

# Virtual Machine Failure Monitoring

VMware VirtualCenter 2.5

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VMware® High Availability (VMware HA) monitors your virtual infrastructure for ESX Server host failures and restarts virtual machines that are interrupted by those failures on alternate hosts. Starting with ESX Server 3.5, VMware HA can also detect and handle the failures of individual virtual machines and respond appropriately based on your specifications.

With this additional functionality, called Virtual Machine Failure Monitoring, VMware HA deals with both host operating system and guest operating system failures.

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**NOTE** Virtual Machine Failure Monitoring is experimental and not supported for production use. By default, Virtual Machine Failure Monitoring is disabled.

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## Understanding Virtual Machine Failure Monitoring

When you enable Virtual Machine Failure Monitoring, VMware HA monitors whether virtual machines are available. VMware HA uses the heartbeat information that VMware Tools captures to determine virtual machine availability.

On each virtual machine, VMware Tools sends a heartbeat every second. Virtual Machine Failure Monitoring checks for a heartbeat every 20 seconds. If heartbeats have not been received within a specified (user-configurable) time interval, Virtual Machine Failure Monitoring declares that virtual machine as failed and resets the virtual machine.

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**NOTE** Virtual Machine Failure Monitoring can monitor and reset a virtual machine only if VMware Tools is installed on that virtual machine.

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Virtual Machine Failure Monitoring can distinguish between a virtual machine that was powered on but has stopped sending heartbeats and a virtual machine that is powered-off, suspended, or migrated. Because Virtual Machine Failure Monitoring ensures that the absolute arrival rate of heartbeats in the specified time interval is zero (0), it can distinguish between a virtual machine that is heavily loaded, resulting in VMware Tools starvation (fewer heartbeats), and a virtual machine that has stopped sending heartbeats.

## Using Virtual Machine Failure Monitoring

You can globally specify Virtual Machine Failure Monitoring for an entire cluster. If the cluster is not yet enabled for VMware HA, you must enable it first.

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**NOTE** You cannot specify Virtual Machine Failure Monitoring during cluster creation. You must edit the cluster settings after creation to enable the cluster for Virtual Machine Failure Monitoring.

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### To specify Virtual Machine Failure Monitoring

- 1 Log in to the VMware VI Client and right-click a cluster in the inventory panel.
- 2 Choose **Edit Settings**.

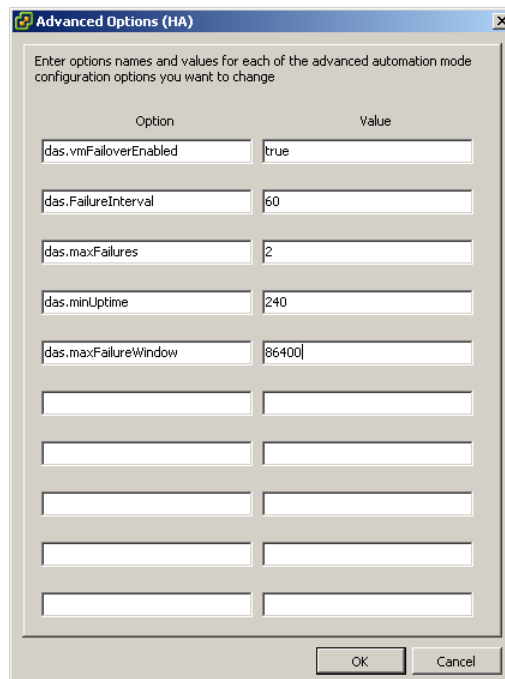
- 3 If the cluster is not yet enabled for VMware HA, select the **Enable VMware HA** check box in the General panel.
- 4 Choose **VMware HA** in the left panel and click **Advanced Options** on the right.
- 5 Enter the following options into the dialog box that appears, then click **OK**.

Option	Value	Description	Default
das.vmFailoverEnabled	true or false	Set this option to true to enable Virtual Machine Failure Monitoring for the entire cluster.	false (disabled)
das.FailureInterval	Integer (number of seconds)	Declare virtual machine failure if no heartbeat is received for the specified number of seconds.	30
das.minUptime	Integer (number of seconds)	After a virtual machine has been powered on, its heartbeats are allowed to stabilize for the specified number of seconds. This time should include the guest operating system boot-up time.	120
das.maxFailures	Integer (number of seconds)	Maximum number of failures and automated resets allowed for the time that das.maxFailureWindow specifies. If das.maxFailureWindow is -1 (no window), das.maxFailures represents the absolute number of failures after which automated response is stopped and further investigation is necessary. If a virtual machine exceeds this threshold, in-depth problem analysis is usually needed.	3
das.maxFailureWindow	Integer (number of seconds)	If das.maxFailures is set to a number, and that many automated resets have occurred within that specified failure window, automated responses stop and further investigation is necessary.	-1 (no failure window)

If you don't specify a value for a field, the default is used. That means that `das.vmFailoverEnabled` remains set to `false` unless you specify a value of `true`. If Virtual Machine Failure Monitoring is enabled, the default values for all the other options are used unless you specify values explicitly.

## Example

The following screenshot shows an example of a Virtual Machine Failure Monitoring setup.



This setup means the following:

- Virtual Machine Failure Monitoring is enabled for this VirtualCenter Server.
- If no heartbeat is received from a virtual machine for 60 seconds or more, VMware HA resets that virtual machine.
- A virtual machine is allowed 240 seconds to stabilize after startup. This allows the virtual machine to perform a reset of the operating system and of VMware tools.
- If the virtual machine fails three or more times in a day, VMware HA does not reset the virtual machine.

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**NOTE** In this experimental version of Virtual Machine Failure Monitoring, no explicit notification is sent to the administrator.

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