vAnalytics™ Endpoint Monitoring Technical Deployment Guide

for

Real Time Endpoint Monitoring and Alerts

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1 Preparing Your Environment

1.1 Overview

The vAnalytics™ Endpoint Monitoring feature provides additional insight into your organization's investment in video infrastructure. This guide is designed to help you install Endpoint Monitoring successfully into your environment. Please follow the subsequent steps in order to complete the installation process.

For the latest versions of Vyopta software:
https://www.vyopta.com/support/

1.2 Endpoint Registration and Selection

There are two methods for adding endpoints for monitoring.

Note: In the subsequent steps, please use the administrator service account you defined for use with the vAnalytics Data Collector.

1.2.1 Automatic Endpoint Assignment from TMS Managed Endpoints

vAnalytics can automatically include endpoints managed by Cisco TelePresence Management Suite (TMS). This method is recommended for most customer environments to ensure endpoints are properly loaded. The Vyopta TMS synchronization process imports endpoint name and address information on a nightly basis.

In order to enable this feature for your organization please reach out to the Vyopta Customer Success Team at support@vyopta.com.

After initial loading (which takes up to 24 hours) it is recommended that you review the endpoints in TMS and the vAnalytics Applications Management Portal in order to ensure endpoint accuracy. Once the endpoints are loaded you will need to enter the admin credentials for each endpoint in the Vyopta Applications Management Portal.

Please note: Endpoints that are deleted in TMS will continue to appear in the Vyopta Application Portal. When you delete endpoints from TMS, you will need to also manually delete them in the Vyopta Application Portal.

1.2.2 Adding Endpoints Manually

This method is suitable for environments that have endpoints that are not managed by Cisco TelePresence Management Suite.

To add endpoints, log into the Applications Management Portal and click first on the *vControl®* menu followed by the *Endpoints* submenu. Click the + icon in the upper-right corner of the screen to add a new endpoint and fill out the information for it. (See figure 1 below.)

Adding Registration Alias is not required, as Vyopta Endpoint Monitor service adds registration information after successfully connecting to the endpoint for the first time. Model and Serial Number are also populated automatically upon the first connection to the endpoint in the Miscellaneous Data field. When data entry is complete, click the save icon (disk) at right.

Note: Do not add an endpoint to the Public group. Make sure that there are no endpoints added to the Public Group.

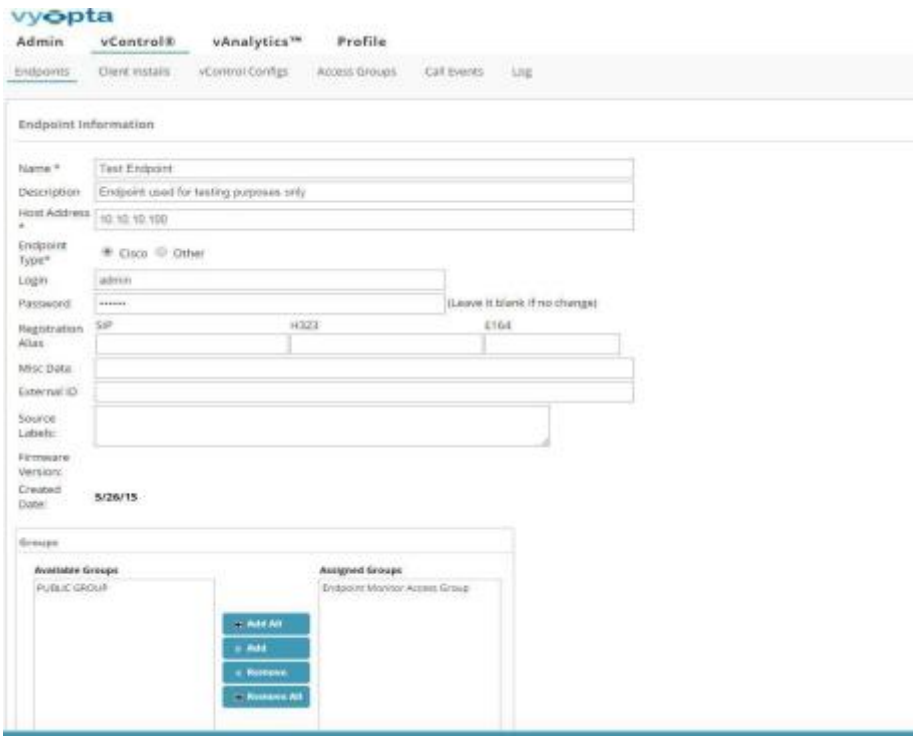

Figure 1-1: Adding a new endpoint

1.3 Create and manage an Access Group

Creating and assigning Access Groups allows you to segment and manage groups for different application users in your organization. It also allows you to create global endpoint groupings for various reasons such as geographic or business structure. To create an Access Group, perform the following:

1. Navigate to *vControl® > Access Group.*
2. Click on the plus icon.
3. Provide a name for the Access Group. Example "Endpoint Monitor Access Group."

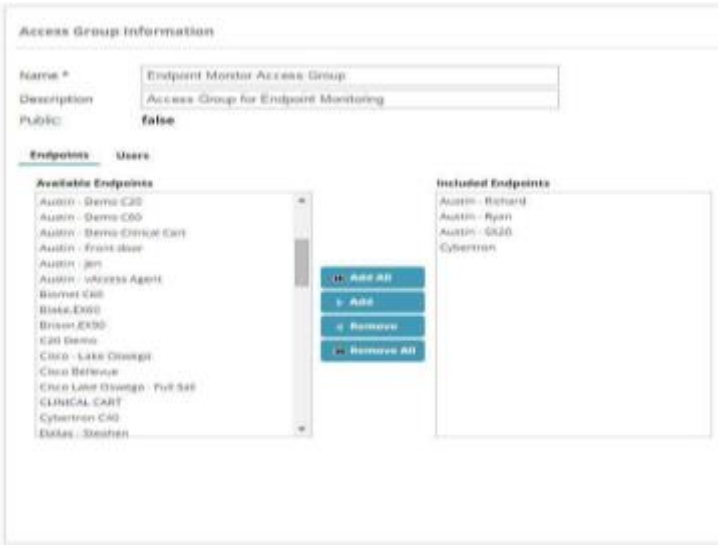

Figure 1-2: Adding an Access Group

4. Select the desired endpoints (or select All) by checking the box to the left of the endpoint.
5. Move the available endpoints into the Member Endpoints Section using the Arrow buttons.
6. Check the "Uniform Control" box to allow for bulk password assignment.
7. Click Save.
8. Click the "Endpoint Passwords" button next to the newly created Access Group

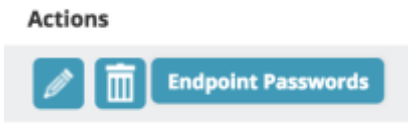

Figure 1-3: Entering passwords for an Access Group

9. Enter the Login and Password for your endpoints (if your endpoints have distinct credentials, multiple access groups will have to be leveraged)

10. Click the Reset Password button in the upper right corner of the screen.

Note: This stores credentials for Endpoint Monitoring and does *not* reset them on your video endpoints or infrastructure.

1.4 Associate the Service Account to the Access Group

To associate users with an Access Group, perform the following:

1. Navigate to *Admin > Users*

2. Find the Service Account using the search parameters.

3. Edit the Service Account by clicking the pencil icon on the right.

4. Move the new Access Group created in the previous step from '**Available Groups**' to '**Assigned Groups**' using the '**Add**' button.

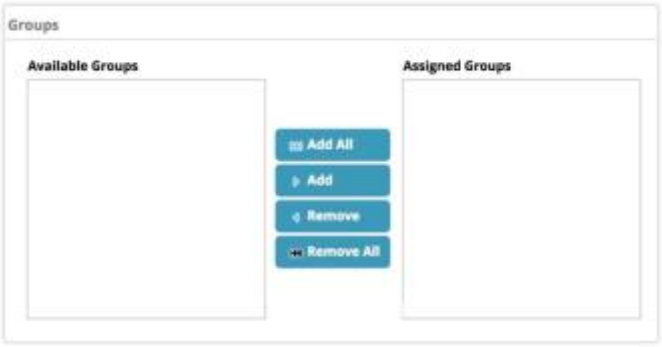

Figure 1-4: Assign an access group to the service account user for endpoint monitoring

5. Remove the '**PUBLIC GROUP**' from '**Assigned Groups**' using the '**Remove**' button.

6. Click the save icon in the upper right corner of the screen.

1.5 Preparation Notes for the vAnalytics Endpoint Monitoring Server

Endpoint Monitoring should be installed on the same Server or VM as the vAnalytics Data Collector. Endpoint Monitoring will communicate with your video endpoints in your internal environment over SSH. If a separate server is required, please contact support@vyopta.com for more information.

CPU	Dual 2.4GHz or Higher
Memory	8GB RAM Recommended
Disk Space	160 GB OS and Data
Network Interface Card	Single Network Interface Card
Operation System	Windows Server 2008 R2 or 2012
System Software	.NET Framework Version 4.5

2 Deploying vAnalytics Endpoint Monitoring in your Environment

After completing the preparations for your video environment, you are now ready to begin the deployment using the Vyopta Endpoint Monitor Configuration Utility. This process includes downloading the vAnalytics Endpoint Monitoring software, installation on the server, logging into the Application Management Portal with the service account, and starting the Vyopta Endpoint Monitor Service.

2.1 Download and Install vAnalytics Endpoint Monitoring

The latest build of the Endpoint Monitor can be found here: https://www.vyopta.com/support/

After downloading the installer, please perform the following on your vAnalytics Data Collector server instance:

1. Run the vAnalytics Endpoint Monitoring software as administrator to start the installation process.

2. Follow the installation wizard's instructions to complete the installation.

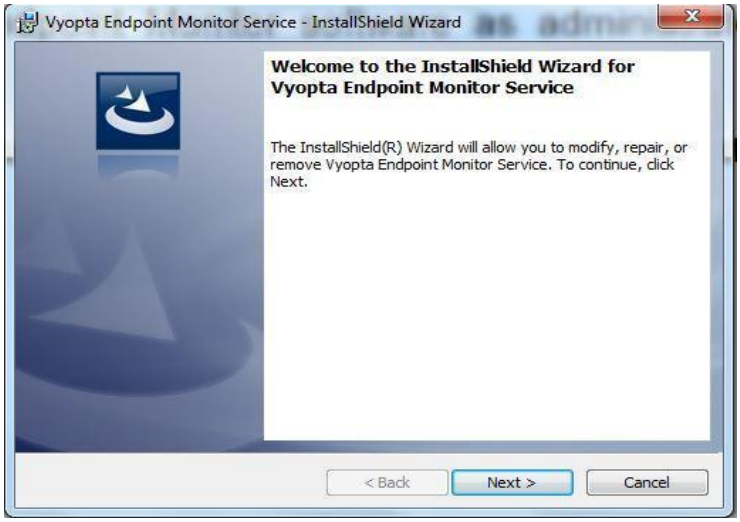

Figure 2-1: vAnalytics Endpoint Monitoring Installation Wizard

2.2 Connect to the Vyopta Cloud from vAnalytics Endpoint Monitoring

Once the installation of the Vyopta Endpoint Monitoring Configuration Utility is completed please use the following directions to complete the configuration:

1. Go to *Start* > *All Programs* > *Vyopta* > *Vyopta Endpoint Monitor* and open the Vyopta Endpoint Monitor Config application

2. Once the Vyopta Endpoint Monitor Config application has opened, fill out the form using the vAnalytics service account used previously, typically: vAnalytics_svc@yourdomain.com

3. Enter HTTP Proxy information only if required.

4. Press "Verify" to connect to the Vyopta Cloud.

5. Once verified **press "Save and Exit" to save the current configuration** and close the application.

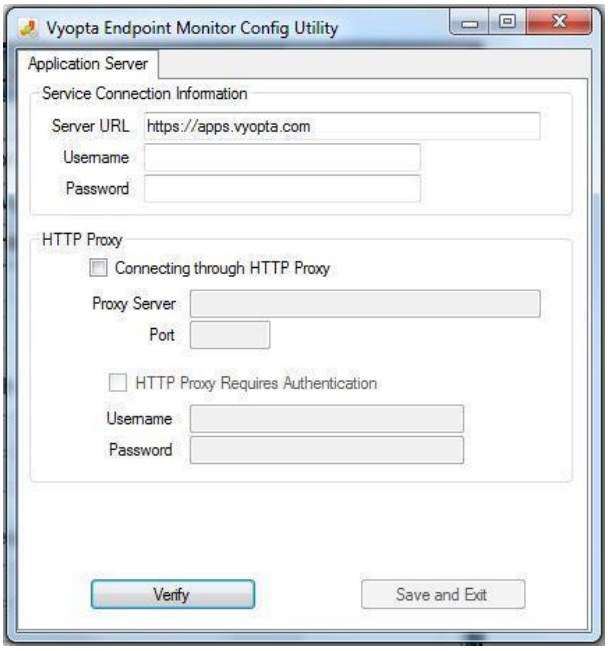

Figure 2-2: Vyopta Endpoint Monitor Config Utility

If you forget your organization's vAnalytics Service Account username or password, you can log into the Vyopta Applications Manager at apps.vyopta.com to view the name of the account and/or change the password.

2.3 Starting the Service for the First Time

Once configuration is complete you will need to manually start the Vyopta Endpoint Monitor Service from the services console by performing the following:

1. On the vAnalytics Data Collector Server, navigate to *Start* > *Control Panel* > *Administrative Tools* > *Services*
2. Scroll down and locate the “Vyopta Endpoint Monitor Service”
3. Right click on the “Vyopta Endpoint Monitor Service”
4. Select Start

Congratulations! You have now successfully installed and activated vAnalytics Endpoint Monitoring within your Environment. You will now be able to see real-time data for endpoints populate into the vAnalytics™ Real Time Monitoring and Alerts Module.

If you have any questions or require any further assistance, please contact support by emailing support@vyopta.com.

3 Viewing Endpoint Monitor Status

Once Endpoint Monitor has finished loading the initial list of endpoints specified in the access group, you can check the monitoring status of those endpoints. The monitor status is located on the *vControl ->Endpoints* Tab.

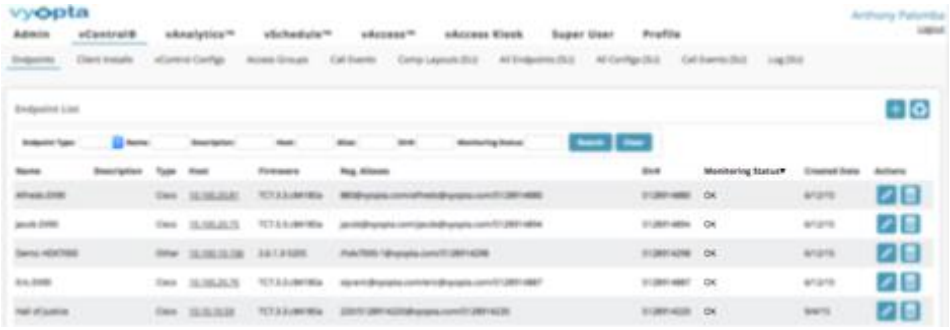

Figure 3-1: Apps Endpoint Monitor Status

3.1 Possible values for Monitoring Status

• **Blank Value**: The endpoint is not part of the access group used for monitoring.

• "**Login Failed**": Incorrect credentials were specified in the Applications Portal.

• "**Encryption error**": The endpoint's codec is using an encryption algorithm that is not supported by Endpoint Monitoring.

• **"No credentials"**: No credentials were specified in the Applications Portal.

• "**Not Responding**": Endpoint Monitoring cannot establish a connection with the endpoint for one of the following reasons:

1. The IP address specified in the Applications Portal does not match the IP address of the endpoint.
2. SSH is not enabled on the endpoint.
3. A firewall or other network issue is blocking connectivity.
4. The endpoint cannot respond in a timely fashion.

3.2 Hardware Status Icons in vAnalytics Realtime

With Endpoint Monitor operational, users can now view Endpoint status at a glance by checking the Endpoints tab in vAnalytics Realtime. From *vAnalytics Realtime-> Endpoints* tab, users can check the **H/W** (hardware) column for real time updates on camera and display status.

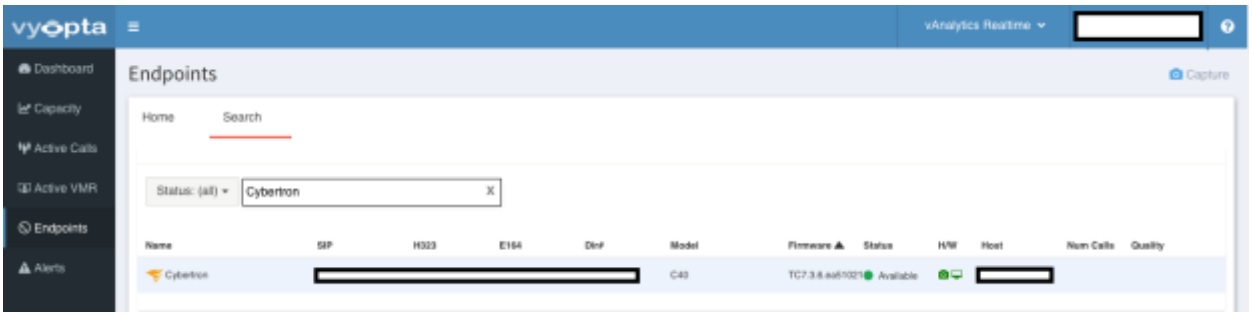

Figure 3-2: vAnalytics Endpoint Monitor Hardware Status

The camera and display status displays as **Green** for operational and **Red** for offline. For example:

	- Endpoint Camera and Display are operational.
	- Endpoint Camera is operational, display is offline.
	- Endpoint Camera is offline, display is operational.
	- Endpoint Camera and Display are offline.

Note: Hardware Status is a new feature still under development, so it is possible that specific endpoints or hardware configurations may not report accurately. Please contact us at support@vyopta.com with any feedback or problems you experience.

4 Inside Endpoint Monitor

4.1 Loading of Endpoints

When Endpoint Monitoring loads, it will load the entire list of endpoints specified in the access group assigned to the user account that Endpoint Monitoring is using. Depending on the number of endpoints in this list and the performance characteristics of your network, it may take some time. (A rough rule of thumb: you can expect an initial load rate of roughly 100 to 200 endpoints per hour.)

If Endpoint Monitoring is unable to load an endpoint, it will subsequently try to reload that endpoint every 10 minutes.

4.2 Endpoint Monitoring Performance

The operating characteristics for Endpoint Monitoring are highly variable – network topology, bandwidth, endpoint location, endpoint model/type, and utilization are all factors that will affect performance. Endpoint Monitoring attempts to connect to all endpoints that are within a specified access group. Any endpoints in remote locations or in locations with spotty network performance may experience disruptions in connection. Although a best effort is made to reconnect to these endpoints, these disruptions may cause loss of data. (See Section 5 – Performance Characteristics.)

For best results, we recommend initiating your use of Endpoint Monitoring with endpoints with optimal proximity and connectivity to your vAnalytics Data Collector server, and then adding endpoints in an organized, incremental fashion thereafter.

5 Performance Characteristics

5.1 Initial Scale Processing and Network Impact Information

5.1.1 Active Monitoring Performance per Endpoint

- CPU: 0.31% of a 2.4 GHz CPU
- Bandwidth: 1200 bytes every 10 seconds

5.1.2 Idle Monitoring Performance per Endpoint

- CPU: 0.19% of a 2.4 GHz CPU
- Bandwidth: 500 bytes every 10 seconds

5.1.3 Rough Network Impact Estimate given 50 In Call Endpoints

- 15% of a 2.4 GHz CPU
- 48 kbps bandwidth (equivalent to less than a single audio call)

5.1.4 Rough Network Impact Estimate given 50 Idle Endpoints

- 10% of a 2.4 GHz CPU
- 20 kbps bandwidth

5.2 Capacity Information

A review of the above metrics, if projected linearly, would suggest an upper limit somewhere between 300 and 500 endpoints that is below our experience in the field. Again, there are many factors at work in determining this sort of threshold, but Vyopta customers with over 600 endpoints are using Endpoint Monitoring to yield call quality insights, which suggests that the above benchmarks flatten out as the number of endpoints scales. If you are contemplating a deployment across more than 500 endpoints, please feel free to consult with Vyopta's Customer Success team at support@vyopta.com.