



MARTELLO



VANTAGE DX DIAGNOSTICS

ADMINISTRATOR GUIDE - FOR ENTERPRISES

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Introduction

Document Purpose and Intended Audience

This document provides information about how to configure and use Vantage DX Diagnostics to test the network paths between your physical office sites and target endpoints, such as Microsoft Teams.

This guide is intended for use by administrators.

Revision History

Document Date	Description
November 23, 2021	Vantage DX Diagnostics Administrator Guide - For Enterprises Release 1.1



About Vantage DX Diagnostics

Vantage DX Diagnostics is a cloud-based application that tests the network paths between physical office sites and target endpoints that you want to monitor, such as Microsoft Teams or SharePoint. VDX Diagnostics provides a visual representation of the quality of the connection at each hop in a network path. This information is shown on network path diagrams to help you quickly understand where issues are occurring along the network path, how your end users' experiences are affected, and which networks are responsible for the issues. VDX Diagnostics also provides information on packet loss rate, round-trip latency, and jitter average for each network path.

Requirements

The following sections describe the system requirements for installing a VDX Diagnostics probe and accessing the VDX Diagnostics interface.

- ["Probe Requirements" on page 7](#)
- ["Client Requirements" on page 7](#)

Probe Requirements

Ensure that the machine where you install the probe meets the following requirements:

- Windows 10 (64-bit) operating system
- Minimum 2 GB RAM
- 70 MB disk space
- Port 443 on the site firewall is open
- Firewall must allow ICMP for outbound and inbound communications
- The probes need to connect to the Vantage DX Diagnostics endpoint on port 443. Run the following connectivity tests in PowerShell to ensure connectivity before installing and configuring the probes:
 - `Test-NetConnection -computername <company_name>.vantage-dx.com -port 443`
 - `tracert world.tr.teams.microsoft.com`
 - `ping <endpoint FQDN>`

Client Requirements

This section describes the requirements for the machine that you use to access the VDX Diagnostics interface.

VDX Diagnostics is officially supported on the following browsers:

- Chrome version 95 and later
- Firefox version 93 and later
- Edge version 95 and later

The recommended screen resolution for viewing VDX Diagnostics is 2560 x 1440 or higher.

About the Interface

The Vantage DX Diagnostics interface provides you with a global view of network path test results between your sites and target endpoints, such as Microsoft Teams. You can use the interface to see detailed information about each network path.

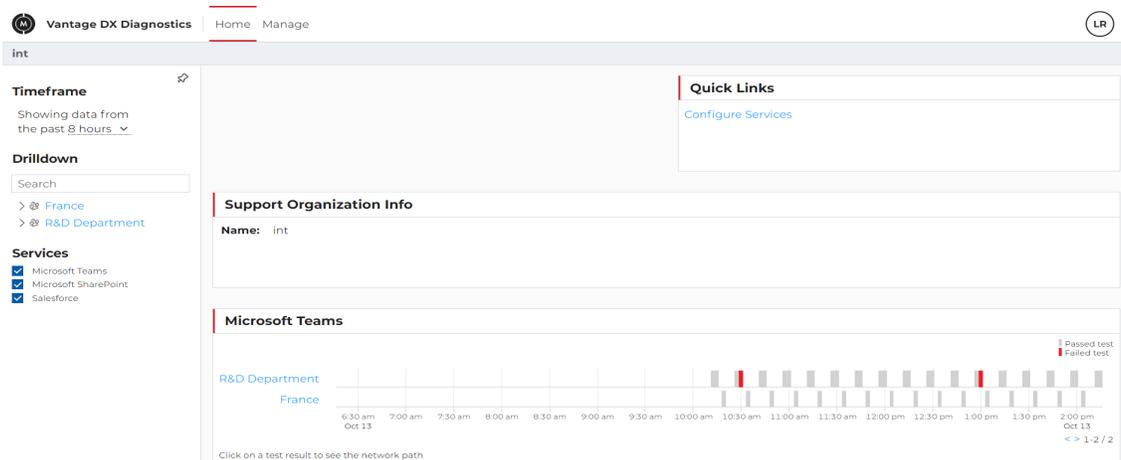
The following sections describe the pages in the interface and the functionality that each one provides:

- ["Home" on page 9](#)
- ["Manage" on page 10](#)
- ["Network Path Diagrams" on page 10](#)

Home

The Home page is displayed when you log into Vantage DX Diagnostics. The following image shows an example of the Home page.

Figure 1: Home Page Example



The **Network Testing Summary** panel consists of a bar graph that illustrates the network path test results between the Microsoft Teams endpoint and the sites. From the Network Testing Summary graph you can access more detailed data about the tests by doing the following:

- Select a site link to display the test results for that site.
- Click on a specific test result bar to display a visualization of the network path test for the site group or site.

Use the following options to filter the data displayed in the Network Testing Summary panel:

- **Timeframe**—Display data from the past 8 hours, 24 hours, 3 days, 7 days, 14 days, or 30 days.
- **Drilldown**—Click on a site to view the test summary for the selected site. You can also find a site by typing its name directly in the search bar.

Manage

The Manage menu provides access to the Application Management page. From this page you can perform the following tasks:

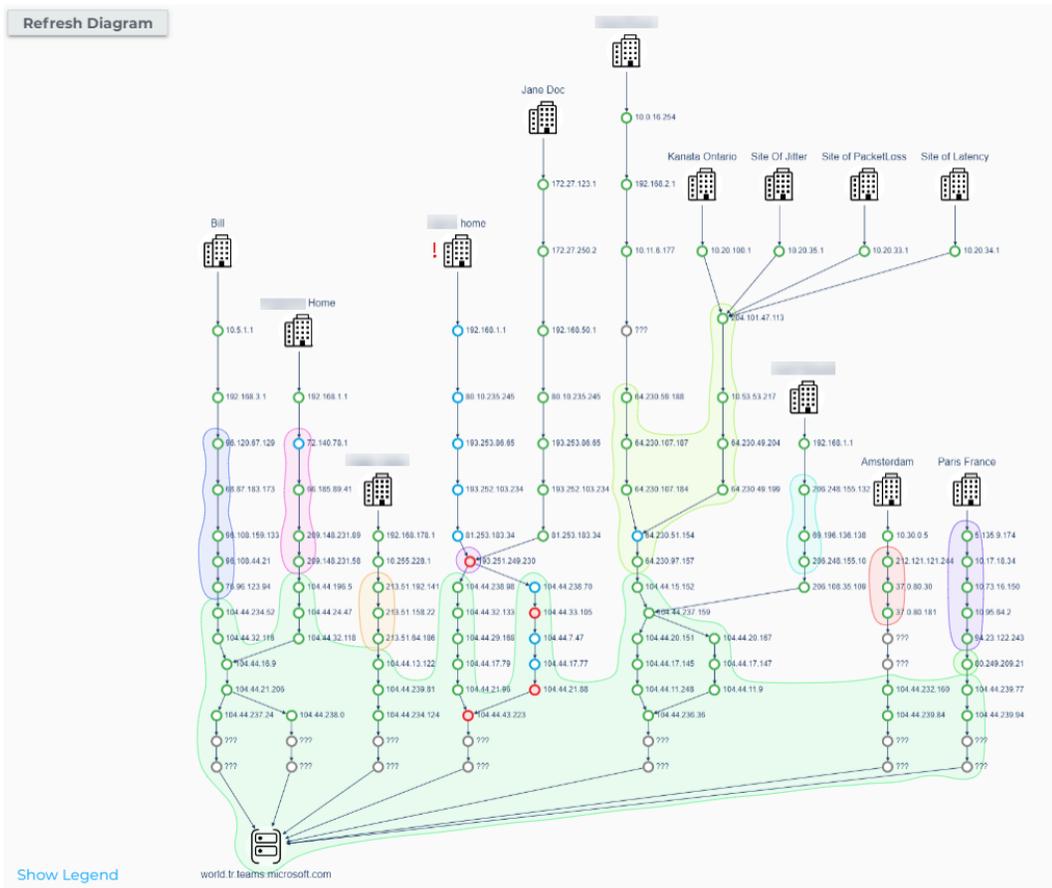
- Add target endpoints.
 - Configure the default endpoints to monitor. See ["Add Target Endpoints" on page 16](#).
- Create and manage site groups.
 - Create a site group to represent your enterprise company. See ["Create a Site Group" on page 17](#).
 - View and edit the details of the company site group. See ["Manage the Site Group" on page 21](#).
- Create and manage sites.
 - Create individual sites to represent the physical office locations within your enterprise that need to be monitored. See ["Create a Site" on page 20](#).
 - View and edit the details of the sites contained within your enterprise company. See ["Manage Sites" on page 21](#).

Network Path Diagrams

The Network Path view provides a visualization of the network paths from each site to the Microsoft Teams endpoint or custom target endpoint. These visualizations are diagrams that identify each hop in the network path and use color-coding to indicate the health status of each hop.

The following image is an example a network path diagram with multiple sites.

Figure 2: Network Path Diagram Example



In addition to the status, the diagram also shows the owner of each hop in the network. Click the **Show Legend** link to display the statuses in the diagram. The hop statuses are:

- Grey—Hop is not responding to network testing.
- Green—Good hop.
- Blue—Hop is responding poorly to network testing.
- Red—Hop is suspected of causing bad test results.

The **Path Analysis** panel to the right of the diagram provides detailed information on each network path that appears in the diagram. See "[View Site Data](#)" on page 26.

Filter and group the elements on the diagram using the options in the sidebar to the left of the diagram. The options include:

- **Test Type**—Displays the path results by site for the selected endpoint. This option allows you switch between endpoints to easily determine which sites are having issues with which endpoints.
- **Date**—Display results for a selected date. The default is the current date.
- **Time of day**—Display results for a selected time, in 15-minute increments.

- **Site**—Display results for selected sites. Optionally, you can set the **Auto-select sites with results** option to **On** to only display the sites that have network path test results in the diagram.
- **Grouping**—Click the **Grouping** link to display the grouping options:
 - **Group by network hop**—Select one of none, by network, or by network owner.
 - **Show network owner**—Set to **On** to highlight each network owner in the diagram in a different color. You can also select which networks to highlight in the diagram.

Getting Started

Vantage DX Diagnostics is configured in the following order.

Figure 3: Configuration Workflow for Enterprise Companies



1. Add any required target endpoints for the Support Organization. See ["Add Target Endpoints" on page 16](#).
2. Create a site groups that represents your company. See ["Create a Site Group" on page 17](#).
3. Configure an integration to Vantage DX Analytics for the company site group. This integration allows the VDX Diagnostics components and alerts to be viewed and reported on in VDX Analytics. See ["Configure the Vantage DX Analytics Integration" on page 19](#)
4. Within each site group, add sites that represent the company's physical office locations. See ["Create a Site" on page 20](#).
5. For each site that you create in VDX Diagnostics, you need to install and configure probe software. See ["Install the Probes" on page 23](#).

After your sites are configured and collecting data, you can view the network path data. See ["View Network Path Data" on page 26](#).

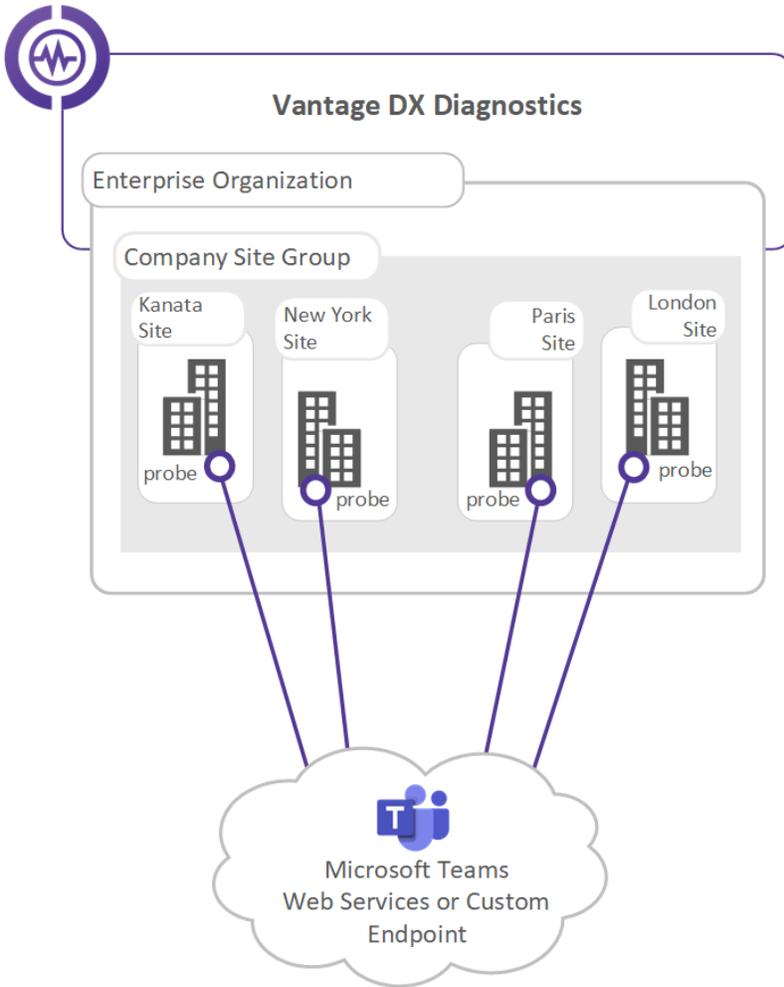
Manage Sites

Vantage DX Diagnostics deployments include the following concepts:

- **Support Organization**—The top level entity, which is the IT services organization. From the support organization, the target endpoints to monitor are configured. The endpoints are enabled and further configured for each site group.
- **Site Group**—Site groups function as theoretical containers for sites. An enterprise company will need only one site group to contain the sites that represent each office location. Each site group can include up to 15 sites. If you need more than 15 sites in your company site group, contact support@martellotech.com.
- **Site**— A site represents a physical office location. Each site must have probe software installed on a computer at the physical location in order to test the connection to the target endpoints and collect data. Sites are created within a site group.

The following diagram demonstrates the site configuration for an enterprise deployment. In this example, the company has multiple sites configured in VDX Diagnostics, which correspond to office locations. Probe software is installed on a computer at each site location. The Probe tests the connection to Microsoft Teams endpoint and collects data.

Figure 4: Enterprise Deployment



Up to 15 sites are supported for the company site group. If you need more than 15 sites, please contact support@martellotech.com.

Use the tasks listed in the table below to manage sites.

Task	Description
"Add Target Endpoints" on page 16	Complete this task to configure the target endpoints to monitor.
"Create a Site Group" on page 17	Complete this task to create a site group to represent your enterprise.
"Configure the Vantage DX Analytics Integration" on page 19	Complete this task to create an integration between the site group in VDX Diagnostics and Vantage DX Analytics.

Task	Description
"Create a Site" on page 20	Complete this task to create a site.
"Manage Sites" on page 21	Search for, sort and filter sites. View site details, edit site information, or delete a site.

Add Target Endpoints

At the support organization level, add the target endpoints that you want to monitor.

The Microsoft Teams endpoint is included by default for your support organization. You can also monitor custom endpoints, such as Microsoft 365 SharePoint, O365 Outlook Exchange Server, or Salesforce. When you configure a custom endpoint, it is available to all of the site groups within your support organization. You can further customize it for each site group.

To add custom endpoints to your support organization, perform the following steps:

Before you Begin

- You must know the target endpoint URL or IP address.
- The provided FQDN or IP address must be able to respond to ICMP ping requests.

1. Click **Manage** to access the Application Management page, then click **Support Organization**.
2. On the Manage Support Organization page, beside the Services heading, click the **Add** link and set the following options.
 - **Name**—Type a descriptive name for the target endpoint.
 - **Default Target**—The URL/FQDN or IP address for the endpoint. This default target can be further customized per site group.
 - **Frequency**—Specify how often to check the network path for the endpoint. Select one of:
 - Every 5 minutes
 - Every 15 minutes
 - Every 30 minutes
3. Click **Save**.

Next Step

- ["Create a Site Group" on page 17](#)

Create a Site Group

A site group represents your entire enterprise company. You only need one site group. The site group allows you to have a global view of the monitored site locations within your enterprise.



Note: After you create the site group, you must also configure an integration between the site group and Vantage DX Analytics. See ["Configure the Vantage DX Analytics Integration" on page 19.](#)

To create a site group, complete the following steps.

Before you Begin

- The endpoints to be monitored must already be configured at the Support Organization level.
1. Click **Manage** to access the Application Management page, then click **Site Groups**.
 2. On the **Manage Site Groups** page, click **Create Site Group**.
 3. Provide a **Name** for the site group in the **Create New Site Group** section.
 4. In the **Monitor Services** section toggle the applicable endpoints options to **On**.
 5. Configure the following options for each of the enabled endpoints, then click **Save**:

Option	Description
Target	<p>The monitored endpoint.</p> <p>For Microsoft Teams, select one of the following:</p> <ul style="list-style-type: none"> • Discover Microsoft Teams Server (recommended). This option presents an exact server IP address to which a Microsoft Teams Server can connect. • General Microsoft Teams Server • Custom—Supply the URL <div data-bbox="717 583 1455 987" style="border: 1px solid black; padding: 10px; margin: 10px 0;">  <p>Warning: Unless you have been specifically directed by Martello, do not change the Microsoft Teams settings. If you have changed these settings prior to reading this warning, you can reset the values for Target back to "Discover Microsoft Teams Server" and the ToS value to 184.</p> </div> <p>For the other custom endpoints, you can use the default target value configured for the Support Organization, or you can provide a custom endpoint as a URL or IP address. Any changes to the target are applicable to this site group only.</p>
Packet ToS	<p>Use the Priority slider to specify a Type of Service value to define the traffic classification for network data and the associated DSCP value. Alternatively, you can type the ToS value into the text box. The default value is 184.</p>
Protocol	<p>Select the protocol to use:</p> <ul style="list-style-type: none"> • ICMP • TCP • UDP <div data-bbox="717 1545 1455 1717" style="border: 1px solid black; padding: 10px; margin: 10px 0;">  <p>Note: Only ICMP is supported for the 1.1 release of VDX Diagnostics.</p> </div>
Port	<p>Specify the port to use if the protocol is set to TCP or UDP.</p>

Option	Description
Packet Size	Specify the packet size in bytes for data transmission.
Packet Count	<p>The number of pings per hop. Select one of:</p> <ul style="list-style-type: none"> • 10 • 30 • 50

Next Steps

- ["Configure the Vantage DX Analytics Integration" on page 19](#)

Configure the Vantage DX Analytics Integration

Use this procedure to integrate Vantage DX Diagnostics with Vantage DX Analytics.

Every site group in VDX Diagnostics must have an integration configured in Vantage DX Analytics. This integration allow you to view the VDX Diagnostics components and alerts in VDX Analytics.

To configure the integration, complete the following steps.

Before you Begin

- The site group in VDX Diagnostics must already exist.
- A license for the site group in VDX Analytics must be in place.

1. Click **Manage** to access the Application Management page, then click **Site Groups**.
2. On the **Manage Site Groups** page, select the site group for the integration.
3. Next to the Vantage DX Diagnostics Configuration Integration, click **Show**.
4. Make note of the following information, as you will need it to configure the integration in VDX Analytics:
 - Vantage DX Diagnostics URL
 - Site Group GUID
 - Username
 - Password
5. Navigate to VDX Analytics.
6. From the main menu in VDX Analytics select **Settings**.
7. On the **Integrations** tab, click the **Add** button at the bottom of the page.
8. Select **Vantage DX Diagnostics** from the list of integration options.
9. Enter the following information.

Property	Description
Source	Read-only. The name of the source system.
Agent	Select a server to communicate with the source system. This can be the VDX Analytics web server or a machine that has a VDX Analytics remote agent installed on it.
Name	Provide a name for the integration; this name displays on the VDX Analytics interface.
Vantage DX Diagnostics URL	The URL for the VDX Diagnostics environment. Copy and paste the URL from the VDX Diagnostics Site Group page.
Site Group GUID	The site group specific GUID. Copy and paste the GUID from the VDX Diagnostics Site Group page.
Username	The generated username for the VDX Diagnostics site group. Copy and paste the username from the VDX Diagnostics Site Group page.
Password	The generated password for the VDX Diagnostics site group. Copy and paste the password from the VDX Diagnostics Site Group page.
Number of alerts for service to be critical	The number of alerts reported by VDX Diagnostics before the status of an endpoint is shown as critical in VDX Analytics.
Discovery Interval	How often the objects are loaded from the integrated system. The default is 3600 seconds.
Operation Interval	How often health states, alerts, and/or incidents are collected. The default is 120 seconds.

10. Click **Save**.

Next Steps

- ["Create a Site" on page 20](#)

Create a Site

Use this procedure to create a site that represents a physical office location.

1. Click **Manage** to access the Application Management page, then click **Sites**.
2. On the **Manage Sites** page, click **Create Site**.
3. On the **Create Site** page, provide the site information, then click **Save**:
 - **Name**—Provide a name for the site.

- **Address**—Provide an address for the site.

Next Steps

- Install and a configure a probe for the site. See ["Install a Windows Probe" on page 23](#).

Manage the Site Group

Use this procedure to view and edit details about the company site group.

1. Click **Manage > Site Groups** to view the company site group.
2. Do any of the following:
 - Click the **Edit** link beside the site group name to make changes to the site group name.
 - Click the **Edit** link beside an endpoint to make changes to the settings.



Warning: If you edit the Microsoft Teams endpoint, all of the Teams data previously collected for this site group and associated sites will be deleted.

- Click **Go to this Site Group's Dashboard** to view network test summary results for the sites in the site group.
- Click **Add Site** to add a site to the site group.
- Click **Delete** to delete the site group. The site group cannot have any sites associated with it.



Note: If you delete the site group, you must also remove the VDX Diagnostics integration in Vantage DX Analytics.

Manage Sites

Use the following procedure to view and edit sites.

1. Click **Manage > Sites** and find the site that you want to view, using the filter options if required.
 - **Search**—Type in the search box to filter the list of sites. The results list is filtered as you type. To clear the search, click **Clear Filters**.
 - **Sort By**—Alphabetical
 - **Order By**—Select one of **Ascending** or **Descending**.
2. Click on the site that you want to view.
The details for the site are displayed in a panel.
3. Do any of the following:

- Click the **Edit** link beside the site name to make changes to the site name.
- Click the **Edit** link beside the site address to make changes to the address.
- Click **Go to this Site's Dashboard** to view network test summary results for the site.
- Click **Delete** to delete the site.

Install the Probes

A probe is the piece of software that monitors and reports on the flow of data along the network path between a site and the target endpoint, such as Microsoft Teams. A probe must be installed for each configured site. Each site can have only one probe installed.

Complete the following tasks for each site that you configure:

Task	Description
"Install a Windows Probe" on page 23	Install a new probe.
"Configure a Windows Probe" on page 24	Perform this procedure only if you installed a Windows probe. You must configure the probe to communicate with VDX Diagnostics.
"Update a Probe" on page 25	Update the probe software.

Install a Windows Probe

Use the following procedure to install a Windows probe for each of your sites. This procedure must be completed for each configured sites. Each probe must be installed on a machine that is located at the site you are configuring.

Before you Begin

- A site must already be configured. See ["Create a Site" on page 20](#).
- Ensure the system meets the requirements listed in [" " on page 7](#).

1. Click **Manage** to access the Application Management page, then click **Sites**.
2. On the **Manage Sites** page, select the site you want to install the probe for, then click the **Windows - Download** link to download the Probe software archive and then extract the files.

3. Run the Probe Windows installer (Vantage-DX-Diagnostics-Setup-v1.1.0.21792.exe) to install the probe software on a machine that is located at the site being configured.
4. If prompted, click **Yes** to allow the application to make changes to the computer.
5. Follow the instructions in the Install Wizard to complete the installation.
6. When the install process is complete, click **Finish** to exit the Wizard.

Next Steps

- Configure the probe to communicate with VDX Diagnostics. See ["Configure a Windows Probe" on page 24](#).

Configure a Windows Probe

After you install the probe software at a site, you must configure it to connect with Vantage DX Diagnostics. Complete this procedure for each installed Windows probe.

Before you Begin

- Ensure the probe software is already installed on a computer at the site.

1. Click **Manage** to access the Application Management page, then click **Sites**.
2. On the Site Management page, select the site you are configuring and generate the probe PIN by clicking **Generate PIN**.



Tip: Make note of the Hostname and PIN displayed on this page.

3. From the Start Menu on the Windows computer where you installed the probe software, navigate to **Vantage DX Diagnostics > Vantage DX Diagnostics Config**.

A command window appears.



Note: If you changed the name of the install directory during the installation, **Vantage DX Diagnostics Config** is found under that directory name instead.

4. In the command window, at the Vantage DX Diagnostics server FQDN prompt, type the **Hostname** and press **Enter**.
5. When prompted, type the PIN that you generated in step 1 and press **Enter**.
6. Once the Probe configuration successfully completes press **Enter** to exit the command window.

7. To confirm that probe is successfully installed go to the site configuration page in VDX Diagnostics and check that the Probe's status is now **Connected**.



Tip: You might need to reload the page in the browser to see the updated status.

Update a Probe

If new probe software is made available you will need to update all of your existing probes. In order to update a probe, you must uninstall the existing probe software, and then install the new probe.

To uninstall an existing Windows probe, do the following:

1. Login to the computer where the probe software is installed.
2. From the Start Menu, navigate to **Vantage DX Diagnostics > Uninstall Vantage DX Diagnostics**.
3. If prompted, click **Yes** to allow the application to make changes to your computer.
4. On the Uninstall Vantage DX Diagnostics Wizard click **Uninstall**.
5. When the uninstall process is complete, click **Finish** to exit the Wizard.

Next Steps

- After the probe software is uninstalled, you can install the updated probe software. See "[Install a Windows Probe](#)" on page 23.
- You do not need to complete the configuration steps to generate a new PIN or provide the Hostname again.



View Network Path Data

Vantage DX Diagnostics provides visual representations of network paths between your sites and the target endpoints.

To view and understand the network path data see ["View Site Data" on page 26](#).

View Site Data

You can view data for all of the sites your company at once to have a global view the network performance between the target endpoints and your sites. You can also choose to view performance data for a single site.

Use this procedure to view and understand the data for the sites in your enterprise environment.

1. From the sidebar on the left of the interface, use the following options to filter and group the data:
 - **Test Type**—Displays the path results by site for the selected endpoint. This option allows you switch between endpoints to easily determine which sites are having issues with which endpoints.
 - **Date**—Display results for a selected date. The default is the current date.
 - **Time of day**—Display results for a selected time, in 15-minute increments.
 - **Site**—Display results for selected sites. Optionally, you can set the **Auto-select sites with results** option to **On** to only display the sites that have network path test results in the diagram.
 - **Grouping**—Click the **Grouping** link to display the grouping options:
 - **Group by network hop**—Select one of none, by network, or by network owner.
 - **Show network owner**—Set to **On** to highlight each network owner in the diagram in a different color. You can also select which networks to highlight in the diagram.

2. View detailed information about the test results from the **Path Analysis** panel. This panel displays the following information for the selected site:
 - **Name of the path**—The name of the site to the URL of the endpoint. For example "MySite to world.tr.teams.microsoft.com".
 - **hops taken**—Number of intermediate devices that a packet passes through from the source site to the endpoint.
 - **round-trip time**—Time in milliseconds for a packet to go from the source site to the endpoint.
 - **jitter**—Time delay of packets being received.
 - **packet loss**—Percentage of packets that are lost in a given period of time. Packet loss directly affects audio quality. A warning message informs you at which hop your site started to experience an issue.
3. To view detailed information about each hop in the path, click the **View Path Details** link in the **Path Analysis** panel.
4. Use the **Hop Breakdown** selector to display details for:
 - **Round-trip time**—The time in milliseconds that it takes a data packet to travel from point A to B and return.
 - **Jitter**—Jitter indicates the size of the buffer that is needed to store packets before they are reconstructed in the correct order. Jitter can cause delays in calls and is an indicator of congestion of the network.
 - **Packet loss**—Percentage of packets that are lost in a given period of time. Packet loss directly affects audio quality. The packet loss is calculated based on the frequency configured for the target endpoint (5, 15 or 30 minutes) and the packet count configured for the site group (10, 30, or 50).



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