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About this Guide

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

Qualys Gateway Service (QGS) is a packaged virtual appliance developed by Qualys that provides proxy services for Qualys Cloud Agent deployments that require proxy connectivity to connect agents to the Qualys Cloud Platforms.

Qualys Gateway Service is managed using a new module user interface on the Qualys platform. From this interface, one can create, register, monitor, and manage QGS virtual appliance deployments.

The QGS virtual appliance is separate and different from the virtual scanner appliance that is used for Vulnerability Management and Policy Compliance scanning. The QGS virtual appliance only provides proxy services for Cloud Agent deployments.

Features

The following features and capabilities are available in this QGS 1.0 release:

- A virtual appliance image downloaded, registered, and managed from the Qualys platform user interface using the “QGS” module
- Support for any Cloud Agent version that supports HTTP/HTTPS proxy (all agents since 2016)
- Explicit forward proxy (an upcoming release will offer a caching option)
- SSL/TLS pass-through bypass (an upcoming release will offer a TLS step-up option)
- Can be deployed in High-Availability failover using external 3rd party load balancers (an upcoming release will offer integrated High-Availability without external dependencies)
- Connection Security – the QGS proxy only will provide connections to the Qualys platform from where it is registered. It is not possible to use QGS to proxy connections to any other destination.
- Shared Platform support (Private Cloud Platforms require coordination with Qualys Operations)
Virtualization Server Requirements and Virtual Machine File Formats

Virtual Machine Configuration
- 2 vCPUs
- 8 GB RAM minimum
- 8 GB Disk
- One network adapter
  - IP address configured with a Default gateway
  - QGS Proxy listening port for Cloud Agents: 1080
    Port 1080 is fixed in QGS 1.0 (changing the port is available in the next release)
- Available support to connect QGS to upstream proxy server, if required
  - IP/DNS name and port of upstream proxy
  - Optional username/password proxy credentials

Network Configuration
QGS requires connectivity to four (4) URLs/IPs on the Qualys Platform for full functionality. The appropriate network routing, firewall rules, and upstream proxy configurations (if used) must be configured correctly to allow QGS to connect to these URLs/IPs.

- One URL/IP is for Cloud Agents to connect through QGS to the Qualys Platform
- Three URLs/IPs are for QGS to connect to Qualys Platform for management functions

<table>
<thead>
<tr>
<th>Platform</th>
<th>Cloud Agent</th>
<th>Qualys Gateway Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 1</td>
<td>qagpublic.qg1.apps.qualys.com (64.39.104.93:443)</td>
<td>amspublic.qg1.apps.qualys.com</td>
</tr>
<tr>
<td></td>
<td></td>
<td>camspm.qg1.apps.qualys.com</td>
</tr>
<tr>
<td></td>
<td></td>
<td>camsrepo.qg1.apps.qualys.com</td>
</tr>
<tr>
<td>US 2</td>
<td>qagpublic.qg2.apps.qualys.com (64.39.104.103:443)</td>
<td>camspm.qg2.apps.qualys.com</td>
</tr>
<tr>
<td></td>
<td></td>
<td>camsrepo.qg2.apps.qualys.com</td>
</tr>
<tr>
<td>US 3</td>
<td>qagpublic.qg3.apps.qualys.com (64.39.104.113:443)</td>
<td>camspm.qg3.apps.qualys.com</td>
</tr>
<tr>
<td></td>
<td></td>
<td>camsrepo.qg3.apps.qualys.com</td>
</tr>
<tr>
<td>Platform</td>
<td>Cloud Agent</td>
<td>Qualys Gateway Service</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>EU 1</td>
<td>qagpublic.qg1.apps.qualys.eu (64.39.100.93:443)</td>
<td>camspublic.qg1.apps.qualys.eu (64.39.100.50:443) camspm.qg1.apps.qualys.eu (64.39.100.51:443) camrepo.qg1.apps.qualys.eu (64.39.100.52:443)</td>
</tr>
<tr>
<td>EU 2</td>
<td>qagpublic.qg2.apps.qualys.eu (154.59.121.74:443)</td>
<td>camspublic.qg2.apps.qualys.eu (154.59.121.88:443) camspm.qg2.apps.qualys.eu (154.59.121.86:443) camrepo.qg2.apps.qualys.eu (154.59.121.87:443)</td>
</tr>
<tr>
<td>IN 1</td>
<td>qagpublic.qg1.apps.qualys.in (103.216.98.40:443)</td>
<td>camspublic.qg1.apps.qualys.in (103.216.98.50:443) camspm.qg1.apps.qualys.in (103.216.98.51:443) camrepo.qg1.apps.qualys.in (103.216.98.52:443)</td>
</tr>
</tbody>
</table>
Qualys Gateway Service User Interface Module

Qualys Gateway Service has a user interface module on the Qualys Platform. Customers with purchased or trial accounts see the QGS module in the module picker.

Use the QGS UI to create, configure, monitor, disable, and delete QGS appliances deployed in your organization.

In order to deploy a QGS virtual appliance, log into the Qualys Platform, select the QGS module, and follow the steps below.

1) Create a New Appliance. Give the appliance a name and enter a location, if desired.
2) Generate a Personalization Code. Similar to the virtual scanner, you will need to enter this Personalization Code in the QGS virtual appliance local user interface to fully configure the appliance.

3) Select Download Image and chose the appropriate file format for your environment

4) Download/copy the virtual appliance image to your virtualization server.
   - Configure the Virtual Machine properties following the specified resources.
   - Start the image.
   - Note: Console access to the running image is required to configure the appliance.

5) Use the console-based user interface to configure the virtual appliance (see instructions below).

6) Validate that the appliance can successfully communicate with the Qualys Platform.

7) Configure Cloud Agents to use the IP or DNS name of the QGS as the agent’s proxy. See the Cloud Agent Install Guide for the appropriate proxy configuration instructions.

Qualys Gateway Service Module User Interface

The Activity Summary widgets provide aggregate activity information for all QGS appliances in the subscription. Active Agents and Total Agents count the number unique agent IPs connecting through all appliances. Bandwidth Savings will only be calculated in an upcoming release that supports caching services.
Create New Appliance / Generate Personalization Code

View List of Appliances and their Status
Download Image of the Virtual Appliance

After Successful Setup and Registration, the Appliance has Active Status

View Details, Stats, and Logs of an Active Appliance

The Performance graph shows connection counts by unique agent IP addresses over the time period selected.
Virtual Appliance Local Configuration

The Qualys Gateway Service virtual appliance utilizes a text-based user interface available from the appliance console to configure, set networking, view status, perform diagnostics, and reset the appliance.

Local Configuration Menu Structure

- Registration
- System
  - Network
    - First
    - DNS
    - Proxy
  - Time
- Info
- Diagnostics
  - Containers
  - Images
  - Units
  - Logs
  - Stats
- Commands
  - Ping
  - Reboot
  - Shutdown
  - Reset

Configuration Screens

Next we’ll document the screens used to configure & manage the Qualys Gateway Service.

QGS virtual appliance starting up

```
11.4587226 SELinux: Class ino_socket not defined in policy.
11.4587226 SELinux: Class rrpc_socket not defined in policy.
11.4588271 SELinux: Class isdn_socket not defined in policy.
11.4588735 SELinux: Class phone_socket not defined in policy.
11.4589211 SELinux: Class ieee802154_socket not defined in policy.
11.4589711 SELinux: Class calf_socket not defined in policy.
11.4589819 SELinux: Class alg_socket not defined in policy.
11.459085 SELinux: Class nfc_socket not defined in policy.
11.4590935 SELinux: Class v Chest_socket not defined in policy.
11.4591441 SELinux: Class kcm_socket not defined in policy.
11.4591911 SELinux: Class qipcrtr_socket not defined in policy.
11.459460 SELinux: Class smo_socket not defined in policy.
11.459468 SELinux: Class infiniband_proxy not defined in policy.
11.4595388 SELinux: Class infiniband_endpoint not defined in policy.
11.4595388 SELinux: the above unknown classes and permissions will be allowed.

11.459652 SELinux: policy capability network_peer_controls=1
11.459715 SELinux: policy capability open_perms=1
11.459767 SELinux: policy capability extended_socket_class=9
11.459884 SELinux: policy capability always_check_network=9
11.459951 SELinux: policy capability cgroup_security=8
11.459968 SELinux: policy capability mnp_mode_transition=8
11.459979 systemd[1]: Successfully loaded SELinux policy in 94.115ms
```
Main Configuration Menu
Under System menu, configure Network Settings

Network Configuration
First ethernet interface

If using DHCP, configure the virtual appliance network interface to use DHCP.
This is the IP of the QGS proxy that Cloud Agents will connect running on port 1080.
**Static**

If using Static IP, configure the virtual appliance network interface to use Static IP Address. Cloud Agents connect to the Static IP Address on port 1080.

Set static IP address, if used.

IP address uses a 32-bit netmask, e.g. “/24” for 255.255.255.0

Specify the Default Gateway IP address.
DNS Servers
Set DNS servers for the virtual appliance to resolve the Qualys URLs.

Proxy Servers
Configure upstream Proxy Server, if using proxy chaining.
**QAG Status: Connected**

“QAG Status: Connected” shows that QGS can connect to the Qualys POD.

If the status is not “Connected”, verify network connectivity and firewall settings.
Registration

Enter the Personalization Code generated in the QGS User Interface module.

Here’s an example of a redacted Personalization Code.
Registration in process

Please wait while appliance registration is being verified. This may take few minutes.
WARNING: Do not interact with the appliance during this time.

Successful Registration

Appliance is registered successfully

Diagnostics

Diagnostics
Containers Docker containers
Images Docker Images
Units Services units
Logs Logs
Stats Container Stats
Containers

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
<th>COMMAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAProxy</td>
<td>Up 17 min</td>
<td>&quot;/entrypoint.sh&quot;</td>
</tr>
<tr>
<td>COMPS-HAProxy</td>
<td>Up 17 min</td>
<td>&quot;/usr/local/bin/confd -wat</td>
</tr>
<tr>
<td>cams-logstash</td>
<td>Up 17 min</td>
<td>&quot;/usr/share/logstash/bin/l</td>
</tr>
<tr>
<td>squid-2</td>
<td>Up 17 min</td>
<td>&quot;/docker-entrypoint.sh&quot;</td>
</tr>
<tr>
<td>CAMSD</td>
<td>Up 17 min</td>
<td>&quot;/sbin/init&quot;</td>
</tr>
</tbody>
</table>

Images

<table>
<thead>
<tr>
<th>REPOSITORY</th>
<th>TAG</th>
<th>IMAGE ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>cams-haproxy</td>
<td>0.1.0-47</td>
<td>a397d13a1</td>
</tr>
<tr>
<td>cans-local:443/cams-haproxy</td>
<td>0.1.0-47</td>
<td>a397d13a1</td>
</tr>
<tr>
<td>cans-local:1443/cams-keepalived</td>
<td>0.1.0-47</td>
<td>8cd941c6d3</td>
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<tr>
<td>cans-keepalived</td>
<td>0.1.0-47</td>
<td>8cd941c6d3</td>
</tr>
<tr>
<td>cans-local:1443/cams-squid</td>
<td>0.1.0-47</td>
<td>9912e188c2</td>
</tr>
</tbody>
</table>
Units

Logs

View log file of the virtual appliance. (Logs are also uploaded to the QGS UI Module.)

Logs are sorted with most recent descending.

Navigation and search commands are defined in the UI.
Stats
View utilization of the virtual appliance services.

Commands
Ping

Reset appliance

Reset appliance to its original unconfigured state.
Warning: All configurations and log files will be deleted.
**Reset network interface**

Reset network interface of virtual appliance.

Note: This only resets the network configuration of the appliance.