

## Page Title: cloud-virtualization-topology

On this page

Cloud, Virtualization, Software Defined Network (SDN) and Hyper Converged Infrastructure (HCI)  
Topology

Overview

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The Cloud, Virtual, SDN, and HCI device Topology in Motadata AIOps provides a comprehensive visual representation of your infrastructure, allowing you to understand the interconnections and dependencies between various devices and their underlying components. By visualizing the relationships between these elements, the topology map helps you monitor and optimize the performance and health of your environment.

Pre-requisites for a Cloud, Virtual, SDN, or HCI Device to be Detected in a Topology Map

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The device should be discovered and configured as a monitor in the system.

The topology map will be built as long as the polling is completed for monitors that fall under this category.

Vendors Supported for Cloud Infrastructure

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Amazon Web Service (AWS) Cloud

Microsoft Azure Cloud

Microsoft Office 365 Cloud (O365 Cloud)

Vendors Supported for Virtual Infrastructure

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Hyper-V

VMware

Citrix Xen

## Vendors Supported for Hyper Converged Infrastructure (HCI)

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Nutanix

## Vendors Supported for Software Defined Network (SDN)

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Cisco Catalyst SD-WAN

## Creating Cloud, Virtualization, SDN, and HCI Topology in Motadata AIOps

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The topology for Cloud, Virtualization, SDN, and HCI infrastructure is generated automatically based on polling data. Unlike network topology, a separate scan scheduler is not required.

This example shows a topology created for cloud infrastructure. The topology is automatically generated once polling data becomes available for the cloud components within the infrastructure.

The same process applies to Virtualization, SDN, and HCI components.

## Representation of Connections in SDN Topology

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In SDN topologies within Motadata AIOps, different types of connections are visually represented using

solid lines

and

dotted lines

:

Solid Lines

depict

controlled connections

between devices, indicating direct and managed communication pathways.

Dotted Lines

represent

tunnel connections

, showing routes or pathways established through tunnels for specific data flows.

This differentiation provides better visualization and understanding of how devices are connected and interact in an SDN environment.

## Page Title: how-does-topology-help

On this page

How Topology Maps help you

Topology maps are an essential tool for managing complex networks. They enable you to:

Visualize Infrastructure

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View the complete IT infrastructure

Easily locate the devices causing issues

Prepare easy-to-view topology maps by selecting the starting point for the scan

Monitor Critical Business Components

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Identify network elements that need immediate attention and start resolving these issues

Monitor Network Status and Performance

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Monitor status of network components and the network performance issues with just a single glance

Reflect latest status of the infrastructure using icons that represent the components of your infrastructure

View the details of the faulty device directly from network maps

Understand the hierarchy of the devices in your infrastructure

Judge the criticality of an issue by viewing the network layout on the map & identifying if a critical business component has been affected

Identify Alerts

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Identify alerts on any network component through color-coded icons in the topology map

Understand Interdependencies

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View the network devices, their interconnections, and their interdependencies

Monitor the network devices, identify failures in advance, and reduce the MTTR that in turn ensures better business continuity

Plan Capacity and Growth

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The topology map is a valuable resource for capacity planning and future growth. By understanding the relationships and dependencies within your network, you can assess the capacity of your infrastructure and plan for scalability. This enables you to make strategic decisions regarding network expansion, device upgrades, and resource allocation to meet the growing demands of your organization.

Optimize Network Performance

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By analyzing the topology map, you can identify areas of improvement and optimize network performance. The map provides insights into traffic patterns, device utilization, and network bottlenecks. With this information, you can fine-tune your network configuration, allocate resources more efficiently, and ensure optimal performance and reliability.

## Page Title: network-topology

On this page

Network Topology

Overview

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The network topology page in Motadata AIOps provides a comprehensive visual representation of your network infrastructure, enabling you to understand the interconnections and interdependencies between network devices. By displaying the relationships between switches, routers, firewalls, and other network components, the topology map helps you identify issues and quickly resolve them.

Pre-requisites for a Network Device to be Detected in a Topology Map

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The device should be discovered and configured as a monitor in the system.

All the devices need to be configured to be able to communicate with either an L2 (CDP, LLDP, SPM) or an L3 (OSPF, BGP, ISIS) protocol.

Protocols Supported for Topology Creation

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The protocols supported for creating a topology map of a network device are:

Layer 2 protocols

Cisco Discovery protocol

Link Layer Discovery protocol

Switch Port Mapping protocol

Layer 3 protocols

Open Shortest Path First protocol

Border Gateway protocol

Intermediate System to Intermediate System protocol

Creating Network Topology in Motadata AIOps

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The creation of a topology map for network devices in Motadata AIOps starts with the execution of a Topology Scan scheduler. This process begins from a seed point device, which is provided by the user in the scheduler. Once the scheduler starts executing the topology creation job in the background, Motadata AIOps uses the appropriate neighbor discovery protocols on the starting point device to find the peer nodes, identify the interface connection between the two devices and build the Topology map.

The creation of a Topology Map for network devices starts with the execution of a Topology Scan scheduler. The Topology creation starts from one node and moves on to find the peer nodes and the process goes on till the map is created.

Let us see in detail how this process works.

User creates a topology scan scheduler and specifies the entry point or the seed device around which they want to create the topology.

The Topology creation job is executed in the back end as per the schedule. AIOps uses the appropriate neighbor discovery protocol on the seed device to find the peer(s) connected to it.

The interface connection between the seed device and the peer device is identified and this relation is then stored in a file known as â€Dependency Mapâ€™™ in the back end. These relations could be seen at the UI level at

Settings

>

AIOps

>

Parent Child Dependency Mapper

AIOps then uses the neighbor discovery protocols recursively to create the topology map

The navigation panel is created based on the seed device selected for creating the Topology. i.e., the seed devices are present on the navigation panel to view the Topology created for that device.

Now, let us see how to schedule a topology scan in the next section.

Navigation

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Go to Menu, Select

Settings

. After that, Go to

Monitoring Settings

. Select

Topology Scanner

. The page to configure the topology scan scheduler is now displayed.

Select

to start creating a scheduler for network topology. A pop-up asking for scheduler details is displayed.

Topology Scan Scheduler

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Enter the details in the pop-up to create the scheduler as follows:

Field

Description

Entry point

Select the entry point around which you want to build the topology. The topology scan runs with this point as a starting point, querying this device, subsequently drawing the links from this device to other connected devices, and showing the connectivity of all the devices on your infrastructure.

Scheduler Type

Select the frequency (

Once

,



Daily

,

Weekly

, and

Monthly

) at which you want the Topology scan to run.

Start Date

Select the date on which the topology scan should start.

Hours

Select the time at which the topology scan should start.

Days

Select the days on which the topology scan should run. This parameter is available only when you select the

Scheduler Type

as

Weekly

.

Months

Select the months in which the topology scan should run. This parameter is available only when you select the

Scheduler Type

as

Monthly

.

Dates

Select the dates on which the topology scan should run. This parameter is available only when you select the

Scheduler Type

as

Monthly

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Exclude

- Select

IP

if you wish to exclude a specific IP from the topology scan.

- Select

IP Range

if you wish to exclude a range of IPs from the topology scan.

Enter one or more IPs

Kindly enter the IP or a range of IPs based on your selection in the Exclude field.

Link Layer

Select the layer (

L2

or

L3

) at which you want the topology map to be built.

Protocol

The Protocol will be auto-selected based on the

Link Layer

you have selected in the previous option. You can change the selected protocols once you have specified the Link Layer.

Notify via Email

Enter the email addresses that should receive a notification when the topology scan starts.

Notify via SMS

Enter the contact number(s) that should receive a notification when the topology scan starts.

Select the

Create Scheduler

button to create the scheduler with the values entered.

Select the

Reset

button to erase all the current field values, if required.

Once the topology scan runs on the scheduled time and is executed successfully, the topology map will be created and available to view on the topology screen

.

You can also run a scheduler instantaneously from the

Topology Scanner

screen by clicking on

for the scheduler you want to run.

Creating a network topology map helps you visualize complex networks in a comprehensive manner and better understand the hierarchy of your infrastructure components. It enables you to view the complete IT infrastructure, monitor the status of network components, and identify network elements causing any issue. In addition, topology maps are dynamic and updated when actual components in your infrastructure change, making it easier to find and resolve issues in your infrastructure.

## Page Title: topology-overview

On this page

Topology

Overview

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Motadata AIOps offers a customizable visual representation of your network infrastructure through a Topology map. This dynamic map allows you to easily understand the relationships between different network elements, even in large and complex networks that are constantly changing.

As networks become larger and more complex, achieving optimal performance and network health to ensure business continuity can become challenging. This is where a network topology map comes in handy. The Topology map provides a comprehensive visual of your network infrastructure, making it easier to identify potential issues and their root causes.

Here, you can see an example of a topology for an AWS cloud infrastructure.

The Topology map is dynamic, reflecting the current state of your system without requiring manual changes when your infrastructure components change. The map displays the latest links and device statuses, subject to the timely run of the topology scanner.

The Topology map shows the relationships between different infrastructure components, including switches, routers, firewalls, virtual devices, and cloud services. These real-time topology maps provide a complete view of your IT infrastructure, allowing you to quickly locate the root cause of any issues and determine the best course of action to resolve them.

In summary, the Topology map in Motadata AIOps provides a customizable and dynamic visual representation of your infrastructure that enables you to gain a better understanding of your network, locate issues quickly and efficiently, and make informed decisions about how to resolve them.

Topology Types Based on Infrastructure

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Motadata AIOps provides two types of Topology maps based on the infrastructure type: Topology creation for Network Infrastructure and Topology creation for Cloud and Virtual Infrastructure.

### Network Topology

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This type of Topology map is used to visualize and manage traditional network infrastructure

components such as switches, routers, firewalls, servers, and other network devices. The Topology map shows how these devices are interconnected and how data flows between them. This makes it easier to identify any potential bottlenecks, points of failure, or security vulnerabilities within the network infrastructure. You can use the Topology map to monitor the performance of your network devices, visualize the dependencies between them, and troubleshoot any issues that arise.

### Cloud and Virtualization Topology

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This type of Topology map is designed to visualize and manage

HCI Components, SDN Components, Cloud-based infrastructure components , Virtual devices, and Cloud Services like Amazon Web Services, Microsoft Azure, and Office 365

. The Topology map shows how these components are connected to each other and how data flows between them. You can use the Topology map to monitor the performance of your infrastructure, identify potential security risks, and troubleshoot issues.

By providing both types of Topology maps, Motadata AIOps enables you to gain a comprehensive view of your entire infrastructure, regardless of its composition. This allows you to easily identify issues, monitor performance, and make informed decisions to optimize your network and cloud infrastructure.

## Page Title: using-the-topology-map

On this page

Using the Topology Map

Overview

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The Topology screen in Motadata AIOps provides powerful functionalities to analyze and gain valuable insights from your infrastructure. With organized topologies based on infrastructure, visual representation of topology maps, color-coded monitor nodes to indicate alerts, and drill-down capabilities on monitors, this screen empowers you to optimize network performance, address issues efficiently, and ensure seamless operations.

Organized Topologies Based on Infrastructure

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The Topology screen provides a structured way of organizing topologies based on different infrastructure types. Whether it's network infrastructure, cloud services, or virtual devices, you can easily navigate through the menu to access the specific topology maps you need for analysis. This intuitive organization ensures a efficient process of accessing and exploring the relevant topology maps.

Visualize and Analyze Topology Maps

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With the Topology screen, you can conveniently view and analyze the topology maps created for your infrastructure. These maps visually represent the relationships and interconnections between various components, giving you a comprehensive understanding of your network layout. By examining the topology maps, you can make informed decisions to optimize your network performance.

Color-Coded Monitors to indicate alerts for Quick Identification

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Topology maps on the screen have color-coded monitor nodes to indicate the highest severity alert associated with each monitor. This allows you to quickly identify critical issues that require immediate attention. The color-coded monitor nodes provide an at-a-glance overview of the overall health of your network infrastructure, enabling you to prioritize and address the most impactful issues promptly.

#### Drill Down for Detailed Monitor Information

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The Topology screen enables you to drill down into each monitor on the map to access detailed information. By clicking on a specific monitor, you can view comprehensive details about its status, performance metrics, and associated alerts. This feature empowers you to investigate and troubleshoot issues efficiently, gaining deeper insights into the health and performance of your network components.

#### Drill Down for Detailed Link Information

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The Topology screen enables you to drill down into each link on the map to access detailed information. By clicking on a specific link, you can view comprehensive details about its status, information about source and target monitors, exhaustive information about status, along with details of In and Out traffic. Users can also drill down to interface level by clicking on the Interface name.

#### Search Specific Monitors

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Search for a monitor in the search bar above the screen to bring it into focus. This allows you to highlight and examine its parent and child relationships within the topology. The search functionality in the Topology screen enables you to quickly locate a specific monitor or device of interest. When you find and select a monitor, the topology map adjusts to emphasize the connections and dependencies associated with that particular monitor.

By using the search feature, you can gain a deeper understanding of how the selected monitor is

interconnected with other devices in your network. This helps you analyze the hierarchical relationships and visualize the impact of the monitor on its parent and child components. Whether you're investigating a specific issue or exploring the overall network structure, the ability to search for and focus on a monitor provides valuable insights and facilitates comprehensive network analysis.

### Controlling Layer 3 Device Visibility

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In the Topology screen of Motadata AIOps, you have the flexibility to control the visibility of Layer 3 devices through a convenient switch. This feature empowers you to decide whether you want to view Layer 3 devices on the network topology map or not, based on your specific analysis requirements.

Toogle the switch

Layer 3

to

ON

present above the topology screen to view the layer 3 devices.

### Viewing Maps in Two Perspectives: Tree View and Full View

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Motadata AIOps offers users the ability to view topology maps in two distinct perspectives: the Tree View and the Full View. These views provide valuable insights into your infrastructure's components and their parent-child relationships. By understanding these relationships, users can effectively analyze the interconnectedness of their infrastructure and make informed decisions regarding performance optimization and issue resolution.

Tree View

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The Tree View in Motadata AIOps represents the parent-child relationships between components in your infrastructure in the form of a hierarchical tree structure. This view visually organizes your



infrastructure, showcasing how different components are connected to each other. Each component is represented as a node in the tree, with parent components located above and child components below. This intuitive representation helps users comprehend the flow of data and dependencies within their infrastructure. By navigating the tree, users can easily identify the relationships between components and detect potential bottlenecks or vulnerabilities.

## Full View

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The Full View in Motadata AIOps provides a comprehensive representation of your infrastructure's topology as it is scanned. This view presents the entire infrastructure, including all components and their connections, in a single, unified visual layout. With the Full View, users can observe the complete picture of their infrastructure, enabling them to identify critical components, analyze dependencies, and gain insights into the overall health and performance of their environment. This holistic perspective helps users identify potential points of failure, optimize resource allocation, and ensure efficient functioning of their infrastructure.

## Choosing the Appropriate View

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Both the Tree View and the Full View have unique advantages and are valuable in different scenarios. The Tree View is particularly useful when you want to focus on specific components or analyze parent-child relationships within your infrastructure. On the other hand, the Full View is ideal for obtaining a high-level understanding of your entire infrastructure's topology and gaining insights into the overall system architecture.

Motadata AIOps empowers users to explore their infrastructure's topology maps through the Tree View and the Full View. These perspectives provide valuable visualizations of component relationships, aiding in troubleshooting, optimization, and decision-making. Whether you need to delve into specific parent-child relationships or gain a comprehensive overview of your infrastructure, the Tree View and the Full View in Motadata AIOps offer the flexibility and insights you require.