

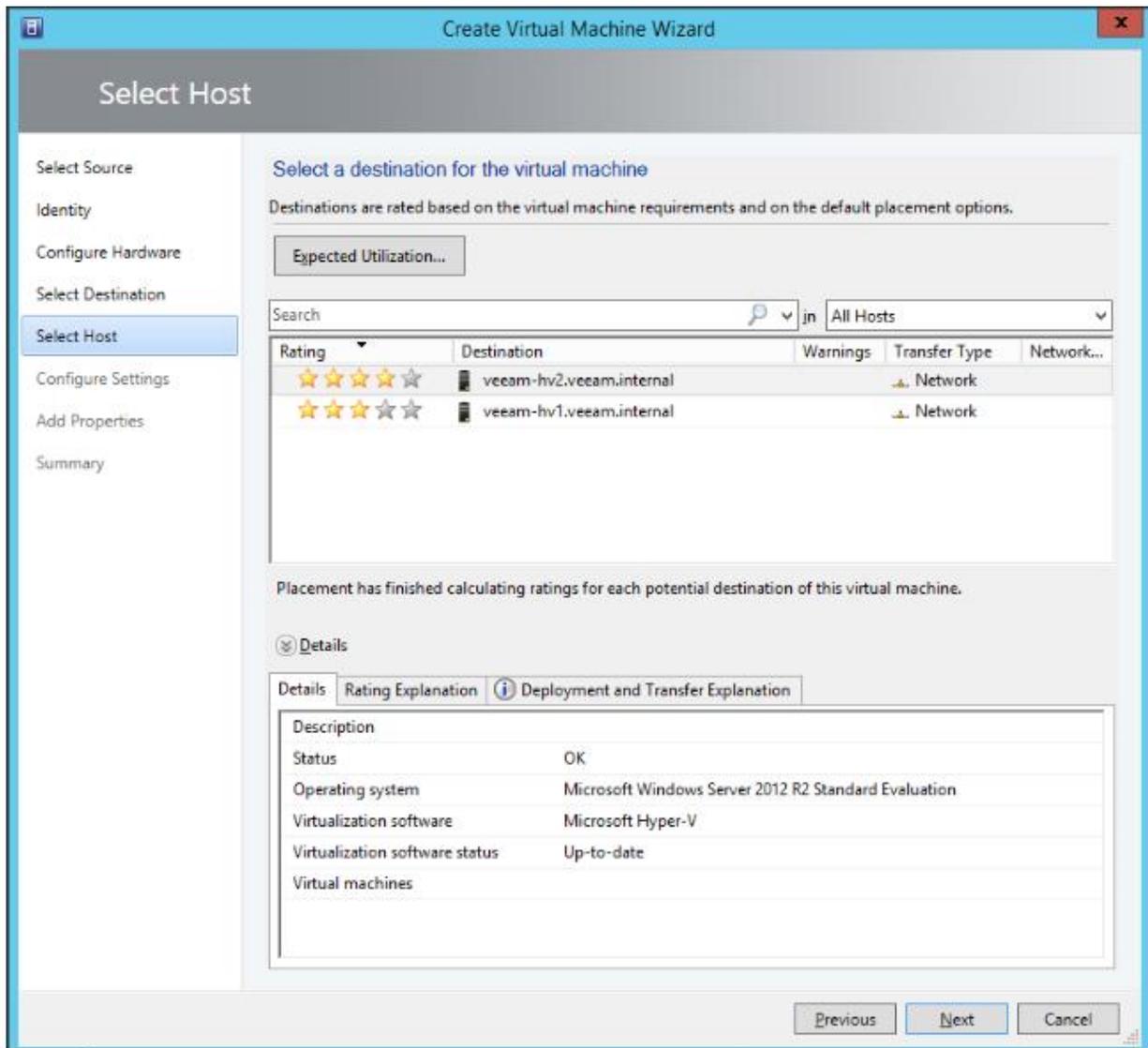
# Guest resource optimization

When you are deploying a VM and you have the option of deploying to different virtualization hosts, you generally want to ensure that you deploy the VM to a virtualization host that has the greatest amount of available resources . Once deployed, you also want to ensure that your virtualization hosts are being used equitably and that VMs are not being hosted disproportionately on some virtualization hosts while the resources on other virtualization hosts remain idle .

## Intelligent placement

When you are preparing to deploy or migrate a VM to more than one virtualization host, VMM will use intelligent placement to assess the suitability of each virtualization host . This assessment is provided as a rating . Ratings are based on CPU, memory, network and disk resource utilization . Figure 4c shows

the



ratings for Hyper-V virtualization hosts veeam-hv1 and veeam-hv2 .

### Dynamic optimization

Dynamic optimization allows the automatic migration of VMs within a VMM managed virtualization host cluster to balance VM load across cluster nodes .

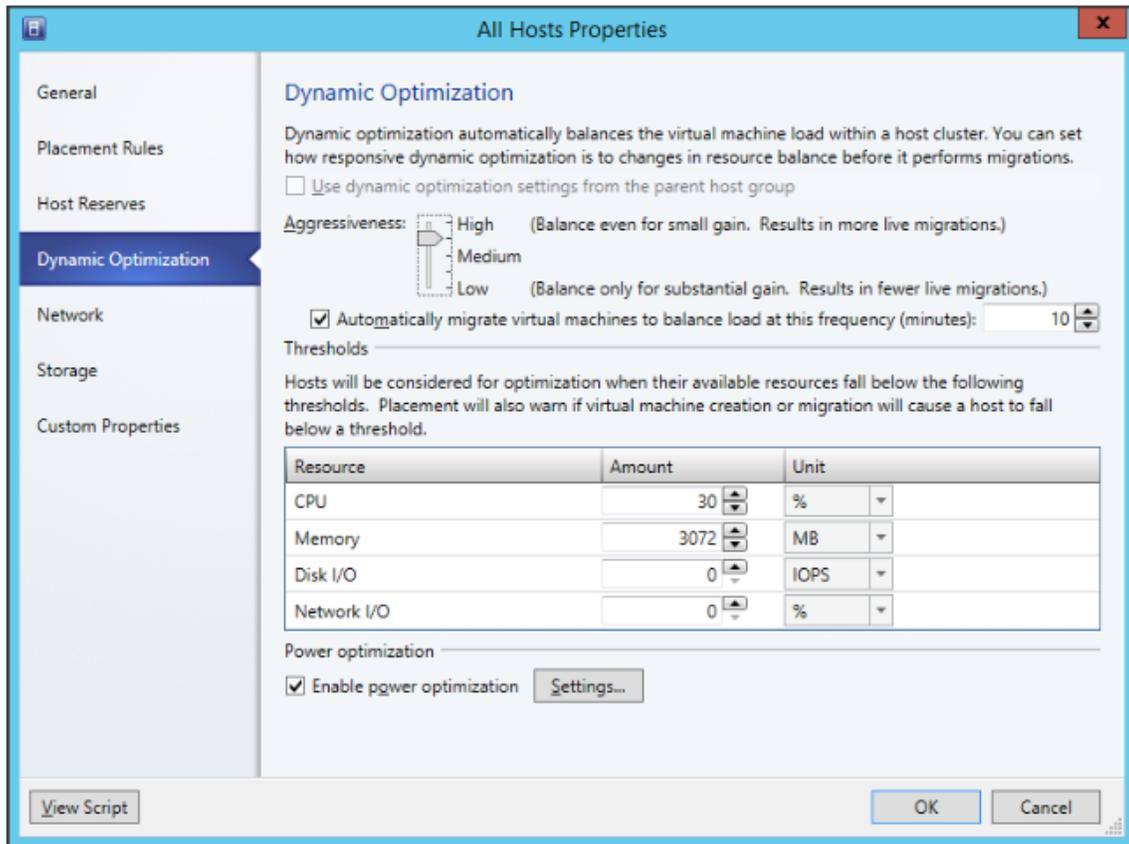
Dynamic optimization can only be used to migrate VMs that are hosted on shared storage . VMs that are not configured as highly available cannot be migrated using dynamic optimization .

You can configure dynamic optimization for clusters with two or more nodes .

While you can configure dynamic optimization at the host group level, any host that is a member of the host group that isn't a member of a cluster, or any cluster that does not support live migration will not participate in the dynamic optimization process .

When configuring dynamic optimization, you specify how aggressive the

process should be . This determines whether migrations will be initiated only for major performance gains or, if set to a higher aggressiveness level, for minor gains as well . You can configure how often this assessment is performed, with the default being every 10 minutes . You can also specify the threshold at which hosts will be eligible for optimization . Figure 4d shows the configuration of dynamic optimization .



### Power optimization

Power optimization allows VMM to power off virtualization hosts that are not required; for example, shutting down one Hyper-V host in an eight-node cluster when seven nodes are more than adequate to host the current VM workload . Power optimization also allows virtualization hosts to be powered back on when workload requirements increase and the extra host capacity becomes necessary . You can only use power optimization when you configure a VMM host group to allow VM migration to be driven by dynamic optimization . When configuring power optimization, you specify the threshold value, in terms of the performance of other hosts in the cluster, that must be obtained in the event that the server selected for shut down has all of its currently running VMs live migrated away . Figure 4e shows the default configuration settings for power optimization .

**Customize Power Optimization Schedule**

**Power optimization settings**

Power optimization will try to evacuate hosts of a balanced cluster and turn them off to save power.

Thresholds

Hosts will be considered for power optimization if they can be evacuated without causing any remaining nodes of the cluster to fall below the following thresholds.

Resource	Amount	Unit
CPU	40	%
Memory	4096	MB
Disk I/O	0	IOPS
Network I/O	0	%

Schedule

Select the days and times when you want power optimization to run. Times are applied locally to the time zone of each virtualization host.

Midnight (AM) | Noon (PM)

	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Sun	<input type="checkbox"/>																								
Mon	<input type="checkbox"/>																								
Tue	<input type="checkbox"/>																								
Wed	<input type="checkbox"/>																								
Thu	<input type="checkbox"/>																								
Fri	<input type="checkbox"/>																								
Sat	<input type="checkbox"/>																								

No power optimization. Any hosts that were shut down by dynamic optimization are restarted.

Power optimization is running. Hosts are shut down and restarted as needed.

### Performance and Resource Optimization

Performance and Resource Optimization (PRO) allows you to use System Center 2012 R2 Operations Manager to monitor virtualization hosts that are hosted by System Center 2012 R2 Virtual Machine Manager (VMM) . When configured with a PRO-enabled management pack, an alert raised in Operations Manager, such as excessive CPU, storage, or memory utilization on a Hyper-V host can create a PRO tip in VMM . A VMM PRO tip can perform an action to resolve the operations manager alert, such as live migrating VMs to different nodes in a Hyper-V cluster, or to live migrate to a separate Hyper-V cluster . You enable PRO when configuring integration with the Operations Manager

server, as shown in Figure 4f . You may need to disable dynamic optimization and power optimization or reconfigure settings if you are using PRO-enabled management packs .

