Working with Block Volumes/enabling the block volume management plugin.txt

Enabling the Block Volume Management Plugin
Enable the Block Volume Management plugin on a Compute instance.

The Block Volume Management plugin is required for the following volume attachment scenarios:

iSCSI attached volumes configured for the Ultra High Performance level. These volume attachements need to be multipath-enabled to achieve

iSCSI attached volumes configured for other performance levels and configured to automatically connect. These volumes were attached with

Operating systems and corresponding Oracle Cloud Agent versions
OS Oracle Cloud Agent version
Oracle Linux or a custom image based on an Oracle Linux image 1.23.0 or newer
Windows or a custom image based on a Windows image 1.24.0 or newer
Ubuntu or a custom image based on an Ubuntu image 1.35.0 or newer
The Block Volume Management plugin is managed by the Oracle Cloud Agent software and performs the following actions:

Checks the instance's metadata for multipath-enabled attachments to Ultra High Performance volumes or attachments configured to automatic

Installs device-mapper-multipath rpm and adds "/etc/multipath.conf" only if there are multipath-enabled attachments.

If there are multipath-enabled attachments or attachments configured to automatically connect in the instance's metadata, then the plugin

Prerequisites
The Block Volume Management plugin is supported on Oracle Autonomous Linux and Oracle Linux images, and on custom images that are based o

The following steps are required for the Block Volume Management plugin.

Service gateways or public IP addresses: The compute instance must have either a public IP address or a service gateway to be able to con

If the instance does not have a public IP address, set up a service gateway on the virtual cloud network (VCN). The service gateway lets

When creating the service gateway, enable the service label called All <region> Services in Oracle Services Network.
When setting up routing for the subnet that contains the instance, set up a route rule with Target Type set to Service Gateway, and the D
For detailed instructions, see Access to Oracle Services: Service Gateway.

Oracle Cloud Agent: The Oracle Cloud Agent software must be installed on the instance. Oracle Cloud Agent is installed by default on curr
Important

If you're enabling the Block Volume Management plugin to support the automatically connect to a volume scenario, the instance must be run
Configure Permissions: These permissions authorize the instance to make API calls to Oracle Cloud Infrastructure services, allowing the B

To configure permissions:

Create Dynamic Group: Create a dynamic group with the matching rules in the following code sample, to include all instances in the specif

Copy
ANY {instance.compartment.id = 'ocid1.tenancy.oc1..<tenancy_ID>', instance.compartment.id = 'ocid1.compartment.oc1..<compartment_OCID>'}
Configure Policy for Dynamic Group: Configure a policy granting permissions to the dynamic group created in the previous step to enable t

Copy
Allow dynamic-group InstantAgent to use instances in tenancy
Allow dynamic-group InstantAgent to use volume-attachments in tenancy
Enabling Block Volume Management on New Instances
To enable Block Volume Management on a new compute instance, use the following steps.

To enable Block Volume Management on a new compute instance using the Console
Follow the steps in Creating an Instance, until the advanced options. Ensure that the instance has either a public IP address or a servic
Click Show Advanced Options.
On the Oracle Cloud Agent tab, select the Block Volume Management check box.

Click Create.

To enable Block Volume Management on a new compute instance using the API
Install the Oracle Cloud Agent software, if it is not already installed.
Use the UpdateInstance operation. Include the following parameters:

Copy
```
#oci compute instance update --instance-id <New_Instance> --agent-config file:///agentUpdate.json
agentUpdate.json
{
    "is-agent-disabled": false,
    "plugins-config": [
        {"name": "Block Volume Management", "desiredState": "ENABLED" }
    ]
}
```
Ensure that the instance has either a public IP address or a service gateway, as described in the Prerequisites.
Enabling Block Volume Management on Existing Instances
To enable Block Volume Management on an existing compute instance, use the following steps.

To enable Block Volume Management on an existing compute instance using the Console
Install the Oracle Cloud Agent software, if it is not already installed. The Oracle Cloud Agent should already be installed all current a

systemctl status oracle-cloud-agent
If the result is not found, you need to install the softare, otherwise proceed to the next step.

Enable the Block Volume Management plugin.
Confirm that plugins are running on the instance.
Ensure that the instance has either a public IP address or a service gateway, as described in Prerequisites.
To enable Block Volume Management on an existing compute instance using the API
Install the Oracle Cloud Agent software, if it is not already installed.
Use the UpdateInstance operation. Include the following parameters:

Copy
```
#oci compute instance update --instance-id <New_Instance> --agent-config file:///agentUpdate.json
agentUpdate.json
{
    "is-agent-disabled": false,
    "plugins-config": [
        {"name": "Block Volume Management", "desiredState": "ENABLED" }
    ]
```

```
}
Ensure that the instance has either a public IP address or a service gateway, as described in Prerequisites.
Manually Enabling Block Volume Management on an Instance
You can manually enable Block Volume Management on a compute instance using the CLI.

This procedure is only required for custom images that have been updated to support the Ultra High Performance level, but the Block Volum

Prior to performing this procedure, you need to complete the steps described in Enabling Block Volume Management on New Instances or Enab

To manually enable the Block Volume Management plugin on an instance
Install the Oracle Cloud Agent software on the instance, if it is not already installed.
Log into the instance, see Connecting to an Instance.
Run the following sed script to enable Block Volume Management:

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sed -i.saved -e '/^  oci-blockautoconfig:/,/^  [a-z]*:/{s/\(.*disabled:.*\)true/\1false/}' /etc/oracle-cloud-agent/agent.yml
This script updates the disabled parameter for the oci-blockautoconfig configuration in /etc/oracle-cloud-agent/agent.yml from true to fa

Run the following command to restart the Oracle Cloud Agent service:
systemctl restart oracle-cloud-agent.service
Troubleshooting the Block Volume Management Plugin
If the Block Volume Management plugin is not configured correctly for an instance, you may encounter an error when attaching a volume wit

Block Volume Management Plugin Log Error: Volume Attachment Not Authorized or Not Found Error
If you have not configured permissions correctly for the Block Volume Management plugin, the volume will fail to attach to the instance.

Details
The volume will not show up as attached in the Console and you will see a NotAuthorizedOrNotFound error message in the Block Volume Manag

The Block Volume Management plugin log is located in:

"/var/log/oracle-cloud-agent/plugins/oci-blockautoconfig/oci-blockautoconfig.log
The following is an sample error log entry for this issue:

2021/08/13 09:14:25.864932 compute_client_command.go:255: Updating volume attachment to the state LOGIN_SUCCEEDED ...
2021/08/13 09:14:26.155473 compute_client_command.go:260: Service error:NotAuthorizedOrNotFound.
volume attachment ocid1.volumeattachment.oc1.iad.<volume-attachment_ID> not found.
http status code: 404. Opc request id: <request_ID>
Cause
The Block Volume Management plugin does not have sufficent permissions to send the iSCSI login status notification to the service.

Resolution
To configure permissions for the Block Volume Management plugin:

Create Dynamic Group: Create a dynamic group with the matching rules in the following code sample, to include all instances in the specif

ANY {instance.compartment.id = 'ocid1.tenancy.oc1..<tenancy_ID>', instance.compartment.id = 'ocid1.compartment.oc1..<compartment_OCID>'
Configure Policy for Dynamic Group: Configure a policy granting permissions to the dynamic group created in the previous step to enable t

Allow dynamic-group InstantAgent to use instances in tenancy
Allow dynamic-group InstantAgent to use volume-attachments in tenancy
Block Volume Management Plugin Log Error: User Agent Can Not Be Blank
The compute instance must have either a public IP address or a service gateway to be able to connect to Oracle services or the volume wil

Details
The volume will not show up as attached in the Console and you will see a user agent can not be blank error message in the Block Volume M

The Block Volume Management plugin log is located in:

"/var/log/oracle-cloud-agent/plugins/oci-blockautoconfig/oci-blockautoconfig.log
The following is an sample error log entry for this issue:

2021/10/15 22:16:07.881953 compute_client_command.go:255: Updating volume attachment to the state LOGIN_SUCCEEDED ...
2021/10/15 22:16:07.882185 compute_client_command.go:260: user agent can not be blank
2021/10/15 22:16:07.882204 iscsi_commands_helper.go:302: user agent can not be blank
2021/10/15 22:16:07.882212 iscsi_commands_helper.go:310: user agent can not be blank
Cause
The Block Volume Management plugin cannot send the iSCSI login status notification to the service due to the network configuration.

Resolution
If the instance does not have a public IP address, set up a service gateway on the virtual cloud network (VCN). The service gateway lets

When creating the service gateway, enable the service label called All <region> Services in Oracle Services Network.
When setting up routing for the subnet that contains the instance, set up a route rule with Target Type set to Service Gateway, and the D
For detailed instructions, see Access to Oracle Services: Service Gateway.
```