

# VM Evacuation Failed

## Cloud Execution Environment

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### OPERATING INSTRUCTIONS

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VM Evacuation Failed



# 1 Introduction

This instruction concerns alarm handling.

## 1.1 Alarm Description

The *VM Evacuation Failed* alarm is issued by the Managed Object (MO) *VM*.

The alarm is issued for a Virtual Machine (VM) in the following situations:

- The automatic evacuation of the VM has failed.
- Or the evacuation of the VM is not allowed due to the policy settings of the VM.
- Or the evacuation of the VM is not possible, because the fencing of the host, as a prerequisite step, has failed.

**Note:** Only VMs in *active* state are attempted to evacuate automatically to a different compute node, if the High Availability (HA) policy of the VM allows that. For VMs with other states than *active*, an alarm is always issued to inform the application owner of the possible fault.

The severity of the alarm is *MAJOR*.

The possible alarm causes and fault locations are explained in Table 1.

Table 1 Alarm Causes

Alarm Cause	Description	Fault Reason	Fault Location	Impact
The evacuation of a VM has failed.	The VM could not be evacuated to another compute node.	<ul style="list-style-type: none"><li>• Insufficient compute resources</li><li>• SW error</li><li>• HW error</li></ul>	<ul style="list-style-type: none"><li>• Region</li><li>• Compute node</li></ul>	The VM becomes permanently unavailable.



Table 1 Alarm Causes

Alarm Cause	Description	Fault Reason	Fault Location	Impact
The evacuation of a VM is not allowed due to the HA policy of the VM.	The HA policy does not allow evacuation.	<ul style="list-style-type: none"><li>• SW error</li><li>• HW error</li></ul>	Compute node	The VM will stay unavailable.
The fencing of the compute failed	Fencing, which is a must for VM evacuation, has failed on the affected compute.	<ul style="list-style-type: none"><li>• HW error</li><li>• Configuration error</li></ul>	Controller node	The VM will stay unavailable.

The following is the consequence for the node if the alarm is not solved:

- The VM remains unavailable.

The alarm attributes are listed in Table 2.

Table 2 Alarm Attributes

Attribute Name	Attribute Value
Major Type	193
Minor Type	2031675
Managed Object Class	VM
Managed Object Instance	Region=<name_of_the_region>, CeeFunction=1, Tenant=<tenant_uuid>, VM=<vm_uuid>
Specific Problem	VM Evacuation Failed
Event Type	other (1)
Probable Cause	m3100Unavailable(14)



Attribute Name	Attribute Value
Additional Text	<p>The following scenarios are possible:</p> <ul style="list-style-type: none"> <li>In case HA policy allows evacuation, but the VM cannot be started on other compute hosts, the following additional text is displayed: <pre>{ "reason":  "Evacuation failed",   "host":    &lt;name_of_the_host&gt; }</pre> <p>Where <i>&lt;name_of_the_host&gt;</i> specifies the host where the VM was running.</p> </li> <li>In case HA policy does not allow the evacuation of the VM, the following additional text is displayed: <pre>{ "reason":  "Evacuation is not allowed", "host":    &lt;name_of_the_host&gt; }</pre> <p>Where <i>&lt;name_of_the_host&gt;</i> specifies the host where the VM was running.</p> </li> <li>In case fencing failed, the following additional text is displayed: <pre>{ "reason":  "Fencing failed",   "host":    &lt;name_of_the_host&gt; }</pre> <p>Where <i>&lt;name_of_the_host&gt;</i> specifies the host where the VM was running.</p> </li> </ul>
Severity	MAJOR (4)

## 1.2 Prerequisites

This section provides information on the documents, tools, and conditions that apply to the procedure.

### 1.2.1 Documents

Not applicable.

### 1.2.2 Tools

No tools are required.



### 1.2.3 Conditions

No conditions.

## 2 Procedure

This section describes the procedure to follow when the *VM Evacuation Failed* alarm is received.

### 2.1 Analyzing the Alarm

Determine the `ha-policy` of the VM by checking the `Additional Text` field of the alarm.

The following scenarios are possible:

- The `ha-policy` of the VM is set to `unmanaged` or `managed-on-host`.

In this case, no action is required, because the VM is not evacuated due to its HA policy.

If you need to evacuate a VM with `ha-policy` set to `unmanaged`, contact the next level of maintenance support to manually evacuate the VM.

- Or the `ha-policy` is set to `ha-offline`, but the evacuation has failed.

In this case, see Section 2.2 on page 4.

- Or fencing has failed. In this case the `Fencing Failed` alarm must be handled.

For more information, refer to *Fencing Failed*.

**Note:** Evacuation is only attempted if the `ha-policy` is set to `ha-offline`, and the VM status is `active`. For VMs with other statuses, an alarm is sent to inform the application owner that action is required on their part.

### 2.2 Actions

The evacuation of the VM is performed as soon as it is determined that the compute node on which it was running became unavailable.

The following scenarios are possible:





- A *Compute Host Failed* alarm is sent. This means that the compute node becomes permanently unavailable.

In this case, proceed to Step 1, and carry on with all subsequent steps.

- Or no *Compute Host Failed* alarm is sent.

In this case, the VM that has failed to evacuate is restarted automatically.

If this applies, no further actions are needed, exit this procedure.

If the VM is not restarted automatically, and the *VM Evacuation Failed* alarm does not cease, proceed to Step 3, and carry on with all subsequent steps.

1. Resolve the *Compute Host Failed* alarm.

For more information about the *Compute Host Failed* alarm, refer to *Compute Host Failed*.

**Note:** It is possible that the procedure to resolve the *Compute Host Failed* alarm takes a considerable amount of time, that is, more than 15 minutes.

2. If the *Compute Host Failed* alarm is resolved, the system tries to restart the VM automatically, if the `ha-policy` of the VM is not set to `unmanaged`. Unmanaged VMs will not be restarted and have to be restarted manually.

If the alarm ceases, exit this procedure.

3. If the alarm is not ceased, use the following command:

```
nova show <vm_uuid>
```

**Note:** The `<vm_uuid>` value is indicated in the `Managed Object Instance` field of the alarm text and Table 2.

4. Check the “fault” value in the output.

The following scenarios are possible:

- The “fault” value contains the text “No valid host was found”, the system was not able to evacuate the VM, because there are no sufficient resources available on other nodes.

In this case, the Region has several failed compute nodes.

Resolve all *Compute Host Failed* alarms.

For more information about the *Compute Host Failed* alarm, refer to *Compute Host Failed*.



**Note:** It is possible that the procedure to resolve the *Compute Host Failed* alarms takes a considerable amount of time, that is, more than 15 minutes.

If the *VM Evacuation Failed* alarm persists after the *Compute Host Failed* alarms were resolved, proceed to Step 5.

- Or the “fault” value in the output does not indicate insufficient resources.

In this case, proceed to Step 5.

5. Collect troubleshooting data as described in the *Data Collection Guideline*. For alarm-specific logs, refer to the Table *Data Collection for Alarms and Alerts* in the *Data Collection Guideline*.
6. Contact the next level of maintenance support.

Further actions are outside the scope of this instruction.

7. The job is completed.

## 3 Additional Information

The alarm is ceased for a VM when the VM is restarted, and the VM state becomes `active`.