VIAVI

Apex Essentials
User Guide

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Chapter 1: Learn about Apex

Apex helps your organization create reports, called *dashboards*, from the data collected by Observer Platform products. These reports can assist your organization with troubleshooting, planning, performance, compliance, and more.

Apex vs. Apex Lite

Apex is a full-featured reporting engine for combining information from many assets while Apex Lite has limited functionality and can only be used for reports of the local asset.

Table 1: Apex vs. Apex Lite

Feature	Apex	Apex Lite
System and user dashboards	X	X
Import dashboards	X	X
Filtering	X	X
Event logging / notifications	X	X
Tags	X	X
Tables	X	X
Graphs	X	X
Charts	X	X
Threshold graphs	X	
GigaStor workflow integration	X	
Site dashboards	X	
Multiple data sources	X	
Business groups	X	

Feature	Apex	Apex Lite
Status widgets	X	
Application dependency maps (ADM)	X	
Failover / Redundancy	X	
Multiple user configuration	X	
Thresholds	X	
Alarms	X	
Scheduled reports	X	
Works with	Observer Analyzer (Expert and Suite) Observer GigaStor	Observer (Expert and Suite) GigaStor

Figure 1: Observer Platform

Observer Performance Management Platform
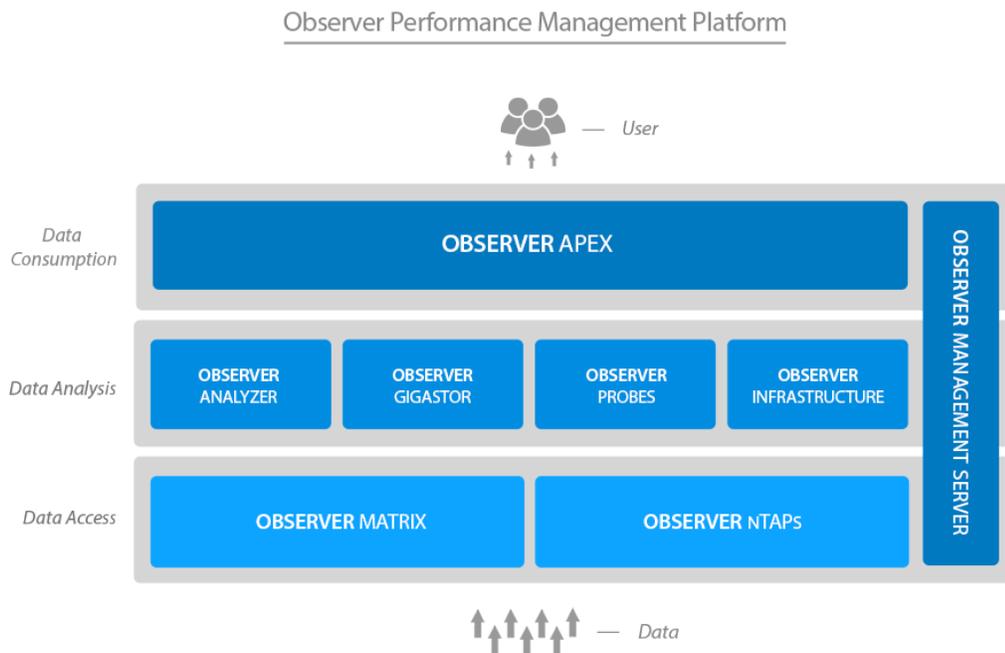
Understanding dashboards

A *dashboard* is a report populated with widgets, and these widgets show the information collected by your data sources.

Dashboards are reports populated with widgets. Your reports—your dashboards—are populated with one or many widgets. The data shown by widgets in your dashboards belongs to Observer. To make use of dashboards, Observer must be collecting network trending data and be a data source to Apex. Without trending data, Apex will not have any data for the widgets in a dashboard.

Figure 2: An Apex dashboard populated with five widgets
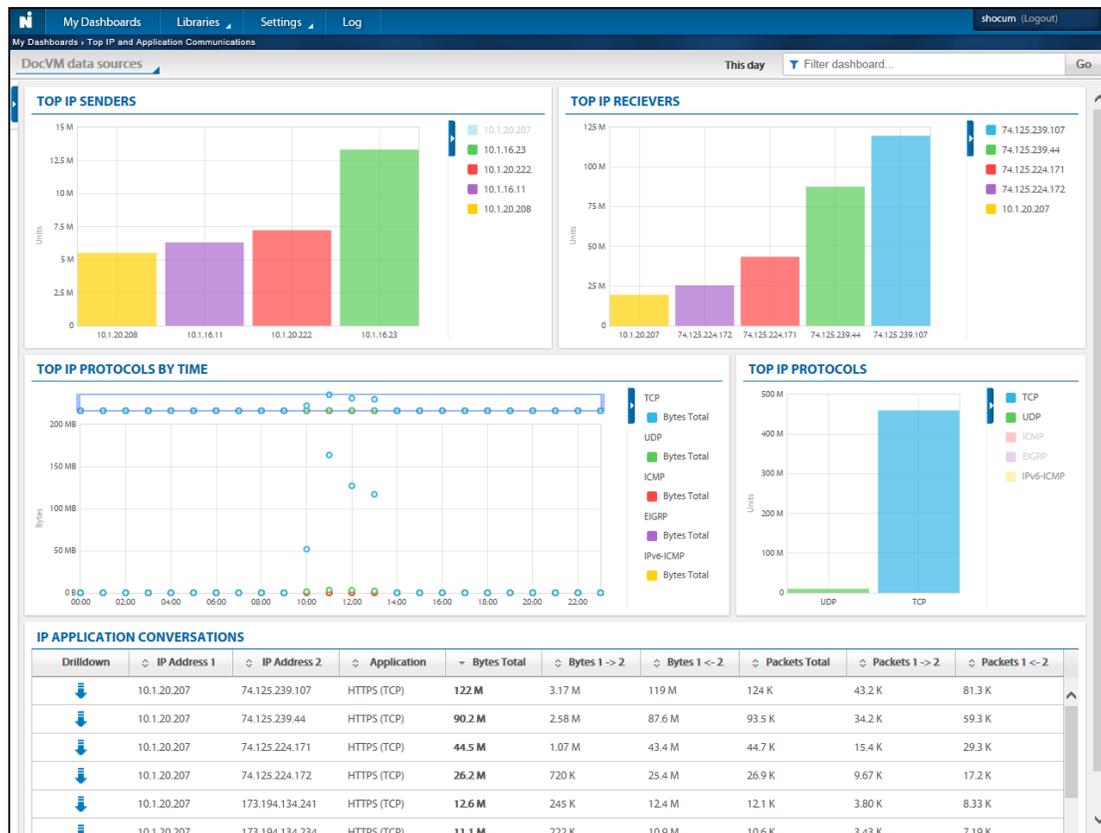
System dashboards are available "out-of-the-box" for you and cannot be modified. Dashboards that are pre-made by Viavi are available to you as *system dashboards*. System dashboards are identical in function to dashboards you create on your own, but they cannot be modified. Additionally, system dashboards provide broad information and are useful for high-level analytics. A temporary filter can be used while viewing system dashboards, but a permanent filter cannot be added.

Dashboards can be filtered. Any dashboard can have an always-on filter written into its properties. Dashboard filters force every widget in a dashboard to display only information that meets the filter. For example, you can filter a dashboard so that its widgets show statistics from a specific subnet only. Or you can filter a dashboard to search for a telephone number used in a VoIP conversation.

A dashboard filter can be applied to the design of the dashboard itself (always-filtered), applied during viewing of the dashboard (temporary), or applied as a combination of the two.

User dashboards are only viewable by you. Each newly created dashboard is considered a *user dashboard*. User dashboards are unique to the user that logged in to Apex and created it, and it can only be viewed and modified by that user. To share a user dashboard with other Apex users, the creator must promote the dashboard. A promoted dashboard becomes a *site dashboard* that is viewable by other users. A promoted dashboard cannot be demoted.

Promoting a dashboard does not simultaneously promote user widgets. This means you can promote a user dashboard to a site dashboard without promoting the underlying user widgets—if any exist. This protects your personal user widgets from being altered and changed by others. If you want to share a

dashboard with others (by promotion) and *also* allow changes to those widgets, the widgets must be promoted to site widgets.

Understanding widgets

Widgets are tables, graphs, pie charts, and more, made to display information collected by Observer Platform products. For widgets to have any effect, they must be put into dashboards.

Widgets are the building blocks of your dashboards. Every widget type is designed to help you better understand the traffic of your network. For example, the graph widget type could help you visualize traffic over time, while a chart widget type could display which protocols contributed most of the traffic during the report period.

Figure 3: The **Widget Properties** tab

Widgets show the data collected by other products. Widgets show the data collected by *data sources*. Data sources are your other Observer Platform products. This retrieved data, from data sources, is parsed by Apex and displayed in dashboards that include the widget. Without dashboards to operate inside, widgets will not show any data.

System widgets are available "out-of-the-box" and cannot be modified. Widgets that were created by Viavi are available to you as *system widgets*. System widgets are identical in function to widgets you create on your own, but system widgets cannot be modified. As your teams become comfortable with creating their own widgets, you might develop less reliance on these.

We recommend using system widgets as needed, and even exploring how the system widgets were created can aid your learning about Apex!

Widgets can be filtered. The purpose of widget filtering is to narrow the scope of reported criteria, so the end result, like a graph, is specific and easily understood by viewers. Any widget can have a filter written directly into its design. Widget filters force the widget to display only information that meets the filter.

For example, you can filter a widget so that it shows statistics from only specific applications or ports. The filter can be applied to the design of the widget itself, which creates always-filtered results when viewing that widget. You can combine a widget filter with other filtering techniques, such as filtering the dashboard or business group, to further filter your results. The widget retains its filter regardless of the dashboards it is placed into. Finally, filtering a widget will not displace or modify your underlying data.

The same widget can be put into different dashboards. Widgets can be reused by any number of dashboards. For example, if a widget is placed in one dashboard, the widget can also be put into a different dashboard. Each "instance" of a widget behaves exactly the same regardless of the dashboard, or dashboards, it was placed into. There are some exceptions, however. One example is if a dashboard or business group is being filtered, the information shown by the widget is influenced by the filter. Under these circumstances, it is possible for the same widget to display different information based on the filter of its parent dashboard or business group.

Understanding data sources

A *data source* is any Observer Platform product that feeds data into Apex. Data sources are configured in Apex, by you, and assigned to one or more business groups.

Data sources must be configured. Apex must be connected to data sources for the application's core features to operate. Adding a new data source tells Apex about a new Observer Platform product from which you want to get data. For example, one Observer analyzer can be an aggregation point that gets data from several probes like a GigaStor or Observer Suite.

Data sources must be added to business groups. It is not enough to just configure a data source and have Apex automatically connect to it. To transfer the data collected by data sources to Apex, your chosen data sources must be added to a business group.

Understanding business groups

Business groups are collections of data sources. By assembling multiple data sources into a logical grouping, you are creating a business group for that grouping.

Business groups are a collection of data sources. Imagine you have 14 web servers across your network that are monitored by three different probe instances. You can create a business group that views the statistical data from those data sources—the three probes instances. This allows you to view dashboards that combine the metrics from those web servers.

Data sources only transfer trending data after being placed into a business group. It is not enough to add a data source to Apex and have Apex connect to it. To actually transfer data from your data sources, the data sources must be assigned to one or more business groups. This must be done for widgets and dashboards to show any data.

Business groups can contain these data sources:

♦ Probe instances from Observer Suite analyzer, GigaStor, and other probes.

Business groups can include other business groups. Business groups can be nested. This allows you the option of making smaller, more manageable business groups and still have them act as one large business group.

Understanding thresholds

Thresholds are defined values that determine if a statistic is above, below, or within a normal range on your network.

Thresholds are also used when displaying colors in dashboards. Anything below the marginal threshold is green, anything between the marginal and critical threshold is yellow, and anything above the critical threshold is red. Thresholds can also be used as part of status widgets that are based on either performance or a baseline.

Ports used by Observer Platform v17 and later

Open inbound and outbound TCP 80, 443, and 25901 on your firewalls for Observer Platform products version 17 and later.

Port	Functionality
TCP 80	Requests from product to Viavi to see if a new version or update exists.
TCP 443	Secure web server traffic.
TCP 8008	Default port for transfer of software upgrades.
TCP 25901	All intra-Observer Platform communication.

System specifications

The system specifications in the table applies to appliances from Viavi.

If you want to use the software version of Apex on your own hardware or to put Apex in a virtual machine, the table below lists the minimum requirements with these changes (as appropriate):

♦ DATA array: Four (4) disk RAID5. The more read speed you have, the better off you will be.

♦ Hard drives: 7200 RPM platter HDDs. 5400 RPM HDDs and solid state drives (SSDs) are not recommended.

Platform	2U 19-inch rack-mountable appliance.
Memory/RAM	64 GB
Processor(s)	Single - Six Core
Hard drive(s)	OS: 500 GB / DATA: 8 TB (8 x 1 TB RAID5)

Redundant Power Supply	Yes; Standard
Lights Out Management	IPMI v2.0
Power consumption	Input voltage: 100V-240V auto select Input frequency: 50/60Hz 258w (880 Btu/h)
Operating Temperature Range	32° F (0° C) to 104° F (40° C)
Dimensions	19 in (W) x 3.48 in (H) x 26.01 in (mounting depth) (Full probe depth with handles: 28 in) 48.3 cm (W) x 8.8 cm (H) x 66.1 cm (mounting depth) (Full depth with handles: 71.1 cm)
Weight	55 lbs (25 kg)
Operating system	64-bit Windows 7

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Chapter 2: Start using Apex

Apex allows you to accurately assess the impact of mission-critical applications on your business through extensive dashboards. Apex also provides auto-baselining capabilities for establishing benchmarks, understanding typical performance levels, and running day-to-day comparisons.

How to begin using Apex

After Apex is properly installed, all interactions with Apex will occur through a web browser. To begin using Apex, log in to Apex.

Prerequisite(s):

A compatible web browser is required.

- ◆ Internet Explorer 9.0 or later
- ◆ Mozilla Firefox
- ◆ Google Chrome

> **Tip!** Do you need to license and activate Apex? See the instructions at How to license.

1. Open a compatible web browser, and type the following URL into the location bar: **https://ApexHost/oa** replacing "ApexHost" with the host name or IP address of the system where Apex is installed and running.

   You may notice a security certificate warning; this is normal for a self-signed certificate.

2. Log in to Apex using a user name and password managed by Apex or Observer Management Server (OMS) (sold separately).

> **Tip!** The default user name is **admin**, and the default password is **admin**, and it is case-sensitive.

You successfully logged in to Apex. All of your interactions with Apex will occur in this web interface.

How to add a data source

Adding a new data source tells Apex about the Observer Platform product you want to get data from. At least one data source is needed for Apex to fully operate.

To add a data source:

1. In the web interface, click **Settings** > **Data Sources**.
2. Click **New**.
3. In the **Edit** pane, provide information about the data source and credentials to connect to it.
4. Click **Accept**.

The data source is added to Apex, and Apex attempts to communicate with the data source. The **Connection State** indicator shows the connection status in real time; it is not necessary to refresh the web page.

> **Note:** No network trending data is transferred during this process.

You *must* assign at least one data source to a business group to complete your configuration. This is because network trending data is only transferred to Apex after a data source is assigned to a business group. For details, see How to assign data sources.

How to create a business group

Business groups can be created to organize your data sources by department, location, multi-tiered application, or for other reasons. A business group with data sources is required for widgets and dashboards to display data.

To create a business group:

1. In the web interface, click **Settings** > **Business Groups**.
2. Click **New**.
3. Type a name for your business group.
4. Ensure **Trending Enabled** and **Selectable** are selected if you plan to have this new business group selectable and able to retrieve data from data sources.
5. (Optional) If you want to combine other business groups into this business group, use a drag-and-drop operation in the **Included Business Groups** tab.
6. (Optional) If you want to immediately add data sources, complete the following:
   a. In the **Edit** pane, click the **Data Sources** tab.
   b. Move a probe instance from **Available Data Sources** to **Selected Data Sources** using a drag-and-drop operation.

   You can repeat the drag-and-drop operation to assign more data sources to the business group.
7. Click **Accept**.

You successfully created a business group. You assigned, or will assign in the future, one or more data sources to the business group you created. All selectable business groups appear in a list in the upper-left corner of **My Dashboards**.

How to assign a data source

Data sources must be added to business groups before their data can be transferred to Apex.

Prerequisite(s):

You must have a data source before you can assign it to a business group. If you need to create a data source before continuing, see How to add a data source.

To assign a data source:

1. In the web interface, click **Settings** > **Business Groups**.
2. Begin editing a business group by clicking its name.
3. In the **Edit** pane, click the **Data Sources** tab.
4. Move a probe instance from **Available Data Sources** to **Selected Data Sources** using a drag-and-drop operation.

   You can repeat the drag-and-drop operation to assign more data sources to the business group.
5. Click **Accept**.

Apex contacts the data source to request and retrieve its trending data. The value of **Data transfer delay (minutes)** at **Settings** > **General Settings** controls the number of minutes to wait after **Data transfer period (minutes)** finishes before retrieving the trending data.

For example, if **Data transfer delay (minutes)** is set to **2** minutes, trending data from your assigned data source will begin transferring two minutes after the data source has finished its statistics collection interval.

How to create a dashboard

You can report on metrics that matter to you and your organization. Do this by creating a dashboard and populating it with widgets.

To create a dashboard and populate it with widgets:

1. In the web interface, click **Libraries** > **Dashboard Library**.
2. Click **Add**.

   The dashboard designer starts, indicated by the words "Drag and drop a widget here" and the appearance of rightmost tabs.

Figure 4: The dashboard designer can be identified by its rightmost tabs
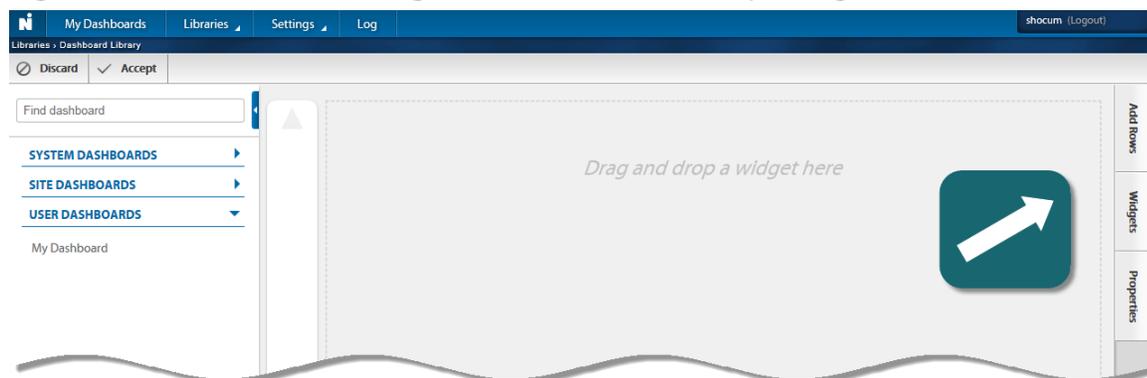
3. Click the **Widgets** tab to show all available widgets.

4. (Optional) Add more places to drop widgets using the **Add Rows** tab.

5. From the list, move a widget to the dashboard using a drag-and-drop operation.

6. Click **Accept**.

You successfully created a dashboard and populated it with one or more widgets. If data sources are configured and business groups are set, this dashboard will show data when run in the **My Dashboards** page.

How to send log events as SNMP traps

Events recorded in the Apex log can be sent as SNMP traps. Doing so allows you to monitor Apex activity and trigger automated processes to start when certain events occur.

Add new SNMP trap recipients by completing the following steps:

1. In the web interface, click **Settings** > **Log Settings**.

2. Select **Export logged events to an SNMP Trap**.

   The **SNMP Trap Configuration** area appears.

3. Provide details about your SNMP trap recipient(s) using the boxes and lists.

4. Click **Accept**.

Events recorded in the Apex log will now be sent as SNMP traps to SNMP recipients.

How to configure thresholds

In Apex, the default thresholds are pre-configured, so additional setup is rarely needed. If necessary, you can change them to better reflect your network conditions.

To configure a threshold:

1. In the web interface, click **Settings** > **Thresholds**.

2. Select one by clicking a table row.

   The editing pane appears.

3. Edit one or more of the following choices:

Threshold Type	**Threshold Type** sets whether the threshold is crossed above or below its marginal and critical values.
Marginal Value	**Marginal Value** determines if a statistic is slightly out-of-range for your network. Based on **Threshold Type**, 'marginal' is either above or below this value, and widgets display a yellow color if a '**Marginal Value**' is crossed.
	Performance based thresholds use actual values, while baseline thresholds use percentage values.
Critical Value	**Critical Value** determines if a statistic is greatly out-of-range for your network. Based on **Threshold Type**, 'critical' is either above or below this value, and widgets display a red color if a '**Critical Value**' is crossed.
	Performance based thresholds use actual values, while baseline thresholds use percentage values.

4. Click **Accept**.

You successfully configured a threshold to better reflect your network conditions.

How to create a user

User accounts allow people to view dashboards and create user widgets.

> **Note:** If you are using OMS, see How to add new users. The user name and password must be created there.

Any user created in Apex is local to Apex. It is not connected in any way to a domain user account or local system account. If you want or require that sort of integration you must use OMS.

Any local user wanting to log in to view or create dashboards must use the user name and password set here.

To create a user:

1. In the web interface, click **Settings** > **Users**.
2. Click ⊕.
3. Complete the fields using the information in User settings if necessary.
4. Click **Accept**.

The new user is created and is available to log in and begin using Apex.

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