Cisco Nexus Dashboard Insights Sites, Release 6.3.1 - For Cisco NDFC

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First Published: 2023-09-06

New and Changed Information

The following table provides an overview of the significant changes up to the current release. The table does not provide an exhaustive list of all changes or the new features up to this release.

Table 1. New Features and Changed Behavior in the Cisco Nexus Dashboard Insights

Feature	Description	Release	Where Documented
Reorganized Content	Content within this document was originally provided in the Cisco Nexus Dashboard Insights User Guide. Starting with release 6.3.1, this content is now provided solely in this document and is no longer provided in the Cisco Nexus Dashboard Insights User Guide.	6.3.1	

This document is available from your Cisco Nexus Dashboard Insights GUI as well as online at www.cisco.com. For the latest version of this document, visit Cisco Nexus Dashboard Insights Documentation.

Sites

About Sites

Sites are on-premises network regions that consist of a group of switches and other networking devices that provide connectivity for your applications and endpoints. You can split sites into different availability zones, such as pods, that are analyzed and managed by Nexus Dashboard Insights.

Types of on-premises sites

- Online sites: Multiple Nexus switches running ACI or NX-OS and represented by a controller such as APIC or NDFC and connected to Nexus Dashboard Insights to continuously stream telemetry. Types of online sites include:

  - ACI: Multiple Nexus switches with Cisco ACI and represented by a Cisco APIC.

  - NDFC: Multiple Nexus switches with Cisco NX-OS and represented by a Cisco NDFC.

- Snapshot sites: Controller-based sites, that are referenced by a snapshot, for use in one-time analysis or demonstrations. They're not connected to Nexus Dashboard Insights over the network.

To learn about how to prepare sites for onboarding, see Add Sites.

A NDFC site is comprised of a fabric running NX-OS that is either fully managed or only monitored by NDFC. All of the switches in the fabric can be analyzed as a part of the site. With a NX-OS based fabric, the fabric could be a NDFC managed fabric or it could be configured using other means such as CLI, Ansible, or any other configuration automation mechanism. For fabrics not using NDFC for configuration management, NDFC must be installed and the fabric must be discovered in read-only or monitor mode. Nexus Dashboard Insights uses NDFC for topology discovery and to identify the role of the switch in the fabric.

Once your site is onboarded and fully prepared, Nexus Dashboard Insights will start the site analysis to collect data from your site and display the site information in the **Sites** page. See Site Details. From there, you can view your site's general information, inventory, L2 and L3 connectivity, endpoints, anomalies and advisories and more! To learn more see Site Details.

Prerequisites

- You have configured DNS on the fabric.

- You have configured NTP on the fabric.

- You have configured in-band management network.

- You have configured out-of-band management on the controllers and switches.

- You have configured Fabric connectivity in Cisco Nexus Dashboard. See Cisco Nexus Dashboard Platform Overview.

- You have the supported software version for your fabric. See Nexus Dashboard and Services Compatibility Matrix.

- For snapshot sites, you have Python3 installed on your system.

Guidelines and Limitations

- Onboarding or monitoring NDFC sites with Change Control feature enabled in NDFC is not supported.

- You cannot onboard a NDFC site with remote authentication using the **Manually Add** option in Nexus Dashboard Insights. You must first add the NDFC site with remote authentication in Nexus Dashboard. You can then onboard the NDFC site using the **Ready to Add** option in NDI.

- Switch name or Host name should be unique across all the fabrics discovered in Nexus Dashboard Insights.

Add Sites

You can add a site to Nexus Dashboard Insights using the following methods:

- Online Sites

  - Enable the site that has already been added to Nexus Dashboard. Sites added to the Nexus Dashboard are not enabled in the services by default, so you will need to explicitly enable them directly from Nexus Dashboard Insights.

  - Add a site to Nexus Dashboard and then enable the site in a single workflow in Nexus Dashboard Insights.

- Snapshot sites

  - Add a snapshot site.

Add an Online Site

1. Navigate to **Operate** > **Sites**.

2. Click **Add Site**.

   a. If you are adding a site in Nexus Dashboard Insights for the very first time, you will receive the following message. Click **Add Site** to proceed.
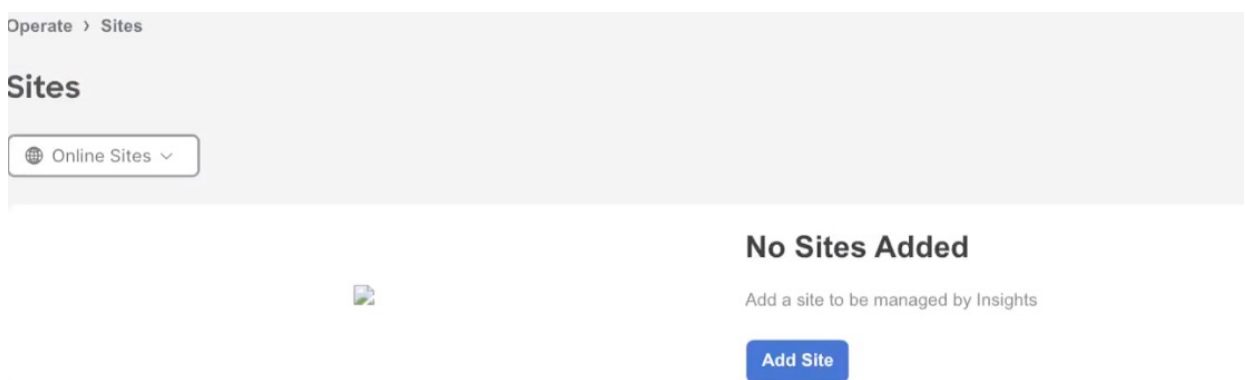
3. To enable a site that has been already added to Nexus Dashboard, select **Ready to Add**. The sites added to Nexus Dashboard are displayed. To add a site to Nexus Dashboard, see Cisco Nexus Dashboard Sites Management.
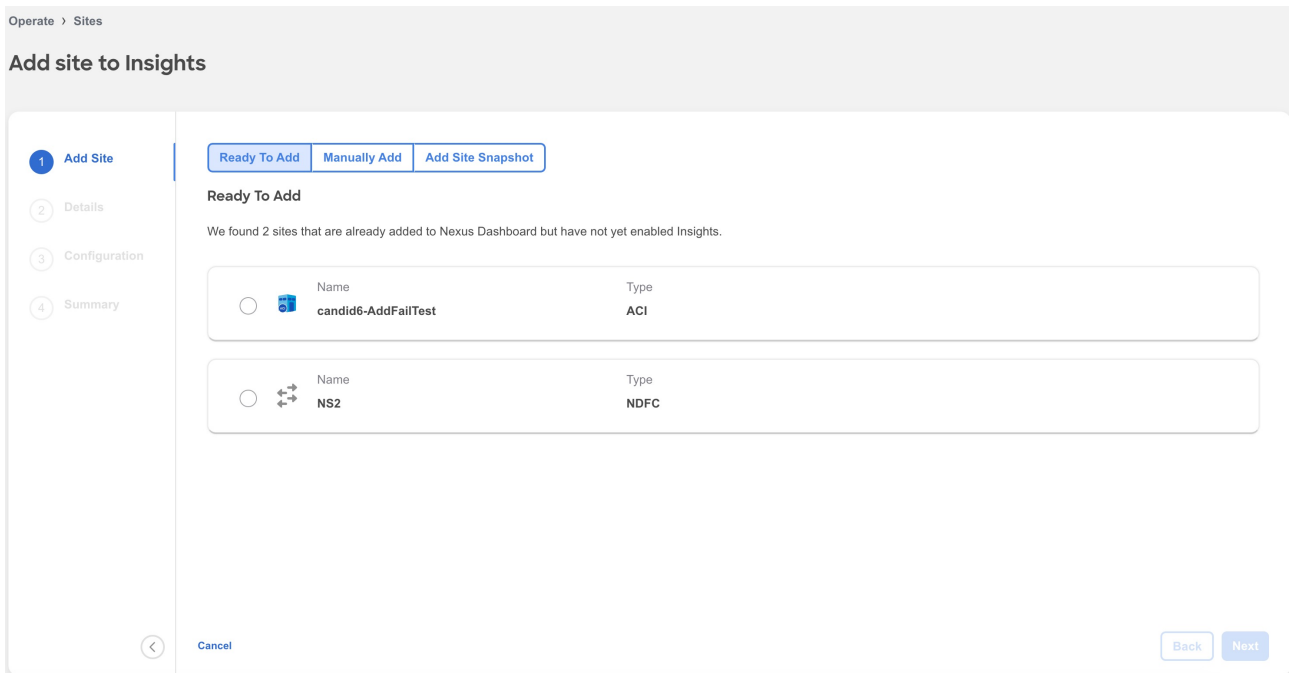
4. Complete the following fields for **Ready to Add**.

    a. Select the site.

    b. Click **Next**.

    c. Select the site location from the map to identify the site on Nexus Dashboard.

    d. Click **Next**.
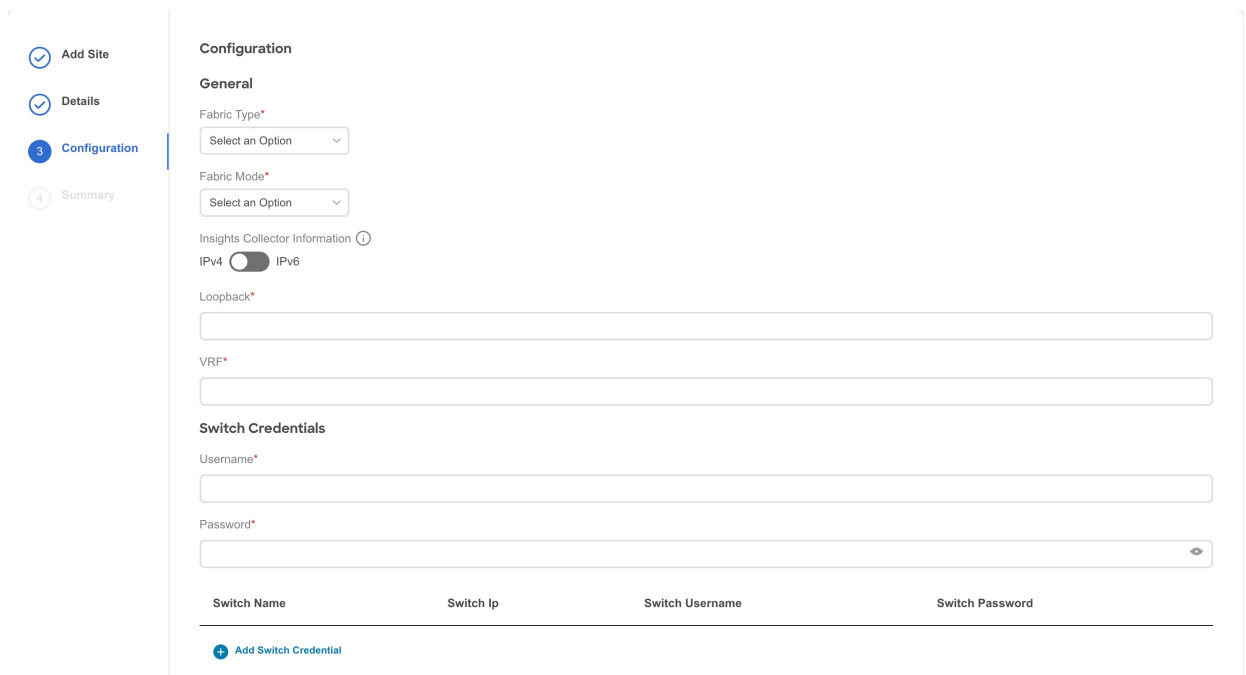
    e. From the **Fabric Type** drop-down menu, select the fabric type. The options are **Classic**, **VXLAN** or **SR-MPLS**. Choose SR-MPLS option to set up flows for SR-MPLS in a NX-OS fabric.

    f. From the **Fabric Mode** drop-down menu, select the fabric mode. The options are **Managed**

or **Monitored**. In Managed mode, Nexus Dashboard Insights will deploy telemetry configuration to all switches in the fabric. In monitored mode, Nexus Dashboard Insights will not deploy telemetry configuration to all switches in the fabric.

g. Use toggle to select IPv4 or IPv6 to onboard the site. Based on this setting, Nexus Dashboard Insights will configure its collector to receive telemetry from this site. This setting should match your sites IP address configuration.

h. In the **Loopback** field, enter the loopback configured on the switches that provide connectivity to the Nexus Dashboard in-band IP address.

i. In the **VRF** field, enter the VRF name associated with the loopback interfaces. This is the VRF that provides connectivity to the Nexus Dashboard in-band IP addresses.

> **ℹ** Default and non-default VRFs are supported. In VXLAN/EVPN fabrics they must be part of the underlay.

j. In the **User Name** and **Password** field for Switch Credentials, provide the login credentials for a LAN user with `admin` privileges on the switch you are adding.

k. Click **Add Switch Credentials** to add switches to the list and specify their credentials only if the switch credentials do not match the default credentials provided above.

   i. In the **Switch Name** field, enter the name for the switch.

   ii. In the **Switch IP** field, enter the IP address for the switch.

   iii. In the **Switch Username** field, enter the username for the switch.

   iv. In the **Switch Password** field, enter the password.

l. Check the check mark to complete to add your entries, and add additional switches as appropriate.

m. Click **Next**.

n. Verify the configuration.

o. Click **Submit**.

5. To add a site to Nexus Dashboard and then enable the site using Nexus Dashboard Insights, select **Manually Add**.

Add site to Insights

| 1 | Add Site | Ready To Add | Manually Add | Add Site Snapshot |

Manually Add

Add your site's host name/IP address and login information below to fetch your site and add it to Nexus Dashboard Insights.

Hostname*

Username*

Password*

Domain ⓘ

Cancel   Back   Next

6. Complete the following fields for **Manually Add**.

   a. In the **Hostname** field, enter the IP address used to communicate with the site's controller.

   b. In the **User Name** and **Password** field, provide the login credentials for a user with `admin` privileges on the site you are adding.

   c. In the **Domain** field, enter the controller login domain name.

   d. Click **Next**.

   e. Enter the site name to identify the site on Nexus Dashboard.

   f. Select the site location from the map to identify the site on Nexus Dashboard.

   g. Click **Next**.

   h. From the **Fabric Type** drop-down list, select the fabric type. The options are **Classic**, **VXLAN** or **SR-MPLS**. Choose SR-MPLS option to set up flows for SR-MPLS in a NX-OS fabric.

   i. From the **Fabric Mode** drop-down menu, select the fabric mode. The options are **Managed** or **Monitored**. In Managed mode, Nexus Dashboard Insights will deploy telemetry configuration to all switches in the fabric. In monitored mode, Nexus Dashboard Insights will not deploy telemetry configuration to all switches in the fabric.

   j. Use toggle to select IPv4 or IPv6 to onboard the site. Based on this setting, Nexus Dashboard Insights will configure its collector to receive telemetry from this site. This setting should match your sites IP address configuration.

   k. In the **Loopback** field, enter the loopback configured on the switches that provide connectivity to the Nexus Dashboard in-band IP address.

   l. In the **VRF** field, enter the VRF name associated with the loopback interfaces. This is the VRF that provides connectivity to the Nexus Dashboard in-band IP addresses.

   > **ⓘ** Default and non-default VRFs are supported. In VXLAN/EVPN fabrics they must be part of the underlay.

m. In the **User Name** and **Password** field for Switch Credentials, provide the login credentials for a LAN user with `admin` privileges on the switch you are adding.

n. Click **Add Switch Credentials** to add switches to the list and specify their credentials only if the switch credentials do not match the default credentials provided above.

    i. In the **Switch Name** field, enter the name for the switch.

    ii. In the **Switch IP** field, enter the IP address for the switch.

    iii. In the **Switch Username** field, enter the username for the switch.

    iv. In the **Switch Password** field, enter the password.

o. Check the check mark to complete to add your entries, and add additional switches as appropriate.

p. Click **Next**.

q. Verify the configuration.

r. Click **Submit**.

Add a Snapshot Site

1. Navigate to **Operate** > **Sites**.

2. Click **Add Site**.

3. To add a snapshot site, select **Add Site Snapshot**.

4. Click **Download Snapshot Script** to download the `data-collectors.tar.gz` to your machine.

5. Extract the file you downloaded and run the data collection script. Follow the instructions provided in the readme.md file. After the script is completed successfully, the data is collected in a `<filename>.tar.gz` file.

> ℹ️ The collection script requires that you have Python3 installed on your system.

6. Upload the file in Nexus Dashboard Insights and click **Next**

7. Enter the site name to identify the site on Nexus Dashboard.

8. Select the site location from the map to identify the site on Nexus Dashboard.

9. Click **Next**.

10. Verify the configuration.

11. Click **Submit**.

Once your site is onboarded and fully prepared, Nexus Dashboard Insights will start the analysis to collect data from your site and display the site information in the **Sites** page. See Site Details. The Site Analysis banner displays the progress of the analysis. The time to run the analysis depends on the size of the fabric.
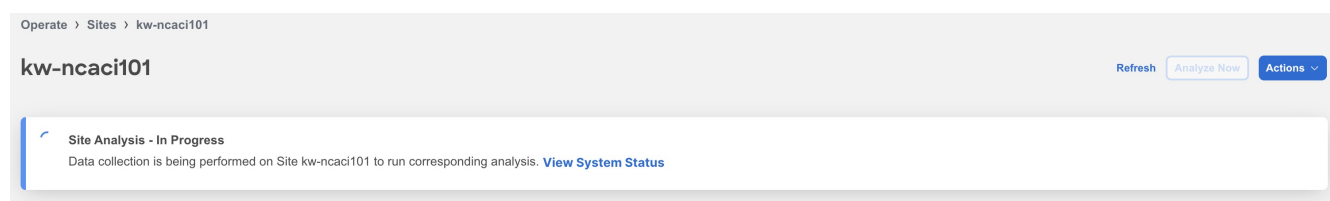
Site Details

In Nexus Dashboard Insights, **Global View** provides bird's eye view of your global network infrastructure for all your sites. The Sites page provides the details for an individual site.

Site Details in Global View

After you add the first site, **Global View** gives you a bird's eye view of your global network infrastructure for all your sites, their locations, and the key health metrics.

Navigate to **Overview**> **Global View**.

The map visually shows the physical location and total number of your sites in each continent, and their names. Click a site to jump directly to the details for that site, or scroll down to the Sites area to navigate to your site. You can also use the the zoom control icons in the page to change your view of the map.

See an at-a-glance summary for each individual site in the Sites area. It includes their anomaly and advisory health levels, site-external traffic with total data transferred, and connectivity data for endpoints and Layer 3 neighbors. To learn about sites in Global View, see Journey and Global View.

Individual Site Details

In the Sites page, you can dive into the details for an individual site, switch, or interface, with a comprehensive dashboard, simple topology, per-device summaries and more. You can also manage anomalies and advisories at a site level.

1. Navigate to **Operate** > **Sites**.

2. Select Online or Snapshot sites from the drop-down list.

3. Use the search bar to filter the sites. The Sites table, displays the site type, connectivity status, anomaly and advisory level, onboarding time.

4. Click the site name to view details for your site.

5. Click **Overview**.

a. In the The **Anomaly** and **Advisory** area you can view the status of your anomaly and advisory levels, and a list of your top anomaly and advisory categories.

   i. Click **Anomaly** to view the level, category, and count for your anomalies for the site.

   ii. Click the anomaly name to view additional details.

   iii. Click **Advisory** to view the level, category, and count for your advisories for the site.

   iv. Click the advisory name to view additional details.

b. The **General** area show you the type of site, the software version used, the connectivity status to Nexus Dashboard, conformance status, and onboarding time.

c. In the **External Traffic** area, you can see the External Traffic that the site has sent and received in the last 7 days. The donut helps view the how much traffic is sent and received by the site. Click the information icon to view more information about what External Traffic is and how it can be measured for the different types of sites.

d. In the **Interfaces** area, you can see the summary of the interfaces for the site. Click **Total** to view additional details such as Anomaly Level, Admin Status, Operational Status, and Interface Type. Click the interface name to view additional details.

e. In the **Connectivity** area, you can view details about your endpoints, and L3 neighbors.

f. In the **Inventory** area, you can view the summary of the controllers and switches for the site.

 i. Click **View Hardware Resources** to view the hardware resources for the site. Click and choose a resource from the **Top Devices By** drop-down list to see a graph for that resource. In the table that follows, see the resource usage by switch. Click the switch name to view additional details.

 ii. Click **View Capacity** to view the different resources with their maximum capacity and current usage. Site Summary shows you the trends for the week, as well as the capacity by resource for the entire fabric. You see the number of resources used out of the total available capacity for each resource in this site (for example, Bridge Domains 2829 of 15000). The percentage indicates the percentage of resource used. The Switch Summary displays the capacity breakout of resources by switch. The graph shows you the timeline for the parameter that you have selected from the **Top Switches By** drop-down list. In the table, click Operational Resources, Configuration Resources, or Hardware Resources, to see the capacity and usage for each switch in the site.

g. In the **Analytics Summary** area, you can view the summary of Traffic Analytics. You can visualize this information if you have enabled Traffic Analytics in **Flow Collection**.

6. Click **Inventory** to view the the controllers and switches information for the site. To learn more, see Inventory.

7. Click **Connectivity** to view the details of interfaces, endpoints, L3 neighbors, vPC Domains, flows for the site. To learn more, see Inventory. Starting from Nexus Dashboard Insights Release 6.3.1, you can also view Multicast Route details for a site. See Multicast Routes.

8. Click **Anomalies** to view all the anomalies for the site. To learn more, see Anomalies and Advisories.

9. Click **Advisories** to view all the advisories for the site. To learn more, see Anomalies and Advisories.

10. Click **Integrations** to view all the integrations associated with the site. To learn more, see Integrations.

11. Click **File History** to view he history of files that are attached to the snapshot site. It shows the file name, the file size, when the file was uploaded, upload status, and when the last analysis was run.

> ℹ️   File History is displayed only for snapshot sites.

a. For the currently active snapshot, which is the latest file that you uploaded, you can click **Run Analysis** to run the same snapshot analysis again. This can be useful when additional features are added and you want to re-run an analysis so that the additional features are included in your analysis.

b. You can also upload a snapshot file for the same site at a different time interval. Click **Upload File** to upload the file and then click **Run Analysis** to run the snapshot analysis.

Multicast Routes

Starting from Nexus Dashboard Insights Release 6.3.1, you can view Multicast Route details for NDFC sites.

> In the Multicast Dashboard, you can view the following information for a NDFC fabric:
>
> - Top groups by traffic
>
> - Top groups by receivers

Prerequisites

Ensure that you have executed the following commands on the Nexus switch.

```
switch(config)# hardware profile multicast flex-stats-enable

switch(config)# multicast flow-path export

switch(config)# copy running-config startup-config

switch(config)# reload
```

> ℹ️ You must also execute the command `copy running-config startup-config` and `reload` for the changes to take effect.

Guidelines and Limitations

- Multicast route is only supported on Cisco NX-OS Release 10.3(3)F and later.

- Multicast route is only supported for Classic VLAN Fabric.

- Multicast route is only supported for IPv4 addresses.

- Supported scale limits per site: 2000 multicast groups, 16000 S,G entries, 8K routed interfaces.

- When First Hop Router for multicast or the multicast source is configured outside the fabric, Multicast Routes are not displayed in the UI.

View Multicast Routes

1. Navigate to **Operate** > **Sites**.

2. Select Online or Snapshot sites from the drop-down list.

3. Click the site name to view the site details.

4. Choose **Connectivity** > **Multicast Routes**.

5. In the Multicast page, you can view the information such as multicast groups, sources sending to this group, sending rate per source, number of receivers for this group, VRF.

6. Click the multicast group to view additional information for sources and receivers.

    a. Click **Sources** to view information such as source IP address, switch name, interface

    b. Click **Receivers** to view information such as switch name,receiver count, uptime, L3 interface.

Working with Sites

1. Navigate to **Operate** > **Sites**.

2. To add a site, click **Add Site**. See Add Sites.

3. Select Online or Snapshot sites from the drop-down list.

4. Click the site name to view the Site Details.

5. From the Actions drop-down menu, select **Edit Site** to edit the site details. After you update the information, click **Save**.

6. From the Actions drop-down menu, select **View in Topology** to view the topology for the site.

7. From the Actions drop-down menu, select **System Status** to view the status of the data analysis for your site. See Getting Started.

8. To delete a site from Nexus Dashboard Insights, perform the following steps:

   a. From the Actions drop-down menu, select **Pause Telemetry Collection** to pause data collection.

   b. From the Actions drop-down menu, select **Remove from Insights** to remove the site. The site is removed from Nexus Dashboard Insights only and not from Nexus Dashboard.

9. From the Actions drop-down menu, select **Resume Telemetry Collection** to resume data collection.

10. Click **Analyze Now** to perform an on-demand analysis. Select the service such as Assurance, Bug Scan, or Best Practices and click **Run Now**. See Getting Started.

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