August 17, 2023

Application Note

Understanding Vantage DX

Overview

Businesses increasingly rely on cloud-based services, and tools like Microsoft 365 have quickly become essential for users in homes and offices. When your business relies on cloud-based services for critical applications, it is challenging for the IT organization to monitor the availability and the quality of the service that is delivered to your users. You do not control the data center that is delivering the service, and you have no control over the external network that you rely on to deliver the service. Remote employees add another layer of complexity, because home networks are typically less robust than corporate networks. The availability of Microsoft 365 applications directly impacts the productivity of your employees, so monitoring its availability—and being able to proactively identify problems—is critical.

This application note explains how Vantage DX works to monitor your Microsoft 365 services, and how you can integrate data from your existing monitoring tools to provide end-to-end monitoring of your IT environment. This document also provides links to other resources, where you can learn about specific use cases for Vantage DX.

Understanding the solution

The Vantage DX solution is made up of three modules, which work together to provide comprehensive data about your users and your environment. Each module provides critical data:

- **Real user data**—Vantage DX Analytics provides about the experience of your users, in near-real time.
- **Network path data**—Vantage DX Diagnostics provides data about the network path between your users and any endpoint, such as the Teams web service, or a business-critical website such as Salesforce.
- **Predictive data**—Vantage DX Monitoring provides data based on synthetic transactions, which are performed by robots deployed at critical locations.

In addition, Vantage DX Analytics—the main interface for the Vantage DX solution—can consolidate information from your existing monitoring tools, cloud platforms, and ITSM systems into a single system. You can use Vantage DX to pull alerts and health state information from a wide range of sources and unify them in one interface.

The following sections describe these capabilities and how they work together to provide end-to-end monitoring of your Microsoft 365 services and your IT environment.

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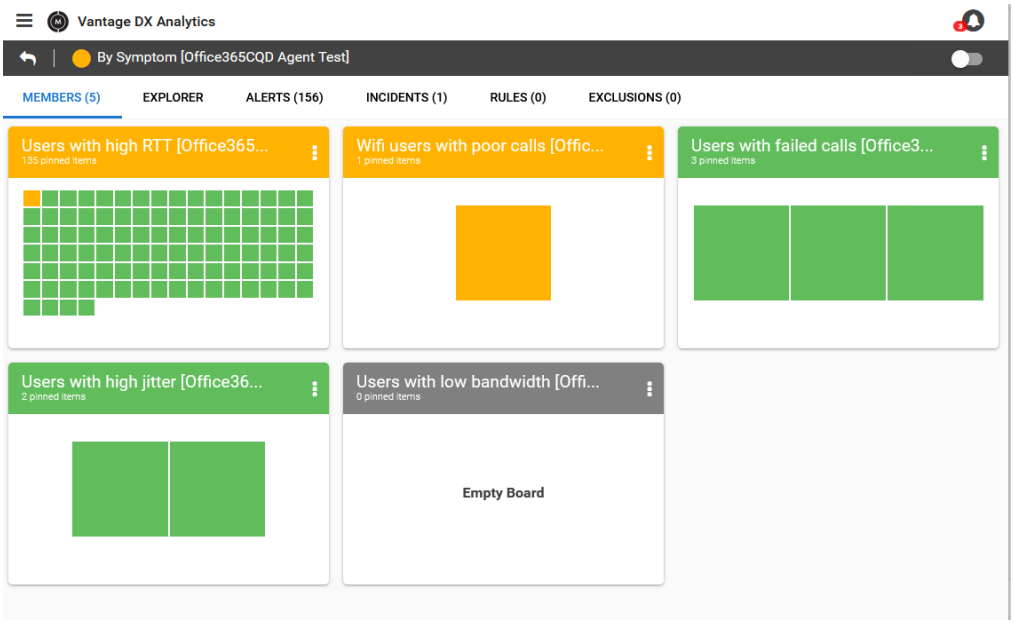
Real-user monitoring with VDX Analytics

A key feature of Vantage DX Analytics is its ability to integrate with the Microsoft Call Quality Dashboard (CQD) to provide real-user monitoring. The Microsoft CQD is a tool that is available in the Teams Admin Center. It monitors all voice and video calls made in Teams and provides call quality metrics within 30 minutes of the end of a call.

You can use this integration to immediately correlate call quality data with factors that impact call quality, such as the ISP, the connection type, or the location of the user.

To make important data immediately accessible, Vantage DX Analytics automatically creates the following set of boards, which contain Teams call quality data:

- **By Symptom**—The By Symptom board, shown in the image below, contains sub-boards that show users with high jitter, high RTT, and low bandwidth. There are also sub-boards for users with failed calls, and WIFI users with poor call quality.
- **Teams ISPs**—This board displays all of the ISPs that provide connectivity for Teams users in the organization.
- **Teams Locations**—This board displays all of the countries where your users are connected.



These are default boards only; you can create many other types of boards to model the data in the way that works best for your organization.

You can use the data in these default boards to identify locations where issues occur repeatedly, and then deploy Vantage DX Diagnostics probes at these locations to collect network path data.

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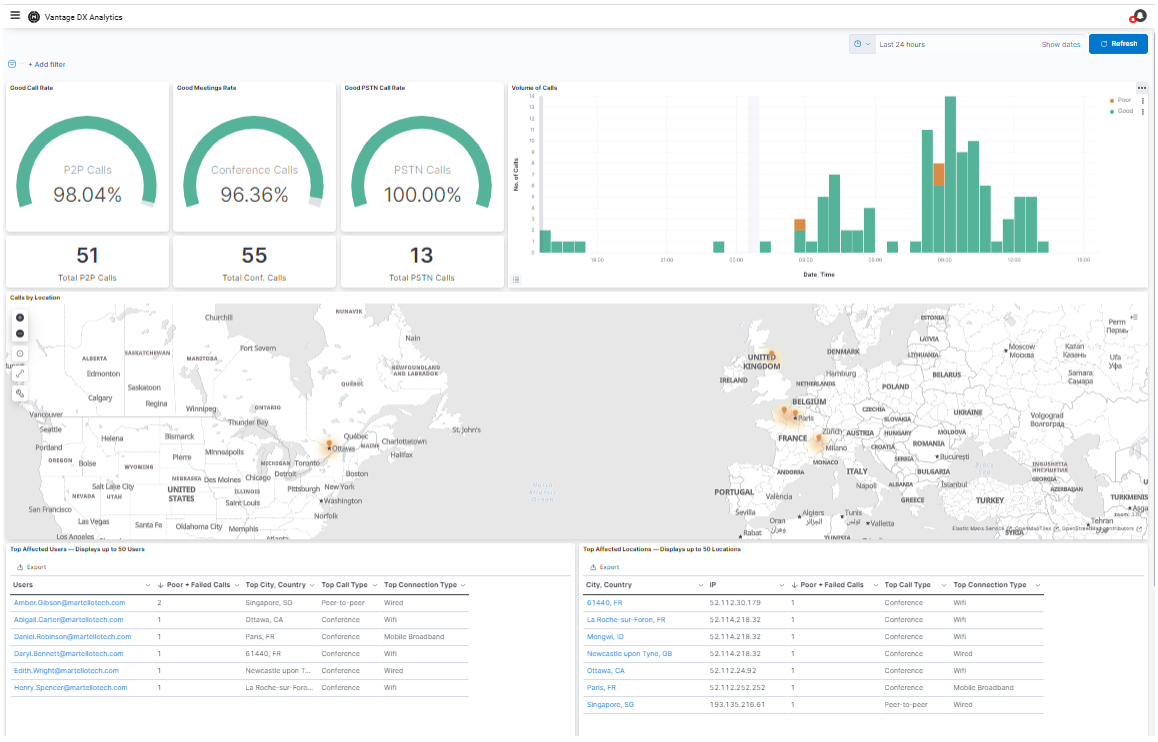
VDX Analytics also provides pre-configured default dashboards. These dashboards use data retrieved from the following integrations:

- Microsoft Teams Call Quality Dashboard (CQD)
- Vantage DX Monitoring
- Vantage DX Diagnostics
- AudioCodes Session Border Controllers (SBCs)

The dashboards provide call quality information for peer-to-peer calls, conference calls, and PSTN calls. The following dashboards are available by selecting **Analyze** from the main menu:

- **Teams Overview**—The Teams Overview dashboard identifies issues that are occurring with Microsoft Teams calls, and which users and locations are most affected.
- **Users**—The Users dashboard identifies users who are experiencing poor and failed calls.
- **Locations**—The Locations dashboard displays the locations and times when poor and failed calls occur.
- **Calls**—The Calls dashboard displays the causes of poor and failed calls.

The image below is an example of the Teams Overview dashboard.



You can also navigate to the following additional dashboards:

- Calls Dashboard—Navigate to this dashboard from the Users Dashboard by clicking on a Call ID and selecting **Go to Calls Dashboard**.

- Meeting Room Devices Dashboard—Navigate to this dashboard from the Meeting Rooms Dashboard by clicking on a meeting room and selecting **Go to Meeting Room Devices Dashboard**.

If you do not have all of the integrations configured, the dashboard will display "no results found" in some widgets.

The ability to view these dashboards is based on user roles. By default, only administrators can view the dashboards. Users in other roles can view the dashboards only if an administrator assigns access to them.

Network path monitoring with Vantage DX Diagnostics

Vantage DX Diagnostics tests the network paths between physical office sites and the target endpoints that you want to monitor. The Microsoft Teams endpoint is configured by default, but you can also configure custom endpoints, such as SharePoint or Salesforce. You can use the real-user monitoring data from VDX Analytics to identify users or locations where problems occur, and then deploy Vantage DX Diagnostics probes on machines at those locations, or on the laptops of specific users.

After you have deployed the probes, Vantage DX 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.
- Which networks are responsible for the issues.

Vantage DX Diagnostics also provides information about packet loss rate, round-trip latency, and jitter average for each network path. You can view this data in VDX Analytics, or you can view the network path visualizations within the Vantage DX Diagnostics interface.

The VDX Analytics interface indicates the health state of the network path that you are monitoring. In the following example, VDX Analytics is reporting that the network path between the Sydney office and the Microsoft Teams endpoint has critical issues:

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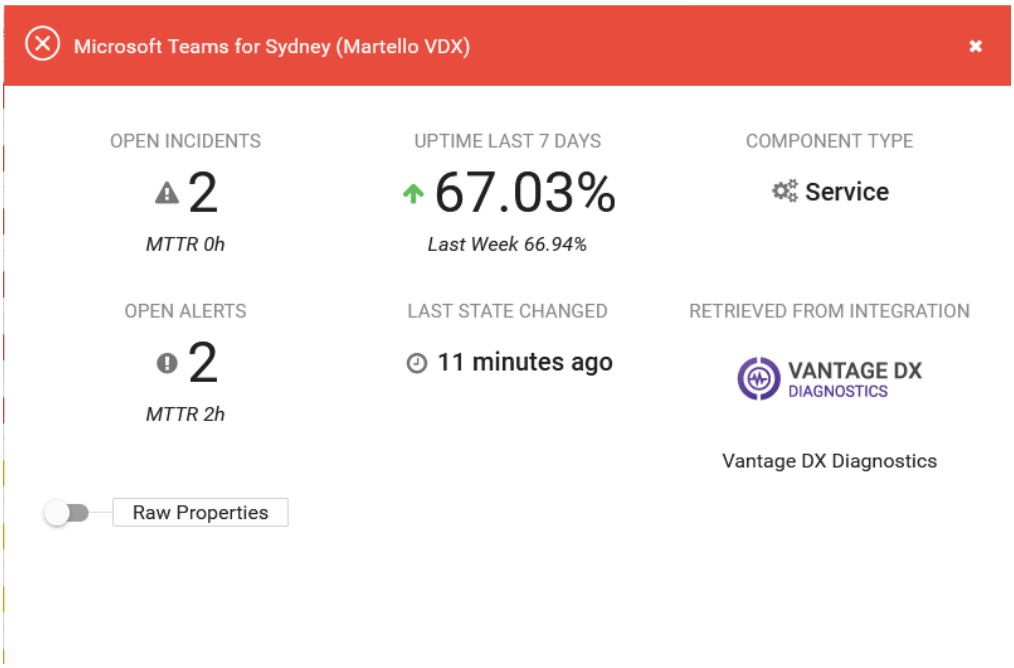

You can navigate to the network path diagram in Vantage DX Diagnostics to see more detailed information:

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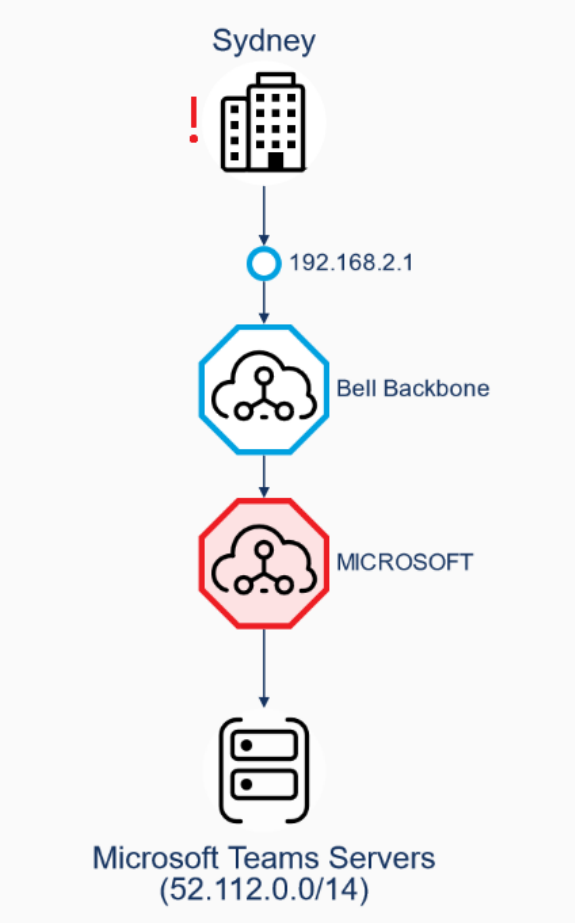
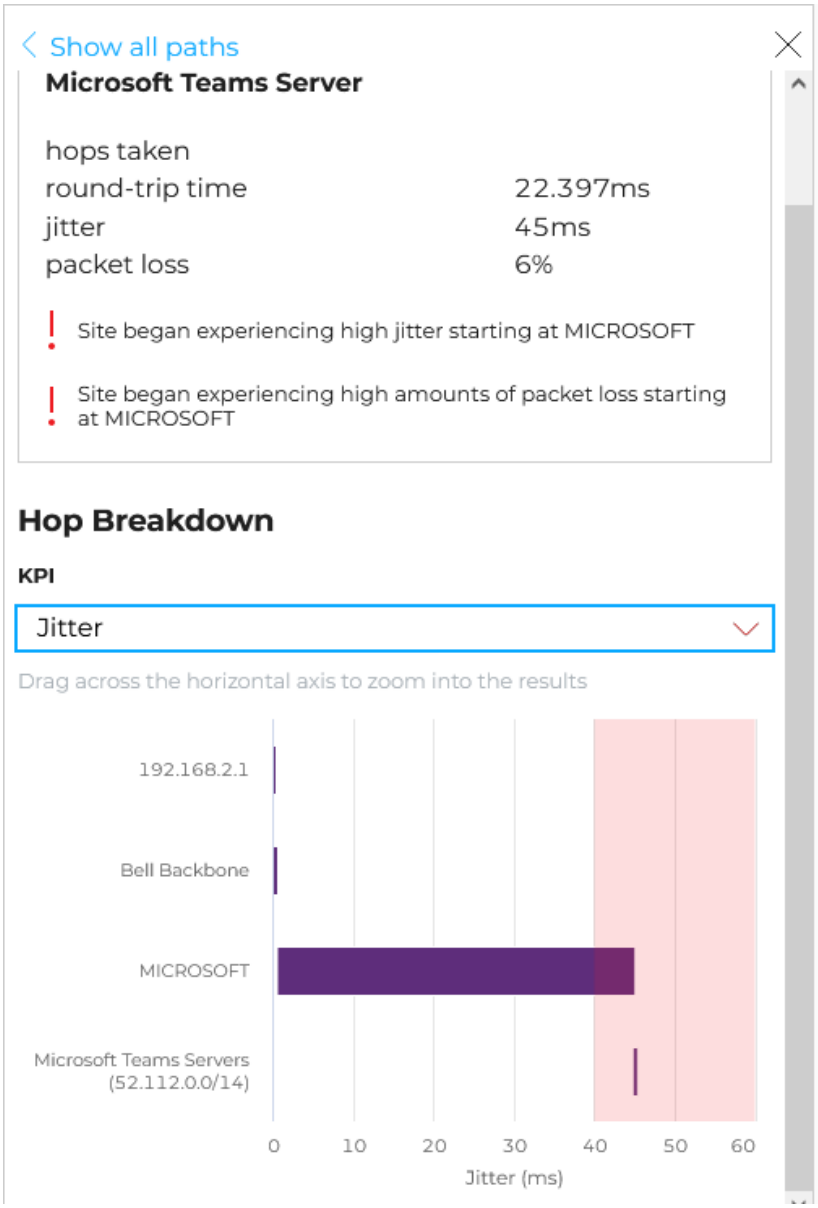
The Grouping option on the interface allows you to view the hops according to the network owner:



The path details show that a specific hop within the Microsoft network experienced high jitter:



Predictive data based on synthetic transactions with Vantage DX Monitoring

Vantage DX Monitoring provides the data about the performance of Microsoft applications and resources, as well as network conditions that impact the performance of those applications and resources. In Microsoft environments, these applications and resources are known collectively as workloads.

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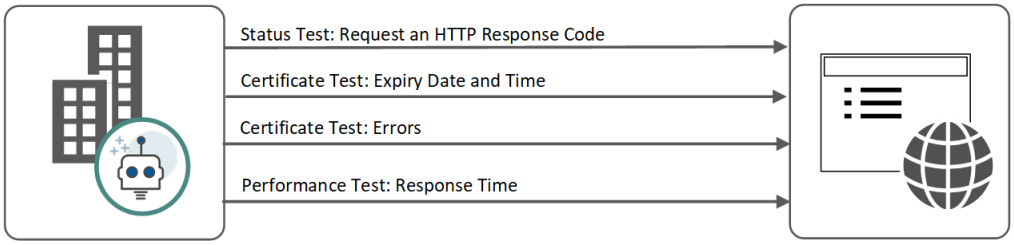
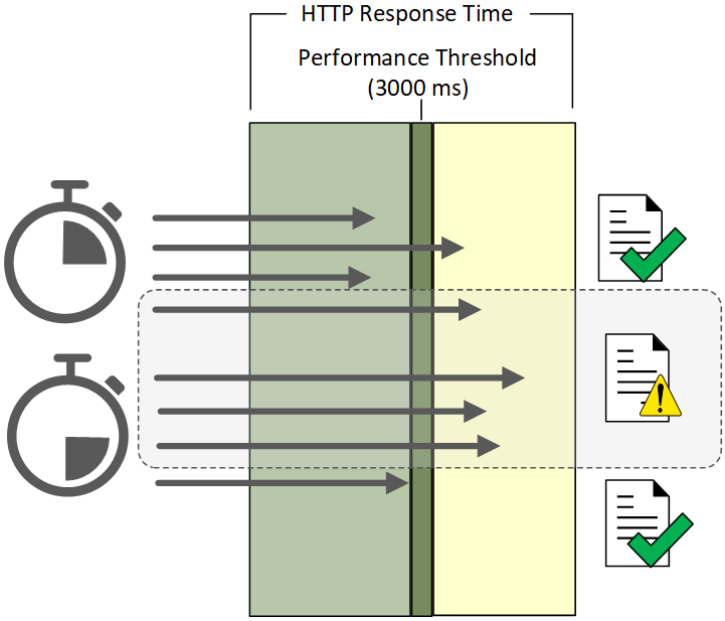
Vantage DX Monitoring deploys robots to perform synthetic transactions, which are tests that simulate the activities that your users typically do. Robots located at your critical business sites perform synthetic transactions on workloads—such as Microsoft Exchange, SharePoint, OneDrive, and Teams—while also testing network conditions. These robots continuously test the user experience from where your end users are located, to help you understand the service quality that you are delivering to your customer sites. Based on these tests, Vantage DX Monitoring provides you with proactive notifications so that you can work directly on issues before they become a problem for your users.

The following images show an example of how synthetic transactions work. In this example, Vantage DX is testing a URL to ensure that the endpoint is available to your users.

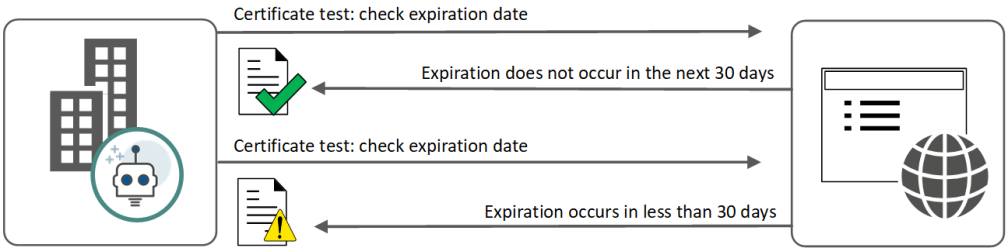
For the URL workload, the robot performs a series of tests on the endpoint that you specify. The health state of the workload is based on the results of the tests.



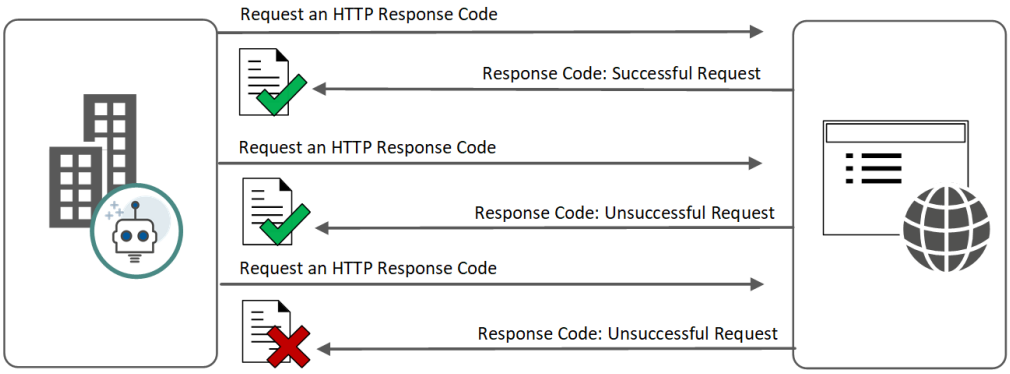
The robots perform the tests at timed intervals. In the following example, the robots are testing the HTTP response time for a URL. If the response time is worse than the performance threshold in four consecutive tests, the status of the workload changes to Warning. The poor results must be consecutive; this ensures that you do not receive unnecessary warnings. The results do not need to occur within the same testing interval.



The number of poor test results that are required before a health state is changed varies, depending on the type of the test and the impact of the failure. For example, if the endpoint's security certificate is going to expire within the next 30 days, the health state is set to Warning after the first test:



If the endpoint is not available for two consecutive tests, the health state is set to Critical:



Consolidate all your monitoring data in Vantage DX Analytics

VDX Analytics consolidates the information from your existing monitoring tools, cloud platforms and ITSM systems into a single system. It pulls alerts and health state information from a wide range of sources and unifies them in one interface. VDX Analytics standardizes the data so that it is easy to understand and compare information from different systems.

The following diagram provides an overview of how VDX Analytics retrieves data from a wide variety of sources and centralizes it in one place.

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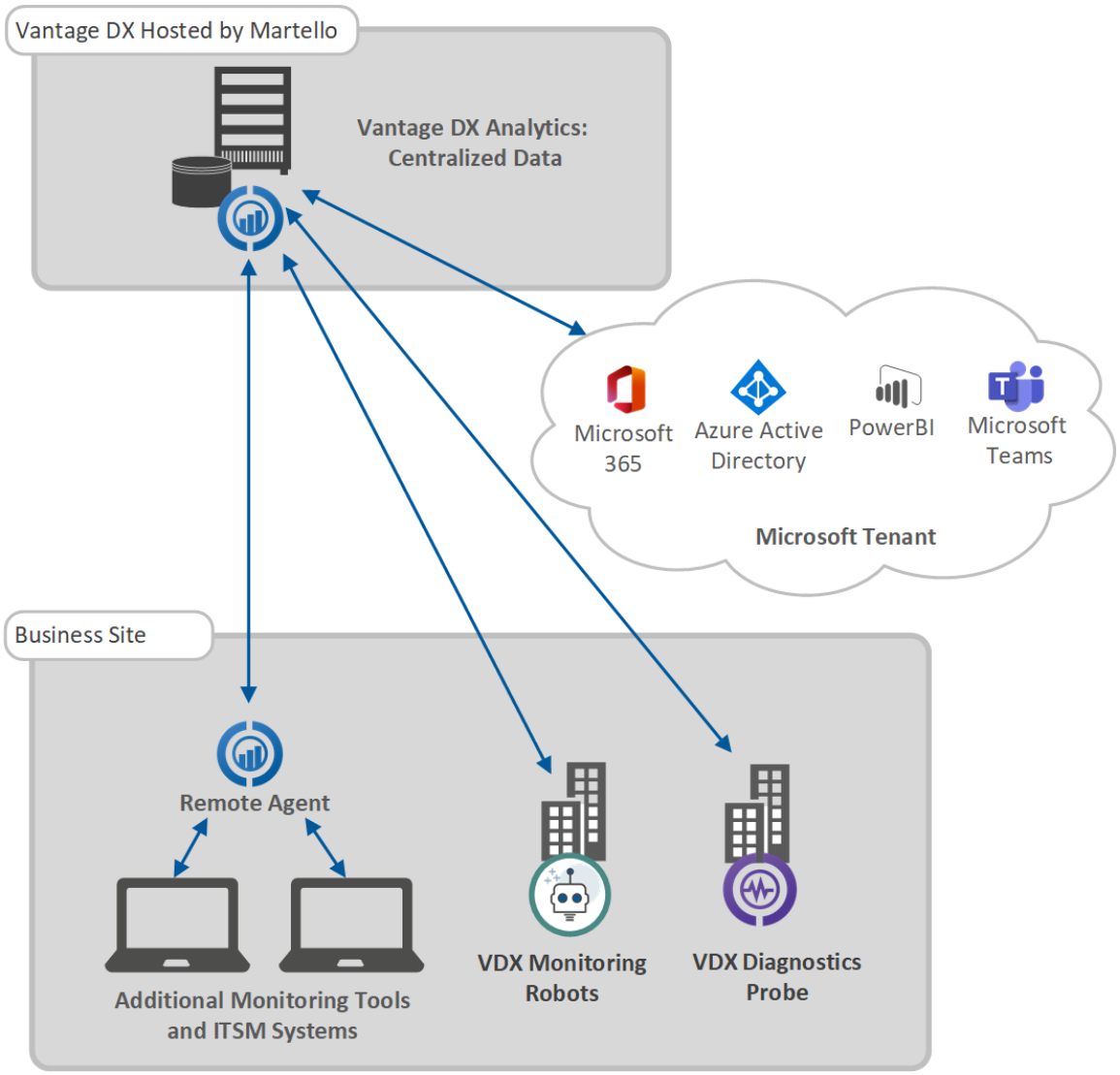


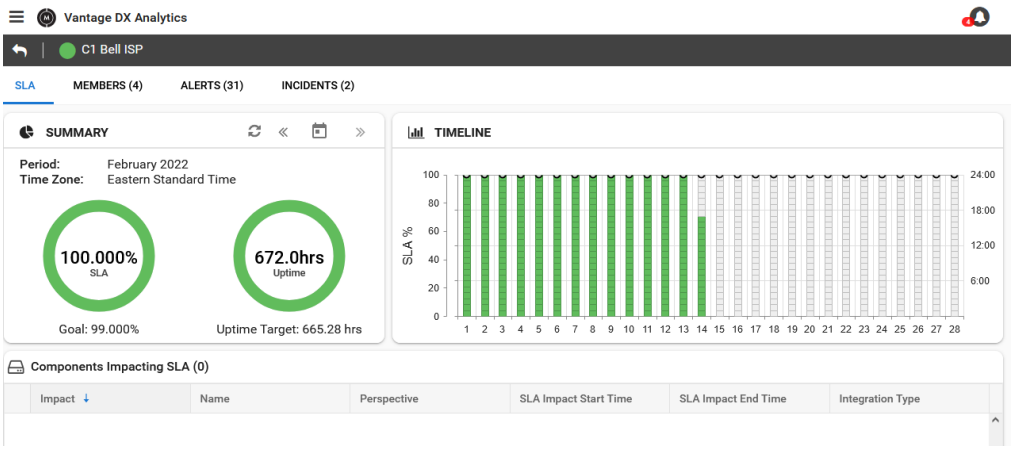
Visualize Data

Data visualization is one of the most important features of a monitoring system, but visualizing the health of your applications and devices is not enough. To effectively monitor your network, you need to be able to visualize data in a meaningful context. VDX Analytics provides two ways to organize data from your other monitoring systems and cloud platforms to create context:

- **Boards**—Boards are a way of organizing groups of objects from one or more monitoring systems. You can create boards and nest them within boards. This allows you to model your IT environment in the way that best fits your needs. For example, you can create boards for locations, applications, or business units, and then divide these boards into sub-boards.

- **Business services**—Business services provide a way of mapping the devices and applications that work together to support specific business services. When you map devices and applications to a business service, you can monitor your organization's IT resources in the context of the business workflow where those resources are used. For example, you can create a business service that monitors all of the applications and servers that work together to provide authentication for your users. SLA reports are available for all business services.

The following image shows an example of SLA calculations for a specific ISP:



For more information about how to use boards and business services, refer to the **Resources** section at the end of this document.

Resources

See the following Application Notes for information and examples about key features in Vantage DX:

- *Manage Data Using Business Services*.
- *Manage Data Using Boards*
- *Monitoring SLA and Availability*
- *Customize Monitored Sites in Vantage DX Monitoring*
- *Identify Call Quality Trends with Dynamic Offices*
- *Manage Incidents and Alerts*
- *Monitor a Hybrid Exchange Environment*
- *Monitor and Troubleshoot Teams Call Quality*
- *Monitor Co-Authoring Platforms*

All documentation is available on the Martello website at:

https://martellotech.com/documentation/vantage-dx/

About Martello Technologies

Martello Technologies Group Inc. (TSXV: MTLO) is a technology company that provides digital experience monitoring (DEM) solutions. The company develops products and solutions that provide monitoring and analytics on the performance of real-time applications on networks, while giving IT teams and service providers control and visibility of their entire IT infrastructure. Martello's products include unified communications performance analytics software and IT analytics software.

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