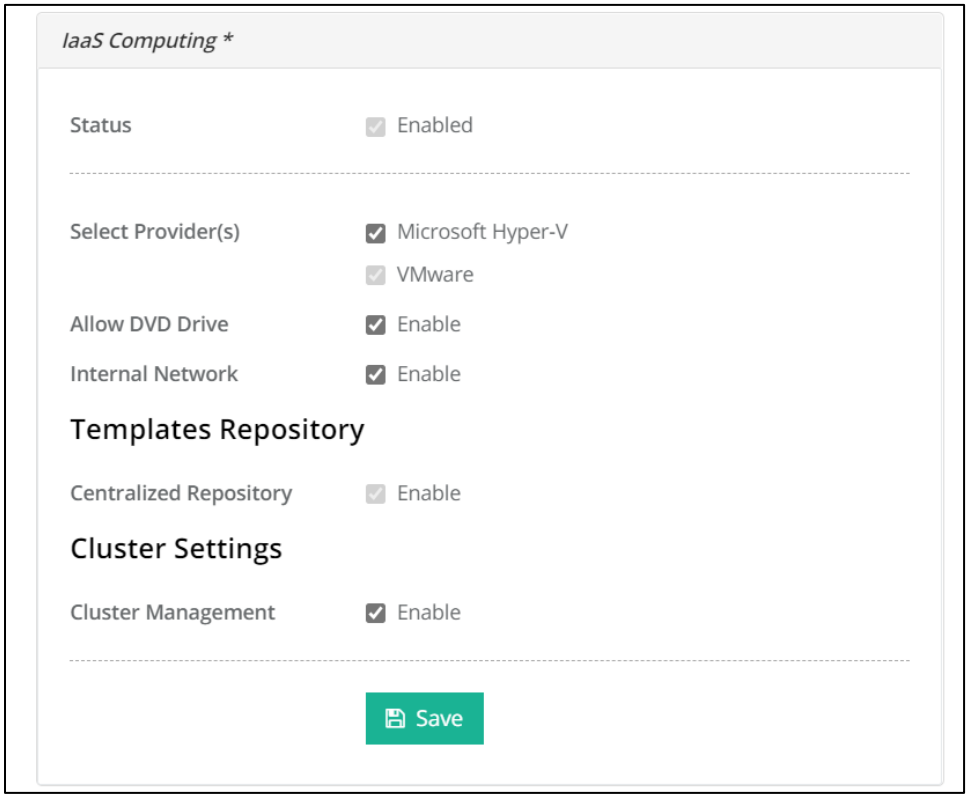
6) Configuring the Panel

To configure the panel, follow the steps as stated for complete and easy Hyper-V server configuration:

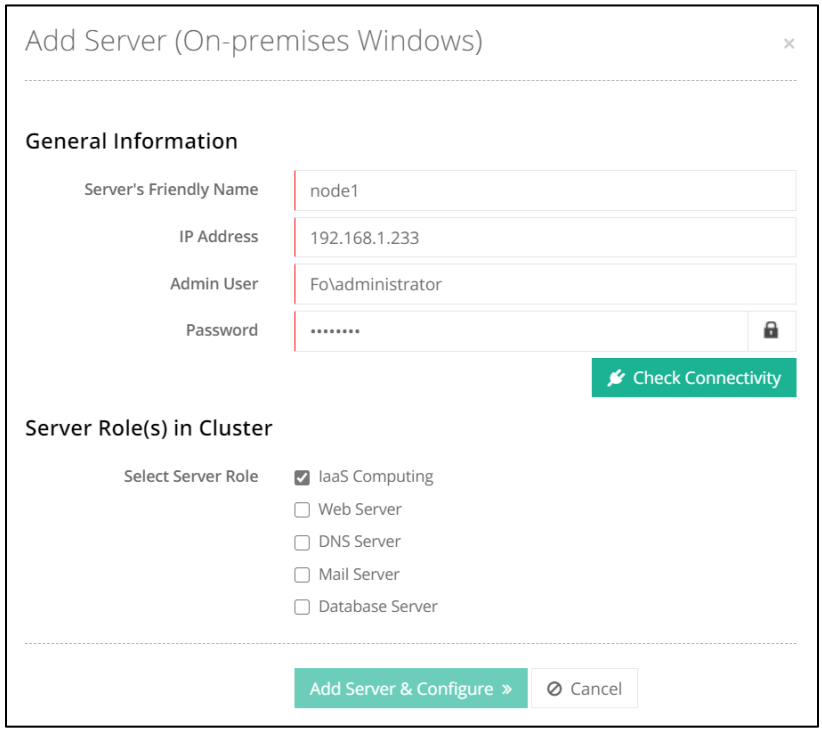
1. Log on to HC panel as a Global Admin user.

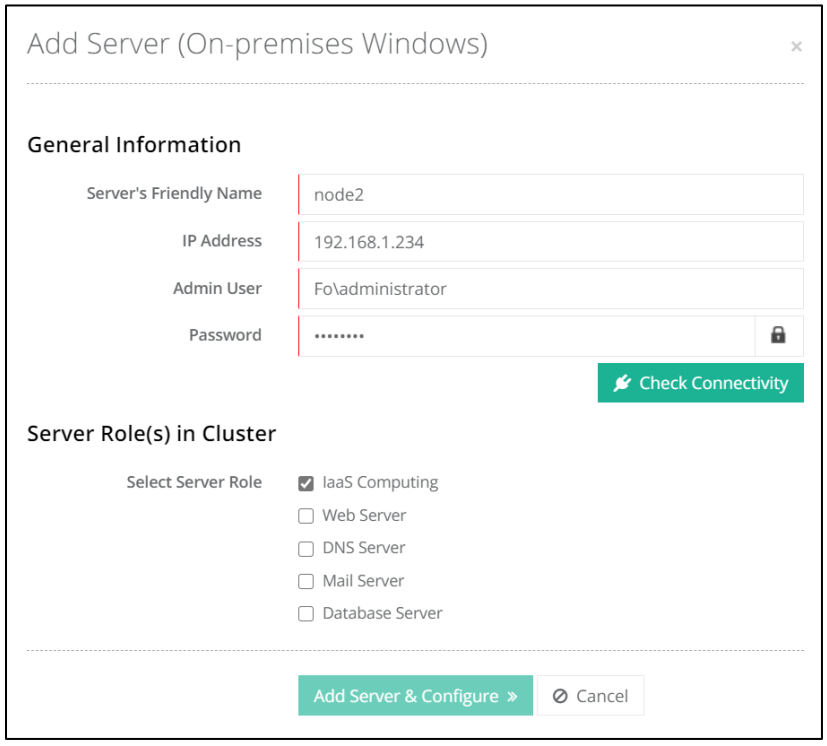


2. To enable Hyper-V server, click ⚙ at top right corner of HC panel and go to **Server Manager >> Cluster Settings**. Under **On-premises** tab and **IaaS Computing** section, select **Enabled** checkbox. Enable Hyper-V checkbox. Next enable **Cluster Management**. Enabling Cluster Management will automatically enable **Centralized Repository**. Finally click on **Save** button.

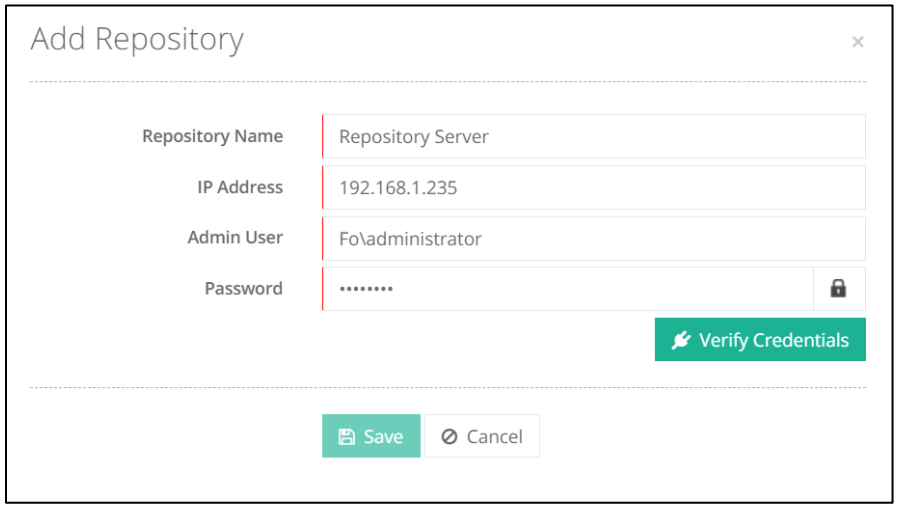


3. Add all your Hyper-V Nodes to HC. To add a Hyper-V node to the cluster, go to **Server Manager >> Servers**. Click **Add Server >> On-premises Windows**. Here against the **Server's Friendly Name** field insert the exact hostname of the Hyper-V node. Next, against the **Admin User** field, insert the credentials of Domain Administrator. Click **Check Connectivity**.

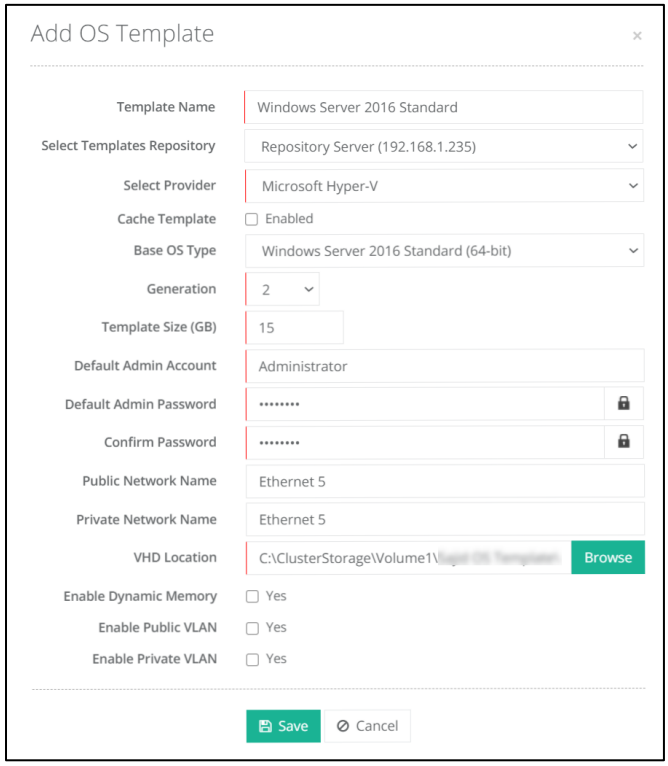




4. Add Repository Server. Repository Server allows OS templates to be stored in a central location. The Repository Server is a separate Windows server where these OS templates are stored. To add a Repository Server, from top right corner of your screen, click and then go to **Virtual Module Configuration** >> **Repository Management**.



5. Add OS template against Repository Server. From top right corner of your screen, click and then go to **Virtual Module Configuration** >> **OS Templates >> + Add OS Template**.



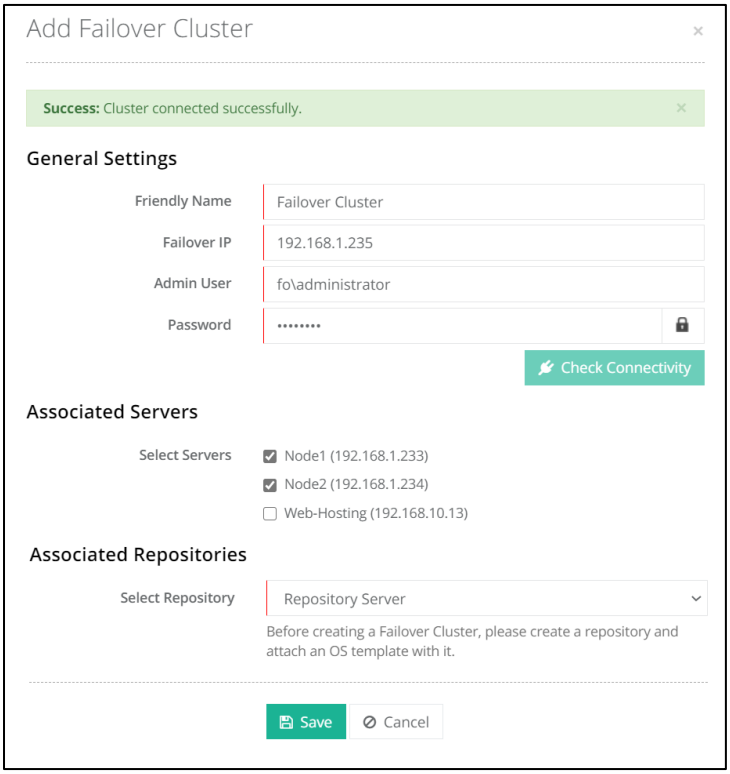
6. Add a failover cluster. To add a failover cluster, from top right corner of your screen, click  and then go to **Virtual Module Configuration** >> **Failover Cluster Management >> + Add Failover Cluster**.

Associated Servers

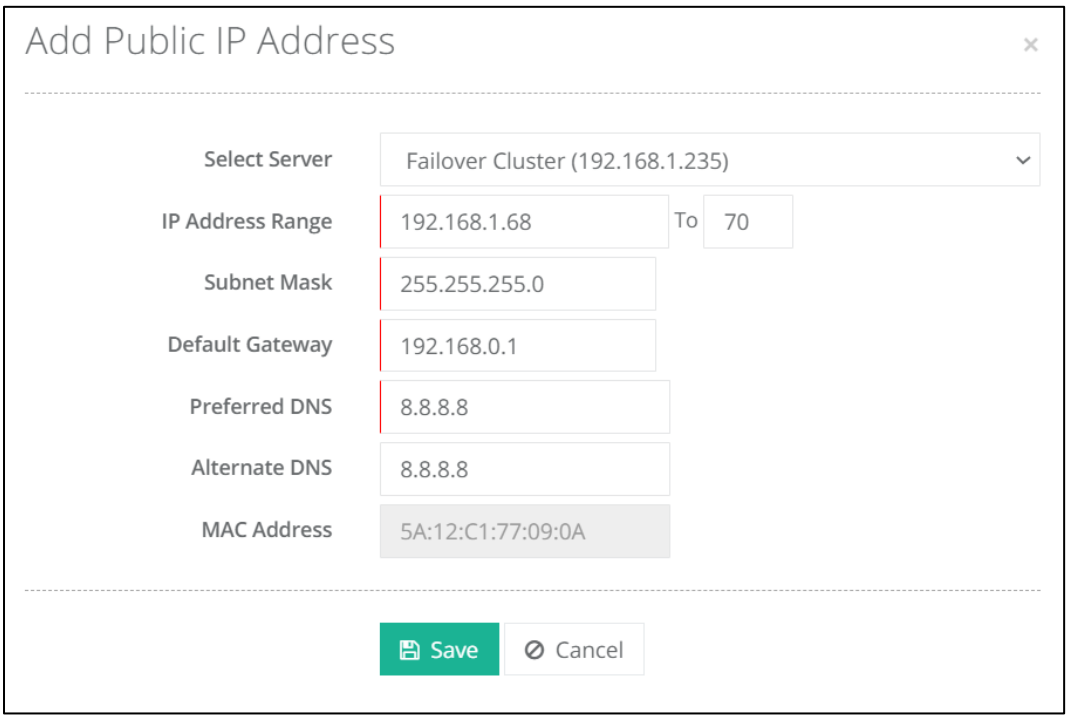
While creating a failover cluster, you can choose all the Hyper-V hosts that will be part of the cluster. These will be the associated failover nodes. A typical Hyper-V failover cluster setup consists of 2 or more nodes. If one or more of the clustered nodes fail or suffer performance issues, the workloads (virtual machines, services, processes, etc.) will be shifted to an available node, so that the virtual machines can resume their normal operations again.

Associated Repositories

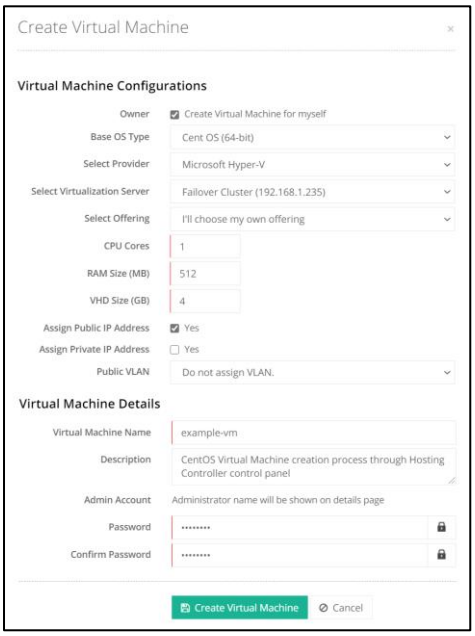
A repository is a central storage location where .vhdx files are stored. The clustered nodes fetch OS templates (.vhdx files) from this central location. The central storage can be on an entirely separate server or on any of the servers in the environment, but the cluster storage volume path (e.g. **C:\Cluster Storage\Volume\..**) should be visible to all nodes in the cluster. The repository has a virtual IP (192.168.1.235 in this case) that enables the active node to fetch from the central location. Therefore no matter which node is active, it will always fetch from the same central location. Central storage can be any of the storage methods such as iSCSI, fiber etc.



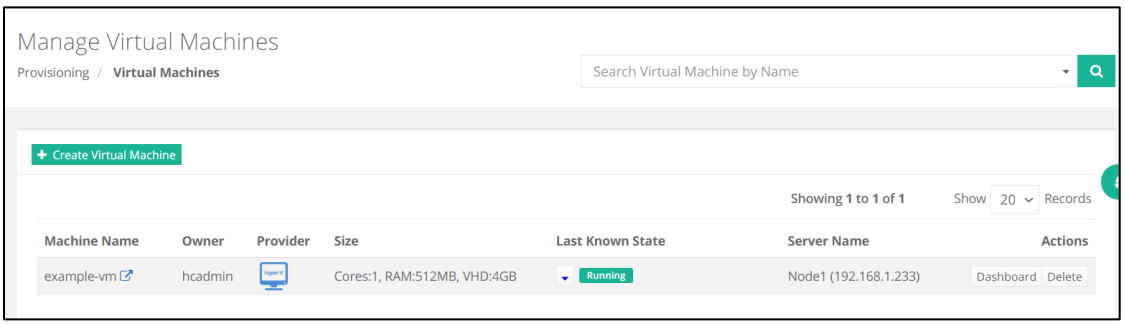
7. Add set of IPs for virtual machines. IP addresses can be added with the help of the link http://help.hostingcontroller.com/hc10/default.aspx#pageid=configuring_public_ip_addressess



8. Finally create a virtual machine. Virtual machines can be provisioned via HC panel in failover cluster environment from: **Provisioning >> Virtual Machines >> Create Virtual Machine**.



9. That's it. A virtual machine has been added through the Hyper-V failover cluster.



7) Contact Us

If you have your environment ready and want to test the HC panel Hyper-V failover capabilities, you can contact our support team at support@hostingcontroller.com and we will configure your panel for you.