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About this Deployment Guide

This deployment guide contains the information for deploying, interacting, and configuring Centralized Appliance Management Service (CAMS) QGS Appliance on GCP Cloud.

About Qualys

Qualys, Inc. (NASDAQ: QLYS) is a pioneer and leading provider of cloud-based security and compliance solutions. The Qualys Cloud Platform and its integrated apps help businesses simplify security operations and lower the cost of compliance by delivering critical security intelligence on demand and automating the full spectrum of auditing, compliance and protection for IT systems and web applications.

Founded in 1999, Qualys has established strategic partnerships with leading managed service providers and consulting organizations including Accenture, BT, Cognizant Technology Solutions, Deutsche Telekom, Fujitsu, HCL, HP Enterprise, IBM, Infosys, NTT, Optiv, SecureWorks, Tata Communications, Verizon and Wipro. The company is also founding member of the Cloud Security Alliance (CSA). For more information, please visit www.qualys.com

Qualys Support

Qualys is committed to providing you with the most thorough support. Through online documentation, telephone help, and direct email support, Qualys ensures that your questions will be answered in the fastest time possible. We support you 7 days a week, 24 hours a day. Access online support information at www.qualys.com/support/.
Overview

The Qualys Gateway Service (QGS) is a packaged virtual appliance created by Qualys that provides proxy services for Qualys Cloud Agent deployments that require proxy connectivity in order to connect to the Qualys Cloud Platform.

This document outlines the steps required to set up a Centralized Appliance Management Service (CAMS) Qualys Gateway Service (QGS) appliance on the Google Cloud Platform (GCP).

Pre-requisites

- To set up the CAMS QGS appliance on Google Cloud Platform (GCP), you need GCP account.
- You must have CLI installed on your machine to use GCP CLI to launch and execute the command.
- To get the CAMS/QGS GCP VHD image, submit a service request to Qualys support.

How to Create GCP Image

- The current version of the GCP image is 2.0.0-17 (The version may be changed with the feature improvements).
- Download the shared GCP VHD image and upload it to the GCP bucket.
- You can upload GCP VHD images to the Google storage bucket and create the image using either one of the following methods. (Make sure that the bucket is already created).

CLI Method to Upload the VHD Image to the Google Storage Bucket

1. You can use the following command to upload the VHD from CLI.
   
   `gcloud storage cp <VHD name> gs://<Bucket name>/`
   
   For example,
   
   `gcloud storage cp qualys-qgs-appliance-gcp-marketplace-2.0.0-17.vhd gs://qgs-poc-storage-bucket/`
   
2. Create an Image from the uploaded VHD.
   
   `gcloud compute images import <Desired Image name> --source-file=gs://<Bucket where VHD is uploaded>/<VHD name> --family=flatcar-linux --data-disk`
For Example,

```bash
gcloud compute images import qgs-jenkins-17-image --source-file=gs://qgs-storage-bucket/qualys-qgs-appliance-gcp-marketplace-2.0.0-17
```

**Note:** If the QGS VHD file is already uploaded in the bucket, you must register the appliance in VHD.

**UI Method to Upload the VHD Image to the Google Storage Bucket**

1. Log in to the GCP console.
2. Click the **Cloud Storage > Buckets**.
3. Select the bucket. Click the **Upload files** or **Upload Folder**. Browse the folder where the Google VHD file is present.
4. Click **Compute Engine > Images**.

5. Click **Create Image**.

- Provide the name of the image in lowercase letters.
- Select the source type as virtual disk (VMDK, VHD) using the dropdown box.
- Provide the uploaded VHD file in the bucket to the Virtual Disk File.
- Select 'No operating system. Data only' using the Operation system on virtual disk dropdown box.
- Provide "flatcar-Linux" in the Family text box.
Overview

How to Create GCP VM Instance

- Click **Create**. Refer to the following screenshot.

![Google Cloud Console Create Instance](image)

**Note:** The above process might take time, depending on your network speed and the location of your GCP storage account.

How to Create GCP VM Instance

The following are the steps required to create the GCP VM instance.

1. Go to the Google Cloud Console to find a managed image > **Images** (Select the latest CAMS/QGS appliance image from the list).
2. Click **Create Instance**. (Refer to the following screenshot).
3. Provide the following details as per your preference. Refer to the following screenshot.

- Enter the instance name as per your preference.
- Enter the region where you want to create the instance.
- Provide the series and Machine type e2-standard-4 (4 vCPU, 16GB RAM) minimum.
- Click the change button to add the disk space 30GB minimum (As specified in the QGS User Guide, ensure that the VM minimum requirement is selected).

- Keep other settings as default.

4. Select the reserved external IP address.
- While Creating a VM, go to Advanced Options.
- Click Networking.
- Click Default network interface.
- Select the external IP address from the dropdown; otherwise, the private IP address will be selected.
**Overview**

**How to Create GCP VM Instance**

**Note:** You can add the network settings as per your preferences and availability.

![Google Cloud Platform Interface](image)

- Keep other settings as default. Refer to the following screenshot.

5. Select the secondary disk to enable the Patch mode or CDN mode.
   - You can add a secondary disc of 250GB to enable patch mode either when creating the VM or later (As specified in the QGS User Guide, ensure that the VM minimum requirement is selected).
   - Click **Disks** and expands the section in Advanced options.
   - Click **Add new disk**.
   - Enter the name.
   - Select a disk source type and a disk type. Generally, keep it as default or change it based on your priorities. Refer to the following screenshot.
- Change the size to 250GB minimum.
- Keep the encryption type as per your preference.
- Select the Mode as per your preference.
- Select the deletion rule as per your priority. Refer to the following screenshot.

- Keep other settings as default.
- Click Save.

6. Add user data

- While Creating a VM, go to Advanced Options.
- Click **Management**.
- In Metadata, click **Add Item**.
- Set key as user-data (Setting this key is mandatory).
- Keep other settings as default. Refer to the following screenshot.

![Metadata screenshot](image)

**IMPORTANT:** If configuring the instance using the latest image version 2.1.0-48, you can directly configure the POD suffix using the TextUI by selecting the options **System Settings > POD Suffix** without using the User Data option. To know more detailed steps to configure the POD suffix without using the User Data option, Refer to the Appendix section of the Qualys Gateway Service User Guide.

However, we recommend using the User Data option only when the instance is launched using the scripts while creating the instance.

- Add the following user data.

```bash
#cloud-config
write_files:
  - owner: root:root
    path: /opt/qualys/cloud.env
    permissions: '0644'
    content: |
      POD_SUFFIX="Add your corresponding POD suffix here"
```

To know the POD suffixes for corresponding PODs, refer the following table:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Cloud Agent</th>
<th>Platform URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 1</td>
<td>qagpublic.qg1.apps.qualys.com</td>
<td>qg1.apps.qualys.com</td>
</tr>
<tr>
<td>US 2</td>
<td>qagpublic.qg2.apps.qualys.com</td>
<td>qg2.apps.qualys.com</td>
</tr>
<tr>
<td>US 4</td>
<td>qagpublic.qg4.apps.qualys.com</td>
<td>qg4.apps.qualys.com</td>
</tr>
<tr>
<td>EU 1</td>
<td>qagpublic.qg1.apps.qualys.eu</td>
<td>qg1.apps.qualys.eu</td>
</tr>
<tr>
<td>EU 2</td>
<td>qagpublic.qg2.apps.qualys.eu</td>
<td>qg2.apps.qualys.eu</td>
</tr>
<tr>
<td>IN 1</td>
<td>qagpublic.qg1.apps.qualys.in</td>
<td>qg1.apps.qualys.in</td>
</tr>
</tbody>
</table>
Click **Create**.

6. Access the text UI to register the appliance.

- After creating GCP Instance, click **VM** and click **edit**.

- Enable the checkbox **Enable connecting to serial ports** and click **Save**.

- After Saving the details, you can see the option Connect to serial console enabled.

- Click the option to access the text UI of the QGS Appliance.

Note: You need to add/create the rule for QGS tunnel mode and cache/patch mode ports in the GCP firewall to communicate with the backend services successfully.
- If you want to access the appliance, create a rule for the SSH port. Contact Qualys Support to get the SSH keys of the appliance.