MagicFlex Smart Analysis v4.2
User Guide

MagicFlex Smart Analysis

Contents

1 Overview

MagicFlex Smart Analysis is a tool that analyzes, monitors, and troubleshoots data center devices. MagicFlex has out-of-the-box configuration, state, performance, and correlation analysis. You can configure MagicFlex to generate alert notifications that are sent by email or SNMP.

You install MagicFlex on a virtual machine. For more information about installing and configuring MagicFlex, see *MagicFlex Smart Analysis Installation Guide v4.2*.

MagicFlex uses SSL for secure communication.

1.1 Supported Devices

MagicFlex Smart Analysis v4.2 automatically detects the associated devices, and supports the following devices.

- HPE Virtual Connect interconnect devices (VCM and OneView)
- HPE BladeSystem c-Class Enclosure
- HPE Synergy Enclosure (OneView)
- HPE H3C Ethernet switches
- Cisco Catalyst Ethernet switches
- Cisco Nexus switches 5000 series and 7000 series
- Brocade SAN switches, including OEM branded switches
- Cisco MDS SAN switches
- VMware vCenter

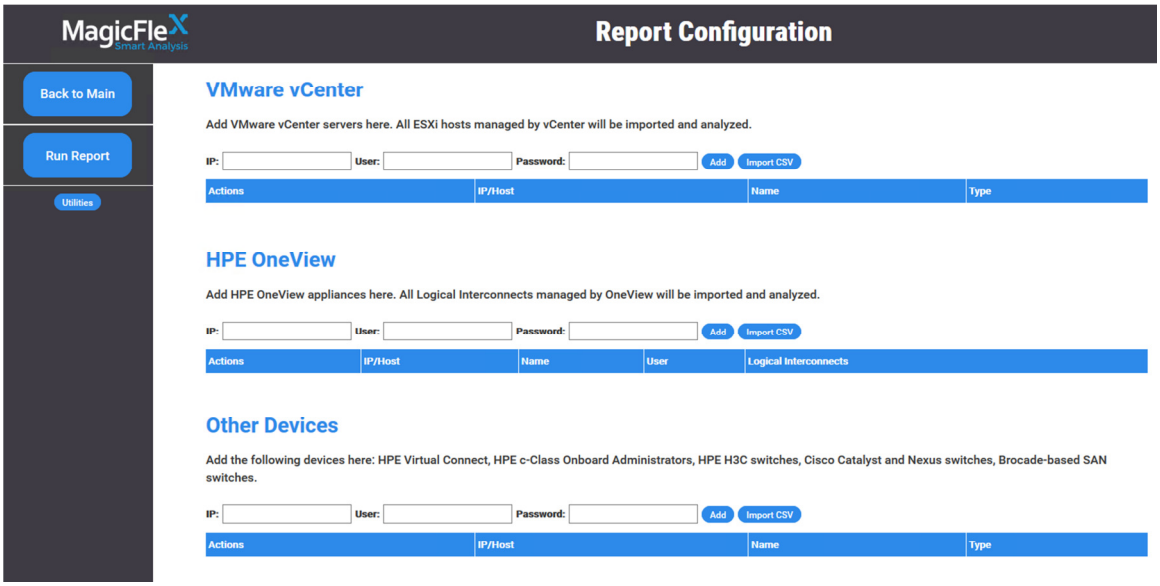
> **Note**
>
> You must add VMware vCenter and HPE OneView appliances manually. For more information, see the *MagicFlex Smart Analysis Installation Guide v4.2*.

2 MagicFlex Summary Report

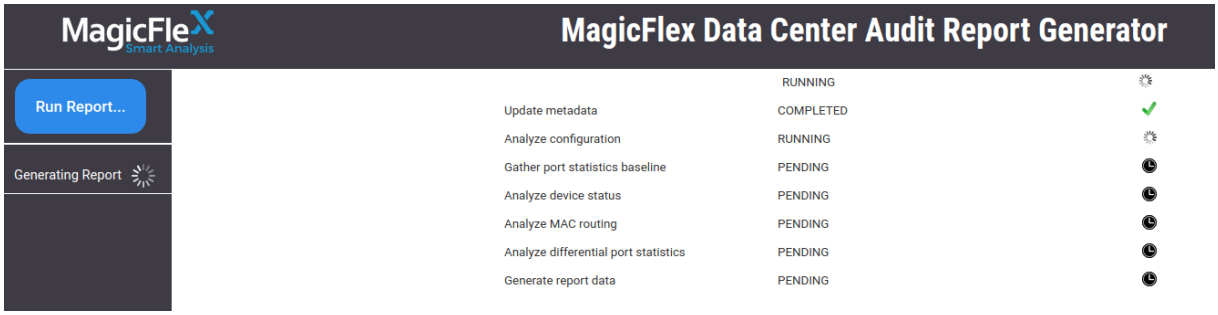
2.1 Creating Summary Report

To generate a sample report, you must first deploy the MagicFlex appliance and add the relevant devices (Virtual Connect, OneView, VMware vCenter, Onboard Administrator, SAN Switches, LAN Switches). For details of how to do this, please see the *MagicFlex Smart Analysis Installation Guide v4.2*.

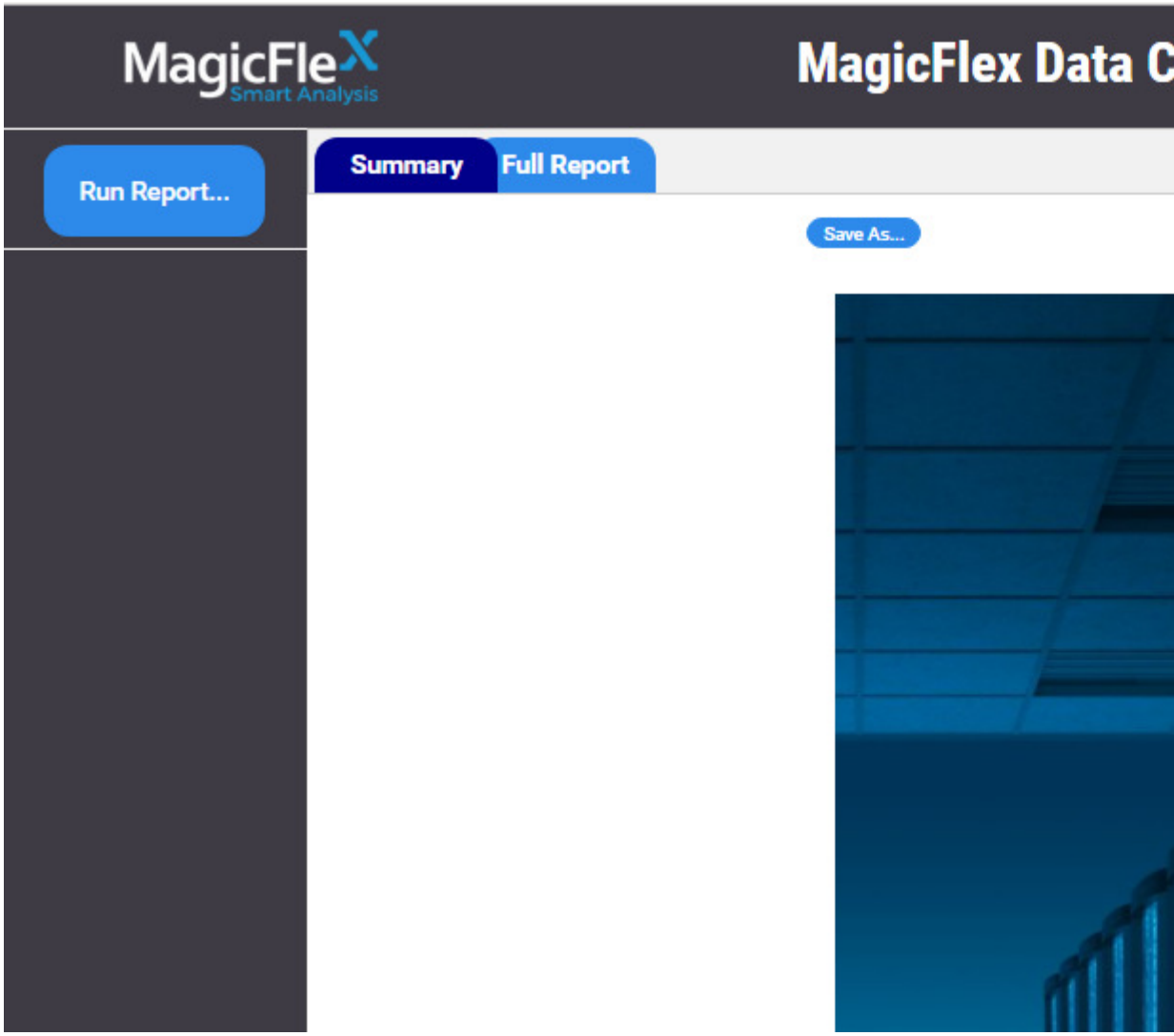
To run the report, click on the Run Report option from the Report Configuration screen:



The following screen will be displayed, showing you the progress of the Report Generation. This step will take several minutes, depending upon the number of devices.



Once the report generation process is complete, you will be brought to Summary tab, which allows you to view, save, or print the summary report.



2.2 Understanding Report Layout

The report is divided into a number of sections:

- Table of Contents
- Recommendation Highlights
- Inventory
- Alerts

In the **Recommendation Highlights** section, the following data center high-level analytical findings are presented, including:

- Executive Summary
  - Data Center Health Score
  - Data Center Alert Summary
- Trends Current vs. Last Scans
- Type of Issues Summary
- Severity by Category Issues Summary
- Type of Issues by Vendor Summary
- Suggestive Corrective Effort
- Impact by Type of Issue

In the **Inventory** Section, the following information is displayed:

- Connectivity Map
- Device Versions:
  - Virtual Connects
  - OneView
  - SAN Switches
  - LAN Switches
  - Virtualization
  - Servers

In the **Alerts** section, samples of alerts discovered by MagicFlex are shown, including the alert details, device impacted, suggest corrective action, and impact of the fix. Sample means one detailed instance of the issue found, and an indication of the total number of instances this specific issue is found throughout the data center.

For details of how to view a Full Report, which includes the details of ALL instances of discovered issues, please see Section 3 of this manual.

Alerts are broken down by type:

- Best Practice Violations
- Configuration Issues
- Errors
- Known Issues

and by device:

- Virtual Connects

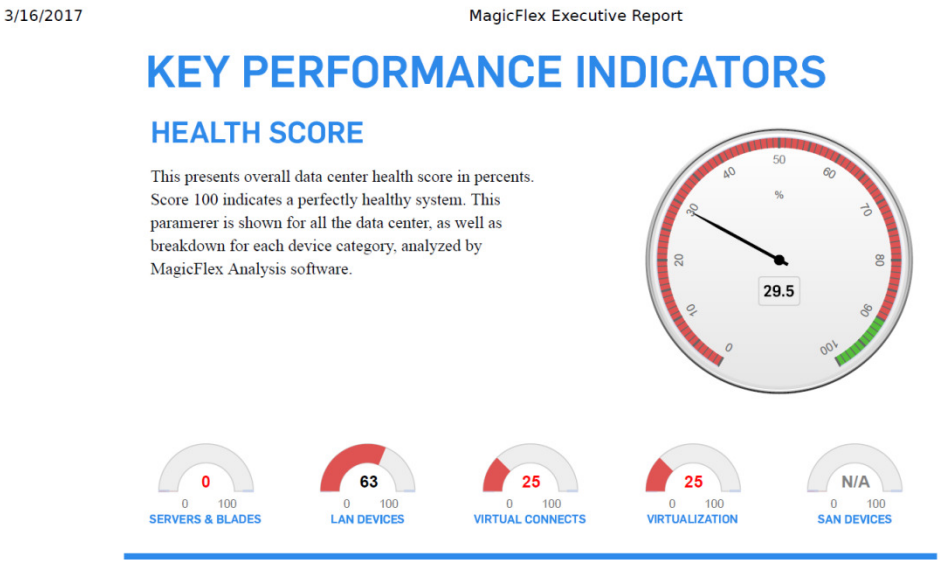
- OneView
- SAN Switches
- LAN Switches
- Virtualization
- Servers

2.3 Executive Summary

The executive summary section is comprised of a number of parts.

2.3.1 Key Performance Indicators

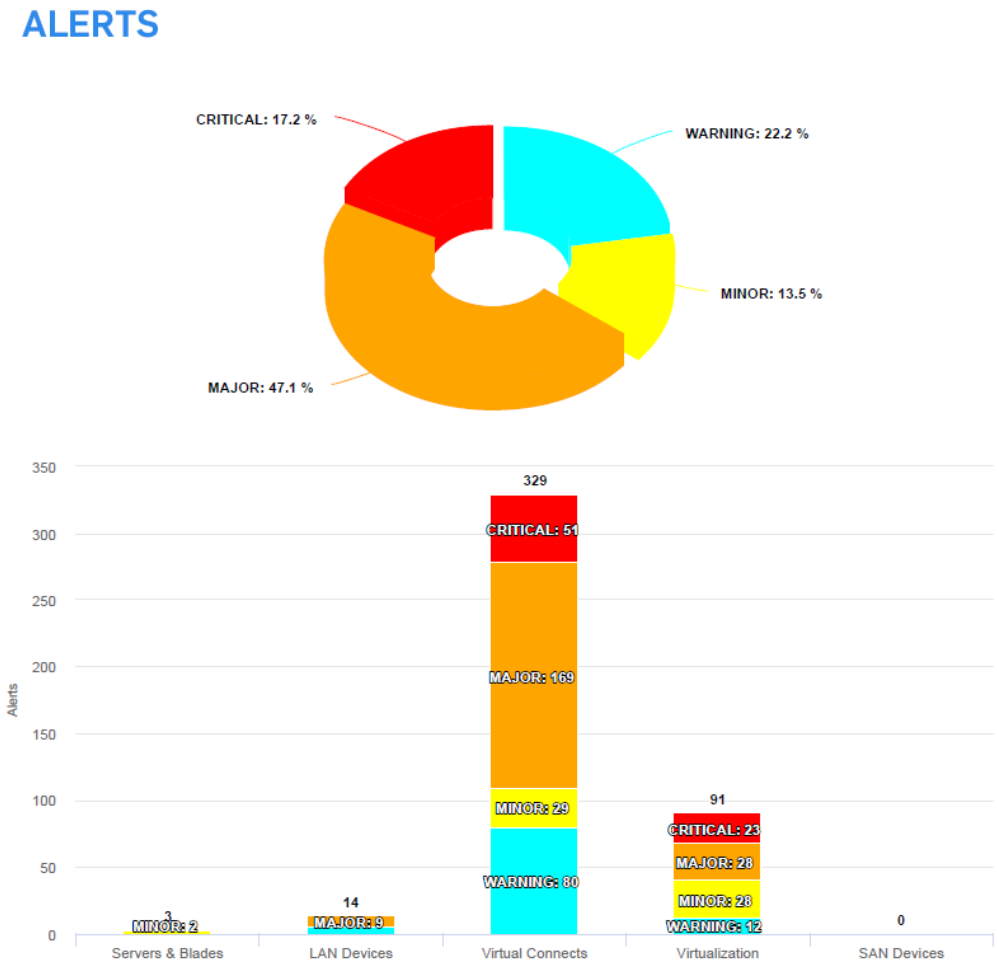
The highlights section shows an indication of the health of the overall data center, as well as a breakdown by device type. A score of 100 is a perfect score; all discovered issues lower this overall score.



2.3.2 Alerts Summary

2.3.2.1 Overall Alerts

This area breaks down the overall alerts identified in the data center by severity. In addition, the total alerts per device type is also displayed with severity level emphasized.



2.3.2.2 Trends Current vs Last Scans

The table below gives an indication of trends in alerts found in the data center, broken down by device. The current column shows the results from the most

recent MagicFlex scan. The Last Q column indicates the results of the previous scan. A total of five scan results can be displayed.

Trends Current vs. Last Scans

Devie Type	Current	Last Q	Last 2Q	Last 3Q	Last 4Q
LAN Devices	15	-	-	-	-
SAN Devices	0	-	-	-	-
Virtual Connect Devices	519	-	-	-	-
Virtualization	115	-	-	-	-
Server and Blade Systems	3	-	-	-	-

2.3.2.3 Types of Issues Summary

This table summarizes types of issues found, per device type.

The types of issues include:

- Best Practice Compliance – Violations of Best Practice
- Known Issue – Vendor has issued a Customer Advisory for this Issue
- Configuration Issues - Misconfigurations
- Cross Version Conflicts – Conflicts in versions across Devices
- Errors - Port statistics alerts, status of devices, etc
- Other - Uncategorized alerts

Type of Issues Summary

Device Type	Best Practice Compliance	Known Issues	Configuration Issues	Cross Version Conflicts	Errors	Other
LAN Devices	3	0	9	0	3	0
SAN Devices	0	0	0	0	0	0
Virtual Connect Devices	18	185	170	19	106	21
Virtualization	26	7	55	18	0	9
Server and Blade Systems	0	0	1	2	0	0

2.3.2.4 Severity by Category Issues Summary

This table summarizes severity of issues found, per device type.

Severity includes:

- Critical – Problem should be addressed immediately – service affecting
- Major - Issues that may lead to serious/critical issues

- Minor - Probably not affecting service, but may potentially lead to other issues
- Warning - Services are not affected, but this is a potential issue
- Info - Informative recommendations

Severity by Category Issues Summary

Device Type	Critical	Major	Minor	Warning	Info
LAN Devices	0	9	0	5	1
SAN Devices	0	0	0	0	0
Virtual Connect Devices	51	169	29	80	190
Virtualization	23	28	28	12	24
Server and Blade Systems	1	0	2	0	0

2.3.2.5 Types of Issues by Vendor Summary

This table summarizes type of issues found, per vendor.

The types of issues include:

- Best Practice Compliance – Violations of Best Practice
- Known Issue – Vendor has issued a Customer Advisory for this Issue
- Configuration Issues - Misconfigurations
- Cross Version Conflicts – Conflicts in versions across Devices
- Errors - Port statistics alerts, status of devices, etc
- Other - Uncategorized alerts

Type of Issues by Vendor Summary

Vendor	Best Practice Compliance	Known Issues	Configuration Issues	Cross Version Conflicts	Errors	Other
Brocade	0	0	0	0	0	0
Hewlett-Packard Enterprise	18	185	179	21	107	21
Cisco	3	0	3	0	2	0
VMware	26	7	55	18	0	9

2.3.2.6 Suggestive Corrective Effort Summary

This table summarizes the suggestive corrective effort, per device.

Corrective Efforts include:

- Upgrade – A software upgrade is required
- Configuration – A configuration change is required
- Hardware – Hardware must be examined
- Vendor – Vendor needs to be contacted

- Awareness – A state that the user should be aware of and take into account
- Operation – Operation action (non-configuration related) required, such as reboot
- Other – Uncategorized

Suggestive Corrective Effort

Device Type	Upgrade	Configuration	Hardware	Vendor	Awareness	Operation	Other
LAN Devices	0	11	0	3	0	2	0
SAN Devices	0	0	0	0	0	0	0
Virtual Connect Devices	223	185	1	31	0	14	65
Virtualization	34	81	0	0	0	0	0
Server and Blade Systems	2	2	0	0	0	0	0

2.3.2.7 Impact by Type of Issue

This table summarizes the impact of the issue, per device.

Impacts include:

- Performance – System performance may be degraded
- Redundancy – System redundancy is jeopardized
- Downtime – Issue is causing downtime
- Potential Downtime – Issue may cause downtime
- Decision – Should take into account while making future decisions
- Best Practice – System is not complying with best practice recommendations
- Security – System security is jeopardized
- Data Loss – System may experience data loss
- Other - Uncategorized

Impact by Type of Issue

Device Type	Performance	Redundancy	Downtime	Potential Downtime	Decision	Best Practice	Security	Data Loss	Other
LAN Devices	0	0	0	10	0	0	1	2	3
SAN Devices	0	0	0	0	0	0	0	0	0
Virtual Connect Devices	0	16	0	175	1	29	16	0	282
Virtualization	6	0	0	62	0	23	15	0	9
Server and Blade Systems	0	0	0	2	0	0	0	0	2

2.3.2.8 Resolution Efforts vs Risks Summary

This table summarizes the total efforts as related to the risk, per device.

Risks include:

- Estimated Effort to Resolve – Total amount of time to resolve issues
- Resolution Downtime Estimate – Amount of the resolution time that will include system downtime
- Total Alerts
- Performance Impact if not Resolved – Whether performance will be degraded if problem is not resolved
- Downtime Risk if not Resolved – Whether there is a risk of downtime if issue is not resolved
- Data Loss Risk of not Resolved - Whether there is a risk of data loss if issue is not resolved
- Security Risks if not Resolved - Whether there is a security risk if issue is not resolved

Resolution Effort vs Risks

Device Type	Estimated Effort to Resolve	Resolution Downtime Estimate	Total Alerts	Performance Impact if not Resolved	Downtine Risk if not Resolved	Data Loss Risk if not Resolved	Security Risk if not Resolved
LAN Devices	1 hours 45 min	None	16	No	Yes (10 alerts)	Yes (2 alerts)	Yes (1 alert)
SAN Devices	None	None	0	No	No	No	No
Virtual Connect Devices	339 hours 45 min	59 hours 30 min	519	No	Yes (175 alerts)	No	Yes (16 alerts)
Virtualization	38 hours 35 min	25 hours 40 min	115	Yes (6 alerts)	Yes (62 alerts)	No	Yes (15 alerts)
Server and Blade Systems	1 hours 10 min	None	4	No	Yes (2 alerts)	No	No

2.4 Inventory

The Inventory Section displays the network and neighborhood maps, as well as displays the data center inventory.

2.4.1 Network Map

The network map displays the interconnections between the enclosures and SAN/LAN switches.

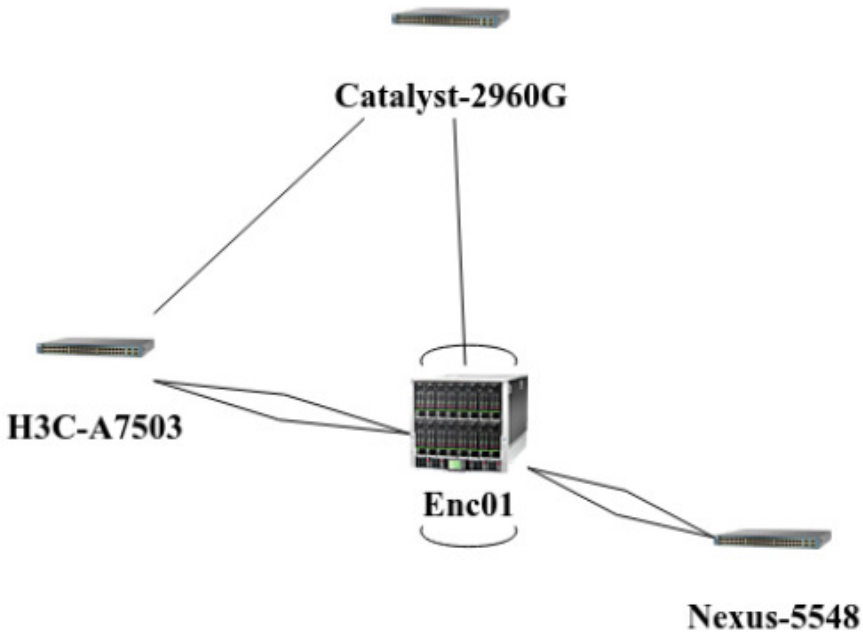
Connectivity Map

2.4.2 Neighborhood Map

The neighborhood map shows a portion of the network map, with the enclosure being the point of reference, and indicating all SAN/LAN switches that are directly connected to the enclosure.

MagicFlex Smart Analysis

Neighbourhood map for Enc01



2.4.3 Inventory

The inventory section describes the hardware and software version present in the data center, broken down by device type, including: LAN Devices, Virtual Connect Devices, OneView, Virtualization, Server & Blade Systems, and SAN Devices

The inventory information includes:

- Device Name
- Vendor
- Model
- Version

LAN Devices

Device Name	Vendor	Model	Version
H3C-Comware7-01 → 1	Hewlett-Packard Enterprise	S5820V2-54QS-GE	7.1.059
Nexus-5548	Cisco	Nexus-5548	5.0(3)N2(2b)
H3C-A7503 → 0	Hewlett-Packard Enterprise		5.20.105
Catalyst-2960G	Cisco	WS-C2960G-48TC-L	15.0(2)SE4
H3C-Comware7-02 → 1	Hewlett-Packard Enterprise	S5820V2-54QS-GE	7.1.059
H3C-Comware7-03 → 1	Hewlett-Packard Enterprise	S5820V2-54QS-GE	7.1.059

Virtual Connect Devices

Device Name	Vendor	Model	Version
VC-4.20-Dev → enc0 → enc0:5	Hewlett-Packard Enterprise	HP VC 8Gb 24-Port FC Module	1.11
VC-4.20-Dev → enc0 → enc0:6	Hewlett-Packard Enterprise	HP VC 8Gb 24-Port FC Module	1.11
VC-4.20-Dev → enc0 → enc0:3	Hewlett-Packard Enterprise	HP VC Flex-10/10D Module	4.20 2009-10-07T10:16:12Z
VC-4.20-Dev → enc0 → enc0:2	Hewlett-Packard Enterprise	HP VC FlexFabric-20/40 F8 Module	4.20 2009-10-07T10:16:12Z
VC-4.20-Dev → enc0 → enc0:4	Hewlett-Packard Enterprise	HP VC Flex-10/10D Module	4.20 2009-10-07T10:16:12Z
VC-4.20-Dev → enc0 → enc0:1	Hewlett-Packard Enterprise	HP VC FlexFabric-20/40 F8 Module	4.20 2009-10-07T10:16:12Z
OVDCS-Enc06-LIG06 → OVDCS-Enc06 → OVDCS-Enc06:2	Hewlett-Packard Enterprise	HP VC FlexFabric 10Gb/24-Port Module	4.10

Virtualization

Device Name	Vendor	Model	Version
vCSASRM01.lab.magic-flex.com → esxisrm01.lab.magic-flex.com	VMware, Inc.	VMware ESXi	6.0.0
vCSA55.lab.magic-flex.com → esxi55dev01.lab.magic-flex.com	VMware, Inc.	VMware ESXi	5.5.0
vCSA55.lab.magic-flex.com → esxi55nested01.lab.magic-flex.com	VMware, Inc.	VMware ESXi	5.5.0
vCSA6.lab.magic-flex.com → esxiprod01.lab.magic-flex.com	VMware, Inc.	VMware ESXi	6.0.0
vCSA6.lab.magic-flex.com → esxi6nested01.lab.magic-flex.com	VMware, Inc.	VMware ESXi	6.0.0
vCSA6.lab.magic-flex.com → esxiprod03.lab.magic-flex.com	VMware, Inc.	VMware ESXi	6.0.0
vCSA6.lab.magic-flex.com → esxiprod07.lab.magic-flex.com	VMware, Inc.	VMware ESXi	6.0.0
vCSA6.lab.magic-flex.com → esxiprod50.lab.magic-flex.com	VMware, Inc.	VMware ESXi	6.0.0
vCSA6.lab.magic-flex.com → esxiprod05.lab.magic-flex.com	VMware, Inc.	VMware ESXi	6.0.0
vCSA6.lab.magic-flex.com → esxiprod02.lab.magic-flex.com	VMware, Inc.	VMware ESXi	6.0.0
vCSA6.lab.magic-flex.com → esxiprod06.lab.magic-flex.com	VMware, Inc.	VMware ESXi	6.0.0
vCSA6.lab.magic-flex.com → esxi6dev01.lab.magic-flex.com	VMware, Inc.	VMware ESXi	6.0.0
vCSA6.lab.magic-flex.com → esxisaprod.lab.magic-flex.com	VMware, Inc.	VMware ESXi	5.1.0

MagicFleX Smart Analysis

Server and Blade Systems

Device Name	Vendor	Model	Version
Enc02	Hewlett-Packard Enterprise	BladeSystem c7000 Enclosure	4.60 Jun 17 2016
Enc02 → Server Bay 1 → ESXiSRM01.lab.magic-flex.com	Hewlett-Packard Enterprise	ProLiant BL460c G6	I24 08/16/2015
Enc01	Hewlett-Packard Enterprise	BladeSystem c7000 Enclosure	4.60 Jun 17 2016
Enc01 → Server Bay 7 → ESXiProd07.lab.magic-flex.com	Hewlett-Packard Enterprise	ProLiant BL460c G6	I24 08/16/2015
Enc01 → Server Bay 1 → ESXiProd01.lab.magic-flex.com	Hewlett-Packard Enterprise	ProLiant BL460c G7	I27 08/16/2015
Enc01 → Server Bay 3 → ESXiProd03.lab.magic-flex.com	Hewlett-Packard Enterprise	ProLiant BL460c G6	I24 08/16/2015
Enc01 → Server Bay 2 → ESXiProd02.lab.magic-flex.com	Hewlett-Packard Enterprise	ProLiant BL460c G6	I24 08/16/2015
Enc01 → Server Bay 5 → ESXiProd05.lab.magic-flex.com	Hewlett-Packard Enterprise	ProLiant BL460c G6	I24 08/16/2015
Enc01 → Server Bay 9 → CZ32078NML	Hewlett-Packard Enterprise	ProLiant BL460c G7	I27 08/16/2015
Enc01 → Server Bay 6 → ESXiProd06.lab.magic-flex.com	Hewlett-Packard Enterprise	ProLiant BL460c G6	I24 08/16/2015

2.5 Alerts

In the **Alerts** section, samples of alerts discovered by MagicFlex are shown, including the alert details, device impacted, suggest corrective action, and impact of the fix. Sample means one detailed instance of the issue found, and an indication of the total number of instances this specific issue is found throughout the data center.

For details of how to view a Full Report, which includes the details of ALL instances of discovered issues, please see Section 3 of this manual.

Following is a description of the MagicFlex Alert Format for an example alert.

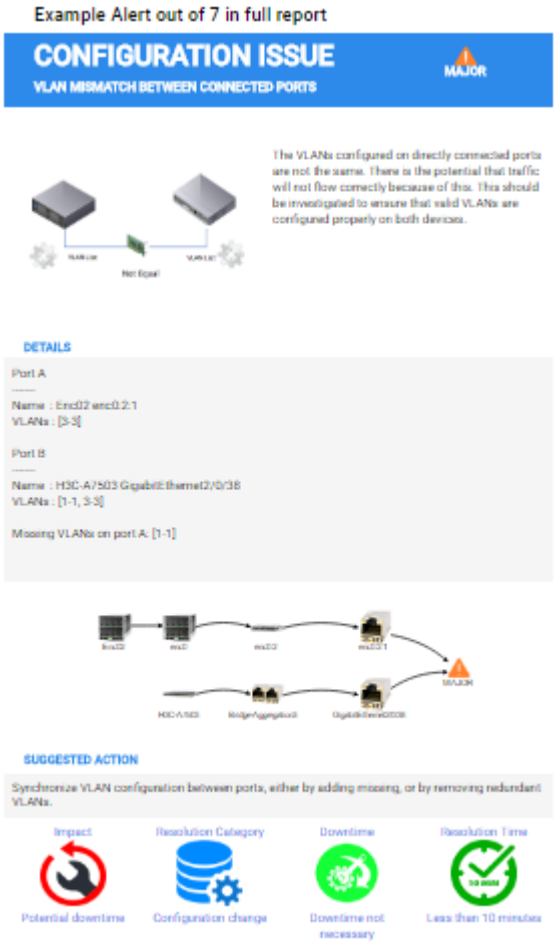
2.5.1 Alert Format Description

Alerts include the following sections:

- An indication of how many of this type of alert was found in the data center. In the example below, a total of seven instances of this alert were discovered.
- The type of warning (in the example below, configuration issue), the severity (in the example case, Major), and the alert title (in the example, VLAN Mismatch Between Connected Ports).
- A diagram of the related devices related to this alert.
- The detailed description of this alert.
- The suggested corrective action for this alert.
- The impact, resolution category, downtime and resolution time for this alert:
    - Impact – The impact of the alert on the data center operations

- Resolution Category – The type of corrective action required to fix the problem
- Downtime – The amount of downtime, if any, to solve the problem
- Resolution Time – The amount of time to fix the problem

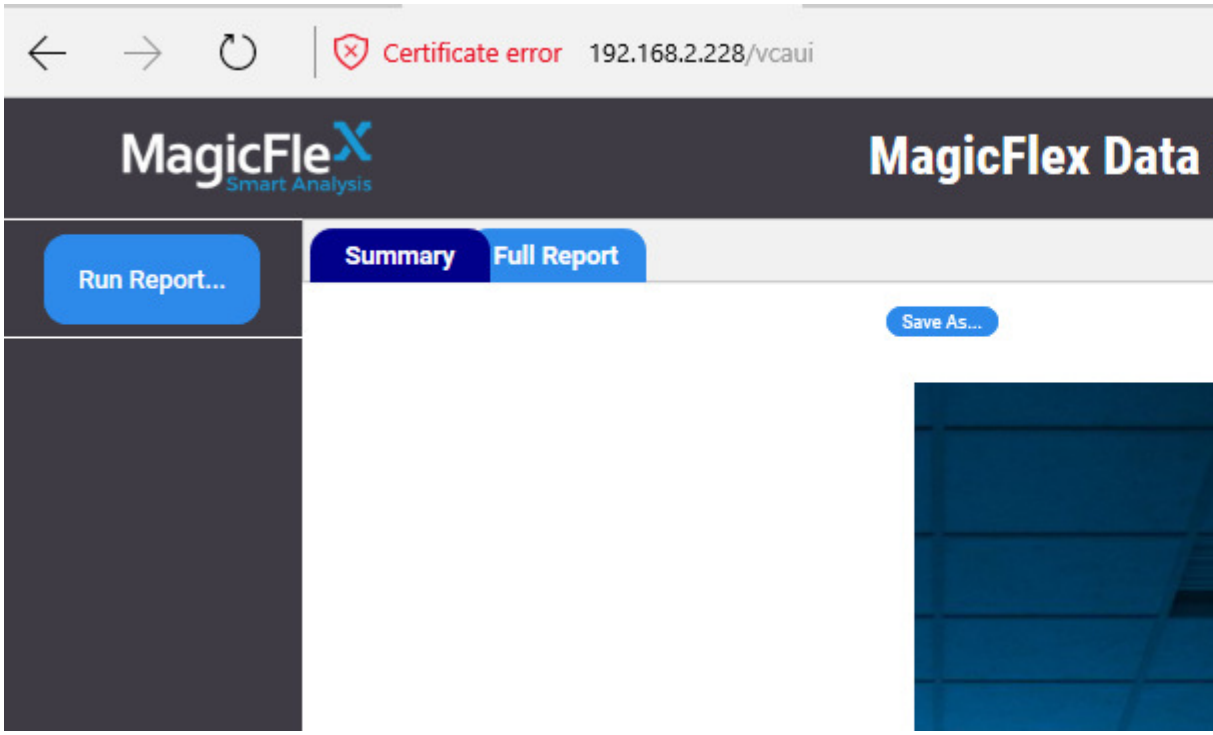
Example Alert out of 7 in full report



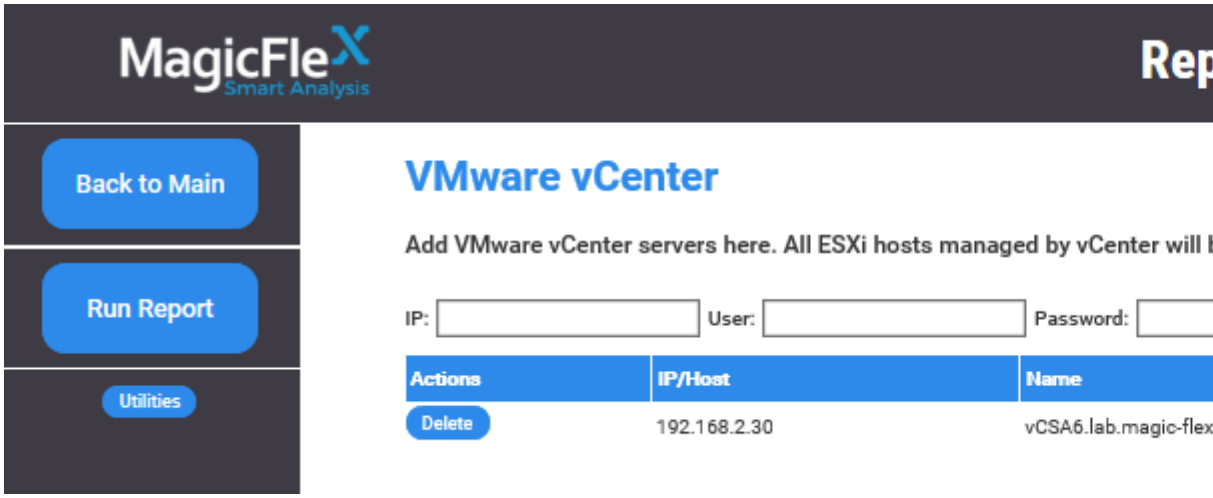
2.6 Utilities

There are a number of utilities available.

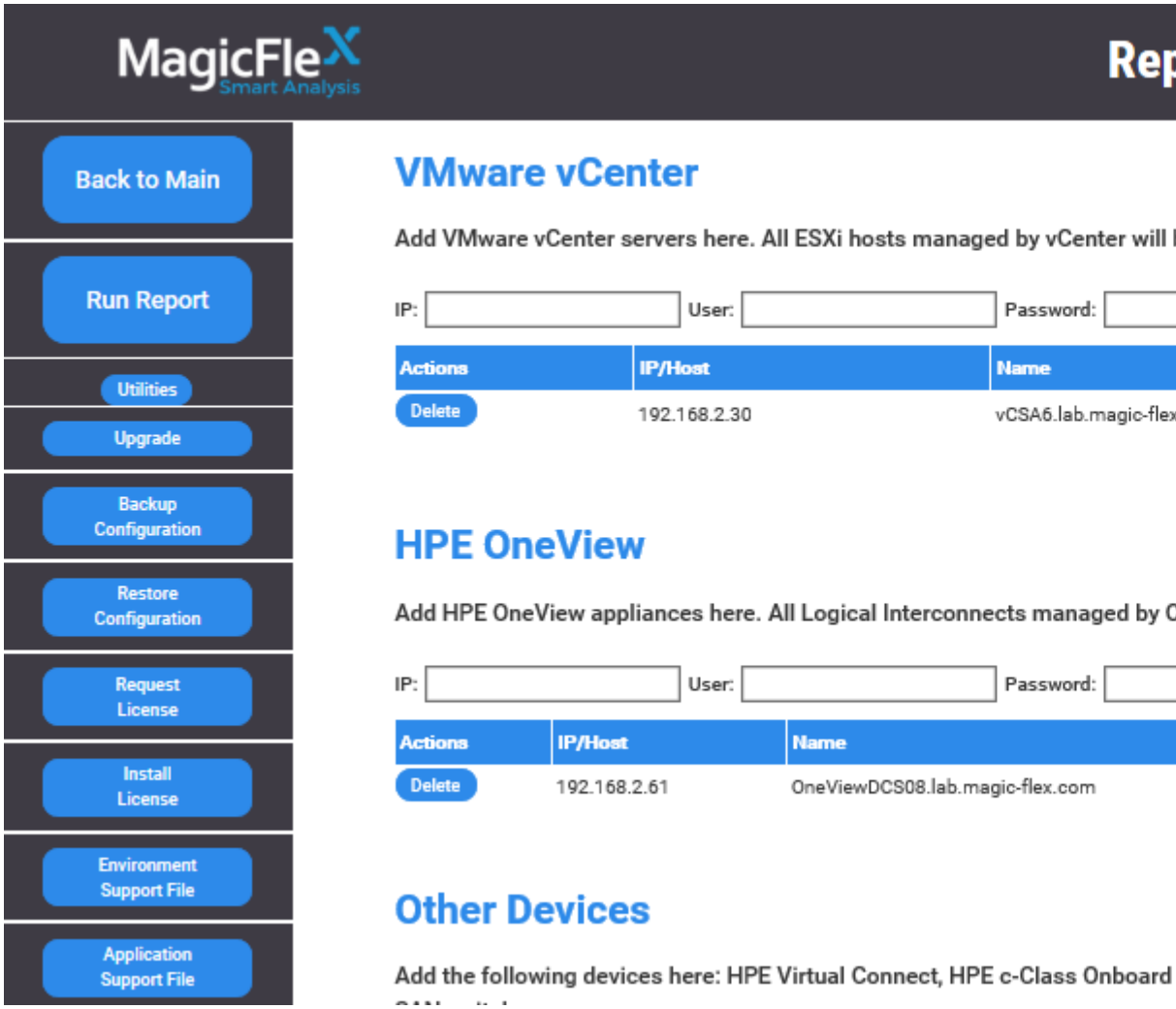
To display the Utilities button, click on the left-side Run Report option.



Click on the left-side Utilities button. The full Utilities menu will be displayed.



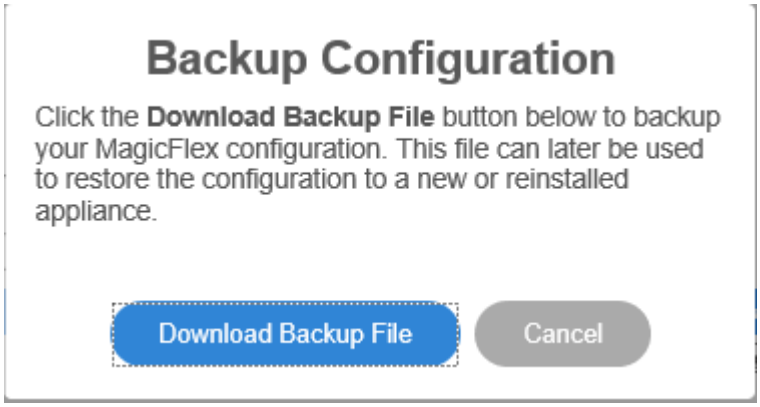
The Utilities menu is displayed.



2.6.1 Backup/Restore Configuration

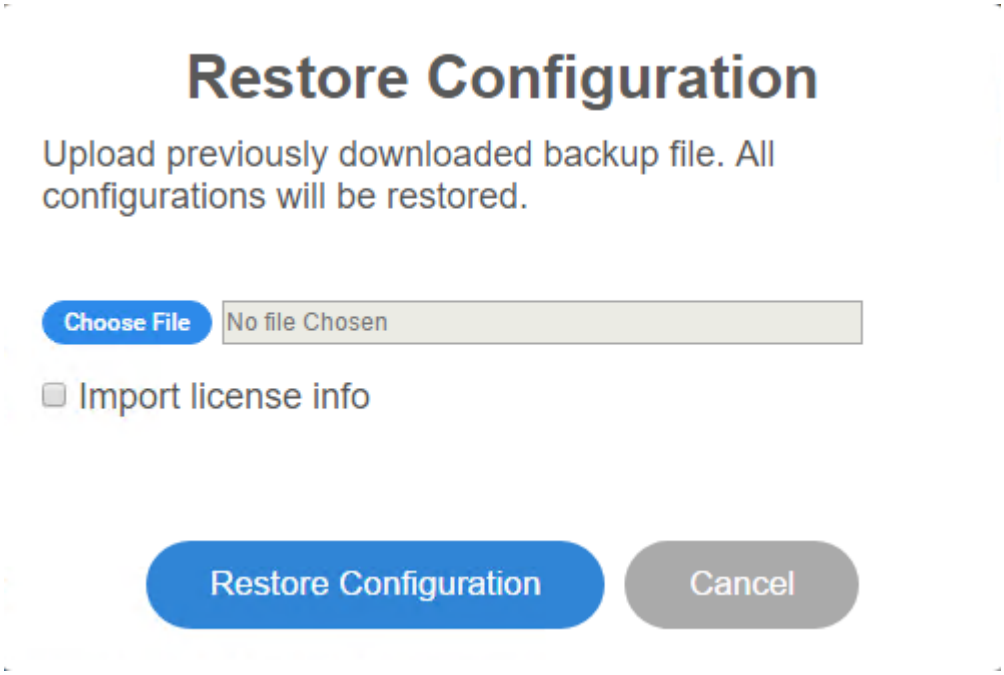
2.6.1.1 Backup MagicFlex Configuration Files

To create a configuration backup, select Backup Configuration then click on the Download Backup File button. An .mcb file will be generated.



2.6.1.2 Restore MagicFlex Configuration Files

To restore configuration from a backup file, select Restore Configuration, click on Choose file, browse for the previously generated .mcb configuration backup file, then select Restore Configuration. Note: Check the Import license info checkbox to restore license. By default, license information is excluded from the restore process.

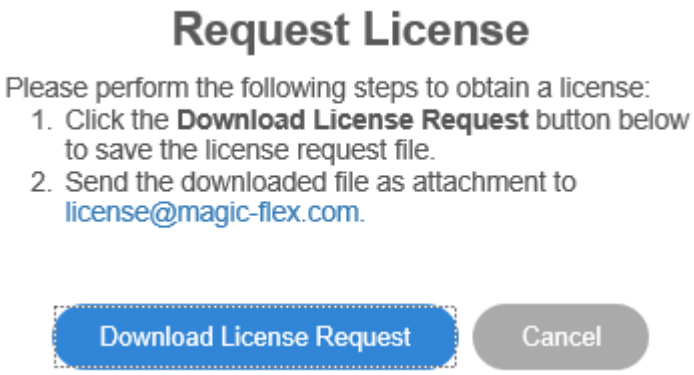


2.6.2 Request/Install License

2.6.2.1 Request MagicFlex License

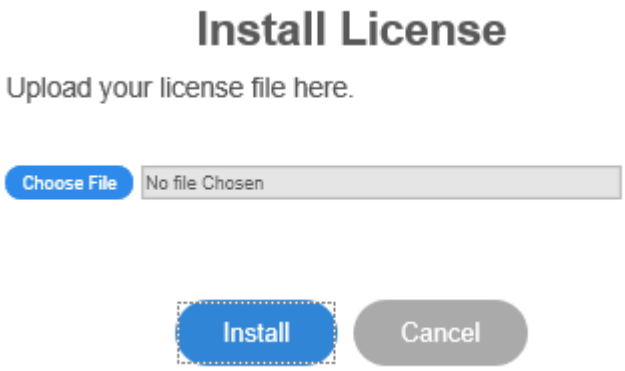
To request a license, select Request License then click on the Download License Request button. Send the resultant file to license@magic-flex.com or to your sales agent.

Note: A license should be requested only after you have added your devices to MagicFlex.



2.6.2.2 Install MagicFlex License

To install your license, select Install License then choose the license file that you received from MagicFlex and click on the Install button.



2.6.3 Environment Support File

The Environment Support file contains the results of MagicFlex analysis that MagicFlex engineers can use to better understand your environment and troubleshoot problems. If you are requested to send this file, click on the Environment Support File option, save the file, and send it to MagicFlex.

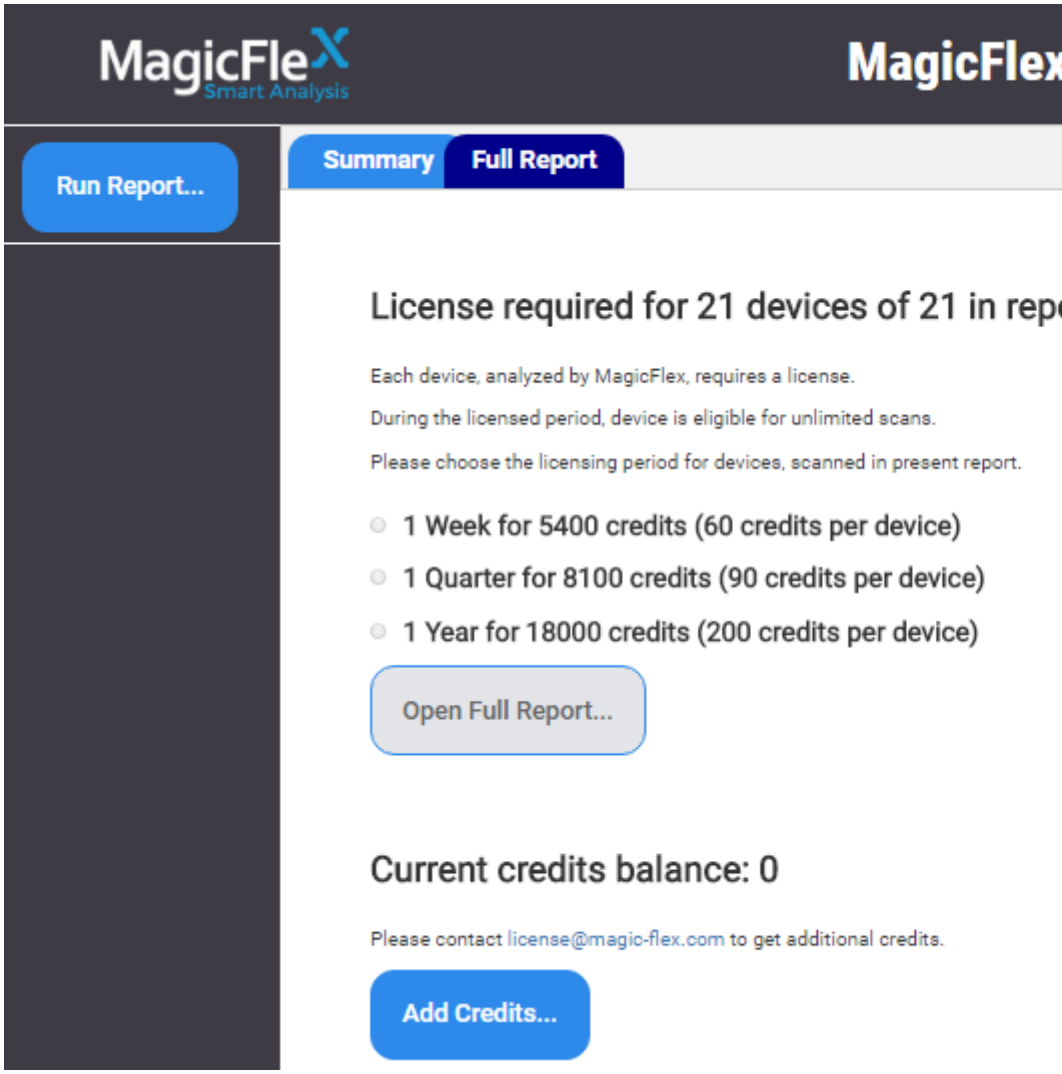
2.6.4 Application Support File

The Application Support file contains various internal logs in MagicFlex that MagicFlex engineers can use to better understand your environment and troubleshoot problems. If you are requested to send this file, click on the Application Support File option, save the file, and send it to MagicFlex.

3 MagicFlex Full Report

Click on the Full Report tab to view the Full Report.

Note: The difference between the Summary Report and the Full Report is that the Summary reports gives examples of the types of alerts found in your data center, whereas the Full Report provides the details on each alert, so that you have the ability to understand where each problem is found and what do to do correct it.



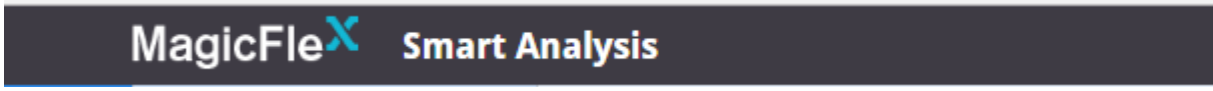
The Full Report is available by subscription only.

If you have purchased the required number of credits (current credits balanced is displayed on this page), you may click your preferred duration time period, and click on the Open Full Report to view your report.

If you wish to add (purchase) credits, refer to the MagicFlex License Request Manual. After you have received your license file from MagicFlex, click on the Add Credits.. button to apply the license and receive your credits.

4 Using the MagicFlex UI

The MagicFlex UI top menu allows you to open to MagicFlex website, send an email to the MagicFlex Support team, and to generate a view an Executive Report.



Please refer to sections 2.2-2.4 for an explanation of the Executive Report, which is an executive excerpt of the standard Summary Report.

The MagicFlex UI has the following views, which you access in the left pane of the UI, that provide detailed information about your MagicFlex environment.

- Dashboard View
- Summary View
- Performance View
- Tools View
- Administration View

4.1 Understanding Device Statuses

The statuses and icons in the MagicFlex UI are the same as those in HPE Virtual Connect, except for statuses Device Inaccessible and Performance Downgraded, which are statuses unique to MagicFlex.

Table 1 Device Statuses

	**Disconnected**: MagicFlex could not connect to the selected device.
	**Critical**: A critical event is occurring on a port, device, or system element.
	**Major**: A port, device, or system element is degraded.
	**Minor**: A port, device, or system element is degraded.
	**Warning**: A port, device, or system element is not performing optimally.
	**Information only**: Recommendations and suggestions.
	**OK**: There are no issues in the domain
	**Unknown**: Status not known.

4.2 Dashboard View

The Dashboard view displays the combined status of all the domains in your environment. By default, domains are listed alphabetically. Each domain can contain a maximum of four enclosures.

The Dashboard view contains the following informational sections.

- Summary
- Devices
- VMware

> **Note**
>
> For HPE OneView environments, the domain represents the Logical Interconnect.

4.2.1 Summary

The Summary section displays the total number of domains, SAN and LAN Switches in three color-coded status circles.

Dashboard View - Summary Statuses

Color	Description
Green	■ OK ■ Info
Orange	■ Warning ■ Minor ■ Major
Red	■ Critical ■ Disconnected

For more information about device statuses, see Understanding Device Statuses.

4.2.2 Devices

The Devices section of the Dashboard view displays the health status of the devices. You can click a device icon to open that domain's Analytics page.

4.2.3 VMware

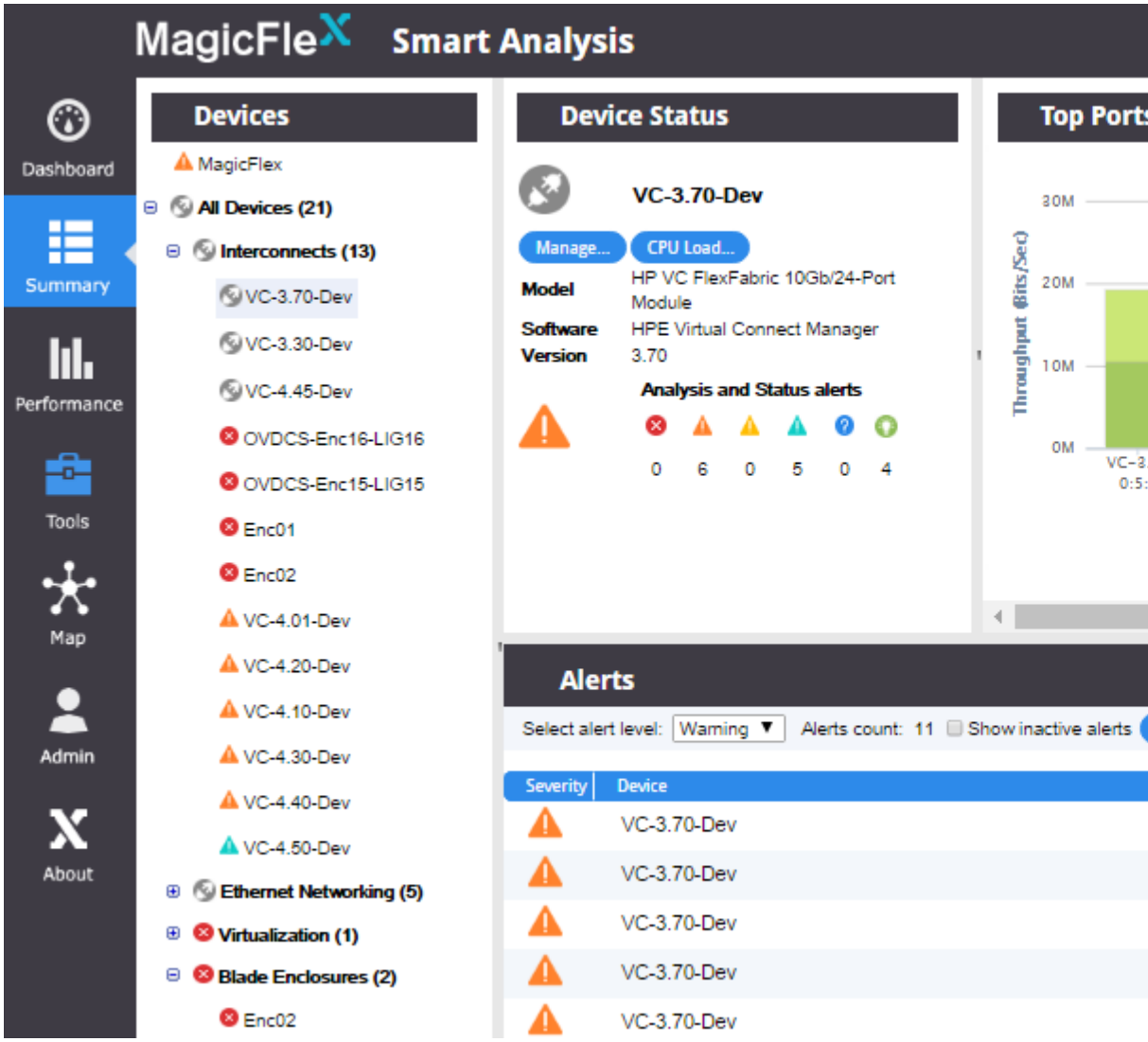
The VMware section of the Dashboard displays the health status of the VMware ESXi hosts, as reported by VMware vCenter. You can click a host icon to open that host's Analytics page.

4.3 Summary View

The Summary view displays current data and analysis for all devices, or a specific device that you select.

The Summary view contains the following information sections, which you can expand or contract to focus on specific data.

- Devices List
- Device Status
- Top Ports
- Alerts


MagicFleX Smart Analysis
Dashboard
Summary
Performance
Tools
Map
Admin
About
Devices
MagicFlex
All Devices (21)
Interconnects (13)
VC-3.70-Dev
VC-3.30-Dev
VC-4.45-Dev
OVDCS-Enc16-LIG16
OVDCS-Enc15-LIG15
Enc01
Enc02
VC-4.01-Dev
VC-4.20-Dev
VC-4.10-Dev
VC-4.30-Dev
VC-4.40-Dev
VC-4.50-Dev
Ethernet Networking (5)
Virtualization (1)
Blade Enclosures (2)
Enc02
Device Status
VC-3.70-Dev
Manage...
CPU Load...
Model
HP VC FlexFabric 10Gb/24-Port Module
Software Version
HPE Virtual Connect Manager 3.70
Analysis and Status alerts
0 6 0 5 0 4
Top Ports
30M
20M
10M
0M
Throughput (Bits/Sec)
Alerts
Select alert level: Warning
Alerts count: 11
Show inactive alerts
Severity
Device
VC-3.70-Dev
VC-3.70-Dev
VC-3.70-Dev
VC-3.70-Dev
VC-3.70-Dev

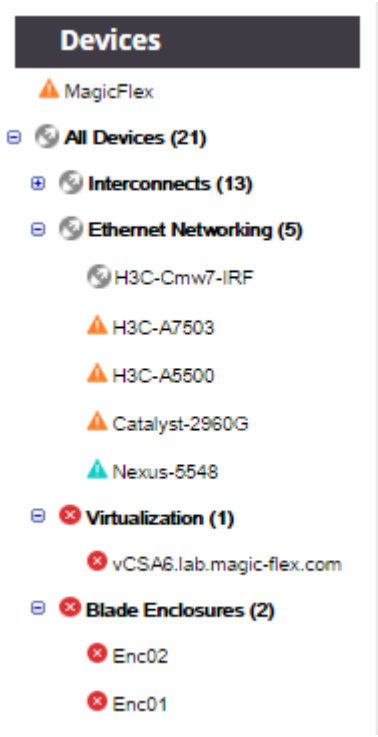
4.3.1 Devices List

The Devices tree displays all Virtual Connect Domains, Ethernet switches, SAN switches, vCenter Virtualization and Blade Enclosures that you added to your MagicFlex environment.

You can click a device to display statuses and alerts for the selected device.

The combined status for a device is displayed at the root level, for example, Interconnects, or Ethernet Networking.

MagicFlex separates your environment's information and alerts from the MagicFlex appliance health and state. MagicFlex appliance related alerts are included in environment alert summaries.



4.3.2 Device Status

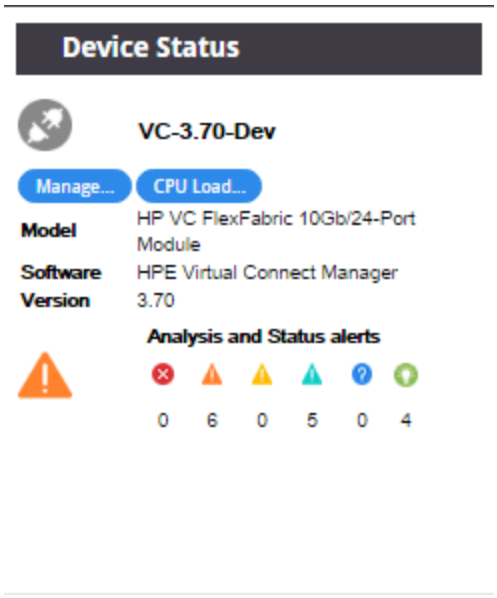
When you select **All Devices** from Devices List, the Device Status section displays alerts for every device in your MagicFlex environment.

When you select a specific device from the Devices List, the Device Status section displays the following information for the selected device.

- Device name
- Model
- Software

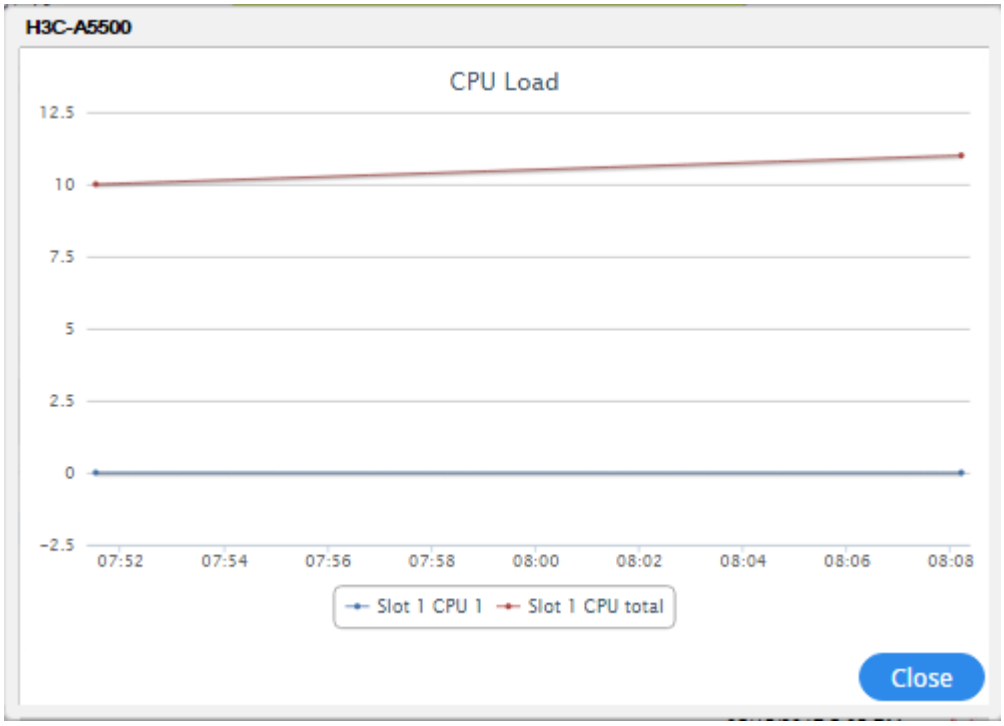
- Version
- Analysis and Status alerts

You can view additional device information, such as Alert Count, the Firmware version, CPU Load, and more. The information that displays depends on the device type.



MagicFlex is a read-only platform; you cannot perform any actions on your devices from the MagicFlex UI. In order to perform actions on your devices, click the **Manage** button to open the device specific UI.

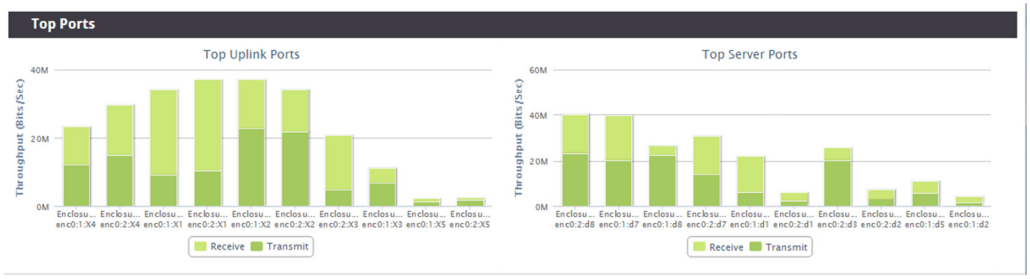
Click the **CPU Load** button to view the CPU usage history for devices that support this feature.



4.3.3 Top Ports

The Top Ports section provides a graphical picture of the current status of the domain traffic.

Top Ports analyzes and identifies the busiest ports for a selected device, and measures the traffic in bits/second. When you select the Domain tree root, uplink ports include the stacking link ports and server ports throughout the Virtual Connect environment.

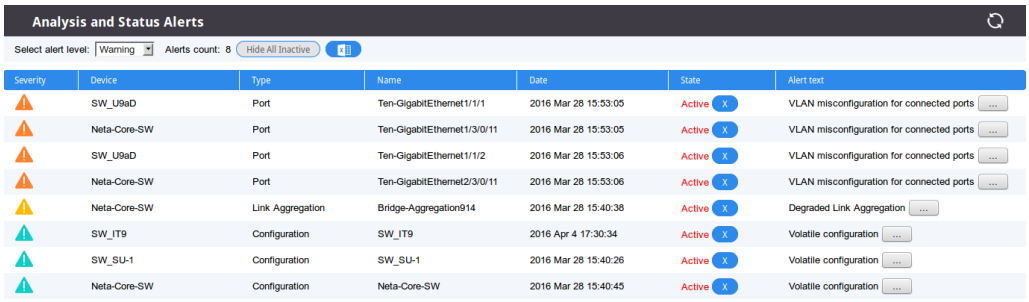


4.3.4 Analysis and Status Alerts

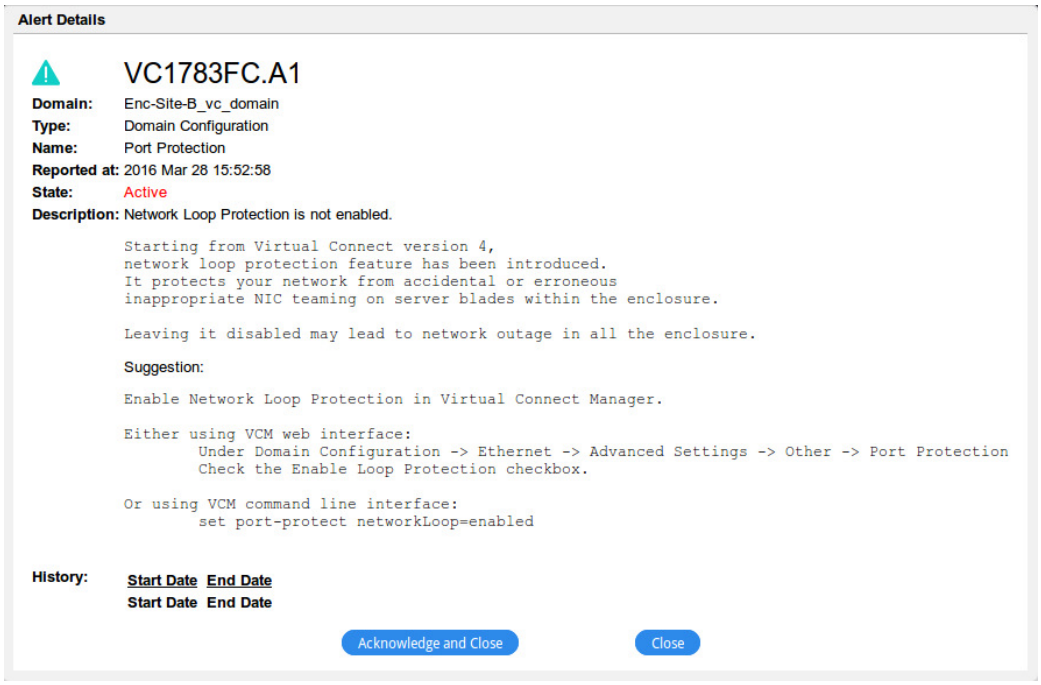
The Analysis and Status Alerts section displays the analysis of the domains, configurations, and events, and includes all alerts.

Alerts in this section indicate issues with configuration, control, and redundancy, such as duplicate MAC, high utilization for extended periods, alerts regarding best practices, and other HPE and MagicFlex issues.

When recommendations are available for an alert, detailed steps on how to fix the issue are provided.



Click the three dots button in the Alert text column to view full alert details.



4.3.4.1 Alert State

MagicFlex alerts are based on periodic checks of your environment. There are two alert states.

Table 2 Alert States

Alert State	Description
Active	Indicates that an active issue was discovered in the last check for the alert condition.
Inactive	Indicates that a previously discovered issue was not discovered in the last check for the alert condition.

The History section of the Alert Details dialog displays the previous time period for the same issue.

4.3.4.2 Acknowledging Alerts

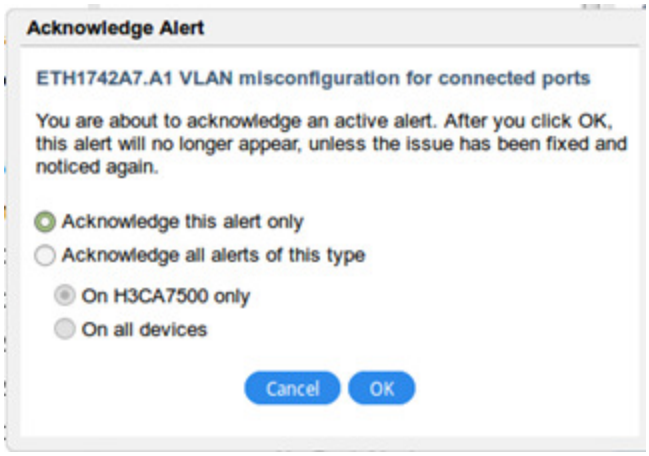
Active alerts are displayed until you acknowledge the alert.

Inactive alerts are displayed until you acknowledge the alert, or removed automatically after 30 days of inactivity.

To acknowledge all inactive alerts, click the **Hide All Inactive** button.

You can use the following methods to acknowledge active alerts and inactive alerts.

- Click the **X** button in the State column in the Alert List section.
- Click the **Acknowledge and Close** button on the Alert Details page. There are several options for acknowledging and closing the alert.
  - Acknowledge this alert only
  - Acknowledge all alerts of this type



4.4 Performance View

You can monitor at the port level the performance of devices analyzed by MagicFlex. Port performance is displayed in the following graphs.

You can view historical or real-time port performance.

Table 3 Port Performance Graphs

Graph	Description
History	You can select historical data for a 24-hour time period. The data is displayed in 24-hour periods, and you can zoom in on the graph to view data in shorter time chunks. By default, the current date is selected.
Realtime	Displays current port performance data and is refreshed regularly.
Statistics	Displays historical performance statistics
Port Metrics	Displays metrics for ports

4.4.1 History

The **HISTORY** tab displays historical performance data for each port in two graphs, an uplink ports graph and a downlink ports graph. Common uses of this data include diagnosing troubleshooting issues and designing network load and performance. You can view a maximum of four ports at one time.

For server ports, you can drill down to the v-port level.

For Virtual Connect v3.70 and later, if you divided the Flex NICs into four v-ports, you can monitor performance at this level.

4.4.1.1 Viewing Performance History for a Specific Time Period

Select between one and four ports from the ports tree in the left pane.

The following charts are displayed for the selected ports.

Table 4 Performance History

Chart	Description
Incoming (Rx)	Traffic is displayed in the **Rx Charts** tab.
Outgoing (Tx)	Traffic is displayed in the **Tx Charts** tab.
Uplink ports	Ports are displayed in the top section of each tab. The data includes stacking link ports.
Downlink (server) ports	Ports are displayed in the bottom section of each tab.

The zoom function is synchronized between all four charts.

To view a specific time period, use the mouse to select a time period in the graph. By default, data for the current day is displayed.

You can change the chart throughput units in the drop-down menu on the top bar of the charts section.

To view the configuration details for a specific port, access the tooltip for the port in the port tree in the left pane.

4.4.1.2 Exporting Performance History to an Excel File

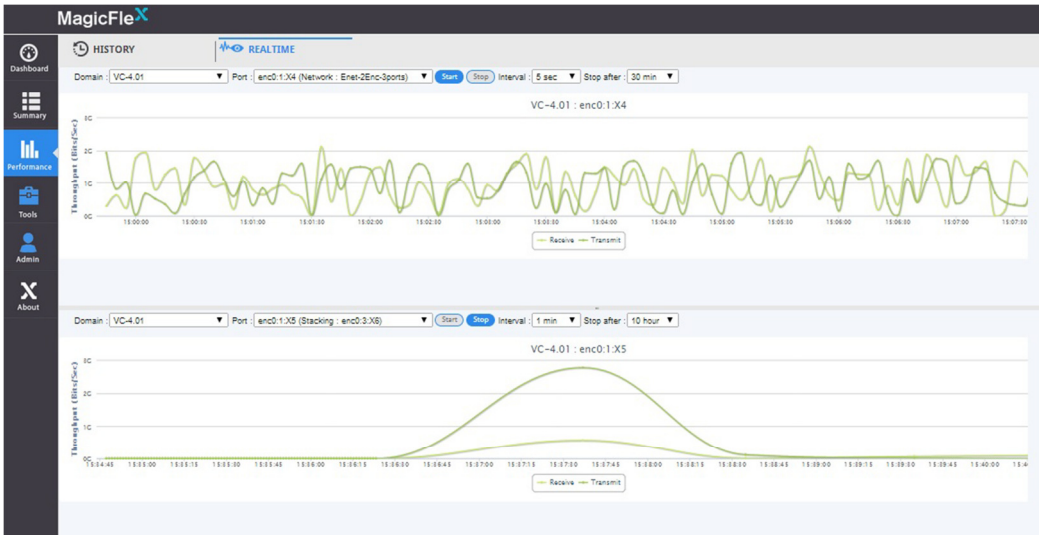
1. Select the ports from the ports tree in the left pane for which you want to export the data.
2. Click the **Microsoft Excel** button.
3. In the calendar dialog, select the time period for which you want to export the data.
4. Click the **Get Report** button.

4.4.2 Realtime Display

The **REAL TIME** tab displays in real time the transmitted and received traffic for each port that you select. This data is generally used for troubleshooting issues in real time.

To display the port data in real time, click **Performance** in the left tab, and then click the **REAL TIME** tab on the top of the page. Click the **Start** button or **Stop** button in the action bar to start or stop the real-time data graphs.

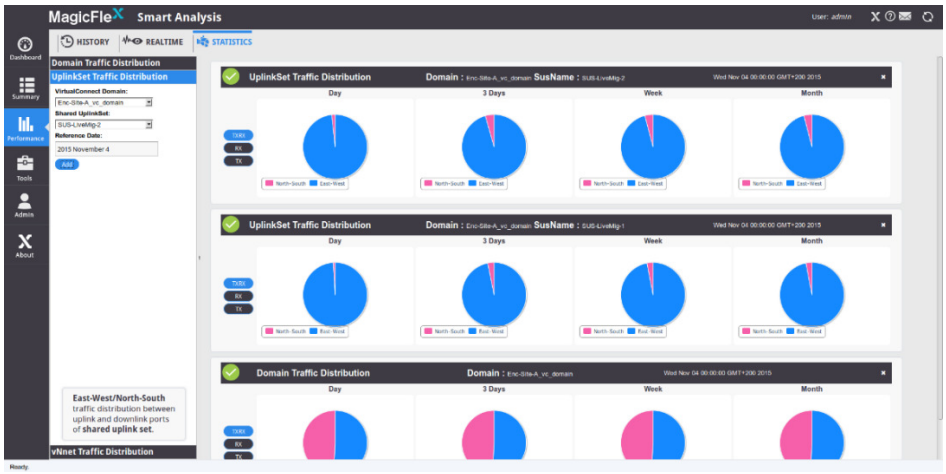
You can view a maximum of two graphs at one time.



4.4.3 Statistics (Performance)

MagicFlex displays performance statistics for a specific time period. Time periods are taken for the user selectable reference date. By default, the current date is selected. The displayed time periods are:

- 1 day
- 3 days
- 1 week
- 1 month



4.4.3.1 View Performance Statistics

You can view several statistic panels simultaneously.

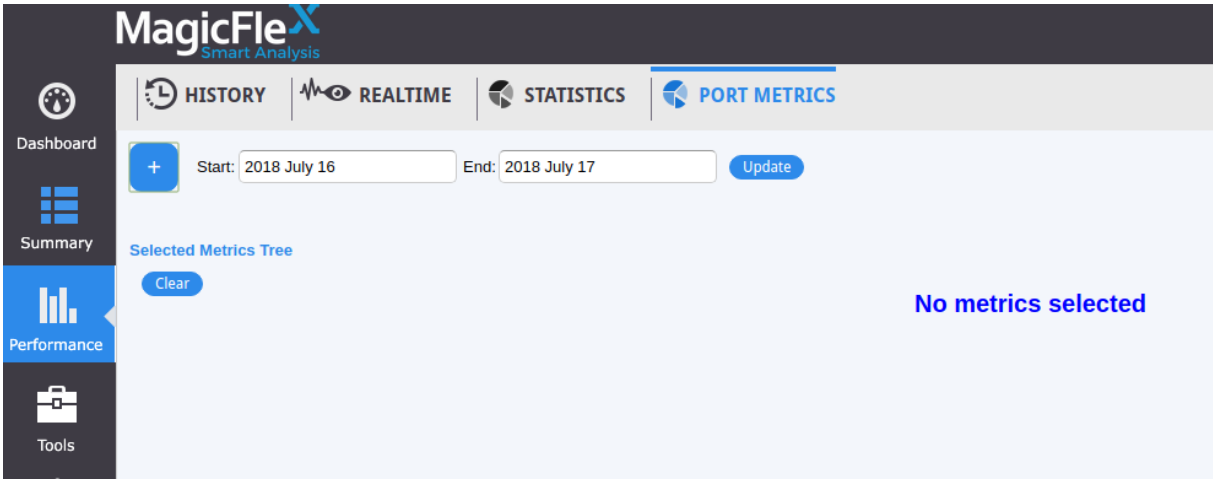
1. Click **Performance** -> **Statistics**.
2. Select a statistic type from the left pane.
3. Enter the required information.
4. Click the **Add** button.

4.4.4 Port Metrics

MagicFlex enables you to view metrics for selected ports.

4.4.4.1 Select Port and Metric

In order to specify a port and a metrics to be viewed, click on the “+” button to the left of the start time.



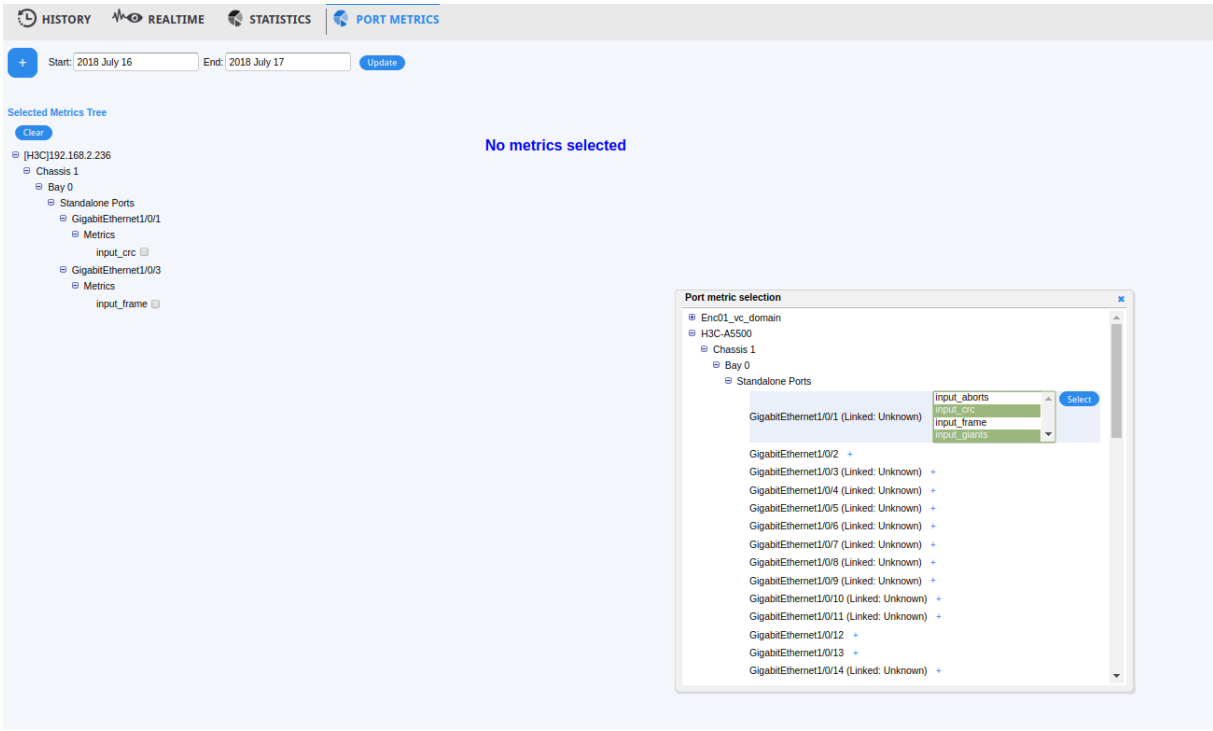
4.4.4.2 Select Port and Metric

Click on the "+" sign to the right of the device to drill down to the specific port of interest.

Once you get to the port level, click on the "+" to the right of the port. This will open the window of all relevant metrics. Click on one or more of the metrics, and when you are finished, click on the blue Select button (the port/metrics will appear on the left side of the screen). Please note that if you wish to select more than one metric, for the second metric and on, press the Control (Ctrl) button as you click.

Continue this process until you have selected all of the port/metric combinations of interest to you.

When you have completed this process, close the port metric selection window by clicking on the "x" in the upper right.



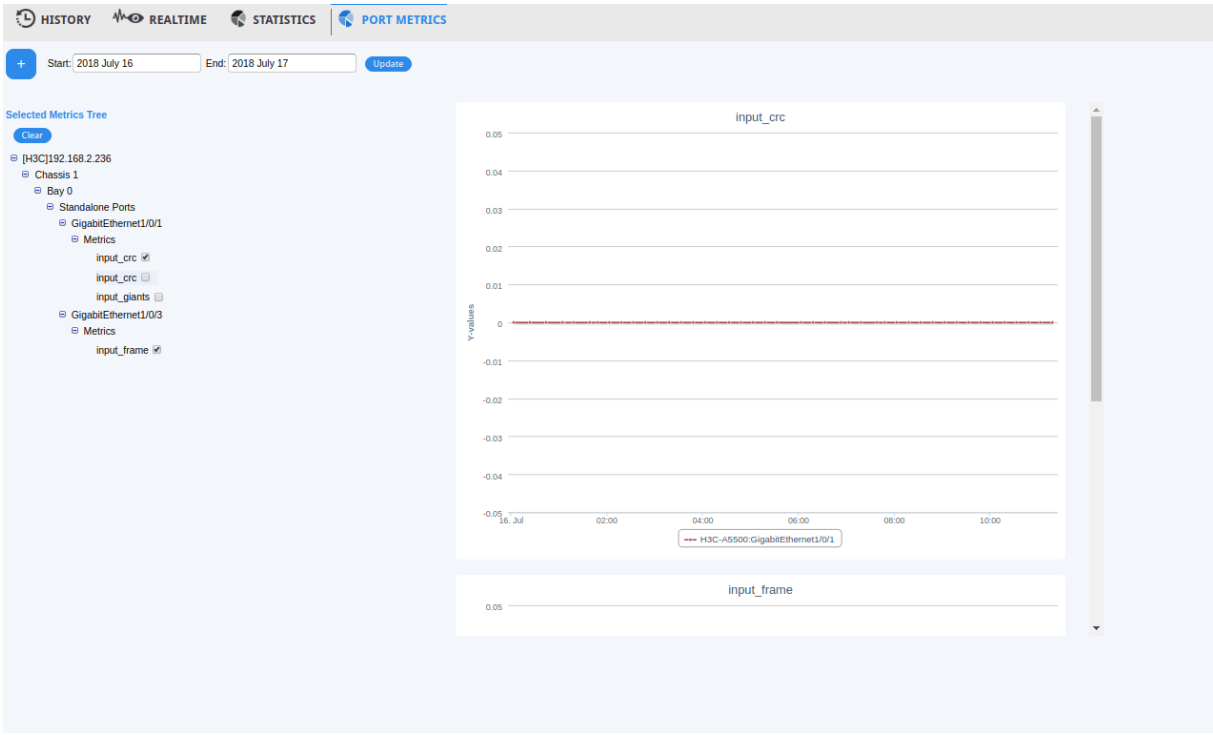
4.4.4.3 Display the Port Metrics

In the tree, click on the check box next to the right of each port/metric you wish you display in the graph. If you wish to de-select a port/metric, click on the relevant check box to de-select it.

On the top of each graph, the port metrics to be displayed will be in the title. Each port metric will appear on a separate graph (scroll down to see all of the graphs. If you have selected the same metric for multiple ports, these will all appear on the same graph.

To remove all of the selected port/metrics combinations, click on the Clear button.

To change the time period for the graphs, change the start and/or end dates, and click on the Update button.


HISTORY
REALTIME
STATISTICS
PORT METRICS
Start: 2018 July 16
End: 2018 July 17
Update
Selected Metrics Tree
Clear
[H3C]192.168.2.236
Chassis 1
Bay 0
Standalone Ports
GigabitEthernet1/0/1
Metrics
input_crc
input_crc
input_giants
GigabitEthernet1/0/3
Metrics
input_frame
input_crc
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.04
-0.05
Y-values
16. Jul
02:00
04:00
06:00
08:00
10:00
H3C-A5500:GigabitEthernet1/0/1
input_frame
0.05

4.5 Tools View

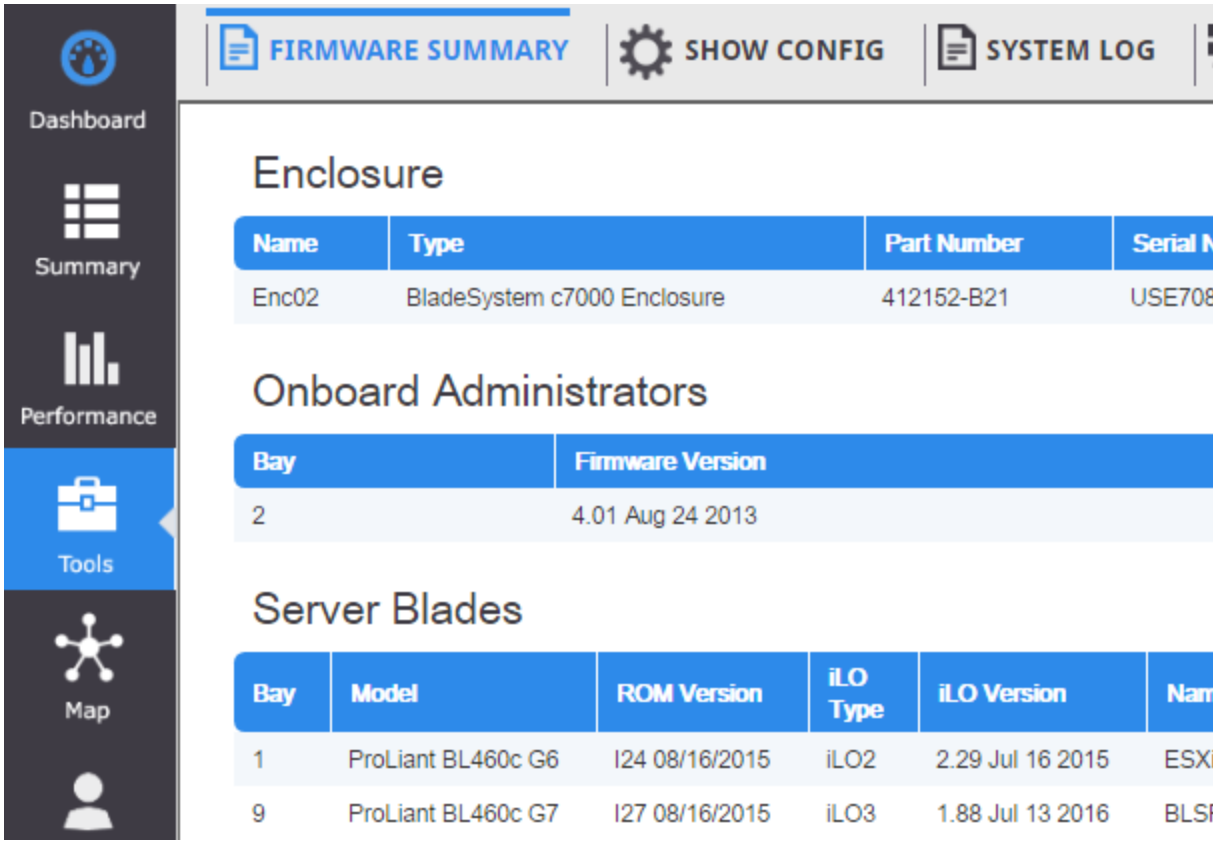
MagicFlex tools help you configure and backup Virtual Connect by using an efficient method to locate MAC addresses and WWN identifiers, and prevent duplication and misconfiguration.

The following tools are available.

- Firmware Summary
- Address Ranges
- System Logs
- Show Config
- Search
- Find MAC (Runtime)

4.5.1 Firmware Summary

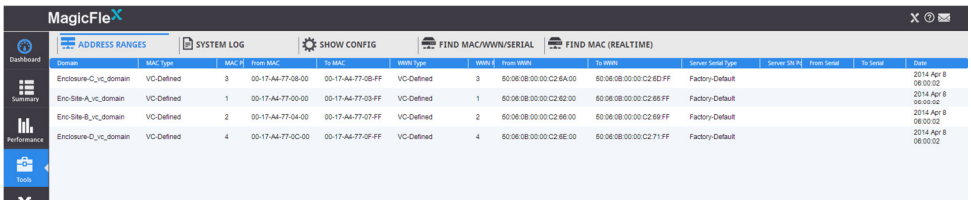
This tool allows you to see the various firmware versions active in your data center.



4.5.2 Address Ranges

In general, Virtual Connect provides MAC address ranges, WWN identifiers, and serial and server number ranges to the NICs in the Blade Servers.

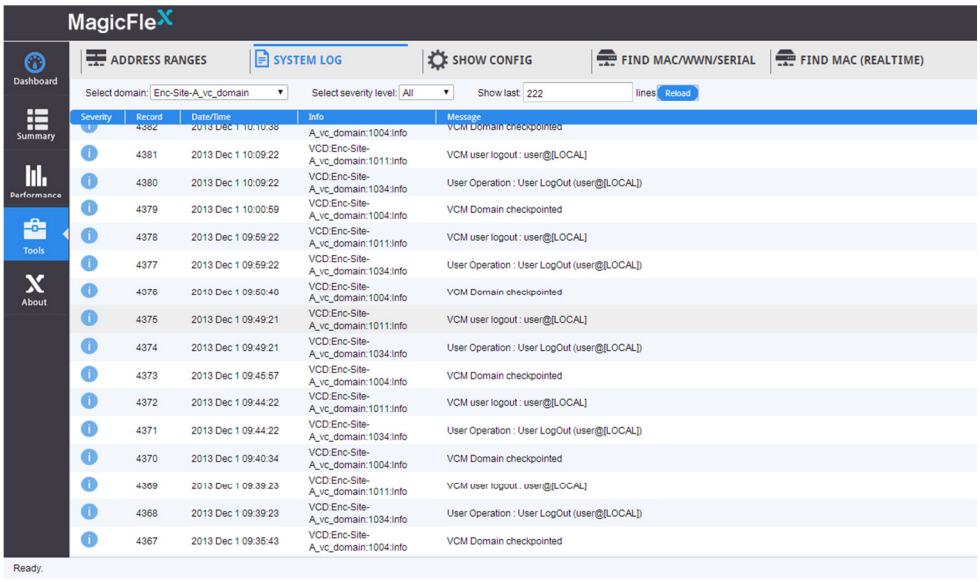
Use the Address Ranges tool to locate and prevent duplication of MAC, WWN, and serial number ranges, thereby reducing troubleshooting episodes. You can also use the Address Ranges tool when scaling your environment to ensure that a range is not used when selecting from existing pools.



4.5.3 System Logs

The System Logs tool provides an organized format to locate issues. A specific use case for the system logs tool is when Virtual Connect is not accessible because MagicFlex provides recent data, by default up to the previous last minutes.

To locate a specific issue, select the domain, a severity level, and how many lines to display.



4.5.4 Show Config

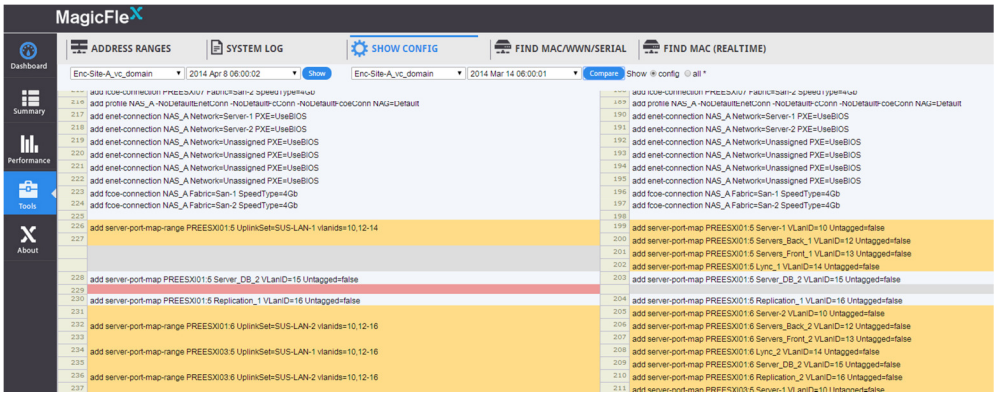
Use the Show Config tool to compare a domain's configuration on different dates, or different domains on the same date, or different domains on different dates.

In the **Administration** tab, select the domain, date, and click **Show**.

To compare a domain's configuration on different dates, or different domains on the same date or a different date, select the domains and dates, and click **Compare**.

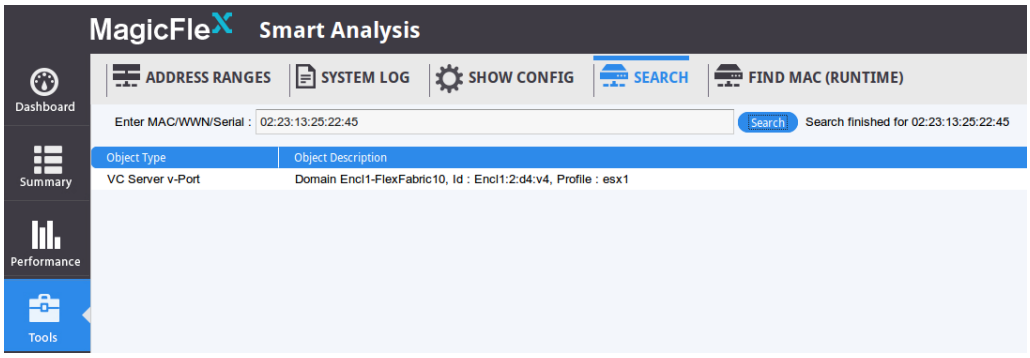
Click **Show All** to display information about uplink ports, stacking link ports, and MAC and WWN addresses.

By default, this procedure is run daily, at 6 am. To view the current configuration in real time, click **Run Configuration Harvest**.



4.5.5 Search

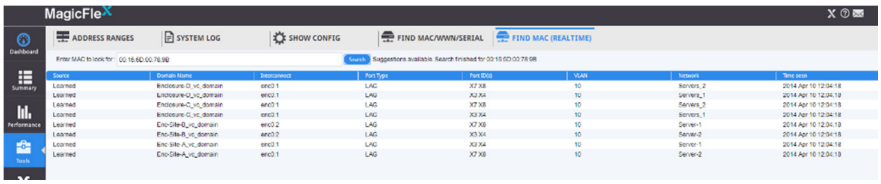
MagicFlex uses several keywords, for example, MAC addresses, WWNs, IPs, and names to index various data center entities, such as switches, ports, enclosures, and so on.



MagicFleX Smart Analysis

4.5.6 Find MAC (Runtime)

The Find MAC (Runtime) tool searches for the MAC addresses in the Interconnect Mac table of Virtual Connect. If duplicates are discovered, a message displays in the Analysis and System Alerts section of the Dashboard.



5 Connectivity Map

The Connectivity Map displays physical connections between devices. Initially, only high-level devices, such as enclosures, SAN and LAN switches, are displayed. You can drill down to the single-port level by double-clicking a device.

Information for the selected device displays in the right pane. The information that displays is based on the selected device type, and can include name, management IP, model, version, used/available ports, server bays, and so on.

Red lines indicate a physical connection between device ports. Gray lines indicate aggregation between devices, such as switches and their ports.

5.1 Map Controls

You can perform the following actions on map entities.

- Click a device icon for additional device information.
- Double-click a device icon to expand or collapse its components.
- Use the mouse wheel to zoom in or zoom out.
- Press **Ctrl-Drag** to pan the map.
- Click the **Export** button to export the map as it is currently displayed. The file is exported as an SVG file.
- Click the **Reset Settings** button to return to the default map view.

5.2 Display Options

The following display options are available for the Connectivity Map.

- Use the checkboxes in the upper-right to hide or display device types.
  - Backbones
  - Ethernet switches
  - SAN switches
  - Blade enclosures
- Use the checkboxes in the upper-left to regulate the drilldown level.
  - To port, which are connected to other monitored devices.
  - To all ports, with link up.

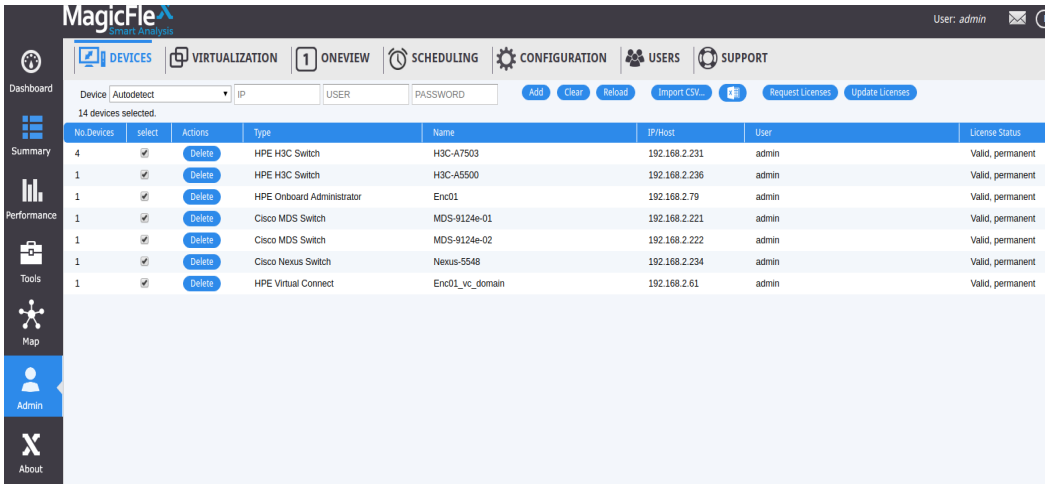
6 Admin

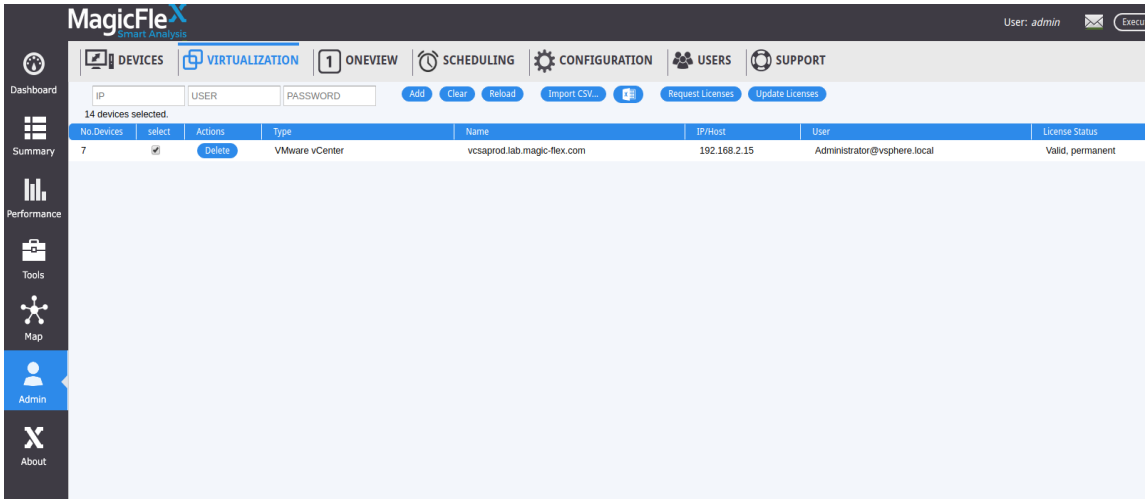
The following administrative procedures are available in MagicFlex.

- Adding and removing devices to monitor
- Adding and removing OneView appliances
- Adding and removing virtualization devices
- Configuration
- Managing Users
- Backup/Restore MagicFlex Configuration Files

6.1 Adding and Removing Devices

MagicFlex can analyze one or more data-center devices. You might require additional licenses for more devices, depending on your license agreement.





6.1.1 Add a Device, Virtualization and/or OneView

For a list of supported devices, see Supported Devices.

1. Click **Admin** in the left pane.
2. Click the **Devices or Virtualization or OneView** tab in the top navigation bar.
3. Select a device from the Device drop-down list. Note: In the device tab, you can generally select Autodetect, but if the device addition is not successful, go to this drop-down list, select the specific device you wish to add, and re-try the operation.
4. Type the IP address.
5. Type the username and password.
6. Click **Add**.

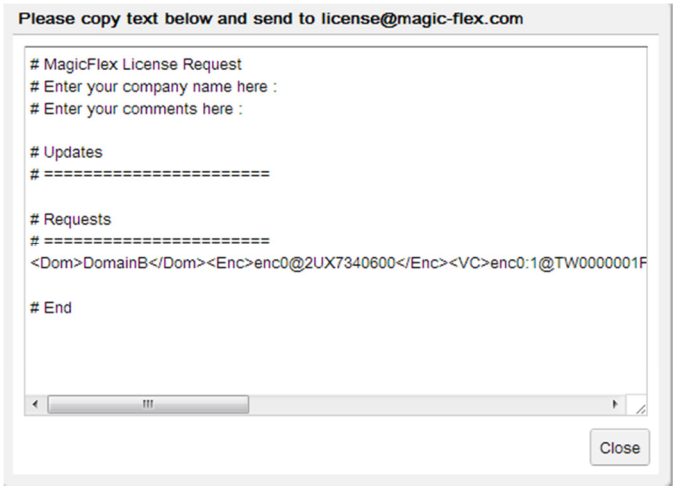
6.1.2 Remove a Device

1. Click **Admin** in the left pane.
2. Click the **Devices** tab in the top navigation bar.
3. Click the **Delete** button in the devices grid view for the device you want to delete.

6.2 Request a License

1. Click **Admin** in the left pane.
2. Click the **Devices** tab in the top navigation bar.

3. Click the **Request License** button.
4. Copy the body of the license request.
5. Send an email to MagicFlex Licensing or your sales representative, and paste the license request text in the email.

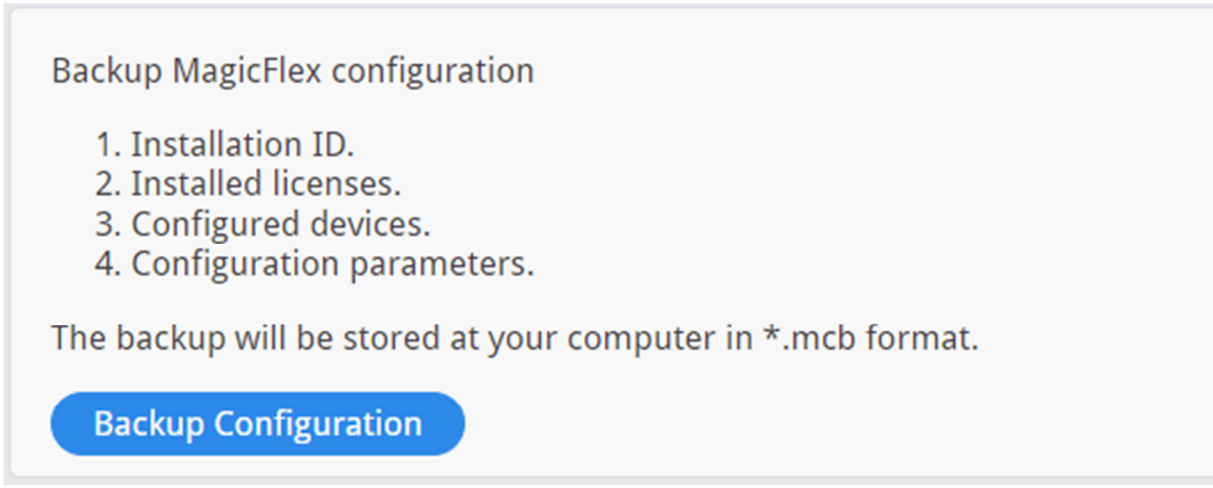


6. When you receive a response from MagicFlex, which can take up to one business day, click the **Update Licenses** button.
7. Paste the license information that MagicFlex sent in the text area.
8. Click **Update License**.

6.3 Managing MagicFlex Configuration Files

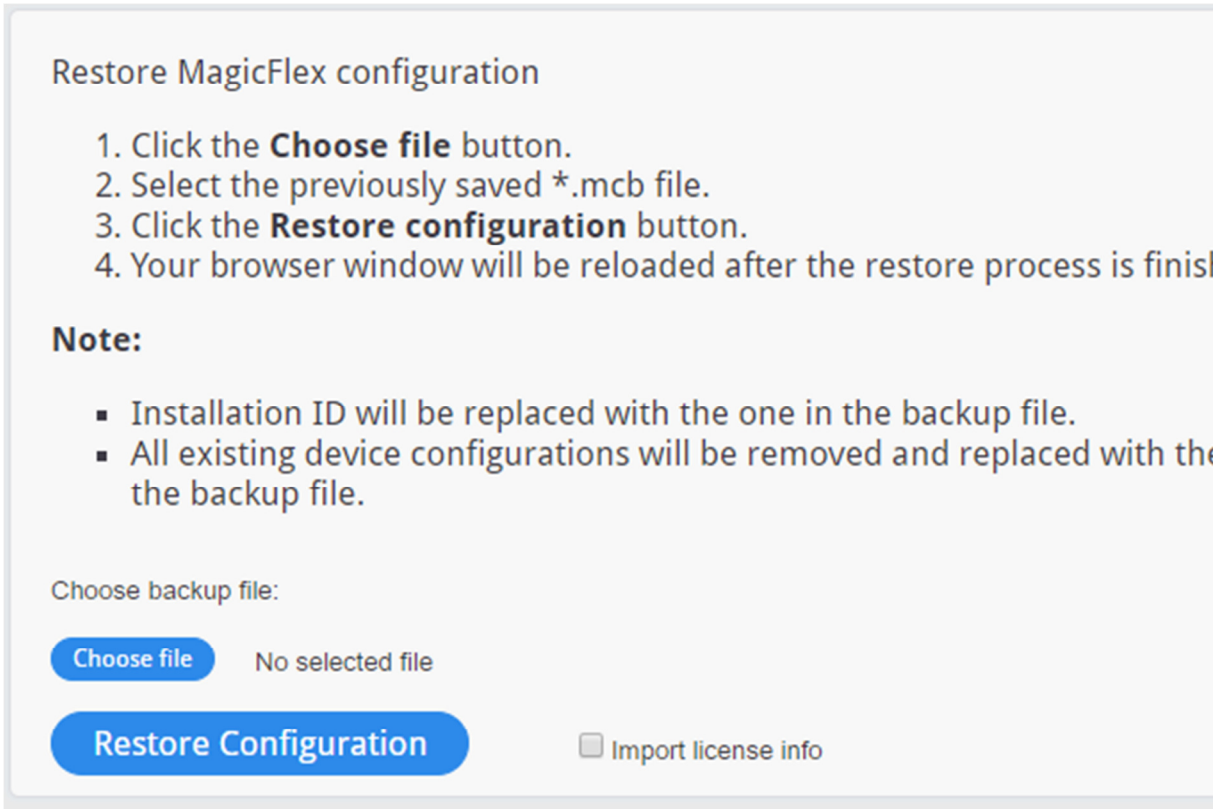
6.3.1 Backup MagicFlex Configuration Files

To create a configuration backup, navigate to Admin -> Support, scroll down to Backup MagicFlex Configuration and select Backup Configuration. An .mcb file will be generated.



6.3.2 Restore MagicFlex Configuration Files

To restore configuration from a backup file, navigate to Admin -> Support, scroll down to Restore MagicFlex Configuration, click on Choose file, browse for the previously generated .mcb configuration backup file, then select Restore Configuration. Note: Check the Import license information checkbox to restore license. By default, license information is excluded from the restore process.



6.4 Scheduling

By default, there are several scheduled harvests.

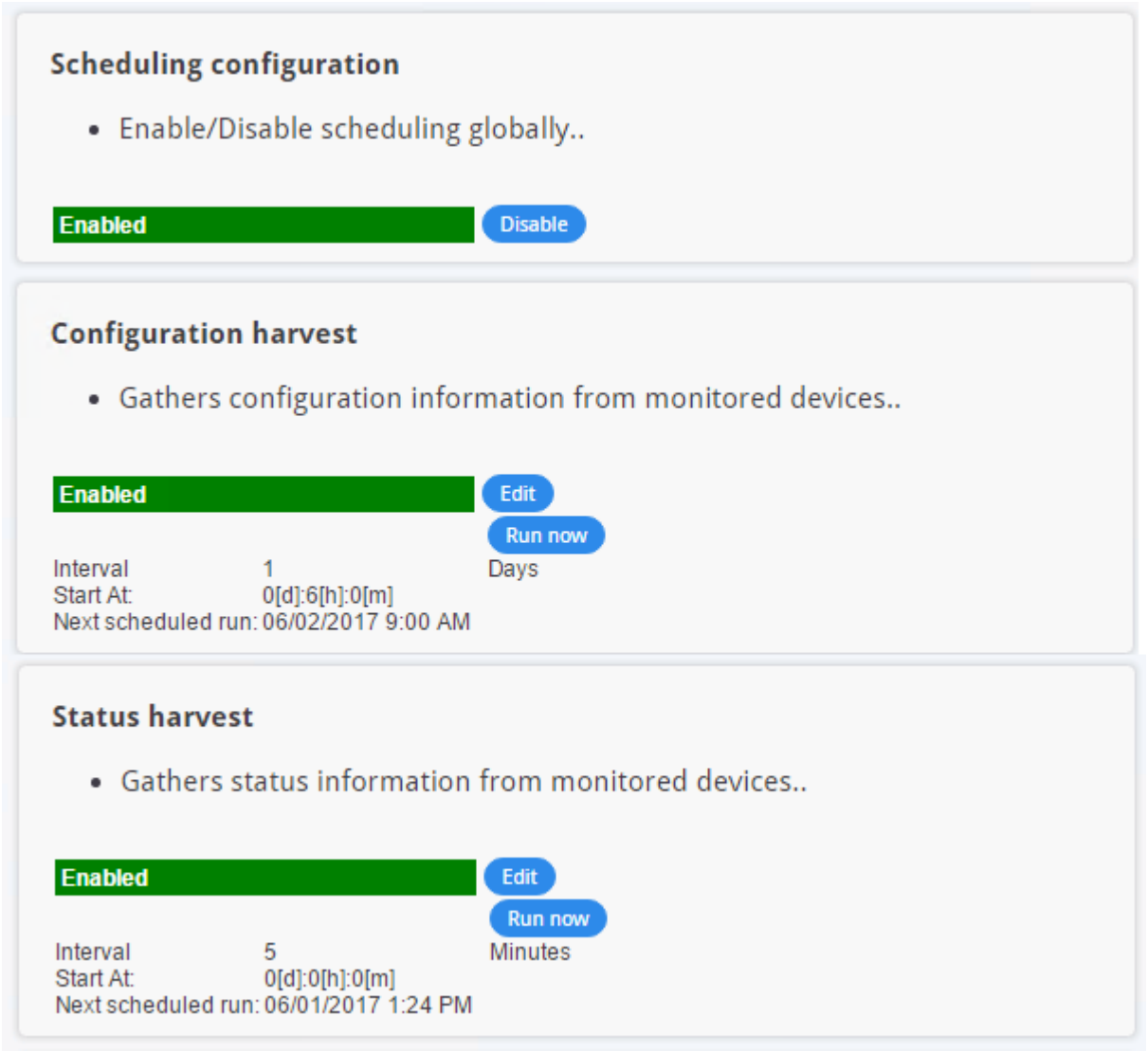
Table 5 Scheduled Harvests

Harvest Type	Schedule
Configuration harvest and analysis	Daily at 6am
Performance harvest and analysis	Every 10 minutes
Status harvest and analysis	Every five minutes

To enable/disable scheduling, use the Scheduling configuration section view and/or change the setting.

You run a configuration harvest on demand to get the current configuration, performance, and health statuses for all devices assigned to MagicFlex.

To run a configuration, status performance Virtual Connect V-Port and/or MAC table harvest on demand, click the related **Run Now** button.



6.5 Configuration

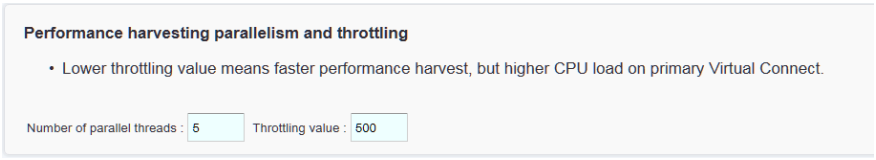
You can configure the following parameters in the MagicFlex UI. Make sure that you click **Save** after you configure a parameter.

- Performance Harvesting and Throttling
- VCM System Log
- Email Alerts
- SNMP Notifications
- HPE OneView
- User Interface

- Timeout
- Alert Retention

6.5.1 Performance Harvesting and Throttling

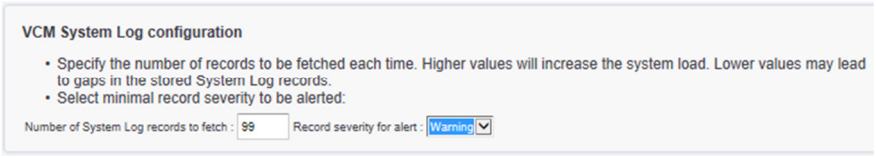
You can configure the number of parallel threads, and the throttling value.



6.5.2 VCM System Log

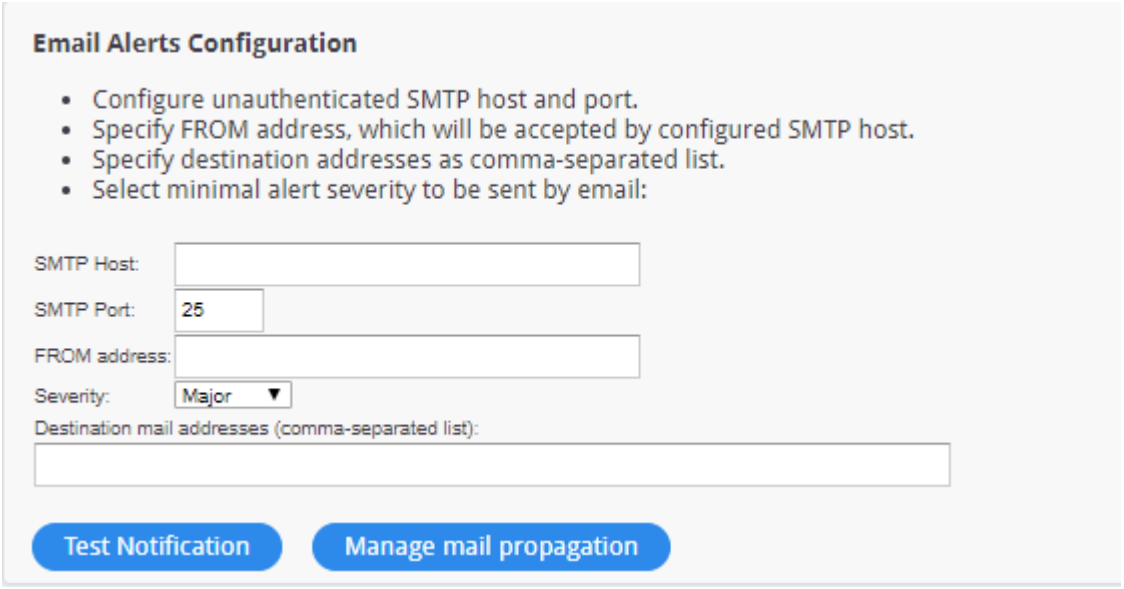
You can specify the number of Virtual Connect logs to fetch. The logs are fetched every five minutes. The default number of logs fetched is 100. There is no limit to the number of logs you can specify.

You can specify the record severity to display in the Analysis and Status Alerts section of the MagicFlex UI.



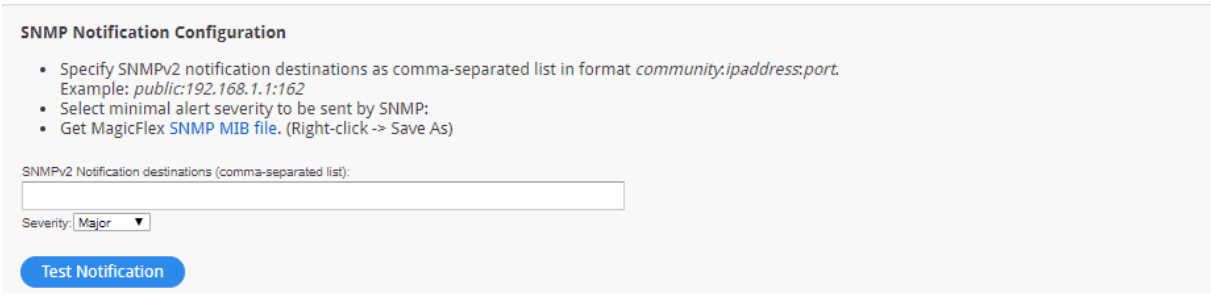
6.5.3 Email Alerts

Define the SMTP Host/Port details, the from email address to be displayed (for instance, MagicFlex), the severity threshold of the alarms to be sent, the email addresses to receive the alerts, and via the Manage mail propagation button, the type of device that each user will receive alerts for.



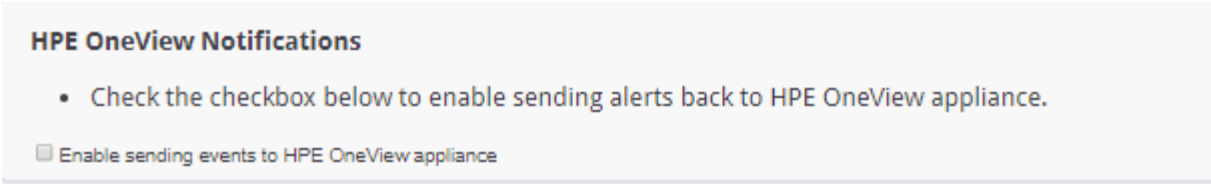
6.5.4 SNMP Alerts

Define IP address where SNMP traps will be sent, and which severity threshold to send such alerts.



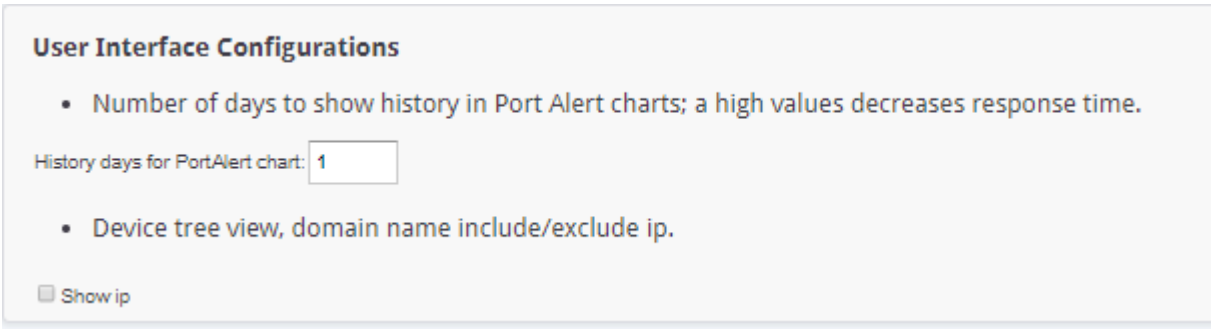
6.5.5 HPE OneView

Specify whether to send alerts to OneView.



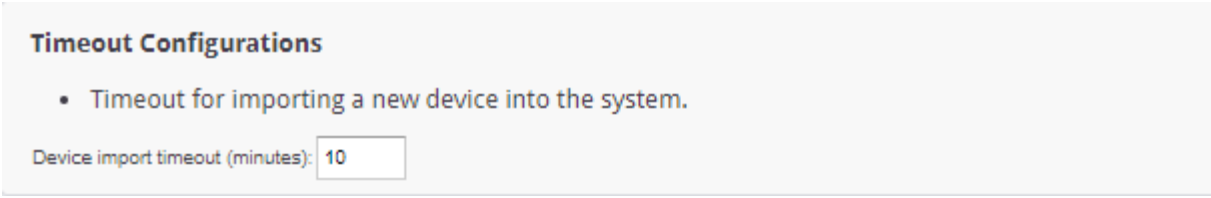
6.5.6 User Interface

Define number of days to keep the port alert history.



6.5.7 Timeout

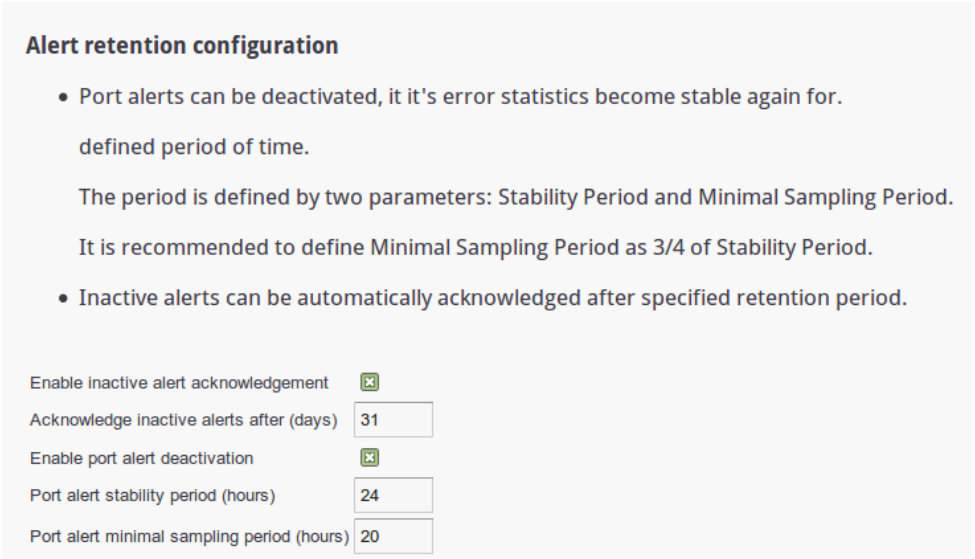
Specify timeout for new devices.



6.5.8 Alert Retention

MagicFlex automatically acknowledges outdated and irrelevant port alerts and analysis alerts.

- By default, port alerts are acknowledged and removed from your system after 24 hours of stability. You can configure the port alert stability period after which port alerts are removed.
- By default, analysis alerts are hidden after one month of inactivity. You can configure the length of inactivity after which analysis alerts are hidden.



6.6 Managing Users

6.6.1 Understanding User Roles

MagicFlex Smart Analysis comes with a single administrator account. The administrator account credentials are:

- User name: **admin**
- Password: **admin**

During system upgrades, the administrator account password resets to **admin**.

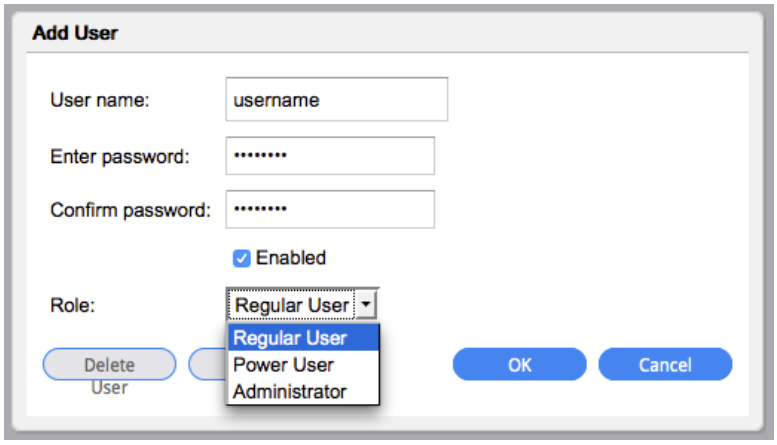
MagicFlex has the following user roles.

Table 6 MagicFlex User Roles

Role	Description
Regular User	Has view-only permissions and cannot access the Administration panel, create port baselines, or acknowledge and hide alerts.
Power User	Can perform any operations, except for user-management operations.
Administrator	Can perform all operations.

6.6.2 Add a User

1. Click **Admin** in the left pane.
2. Click the **Users** tab in the top navigation bar.
3. Click the **Add** button.
4. Enter the required information in the Add User dialog.
5. Click **OK**.



6.6.3 Edit Information for an Existing User

1. Click **Admin** in the left pane.
2. Click the **Users** tab in the top navigation bar
3. Click the **Edit** button next to the user for which you want to edit the information.
4. Edit the necessary information, and click **OK**.

6.6.4 Delete an Existing User

1. Click **Admin** in the left pane.
2. Click the **Users** tab in the top navigation bar
3. Click the **Edit** button next to the user that you want to delete
4. Click the **Delete** button.

6.6.4.1 Change Your Password

The user name is displayed in the toolbar of the MagicFlex UI. All users can change their own password.

1. Click the user name in the toolbar.

In the Password Change dialog, change your password