

HP Operations Orchestration

For the Windows and Linux Software

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Amazon Virtual Private Cloud Integration Guide

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Chapter 1

Introduction

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Purpose of the Amazon Virtual Private Cloud Integration

This integration enables you to build HP Operations Orchestration (OO) operations that are integrated into the Amazon Virtual Private Cloud (VPC).

VPC integrates with Amazon EC2. To use this integration successfully, you should have knowledge of VPC and EC2 technology.

This document explains how this integration has been implemented and how the operations included communicate between OO and VPC.

Amazon VPC Supported Versions

Operations Orchestration Version	Amazon VPC Version
OO Content Pack 16	EC2 API 2014-06-15

Downloading OO Releases and Documents on HP Live Network

HP Live Network provides an Operations Orchestration Community page where you can find and download supported releases of OO and associated documents.

To download OO releases and documents, visit the following site:

<https://hpln.hp.com/>

Note: This site requires that you register for an HP Passport and sign-in.

To register for an HP Passport ID:

1. Go to: <http://h20229.www2.hp.com/passport-registration.html>

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Click the **New users - please register** link on the HP Passport login page.

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3. On the left-hand side, click **Operations Orchestration Content Packs**.
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5. Enter your user ID and Password to access to continue.
6. Click **HP Operations Orchestration 9.00**.
7. Search for the required HP Operations Orchestration Content Pack.

Chapter 2

Getting Started

This chapter includes:

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Installing and Configuring the Integration

No special installation and configuration instructions are required for the Amazon Virtual Private Cloud integration. To use Amazon VPC, you must first subscribe to Amazon EC2 and Amazon VPC at <http://aws.amazon.com/vpc/>. Amazon has created specialized plugins for several browsers, such as Elasticfox for Firefox, which allow easy interaction with Amazon EC2 and Amazon VPC.

Use Cases and Scenarios

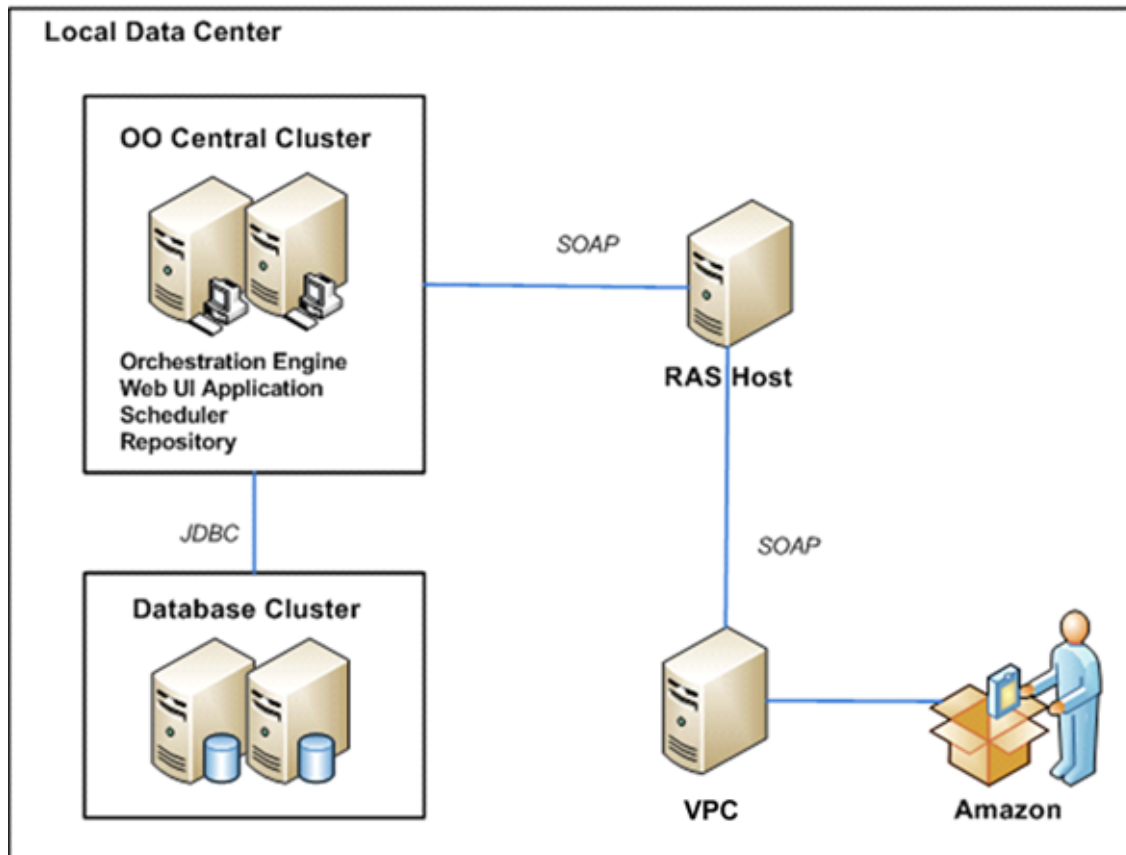
The following are the major use cases for the Amazon VPC integration, and the operations that you can use to implement them.

1. Manage customer gateways:
 - Create Customer Gateway
 - Delete Customer Gateway
 - Describe Customer Gateways
2. Manage DHCP options:
 - Associate Dhcp Options
 - Create Dhcp Options
 - Delete Dhcp Options
 - Describe Dhcp Options
3. Manage subnets:
 - Create Subnet
 - Delete Subnet
 - Describe Subnets

4. Manage virtual private clouds:
 - Create VPC
 - Delete VPC
 - Describe VPC
5. Manage VPN connection:
 - Create VPN Connection
 - Delete VPN Connection
 - Describe VPN Connection
6. Manage VPN gateways:
 - Attach VPN Gateway
 - Create VPN Gateway
 - Delete VPN Gateway
 - Describe VPN Gateway
 - Detach VPN Gateway
7. Display the VPC dashboard information.

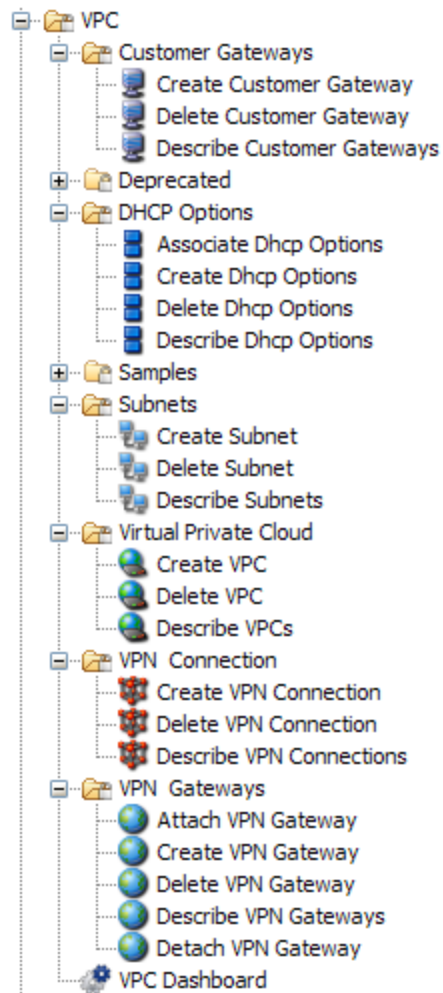
Amazon VPC Architecture

This section depicts the Amazon VPC architecture.



Location of Amazon VPC Operations and Flows in OO Studio

The VPC integration includes the following operations and flows in the **OO Studio Library/Integrations/Amazon/VPC** folder.



Chapter 3

Troubleshooting

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Troubleshooting Overview

This section provides troubleshooting procedures and tools you can use to solve problems you may encounter while using this integration. It also includes a list of the error messages you may receive while using the integration and offers descriptions and possible fixes for the errors.

General Troubleshooting Procedures and Tools

When troubleshooting issues related to the VPC integration, verify that:

1. The same operation works when it is performed through the VPC console using the same parameters.
2. Your access key and proxy parameters are correct.

Error Messages

This section lists the error messages you may receive while using this integration.

- Failed to open HTTP connection.
- AWS was not able to validate the provided access credentials. Error code:
AuthFailure.
- The request signature we calculated does not match the signature you provided.
Check your AWS Secret Access Key and signing method. Consult the service documentation for details. Error code: SignatureDoesNotMatch.
- Invalid integer value ###. Error code: InvalidParameterValue.
- Value (###) for parameter bgpAsn is invalid. Invalid Format.

Error code: InvalidParameterValue.

- The following input must not be null: bgpAsn.
- Value (###) for parameter ipAddress is invalid. Invalid Format.
Error code: InvalidParameterValue.
- The request must contain the parameter ipAddress.
Error code: MissingParameter.
- Value (###) for parameter type is invalid. Invalid Format.
Error code: InvalidParameterValue.
- The following input must not be null: type.
- The customerGateway ID '###' does not exist. Error code:
InvalidCustomerGatewayID.NotFound.
- ### is not a valid Key name. This message appears if the filterName
is invalid.
- The following input must not be null: customerGatewayId
- The vpc ID '###' does not exist. Error code: InvalidVpcID.NotFound.
- The name of the Key (DHCP option) with number 1 is not valid.
- The dhcpOption ID '###' does not exist. Error code:
InvalidDhcpOptionID.
NotFound.
- Value (###) for parameter availabilityZone is invalid.
Subnets can currently only be created in the following availability
zones:
eu-west-1b. Error code: InvalidParameterValue.
- The subnet ID '###' does not exist. Error code:
InvalidSubnetID.NotFound.
- Invalid mask for the CIDR! This should be an integer between 16 and
28.
- Invalid CIDR!
- The provided IP is invalid!
- The vpnGateway ID '###' does not exist. Error code:
InvalidVpnGatewayID.NotFound.
- The attachment with vpn gateway ID '###' and vpc ID '###' does not
exist.
Error code: InvalidVpnGatewayAttachment.NotFound.

Chapter 4

Security

This section describes how security is handled by the Amazon VPC integration.

The VPC integration uses the Amazon VPC Query API. To perform its task, each VPC operation sends a query to Amazon. This query is sent over HTTPS and the Symphony Client library is used for sending the actual requests. Every VPC operation has two inputs: **accessKey** and **accessKeyId**. These are provided by Amazon for every Amazon account.

According to Amazon, in addition to the name of the action and the list of parameters, you must include a signature in every query request. The signature is created by using the **accessKey** provided by the user. The steps for creating a signature are described on the Amazon Web site at <http://docs.amazonwebservices.com/AmazonVPC/2009-07-15/DeveloperGuide/index.html?using-query-api.html> and are implemented by the operations.

The VPC integration uses version 2 of the signature. For calculating an RFC 2104-compliant HMAC with the query string created by using the input parameters, the integration use the secret Access Key as the key, and SHA1 as the hash algorithm. You should not perform any special configurations; just provide the **accessKey** and **accessKeyId**.

Chapter 5

Tools

Following are OO tools that you can use with the Amazon VPC integration:

- RSFlowInvoke.exe and JRSFlowInvoke.jar

RSFlowInvoke (RSFlowInvoke.exe or the Java version, JRSFlowInvoke.jar) is a command-line utility that allows you to start a flow without using Central (although the Central service must be running). RSFlowInvoke is useful when you want to start a flow from an external system, such as a monitoring application that can use a command line to start a flow.

- Web Services Wizard (wswizard.exe)

When you run the Web Services Wizard, you provide it with the WSDL for a given Web service. The WSDL string you provide as a pointer can be a file's location and name or a URL. The Web Services Wizard displays a list of the methods in the API of the Web service that you specify. When you run the wizard, pick the methods you want to use, and with one click for each method you have selected, the wizard creates an HP OO operation that can execute the method. This allows you to use the Web Services Wizard to create operations from your monitoring tool's API.

These tools are available in the Operations Orchestration home folder in **/Studio/tools/**.