

How to Deploy an OVA Virtual Test Agent Image in VMware

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Executive Summary

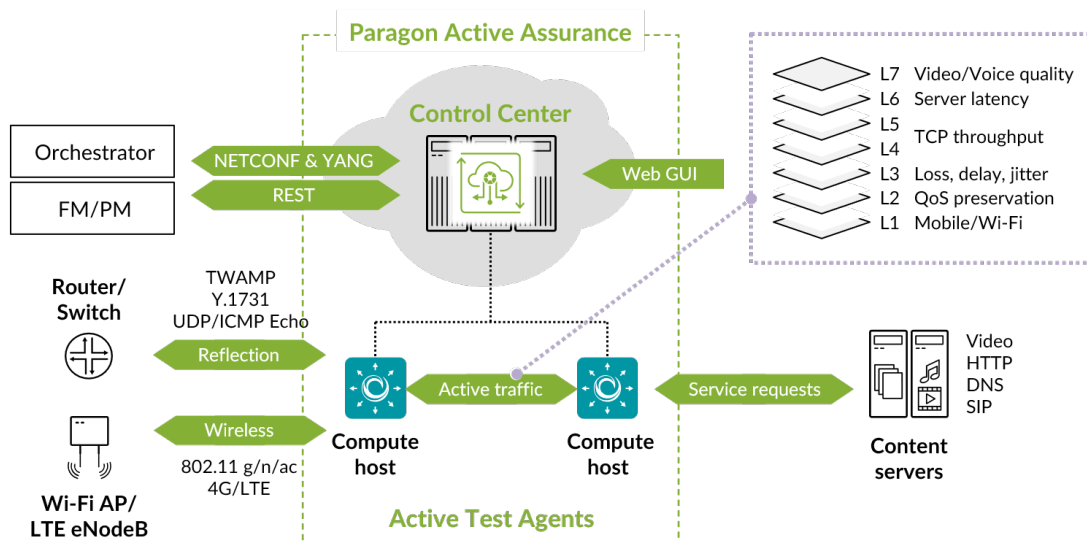
This guide explains how to start a Virtual Test Agent from Paragon Active Assurance as a vApp on a VMware virtual machine.

Paragon Active Assurance: Solution Overview

Paragon Active Assurance consists of two parts:

1. **Test Agents** – software-based active traffic generators. Virtual Test Agents (vTAs) are ones that you upload and boot from your own OpenStack environment. These vTAs will automatically connect to Control Center as part of the deployment process described in this guide. (Juniper Networks also offers non-virtual Test Agents in the form of software that is installed on stand-alone x86 hardware.)
2. **Control Center** – for centralized control and coordination of Test Agents, including distributed VNF vTAs. This includes initiating test sequences and monitoring sessions, as well as evaluating collected measurement data, SLAs and KPIs.

Paragon Active Assurance vTAs are controlled through Control Center. The interface towards Control Center is either a web GUI or an orchestration API, as illustrated below:



Prerequisites

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- [Control Center Account | 2](#)
- [vTA Image | 2](#)

Control Center Account

You need an account in a Control Center in order to access it: either the one belonging to the SaaS solution or one installed on-premise in your organization. If you do not already have a Paragon Active Assurance account, please contact your Juniper partner or your local Juniper account manager or sales representative.

vTA Image

The VNF vTA image is provided either by one of Juniper's partners or directly by Juniper.

The vTA image for VMware is provided in OVA (OVF/VMDK) format and is packaged using the OVF Tool which uses a SHA1 checksum. The OVF file specifies version VMX-09, since that is the lowest version which has the required functionality.

The OVF file also specifies 512 MB RAM and 2 GB block storage for the vTA.

Uploading and Deploying a vTA Image

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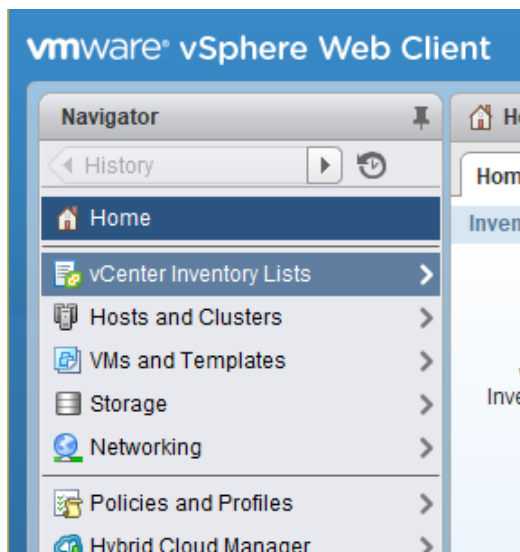
Once you have your vTA image, you need to upload it to your VMware environment and deploy it. This can be done either via the VMware vSphere Client or with the OVF Tool.

The supplying of Netrounds of user data is done in the process of this deployment.

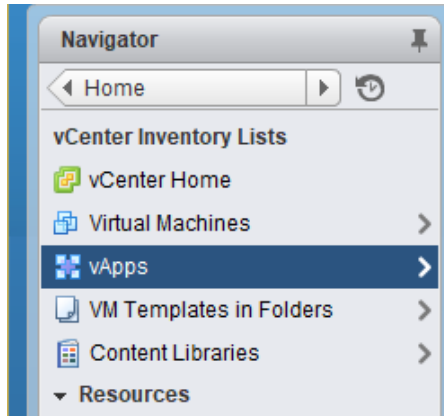
Uploading and Deploying a vTA Image via vSphere Client

This is possible only in Windows and iOS. If you are using a different operating system, you need to use the method in the section ["Uploading and Deploying a vTA Image with OVF Tool" on page 9](#) instead.

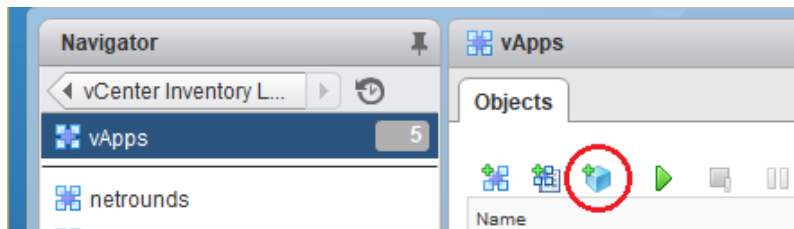
- Log in to vSphere Client.
- In vSphere Client, navigate to **vCenter Inventory Lists**.



- Select **vApps**.



- Click the **Deploy OVF template** button (circled in the screenshot below).



- In the wizard that appears, select **Local file** and browse to select your OVA/OVF file. Then click **Next**.

Select source
Select the source location

Enter a URL to download and install the OVF package from the Internet, or browse to a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.

☐ URL

☒ Local file

- On the **Review details** screen, click **Next**.

Review details

Verify the OVF template details

Product	netrounds
Version	
Vendor	
Publisher	Ⓢ No certificate present
Download size	310.2 MB
Size on disk	900.0 MB (thin provisioned) 2.0 GB (thick provisioned)
Description	

- On the **Select name and folder** screen, **Name** is predefined as “netrounds”. Select a *folder* or *datacenter* as exemplified in the screenshot below. Then click **Next**.

Select name and folder

Specify a name and location for the deployed template

Name: netrounds

Select a folder or datacenter

Search

vcenter.lulea.netrounds.local

Datacenter

The folder you select is where the entity will be located, and will be used to apply permissions to it.

The name of the entity must be unique within each vCenter Server VM folder.

- On the **Select a resource** screen, select where to run the deployed template. Click **Next**.

Select a resource

Select where to run the deployed template

Select location to run the deployed template

Search

Datacenter

esxi.lulea.netrounds.local

Select a cluster, host, vApp, or resource pool in which to run the deployed template




- On the **Select storage** screen, the settings can be left as-is. Select a datastore in which to store the files for the deployed template. Click **Next**.

Select storage
Select location to store the files for the deployed template

Select virtual disk format: Thick Provision Lazy Zeroed ▼


VM Storage Policy: Datastore Default ▼ ⓘ

The following datastores are accessible from the destination resource that you selected. Select the destination datastore for the virtual machine configuration files and all of the virtual disks.

Name	Capacity	Provisioned	Free	Type	Storage DRS
 datastore2	931.25 GB	333.39 GB	651.13 GB	VMFS	
 datastore1	458.25 GB	179.84 GB	313.69 GB	VMFS	
 datastorssd	22.25 GB	10.91 GB	11.34 GB	VMFS	

- On the **Setup networks** screen, edit the configuration if necessary; otherwise, no action is required here. Continue by clicking **Next**.

Setup networks
Configure the networks the deployed template should use

Source	Destination	Configuration
default-routed-network	Amsterdam ▼	

IP protocol: IPv4 IP allocation: Static - Manual ⓘ

Source: default-routed-network - Description
The VDC's default routed network

Destination: Amsterdam - Protocol settings
No configuration needed for this network

- On the **Customize template** screen, you need to fill in your Paragon Active Assurance cloud-init config ("user-data") in base64-encoded format.

The cloud-init config is as shown below. Replace the values as appropriate. Note that lines with parameter settings must be indented as shown. Lines where the default value is kept can be omitted.

```
#cloud-config
netrounds_test_agent:
  name: MyvTA                                # vTA name
  email: john.doe@example.com                # NCC user email
  password: secret                           # NCC user password
  account: theaccount                         # NCC account (short name, found in NCC
URL)
  server: <login-server>:443                  # NCC host and port (default == SaaS)
                                              # Note: With an IPv6 server address the
                                              # whole string including port must be in
                                              # double quotes
  admin_password: secret                     # Admin user password. Use null to
                                              # disable.
  root_password: secret                      # Menu root shell access password. Use
                                              # null to disable.
                                              #
  management_interface: eth0                 # Test Agent management interface
  management_mtu: 1500                       # MTU on management interface
  management_address_type: dhcp              # Can be "dhcp" or "static"

## Set the following if using "static" above:
# management_ip: 192.168.1.2/24
# management_dns: 8.8.8.8, 8.8.4.4
# management_default_gateway: 192.168.1.1
# management_ntp: ntp.netrounds.com

## Set the following if using an HTTP proxy:
# http_proxy: myproxy.lan
# http_proxy_port: 80
# http_proxy_auth_type: none                 # Can be "none" or "basic"
# http_proxy_username: johndoe
# http_proxy_password: secret

## Note: IPv6 management requires special config, see separate documentation
# management_enable_ipv6: False
# management_ntp_allow_ipv6: False
# management_address6_type: none            # Can be "dhcp", "slaac", or "static"

## Set if "static". Note: Use CIDR format for IP
```

```
# management_ip6: 2001:db8:85a3::8a2e:370:7334/64
# management_dns6: 2001:4860:4860::8888, 2001:4860:4860::8844
# management_default_gateway6: <gateway IP address>
```

- In Linux you can use the **base64** command to do the encoding:

```
base64 <user-data file name>.txt
```

- Then click **Next**.

Customize template

Customize the deployment properties of this software solution.



✓ All properties have valid values ✕

Netrounds Control Center registration 1 settings

Base64 encoded user-data	Value is base64 encoded. It will be decoded, and then processed normally as user-data. <div style="border-bottom: 1px solid #007bff; height: 15px; width: 100%; margin-top: 5px;"></div>
--------------------------	--

- Finally, on the **Ready to complete** screen, review your settings. Then click **Finish**.

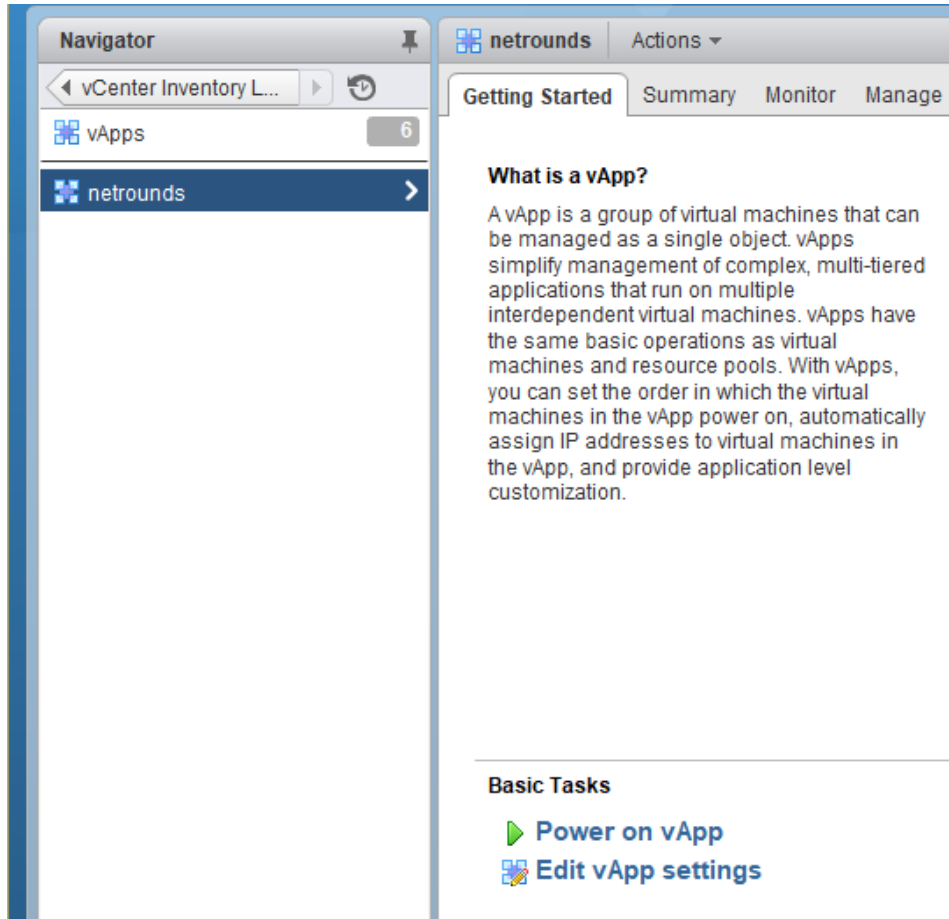
The OVF template will now be deployed in VMware. This will take a non-trivial amount of time; the progress of the deployment is shown in the **Recent Tasks** pane in vSphere Web Client:

Recent Tasks				
Task Name	Target	Status	Initiator	Queued For
Deploy OVF template	 netrounds	<div style="width: 22%;"><div></div></div> 22 % ✕	NETROUNDS.VSP...	6 ms
Initialize OVF deployment	 esxi.lulea.netround...	✓ Completed	Administrator@NET...	0 ms

Powering On the vTA

For the vTA to come online, you must power it on. In vSphere Client, do as follows:

- From the **Home** screen in vSphere Client, navigate to **vCenter Inventory Lists** → **vApps**, and select your vApp (by default named “netrounds”).



- Click the **Power on vApp** link to power on the “netrounds” vApp. This powers on the NetroundsVTA virtual machine as well.

The vTA will now register with Control Center and appear in its web GUI under **Test Agents**. Check for the vTA name in that view to verify that the vTA has registered.

Uploading and Deploying a vTA Image with OVF Tool

With OVF Tool the procedure for vTA deployment is as follows:

- You first need to configure vTA user data in the OVF file. To this end, uncompress the OVA file, which among other things contains the OVF.

- Open the OVF file in your text editor of choice and scroll down to the **ovf:ProductSection** tag:

```
<ovf:ProductSection ovf:class="" ovf:instance="" ovf:required="true">
<ovf:Info>Information about the installed software</ovf:Info>
<ovf:Category>Netrounds Control Center registration</ovf:Category>
...
```

- Inside that tag you will find several **ovf:Property** tags, each of which controls one data entry, identified by its **ovf:key**. To change the value of a Property, edit its **ovf:value**:

```
...
<ovf:Property ovf:key="netrounds.http_proxy" ovf:password="false" ovf:type="string"
ovf:userConfigurable="true" ovf:value="">
  <ovf:Label>Test Agent HTTP-Proxy server</ovf:Label>
  <ovf:Description>The address to a HTTP-Proxy. This is optional</
ovf:Description>
</ovf:Property>
...
```

- When done configuring vTA user data, compress the files back into an OVA again (use the tar format and then replace the file extension).
- You are now ready to upload your vTA image with OVF Tool. The vTA image also needs to be powered on in the same command. Use this syntax:

```
$ ovftool --acceptAllEulas "--datastore=DATASTORE" "--network=NETWORK" --powerOn
file.ova vi://USER:PASSWORD@SERVER/DATACENTER/host/HOST
```

Here, each CAPITALIZED word should be replaced with the appropriate value, and **file.ova** is the name of your OVA file.

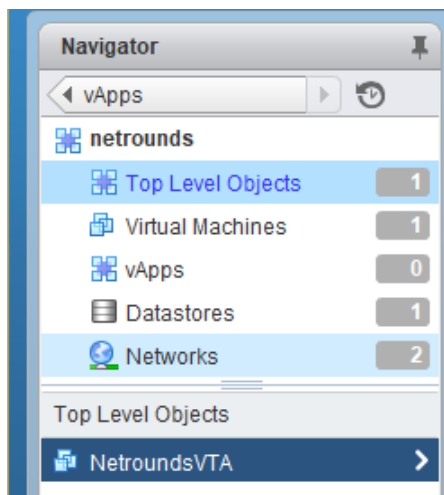
Example:

```
$ ovftool --acceptAllEulas "--datastore=datastore1" "--network=VM Network" --
powerOn
vTA.ova vi://admin@netrounds.vsphere:mypassword@vcenter.lulea.netrounds.local/
Datacenter/
host/esxi.lulea.netrounds.local
```

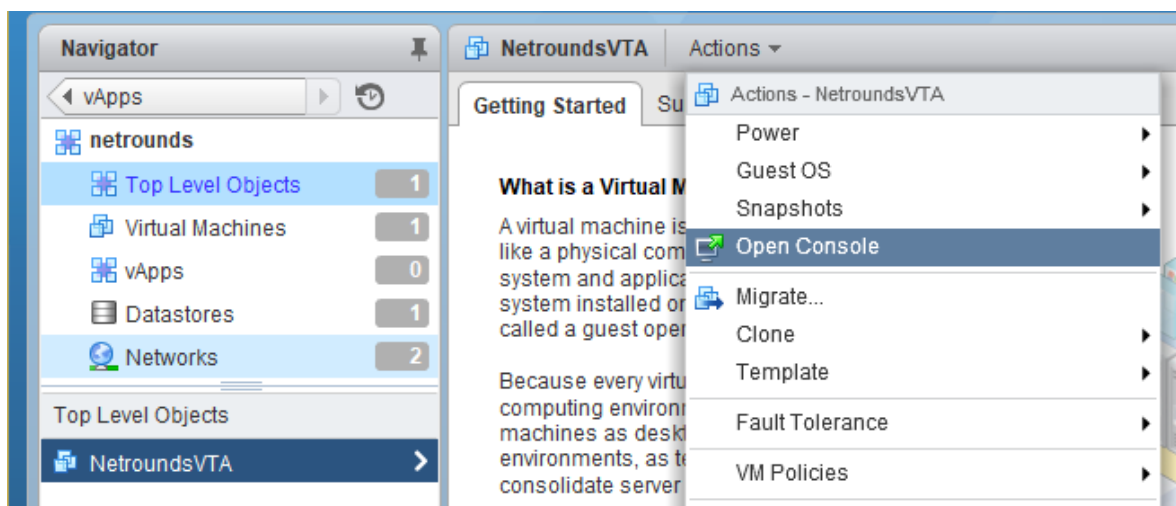
Troubleshooting

If the vTA does not show up in Control Center, it is useful to open the vTA's local console to investigate the cause of the problem.

- From the **Home** screen in vSphere Client, navigate to **vCenter Inventory Lists** → **vApps**, and select your vApp (by default named “netrounds”).
- Click the “netrounds” vApp once more in the left-hand navigation pane, then click **Top Level Objects**.
- Click the “NetroundsVTA” object.



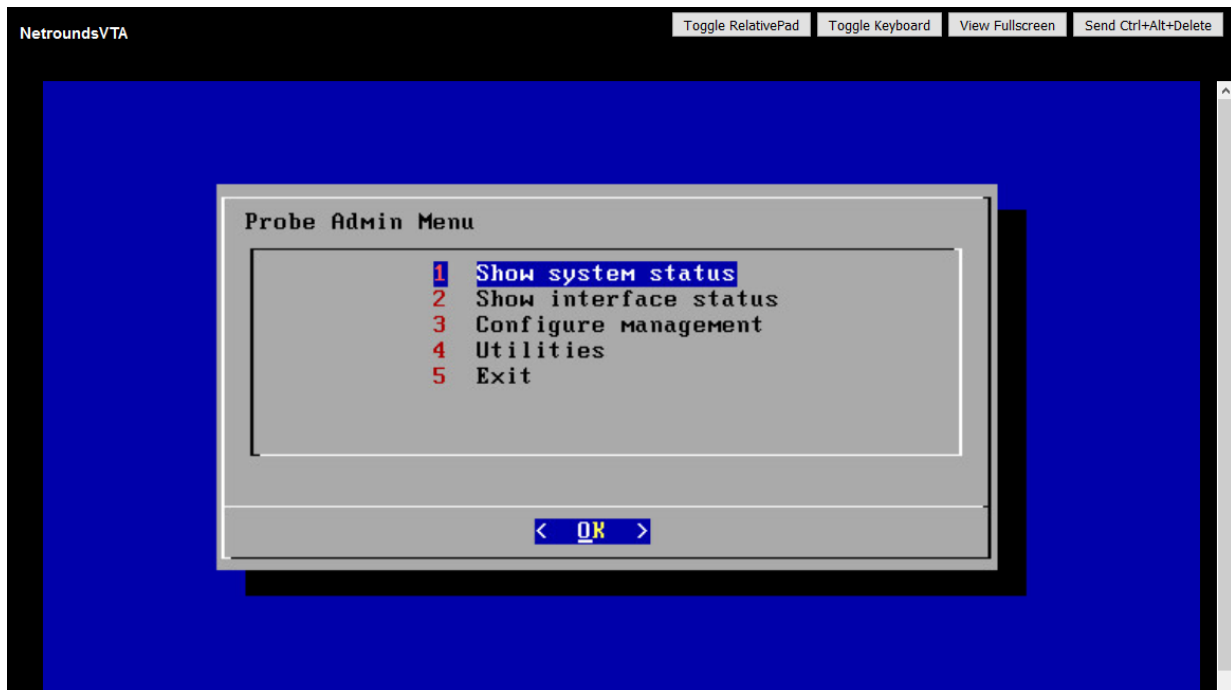
- In the right-hand pane, at the top, open the **Actions** menu and select **Open Console**.



- The console opens on a new tab. If you do not see the prompt shown below, click the **Send Ctrl+Alt +Delete** button in the top right corner.



- Log in using the credentials indicated. You are taken to the top-level Probe Admin Menu:



The functionality here is described in the Paragon Active Assurance support documentation under **Test Agents → Configuring Test Agents from the local console**. The following functions are particularly helpful:

- **Utilities → Ping** for checking that the vTA has a working internet connection.
- **Utilities → Troubleshoot connection** for verifying that the Paragon Active Assurance management connection is working.