ALTEON GLOBAL ELASTIC LICENSE

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LAB OVERVIEW

Purpose

The purpose of this document is to describe and demonstrate how to use the Global Elastic License (GEL) demo environment. As part of this document, a Web-Based application was developed to demonstrate the automation capabilities GEL brings to the table.

Please note that the Web-App used in this guide is just an example for customers to see the possibilities of incorporating automation in their organizations and how far they can go with it when coupled with GEL licensing.

Note: The Web-App is not an official product of Radware!

The document covers the following scenarios:

1. **Manual Licensing**

   In this scenario the document will provide the steps needed for licensing an Alteon via Cyber-Controller Server in a manual manner. The following will be demonstrated:

   A. Register an existing Alteon to Cyber-Controller server.
   B. Allocate license.
   C. Change license.
   D. Delete license.

Note: The system comes with a predefined Alteon named "sys_Alteon", this Alteon can be fully managed by the Web-App, but it cannot be deleted.

2. Automated Licensing

In this scenario we will use a simple portal that demonstrates how customers can integrate the GEL solution into their automation system. With a single button click we will be able to do the following:

A. Provision a fully licensed, pre-configured new Alteon device.

B. Modify Alteon license on the fly.

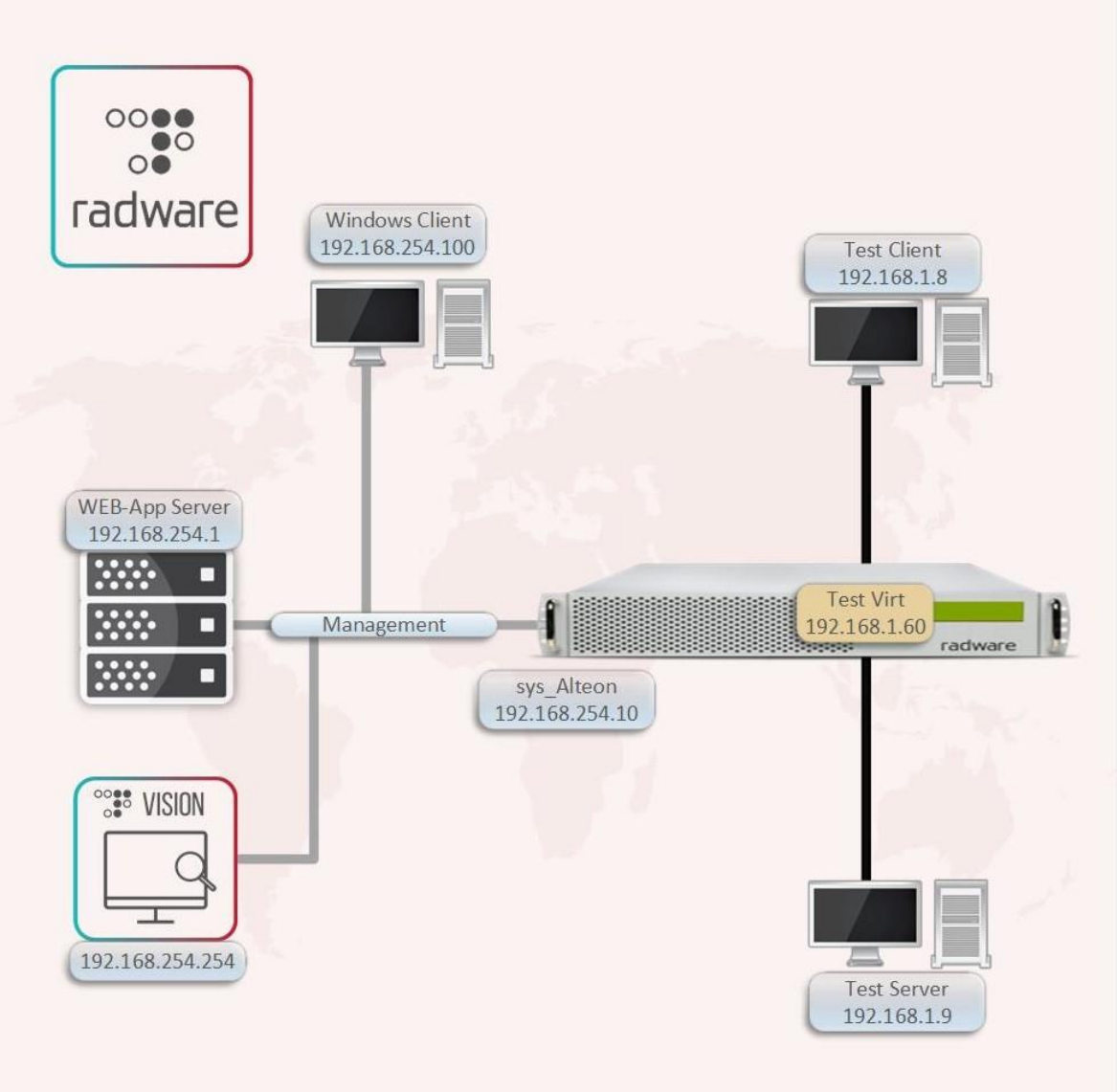
C. Delete an Alteon and release its license back to the license pool.

In addition, for demo purposes, the WEB-App provides an interface for performing a throughput test in real-time. While running the test it will be possible to modify the license to reflect its effect on the throughput test. For more information about the portal please refer to the appendix at the end of this document.

Lab Topology

The demo lab is comprised of several components:

1. ESXI Server hosting the entire environment.
2. Ubuntu Server hosting the Web Application running on top of python flask module.
3. Cyber-Controller server (with vDirect) responsible for managing GEL License.
4. Throughput Test Client.
5. Throughput Test Server.
6. Alteon.
7. Windows Client


radware
Windows Client
192.168.254.100
Test Client
192.168.1.8
WEB-App Server
192.168.254.1
Management
Test Virt
192.168.1.60
radware
sys_Alteon
192.168.254.10
VISION
192.168.254.254
Test Server
192.168.1.9

Lab Environment Credentials

Device	*User*	*Password*
Alteon	admin	Radware1!
Vision	radware	Radware1!
ESXi	root	radware5?

Management (MGMT) Station

This demonstration is performed from the management station, which includes:

1. SSH Access to Ansible Server with MobaXterm. To access the MobaXterm click the icon in the desktop.
2. SSH Access to Alteon with MobaXterm.
3. Web Access to the Alteon, Vision, and the Web-APP with Google Chrome.
4. Web Access to environment devices

The management station includes one network interface for internal management that is connected to the VyOS router for external access.

OVERVIEW

GEL Introduction

What Is Global Elastic License (GEL)?

Alteon Global Elastic License is a new purchasing and deployment model that enables a high level of flexibility for ADC services across datacentres, private and public clouds.

Why Global Elastic License?

1. GEL enables dynamic ADC capacity allocation and the ability to move that capacity across environments, without having to invest separately in a dedicated ADC infrastructure for each and every location where organization's applications are deployed (e.g. on premise, public cloud etc.).
2. This new application delivery licensing model (increases agility and decreases cost) helps eliminate planning risks in the purchase and deployment of ADC services, enabling continuous investment protection of the ADC infrastructure throughout its lifecycle duration.

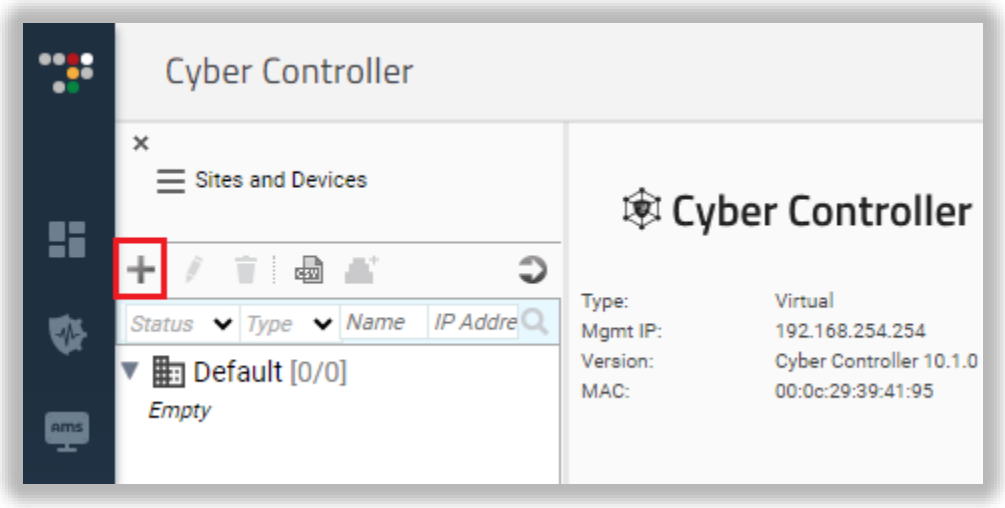
GEL DEMO LAB SCENARIOS

Scenario – 1 – Manual Licensing

In this scenario a manual process of registering the "sys_Alteon" to Cyber-Controller and assigning a license to it will be demonstrated.

1. Register the "sys_Alteon" to Cyber-Controller:

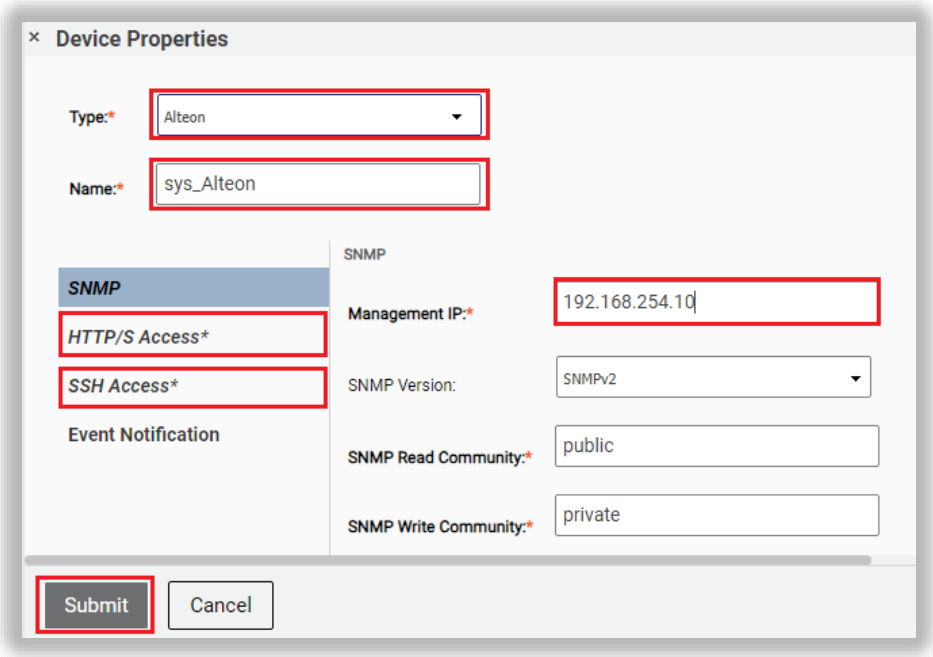
   A. Click the "Plus" sign to open the registration form.



   B. Change the "Type" to "Alteon".

   C. Enter the "sys_Alteon" (case-sensitive) in the "Name" field.

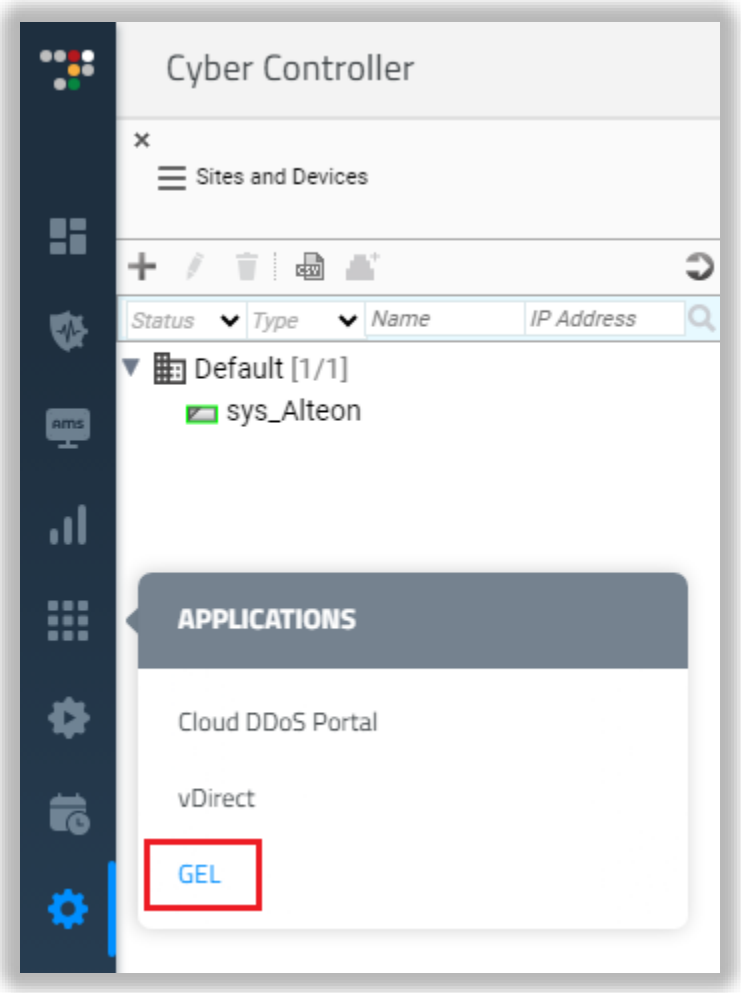
   D. Enter the "192.168.254.10" in "Management IP" field, Provide the password "Radware1!" for both HTTPS and SSH and Click "Submit".



Note: The name of the Alteon must be exactly "sys_Alteon" (case-sensitive). Otherwise, the Web-App will not recognize the Alteon and will not be able to collect its status and license.

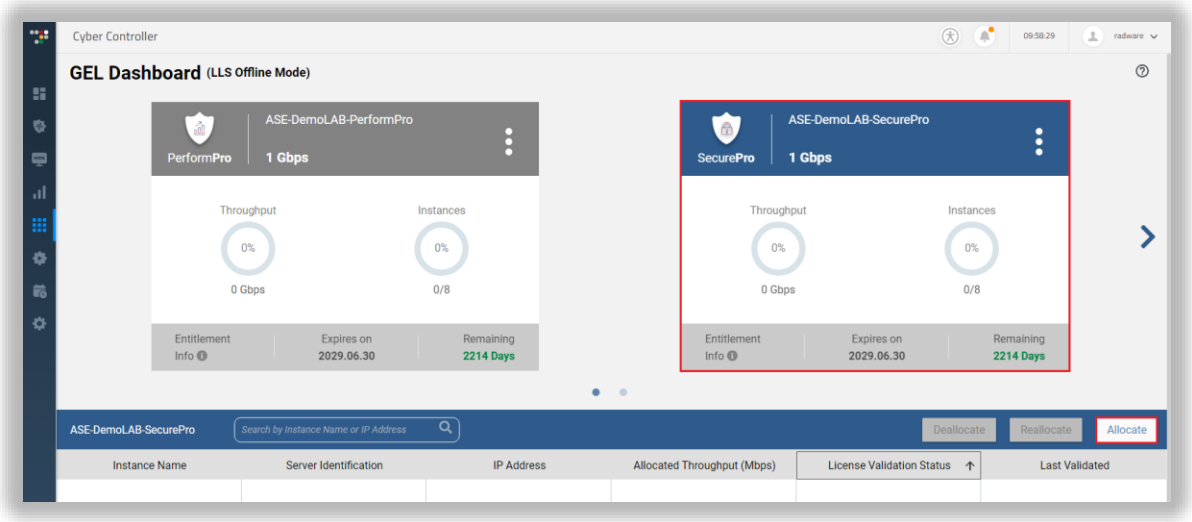
2. Allocate GEL license:

   A. Open the GEL Dashboard.



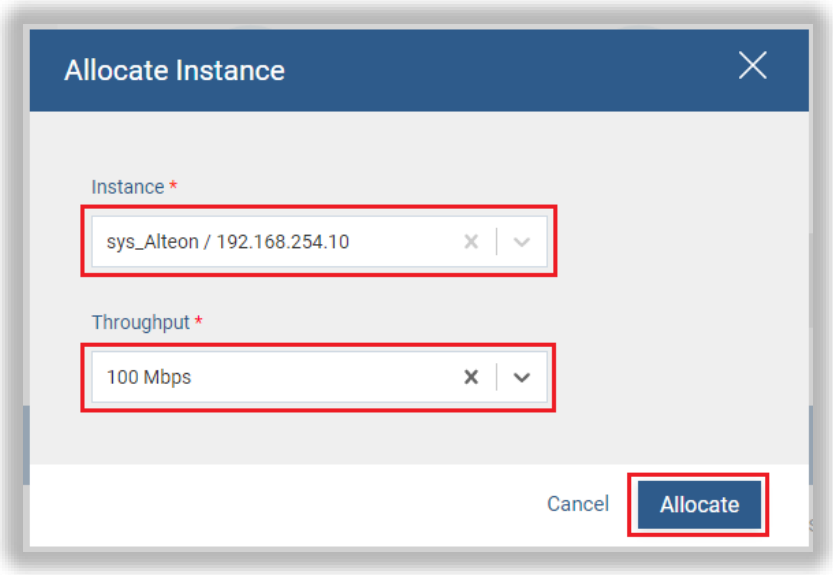
   B. Choose the Secure License Entitlement (Press on the entitlement it is clickable!).

C. Press “Allocate”.



D. Choose the “sys_Alteon” and set “100 Mbps” Throughput.

E. Press the “Allocate” button.



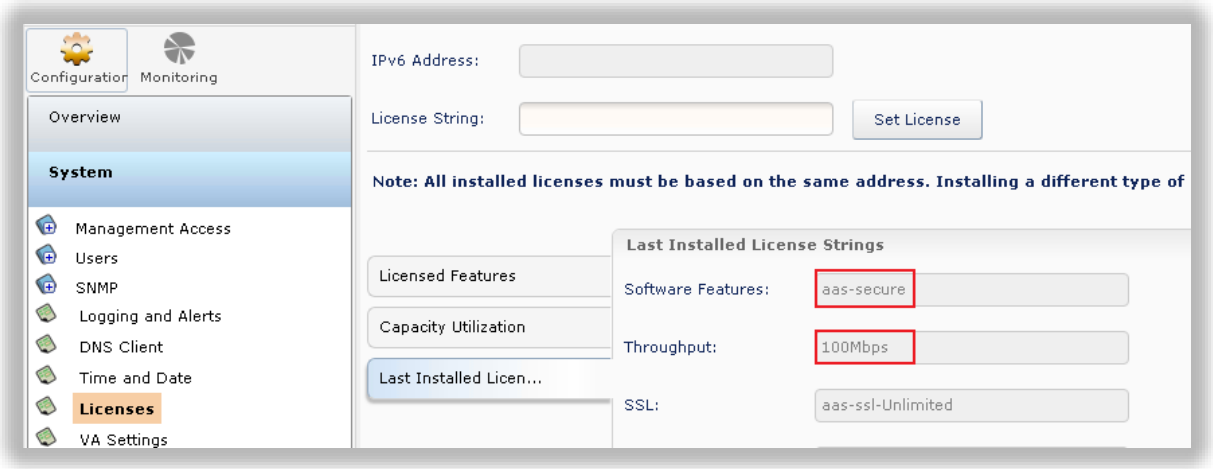
F. Check Allocated License:

I. Connect to Alteon via Web-UI.

II. Navigate to System -> Licenses -> Last Installed License Strings.

III. Locate the "Software Features" field, it should show "aas-secure".

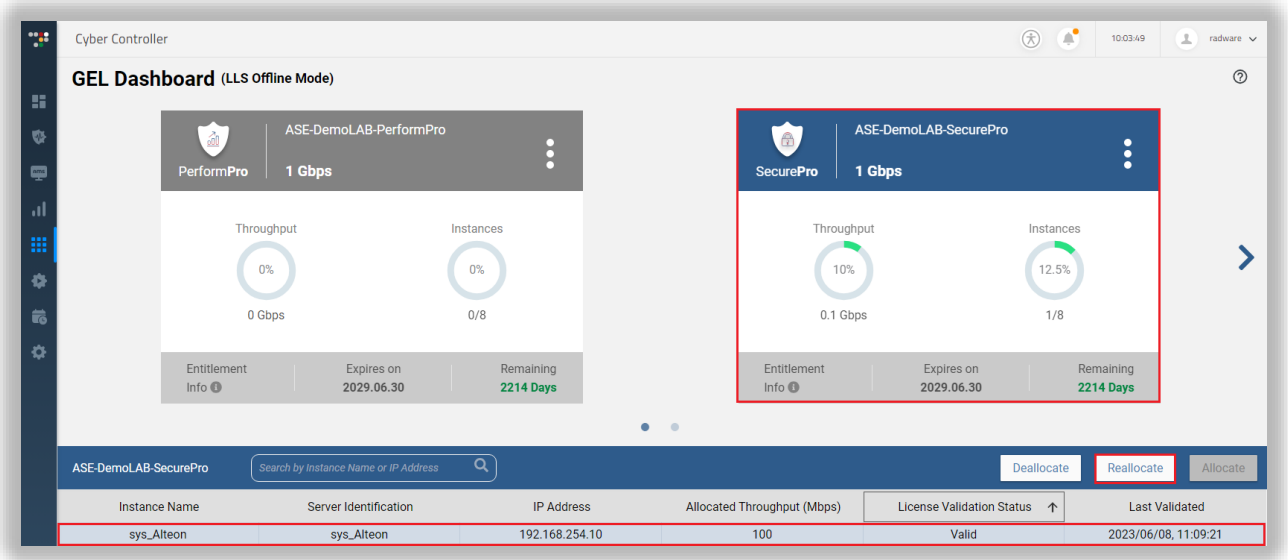
IV. Locate the "Throughput" field, it should show "100Mbps".



3. Update License Throughput:

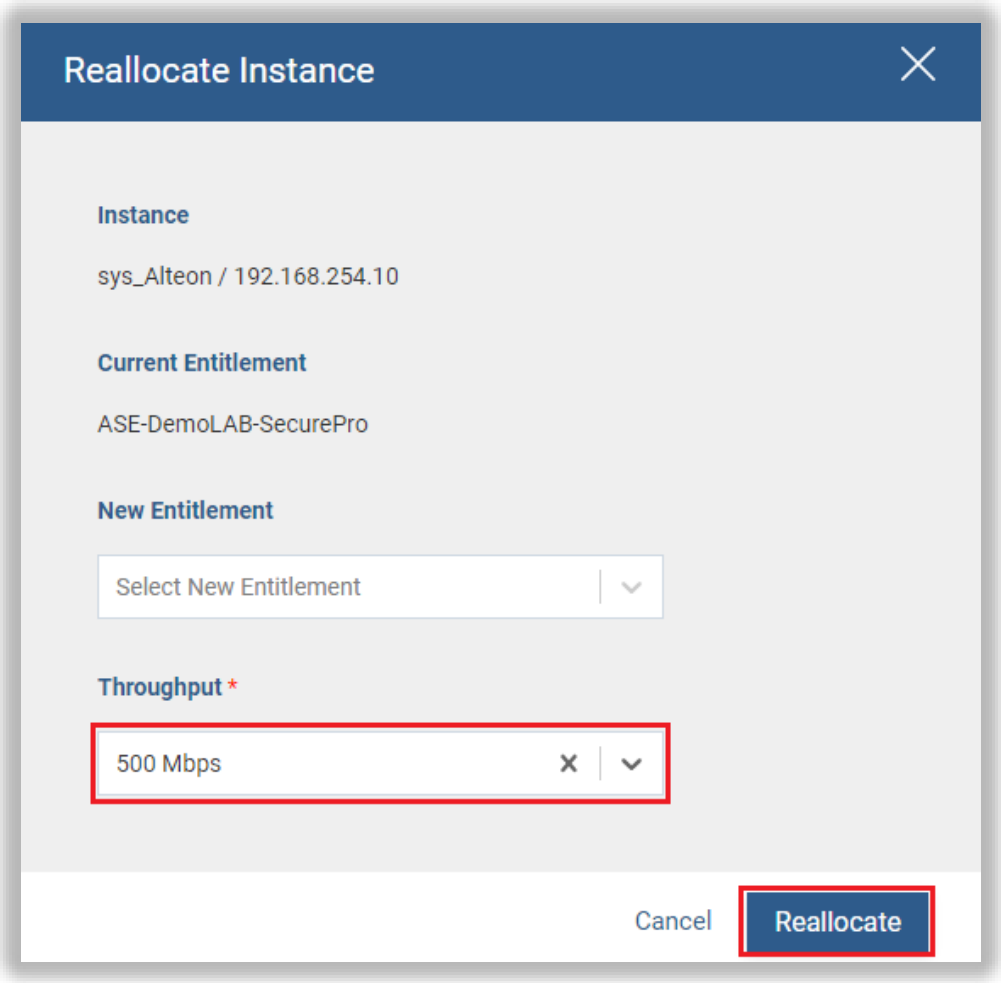
A. Go back to GEL-Dashboard.

B. Press on the Secure license entitlement and choose the "sys_Alteon".



C. Click Reallocate and set "500 Mbps" Throughput

D. Press the “Reallocate” button.



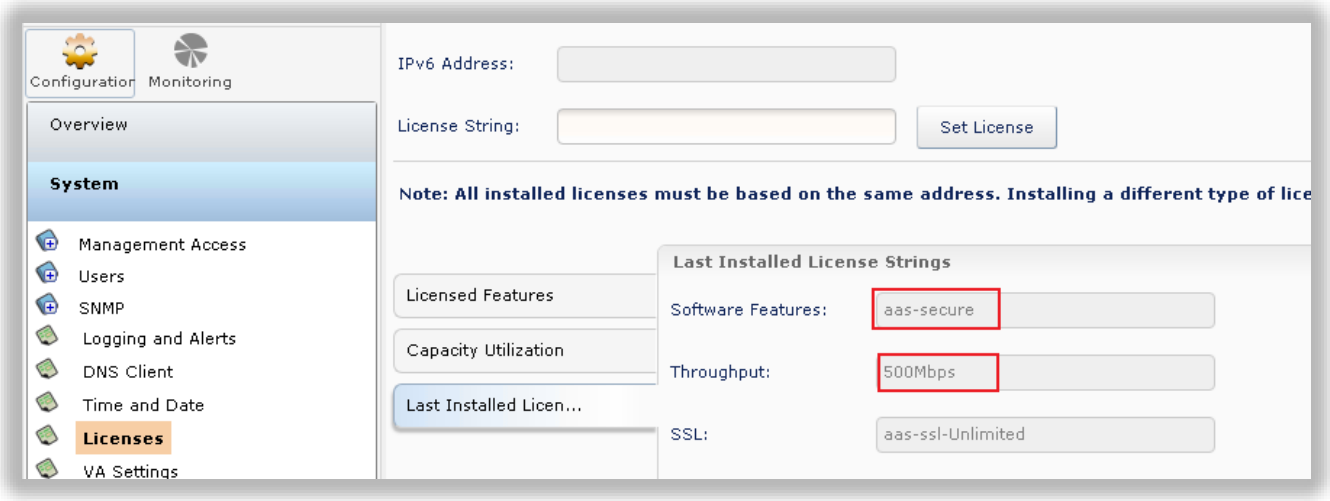
Note: Feature-Set downgrade is not supported by the Alteon! Although technically it is possible to perform the downgrade operation to a “Perform” license after a “Secure” license has been allocated but note that the feature set will remain “Secure”.

4. Check Updated License:

A. Go back to Alteon via Web-UI.

B. Navigate to System -> Licenses -> Capacity Utilization.

C. Locate the "Throughput" Feature, should show 500Mbps, refresh the page if needed.

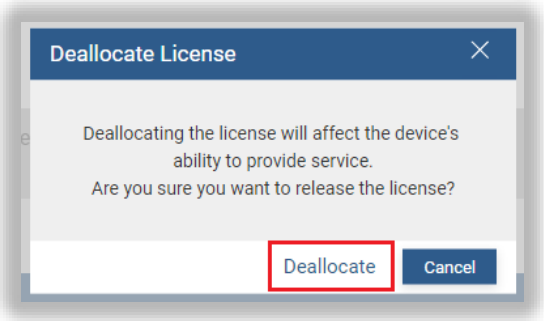


5. Deallocate License:

A. Go back to GEL-Dashboard.

B. Press on the Secure license entitlement and choose the "sys_Alteon".

C. Press "Deallocate" and approve the Deallocation.

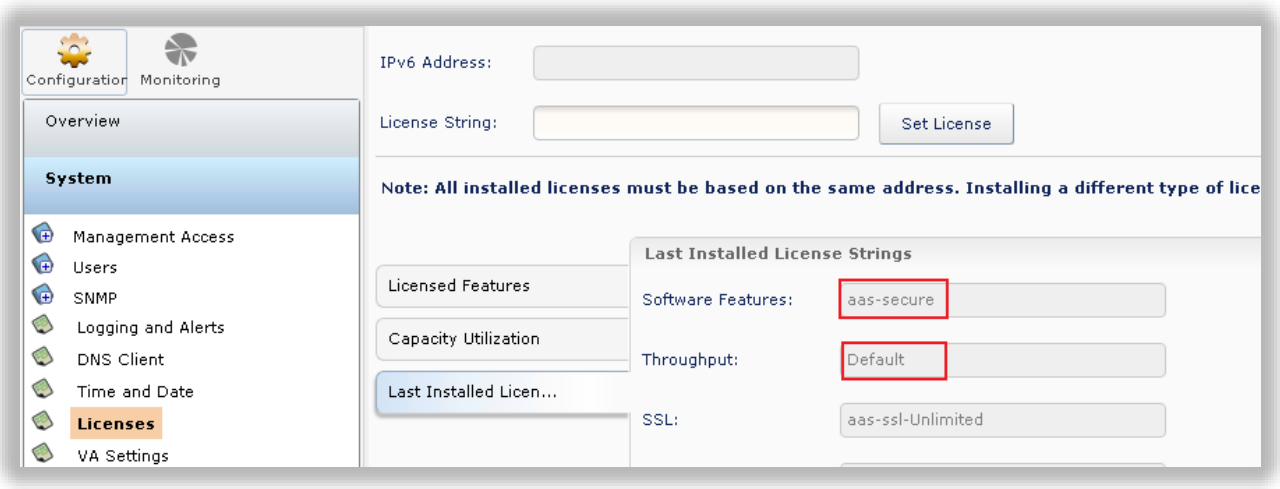


6. Check License Status:

A. Go back to Alteon via Web-UI.

B. Navigate to System -> Licenses -> Capacity Utilization.

C. Locate the “Throughput” Feature, it should show “Default”.



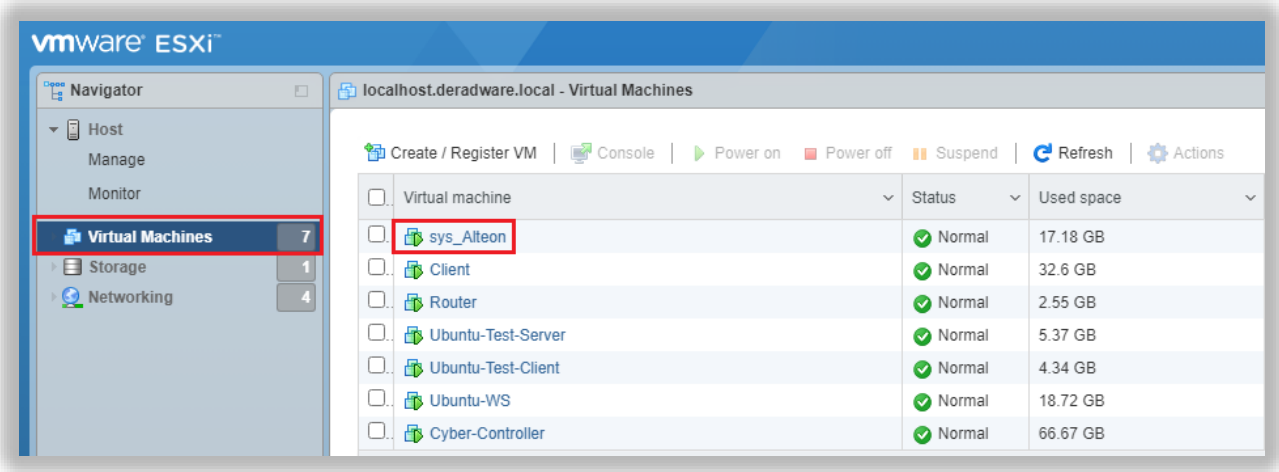
Scenario – 2 – Automated Licensing

In this scenario we will demonstrate GEL licensing automation using the Web-App. With one click of a button we will be able to create a new Alteon on the ESXI server, register it with Cyber-Controller and allocate a GEL license to it. In addition, we will demonstrate the elasticity of the GEL license by using a Throughput-Test in the Web-App.

Please note that this portal is just an example for the possible capabilities what customer can aim for when purchasing GEL license.

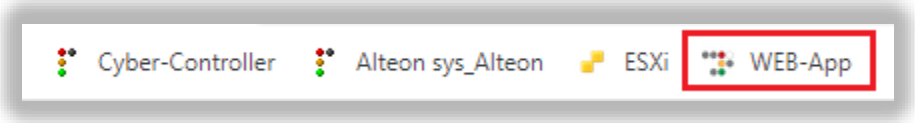
For more information about the portal please refer to the appendix.

1. Open ESXI Server
   A. Total of 7 VM's should exist on the ESXI server.
   B. Notice that currently only one Alteon exist "sys_Alteon", the one we used in the manual licensing scenario.



2. Deploy a new Alteon:

A. Go to the Web-App "Create" Page (http://192.168.254.1:5000/create)

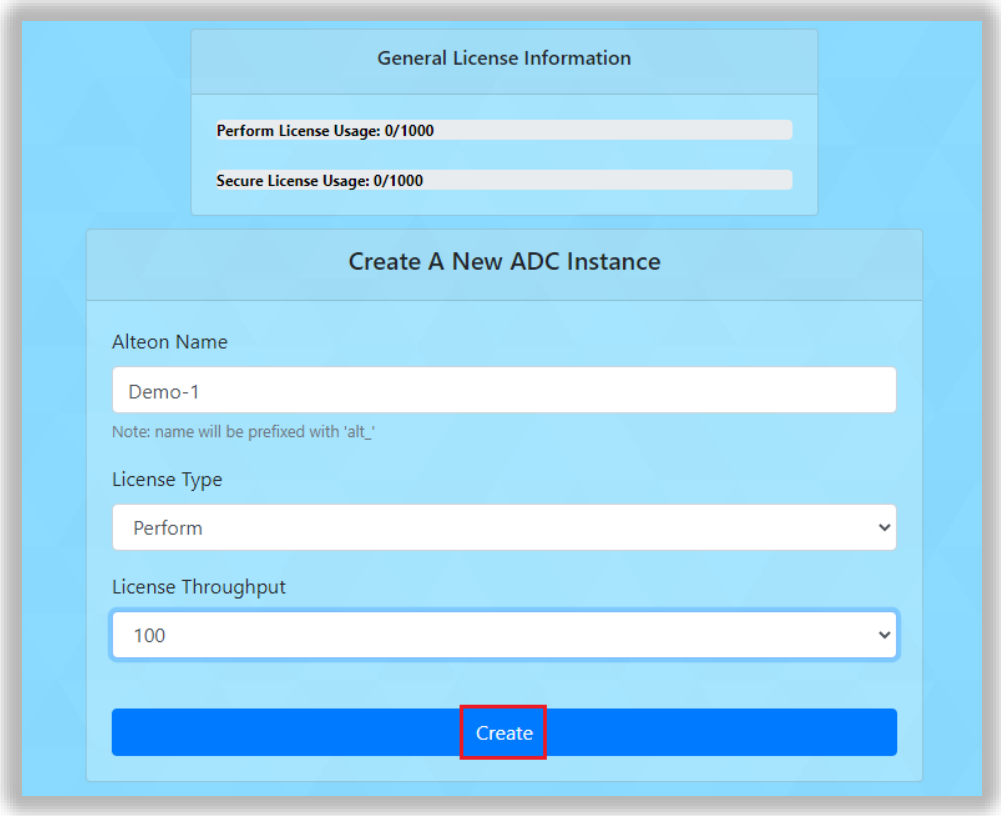


B. Choose an Alteon name "Demo-1", make sure you don't have spaces in the name.

C. Choose license type "Perform".

D. Set Throughput to 100.

E. Press Create (you will be redirected to the status page).



Note: Behind the scenes a new Alteon is being deployed on the ESXI server. Once the Alteon is deployed and ready the Web-App will Register the Alteon onto Cyber-Controller and allocate a GEL license to it automatically. You can monitor the progress in the "Status" page, status should go through the following stages:

I. INIT – Alteon is being created.

II. STARTED – Alteon Creation has finished and the VM has started.
III. REGISTERING – Web-App is trying to register the Alteon with Cyber-Controller.
IV. REGISTERED – Alteon is registered with Cyber-Controller.
V. CHECK_LICENSE – License Allocation has initiated.
VI. LICENSED – Alteon is licensed.

The process takes around 10 minutes.

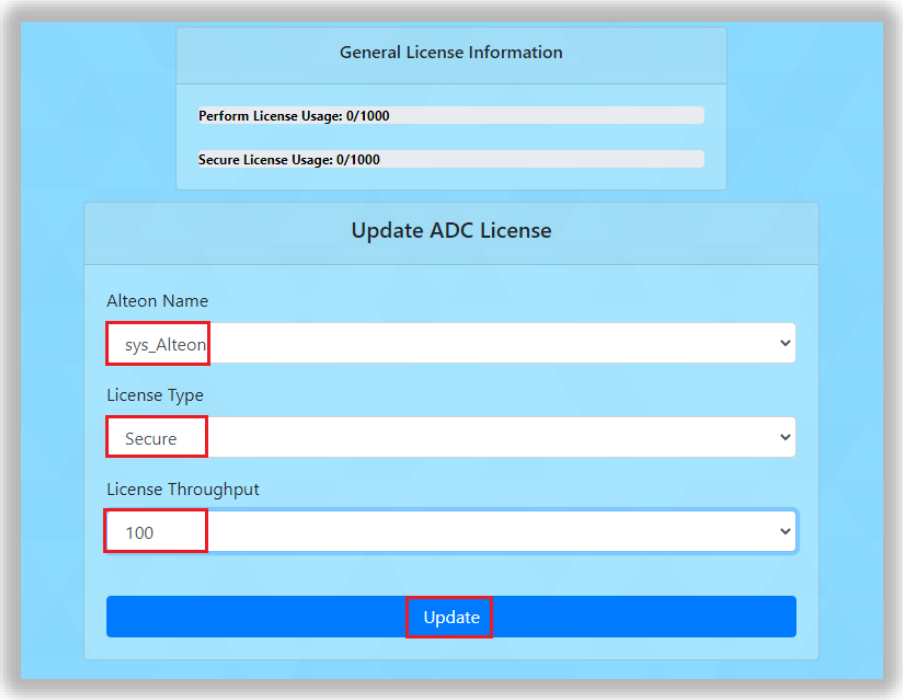
The Web-App keeps a progress logfile for each Alteon. you can access this log by selecting the relevant Alteon from the status page table.

3. Prepare Alteon for Throughput Test

While the new Alteon is being deployed we will demonstrate GEL elasticity using a throughput test. The test will inject traffic through the selected Alteon while we change the license throughput to demonstrate its immediate effect.

A. Go to the "Update" page.
B. Choose "sys_Alteon".
C. Set the "License Type" to Secure
D. Set the "License Throughput" to 100Mb Using the "Update License" button.

E. Press the “Update” button.

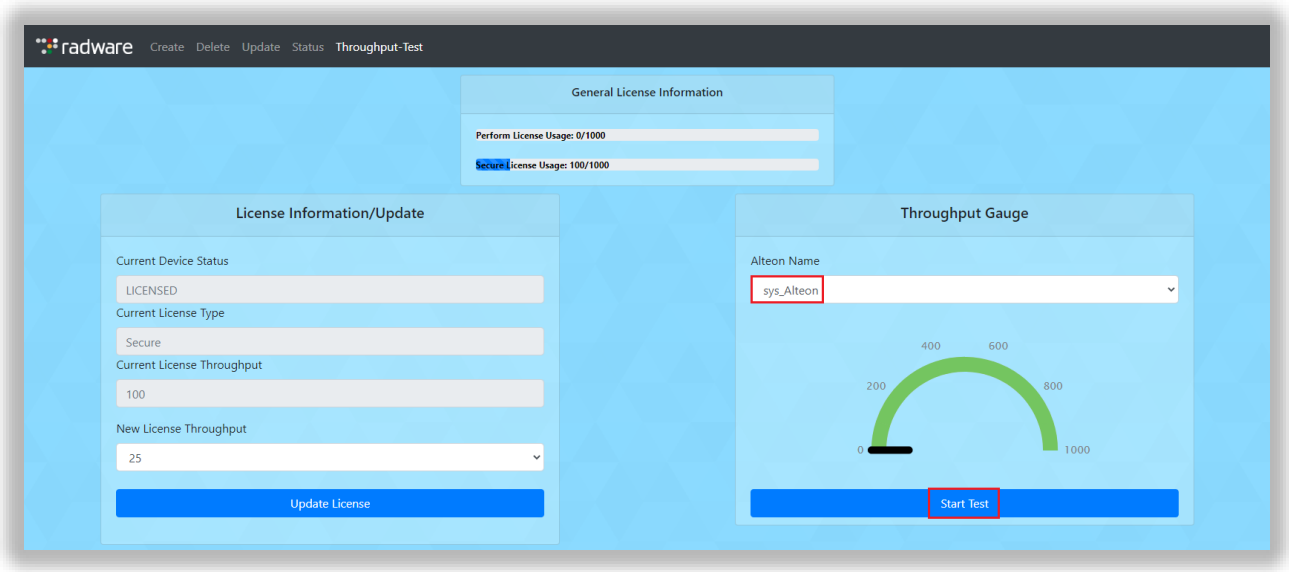


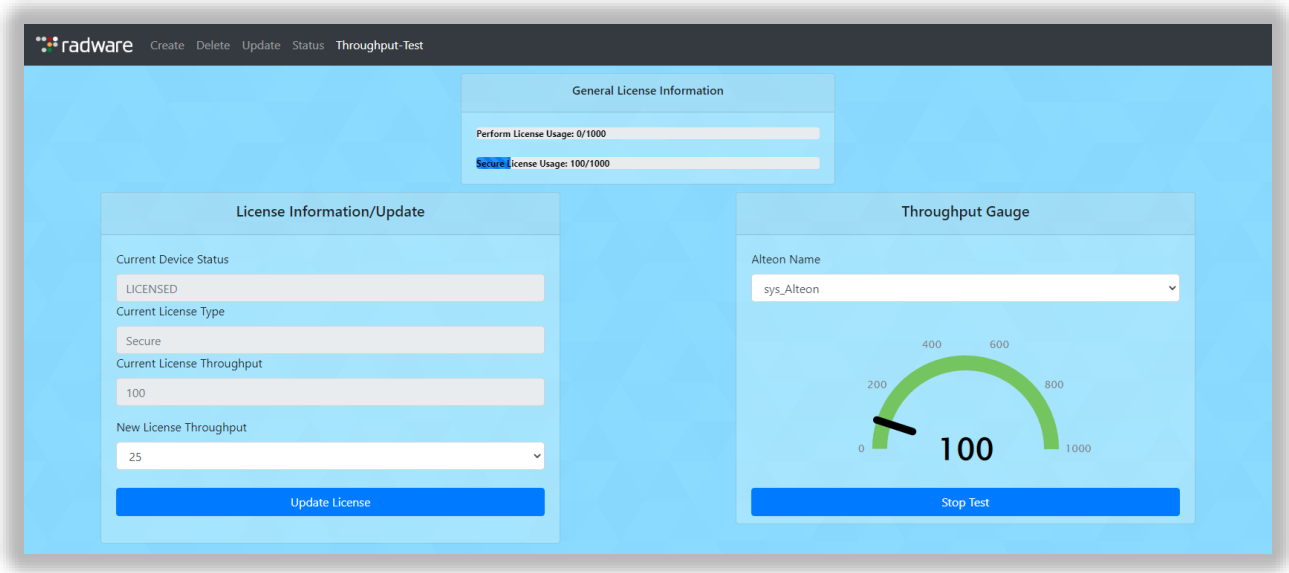
Perform a Throughput Test

A. Go to the "Throughput-Test" page.

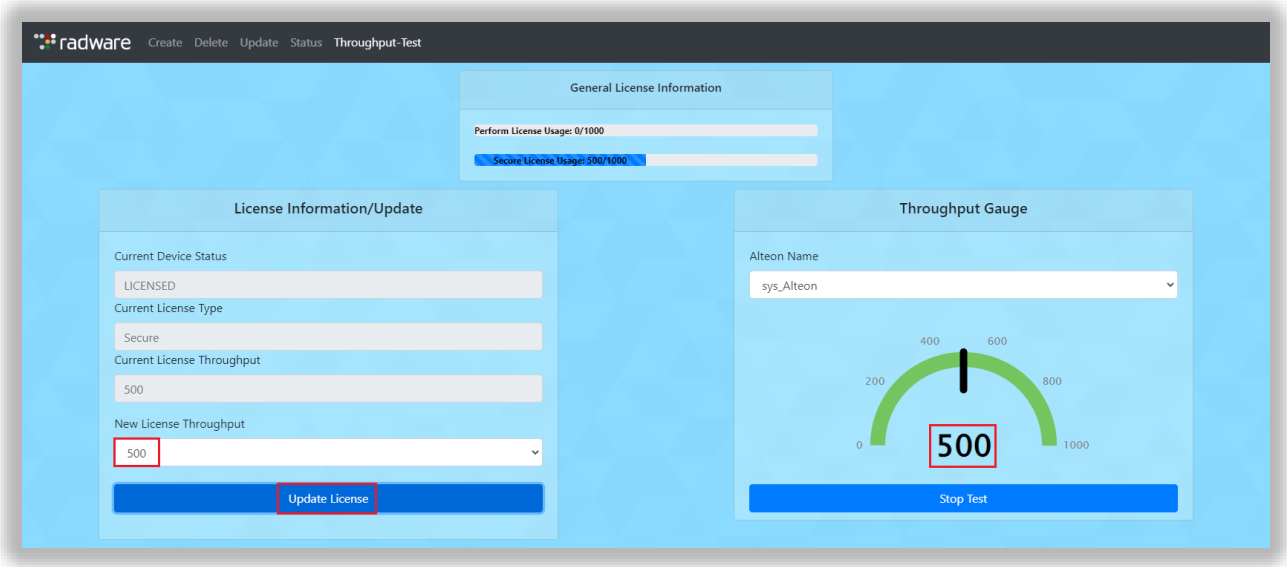
B. Choose "sys_Alteon" from the right-side menu.

C. Press the "Start Test" button, you should see the meter goes up to 100Mb.





4. Update License While Test is Running
   A. On the left-side menu set the new license to 500Mb.
   B. Press the "Update License" button.
   C. The license should get updated, and the meter should go above 100Mb up to 500Mb.

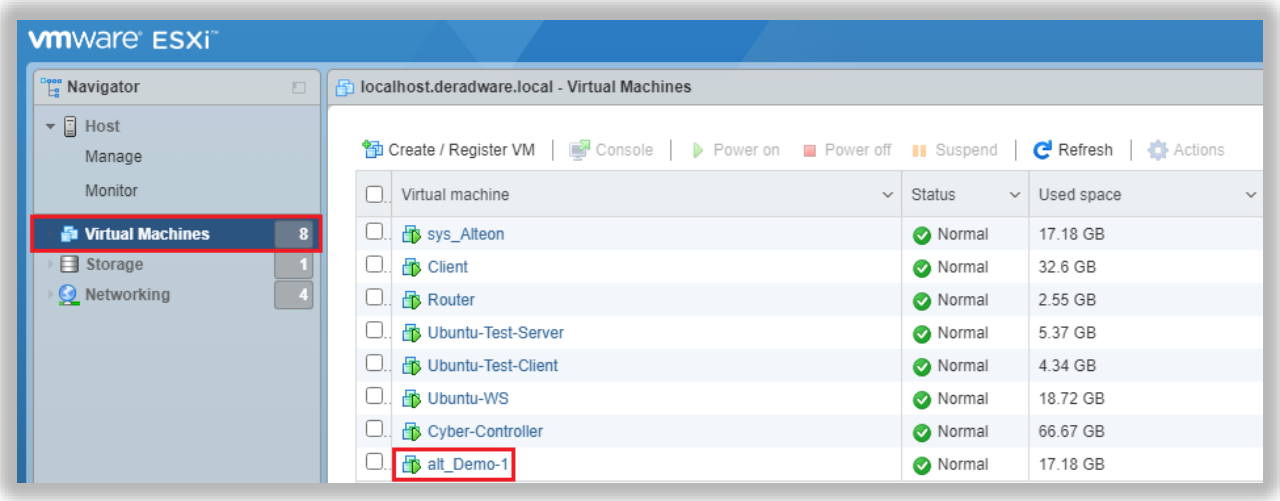


6. Check Newly Deployed Alteon Status
   A. Go to the "Status" page in the Web-App.
   B. Wait for Alteon "alt_Demo-1" to be in "LICENSED" status.

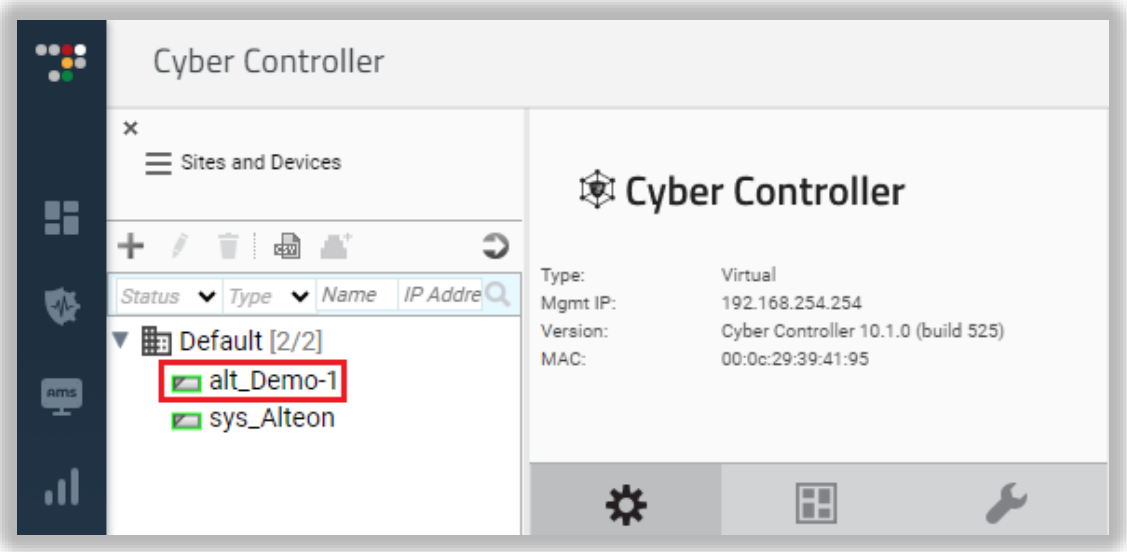
Name	Management Address	License Type	Throughput	Status
sys_Alteon	192.168.254.10	Secure	500	LICENSED
alt_Demo-1	192.168.254.11	Perform	100	LICENSED

7. Check ESXI, Cyber-Controller, GEL Dashboard Status:

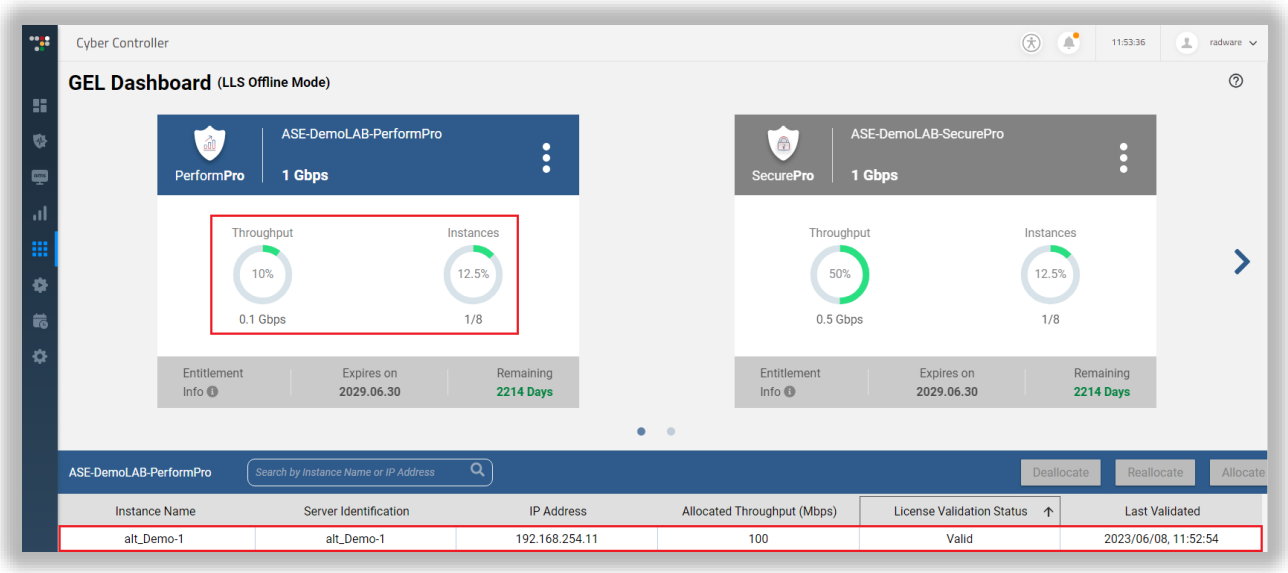
   A. Go to ESXI Server and notice the new Alteon is up and running.



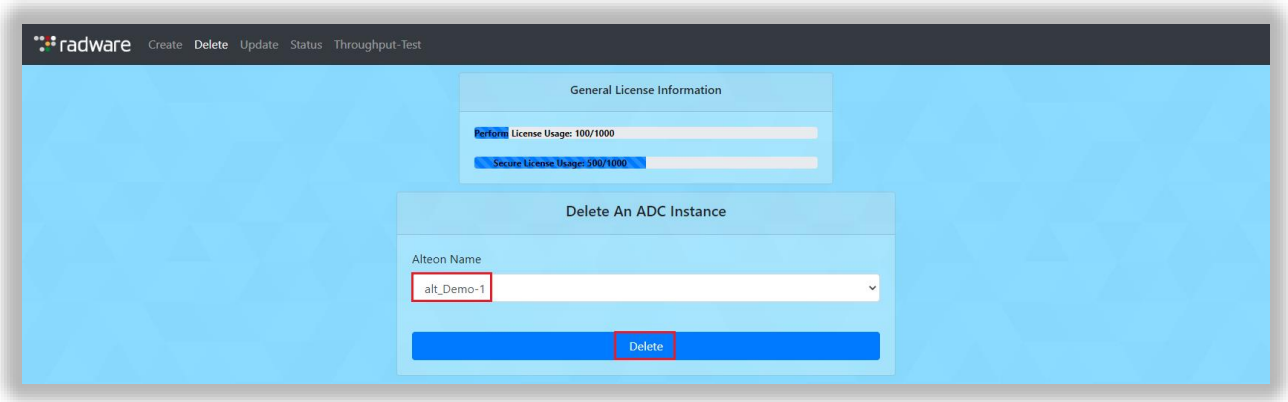
   B. Go to Cyber-Controller and notice the new Alteon is registered.



C. Go to GEL dashboard and notice the new Alteon is Licensed.



8. Delete The new Alteon:
   A. Go to the "Delete" page.
   B. Choose the "alt_Demo-1".
   C. Press Delete Button, (Wait for it to finish).



Note: At this point it is possible to go through step 7 again to show that the Alteon has been removed from Cyber-Controller and deleted from the ESXI server, alternatively we can run the throughput test through the new Alteon or even create a third Alteon.

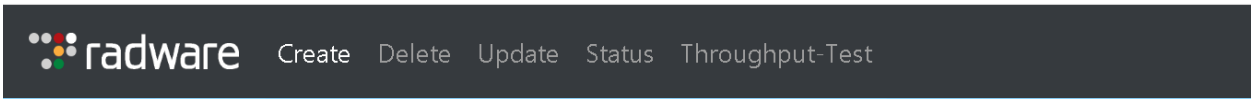
APPENDIXES:

Appendix 1 – The Web Application Portal Explained

The portal uses Python Flask module on top of Ubuntu Server which performs two roles:

1. Frontend – by delivering the HTML pages used to interact with the portal.
2. Backend – by orchestrating all the automations available in the portal.

The portal has 5 tabs:



1. Create – Used to provision a pre-configured Alteon and requires only the device name, license type and throughput.
2. Delete – Can be used to delete an existing Alteon (decommissions the VM). "sys_Alteon" cannot be deleted.
3. Update – Can be used to update a license of an existing Alteon.
4. Status – Can be used to check the Alteon status, you can select an Alteon from the table to see related logs. status explanations:
   A. **UNREGISTERD** – Alteon is up and running but not registered with Cyber-Controller.
   B. **INIT** – Alteon is being created.
   C. **STARTED** – Alteon creation has finished and the VM was powered on.
   D. **REGISTERING** – Web-App is trying to register the Alteon with Cyber-Controller.
   E. **REGISTERED** – Alteon is registered with Cyber-Controller.
   F. **CHECK_LICENSE** – License Allocation has initiated.
   G. **LICENSED** – Alteon is licensed.
   H. **DELETING** – In the process of deleting an Alteon

5. Throughput-Test – This page is used to perform a throughput test using an Ubuntu Server and Client running IPERF. While running the test a gauge meter will show us the current throughput running through the Alteon, In the same page we can also update the license on the fly to demonstrate how it affects actual throughput limit.

Alteon Creation Process:

There are several steps involved in creating an Alteon from the ground up ready to receive traffic. The portal way of doing so is described in the following steps:

1. Web-App receives request to create an Alteon with the following parameters:
    a. Alteon Name
    b. License type
    c. License throughput.

2. The portal builds a unique configuration file using a predefined config scheme. The main parts of the config contain:
    A. Management IP address – Unique address is given to each Alteon.
    B. DNS – required by the GEL licensing server.
    C. SNMP – required by Cyber-Controller server.
    D. Data IP address – Unique address is given to each Alteon.
    E. Health-Check – A predefined http health check called "KEEP-ALIVE" is configured to monitor the IP address of the Web-App. Using this Health-Check the Web-App can know when the Alteon is up and ready. The Health Check sends the Alteon name and addresses for the Web-App to know from which Alteon it was sent.
    F. Virt – A virtual service is configured with a unique address for the throughput test on port 5210 used by IPERF.

3. After config file is ready it is wrapped inside an ISO file. the Alteon VA can be initialized with configuration upon first boot only with a mounted ISO file containing the config.

4. Running a power-shell script using VMware power-cli module to do the following:
   A. Connect to ESXI server.
   B. Upload the ISO file containing the configuration to the ESXI datastore.
   C. Deploying a new Alteon using OVA file on the ESXI.
   D. Mount ISO file as a CD-ROM.
   E. Configuring Network Adapters.
   F. Increase memory to 3Gig to enable DPDK driver.
   G. Start the VM.

5. Once the VM is up it will start to send Health-Checks to the Web-App. At this point the Web-App will see that the Alteon is up and running and will start the register process with Cyber-Controller.
6. Once the Alteon is registered (could take couple of minutes) the Web-App will try to allocate a license as requested by the user.
7. If all goes well, Alteon should show its status as "Licensed" which means all the steps to this point were successful.

Note: A KB exist describing all the REST API used by the portal to register an Alteon with Cyber-Controller and allocating GEL license. The KB can be found in this link.

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