

LANGuardian

Integration Pack for SolarWinds ORION.

Installation and user guide

This manual describes how to integrate NetFort LANGuardian into a SolarWinds ORION® Network Performance Monitor environment.

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About this guide

This guide tells you how to install and use the LANGuardian Integration Pack for SolarWinds Orion®. With the integration pack installed, you can view LANGuardian reports and data in your SolarWinds Orion environment.

Intended audience

This guide is intended for NetFort LANGuardian users who also have SolarWinds Orion Network Performance Monitor (NPM) deployed on their network and want to integrate LANGuardian with their Orion dashboards.

This guide assumes you have already installed LANGuardian and Orion NPM. For information about installing and using LANGuardian, please see the *LANGuardian User Guide*, available here:

<http://www.netfort.com/downloads/solarwinds-integration-pack>

What's in this guide?

This guide contains the following information:

- Chapter 1 explains how LANGuardian and SolarWinds Orion NPM work together.
- Chapter 2 describes how to install the integration pack and add LANGuardian reports to the Orion NPM user interface.
- Chapter 3 contains troubleshooting information to help you diagnose and fix problems that can arise when you install and use the integration pack.
- Chapter 4 describes how to add LANGuardian reports not included in the integration pack.

Document conventions

This guide uses the following conventions:

- Menu items and user interface commands are shown in `Arial font`.
- Folder locations and commands you enter on screen are shown in `monospace font`.

- For brevity, SolarWinds Orion Network Performance Monitor software is referred to as “Orion.”

Additional information and resources

The following additional information and resources are available:

- NetFort Technologies website:
www.netfort.com
- NetFort Technologies support:
support@netfort.com
- Thwack – SolarWinds online community site:
www.thwack.com

LANGuardian and SolarWinds

NetFort LANGuardian monitors traffic flowing through a network, while SolarWinds Orion monitors the performance of devices connected to the network. Together, they provide a single point of access to all the information a network engineer needs to monitor and troubleshoot a network.

System requirements and permissions

Before you integrate LANGuardian with Orion, you must have both products installed and running correctly on your network.

The version requirements are as follows:

- LANGuardian 8.8 or higher.
- SolarWinds Orion Network Performance Monitor 10.1 or higher.

To complete the installation, you must have the following permissions:

- Administrator access to the Windows server on which Orion is installed.
- Administrator rights on the Orion implementation into which LANGuardian will be integrated.
- Administrator access to the LANGuardian system you want to integrate with Orion.

How the integration works

Orion dashboards are made up of resources. You can customize dashboards by adding, removing, and reordering resources. The integration pack creates some additional, NetFort-specific, resources in your Orion environment. These resources enable you to add the most commonly used LANGuardian reports to your Orion environment. You can display or hide the reports by customizing the Orion user interface.

If you want to display LANGuardian reports in Orion that are not included in the integration pack, you can manually create Orion custom HTML resources for them. See Chapter 4 for instructions on how to do this.

From a technical point of view, integration between LANGuardian and Orion is made possible by the LANGuardian REST API. See Chapter 4 for details.

Security and authentication

When you access the LANGuardian web browser user interface you must authenticate yourself by entering a username and password. Similarly, when you integrate LANGuardian into an Orion dashboard, the NetFort resource on the dashboard must authenticate itself with LANGuardian so that it can retrieve the data it needs. For this reason, the HTML code embedded in the NetFort resource includes a valid LANGuardian username and password, enabling Orion to bypass the authentication page and retrieve the information it needs from LANGuardian.

We recommend that you create an Orion-specific user profile on LANGuardian and give it access to all reports. Use this profile when generating the HTML code to embed in Orion.

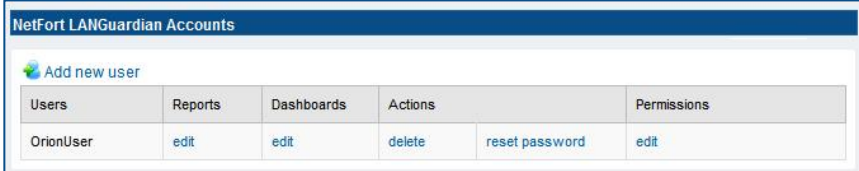
Warning! Do not embed the LANGuardian administrator user name and password in your Orion dashboards.

Follow these steps to add an Orion-specific account to LANGuardian:

1. Click Configuration on the Administration menu.
2. On the Configuration page, scroll down to the System section.
3. Click Add/Edit LANGuardian user accounts.
4. On the LANGuardian Accounts page, click Add new user.
5. Enter the username (for example, OrionUser) and password details for the new account.
6. Click Add User to create the account.

Follow these steps to give the Orion-specific user access to all reports:

1. On the LANGuardian Accounts page, click the edit button in the Reports column for the Orion user you have just added.



Users	Reports	Dashboards	Actions		Permissions
OrionUser	edit	edit	delete	reset password	edit

2. On the Edit existing reports for user page, click View all, then scroll down to the bottom of the page and click Save Reports.

The screenshot shows a web interface titled "NetFort LANGuardian Accounts". The main heading is "Edit existing reports for user: OrionUser". Below this, there is a link "back to the list of users". There are two radio buttons: "View all" (which is selected) and "Custom setup". Under the "View all" section, there are two categories of reports. The first category is "Bandwidth Quota" and it contains four items, each with a checkbox: "Bandwidth Quota :: events (user policy)", "Bandwidth Quota :: Status", "Bandwidth Quota :: Status by Group", and "Bandwidth Quota :: Status Summary". The second category is "Behaviour" and it contains one item with a checkbox: "Behaviour :: Applications, ordered by number of network connections created". At the bottom of the form is a "Save Reports" button.

Installing the integration Pack

The integration pack is provided as a zip file. To install it, simply add the contents of the zip file to your Orion installation.

Download location

You can download the integration pack from the NetFort website:

www.netfort.com/downloads/

On this page, click the link to the LANGuardian Integration Pack for SolarWinds Orion, and follow the instructions.

Installation folder location

Orion is deployed as a web application hosted by Internet Information Services (IIS) on Microsoft Windows Server 2003 or Windows Server 2008.

To install the LANGuardian integration pack, you must add the LANGuardian files to the folder on the server where the Orion web application is hosted. Usually, the path to this folder is:

```
C:\inetpub\SolarWinds
```

Check if this folder exists on your server. If it does not exist, or if it exists and does not contain any files, then it is likely SolarWinds is installed in a different folder or on a different drive. You can find out exactly where it is installed by querying the Windows registry:

```
C:\> reg query "HKLM\Software\SolarWinds.net\SolarWinds 2002\Orion"
```

This command will return the location of the Orion installation folder, for example:

```
HKY_LOCAL_MACHINE\Software\SolarWinds.Net\SolarWinds 2002\Orion
    Web Root Dir    REG_SZ    d:\websites\SolarWinds
```

Extracting files

The integration pack is provided as a zip file. To install it, you must place the contents of the zip file in the SolarWinds installation folder.

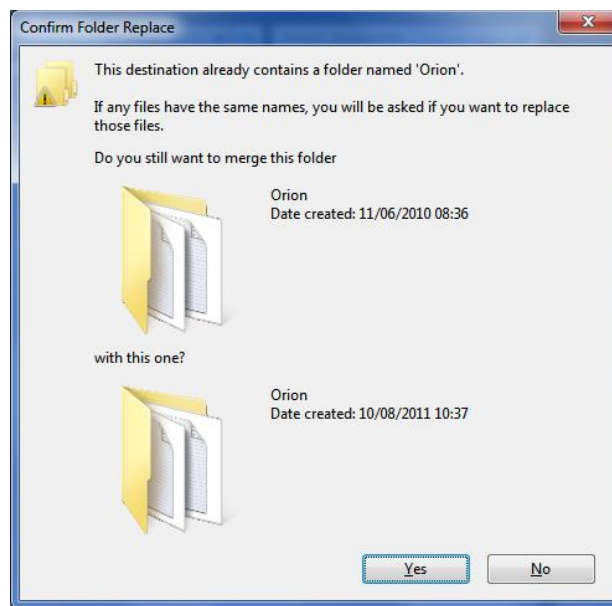
1. Open the zip file with Windows Explorer or an application such as WinZip, WinRAR, or 7-zip.

The zip file contains a folder called Orion.

2. Extract the Orion folder from the zip file to the folder where SolarWinds is installed, for example:

C:\inetpub\SolarWinds

Because the folder already contains a subfolder called Orion, Windows will ask you if you want to merge the existing folder and the new folder containing the integration pack files.



Click Yes to merge the folders and complete the installation.

You might experience permission problems copying the NetFort files into the SolarWinds folder if you are not logged in to the server as Administrator. There are several ways to work around this problem:

- Log in to the server as Administrator.
- Run your zip file extraction program as Administrator (right-click on the program icon, then choose Run As... from the pop-up menu).
- Make sure the account you are using to log on to the server has write access to the installation folder.

Connecting to LANGuardian

After you have installed the files, the next step is to configure Orion with the address and authentication details of the LANGuardian system.

1. Open a web browser and navigate to the Orion home page.
2. Relative to the Orion home page, the address of the LANGuardian settings page is NetFort/Settings.aspx. To access the settings page, append this address to the URL in the browser address bar.


For example, if the address of your Orion home page is

http://192.168.1.127/Orion

The address of the LANGuardian settings page will be

http://192.168.1.127/Orion/NetFort/settings.aspx

3. On the NetFort LANGuardian Settings page, enter the username and password of the LANGuardian account, and the IP address of the LANGuardian system you want to integrate with Orion.

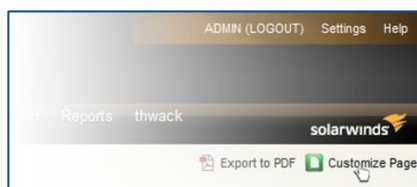



4. Click Submit to complete the integration pack installation.

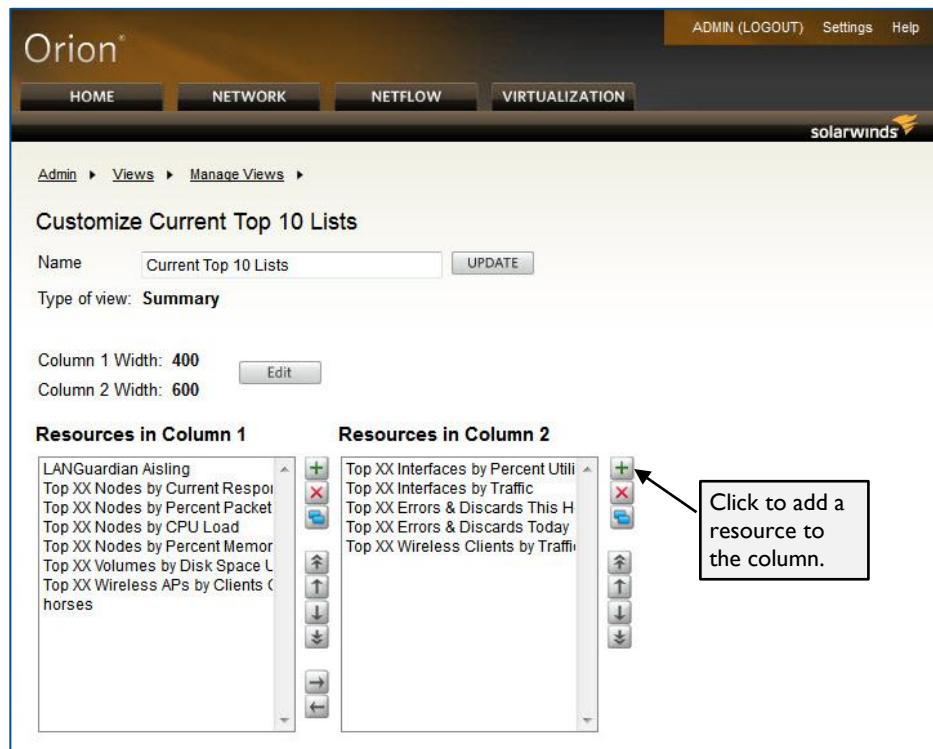
Adding LANGuardian reports to an Orion view

Installing the integration pack makes LANGuardian reports available as resources in your Orion environment. To display a report, you must add the corresponding resource to an Orion view.

1. In the Orion user interface, browse to the page where you want the LANGuardian information to be displayed. For example, to add the report to the Orion Top 10 page, click Home on the Orion main menu, then click Top 10.
2. Click Customize Page.




3. Select the column to which you want to add the LANGuardian report and click the  icon to add a resource to the column.



- Orion displays the Add Resources to Column page. Scroll down to the NetFort Reports resources. These are divided into two categories:

- Netfort Reports for Node Details View - Reports from NetFort LANGuardian DPI Analysis
- Netfort Reports for Summary View - Reports from NetFort LANGuardian DPI Analysis

- Click the  icon beside the NetFort Reports sections to expand the lists of available LANGuardian reports.

On Node Details View pages, the available reports are:

- Netfort Reports for Node Details View - Reports from NetFort LANGuardian DPI Analysis
 - Recent User Logins
 - Top XX Email Subjects
 - Top XX Files Accessed
 - Top XX Files Served
 - Top XX IP Protocols
 - Top XX Network Events
 - Top XX Network Services
 - Top XX Network Users
 - Top XX Web Clients In Use
 - Top XX Websites Accessed
 - Top XX Websites Accessed via Proxy Server
 - Top XX Websites Served

On Summary View pages, the available reports are:

Netfort Reports for Summary View - Reports from NetFort LANGuardian DPI Analysis

- Recent User Logins
- Top XX Email Subjects
- Top XX Files Accessed
- Top XX IP Protocols
- Top XX Network Events
- Top XX Network Services
- Top XX Network Users
- Top XX Web Clients In Use
- Top XX Websites Accessed
- Top XX Websites Accessed via Proxy Server
- Top XX Websites Served

6. Enable the checkbox next to each report you want to include, then click the Submit button.
7. Click Done to finish customizing the page. The LANGuardian reports will be displayed when the page refreshes.

Note

When you add LANGuardian reports as Orion resources in your Orion views, be careful to ensure that the reports match the page type. For example, you should only add Summary View reports to a Summary View page. If you add a report to the wrong page type, the Orion resource for the report will display an error message as shown in the example below:

Recent User Logins

The data below might be incorrect because this report is not designed for inclusion in a Summary view.

Troubleshooting

If LANGuardian reports fail to display in Orion views, the tips in this section might help you to resolve the problem. If you need further assistance, please contact support@netfort.com.

Ensure LANGuardian is running

If you cannot see LANGuardian data in Orion, the first thing to check is that your LANGuardian system is running correctly. Go to the LANGuardian home page and log in using the account and password you specified when you installed the Orion integration pack. If you can log in successfully and see report data, then the problem is likely to be with your Orion configuration settings and not LANGuardian.

Permission errors when extracting or copying integration pack files

If you get “permission denied” errors when copying files to the installation folder or extracting them with an application such as WinZip, make sure you have write access to the folder.

Also, make sure you are logged in to the Administrator account on the Windows server where Orion is installed.

Report returns no data

If a LANGuardian report does not return any data, it might simply be a case of there being no data available that matches the report criteria.

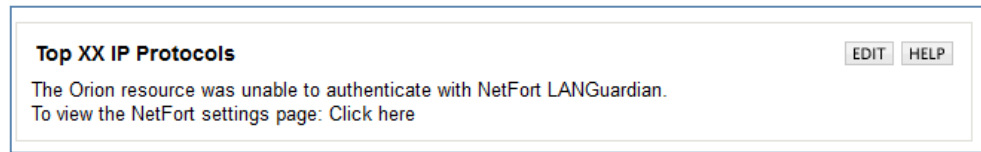
The screenshot below shows a correctly returned report that contains no data.



Top XX Email Subjects				EDIT	HELP
SENSOR	SUBJECT	TOTAL	PERCENT		

You can verify this by viewing the same report directly in LANGuardian. If the report returns no data and you suspect it should, check the sensor configuration in LANGuardian to make sure the correct data is being captured.

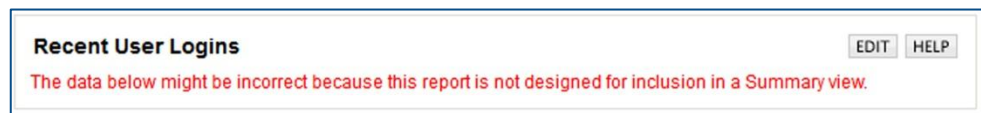
Report displays “unable to authenticate” message



This message is displayed if Orion is unable to authenticate itself with the LANGuardian system. The most likely cause is incorrectly entered credentials.

Click on the [Click here](#) link in the error message to go to the NetFort LANGuardian Settings page. Re-enter the username and password to make sure they are correct.

Report displays “data might be incorrect” message



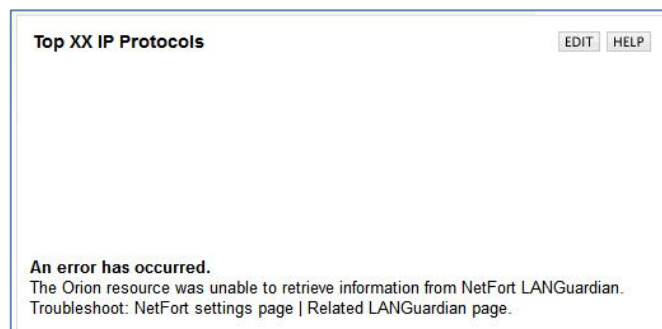
This message is displayed when you add a NetFort report to the wrong type of page.

LANGuardian reports are divided into two categories that correspond to views available in Orion:

- Node Details view
- Summary view

You should place reports from each category only on the page type for that category. For example, you should not place a report from the Node Details category on a Summary page. If you see this error message, delete the report from the page.

Report displays “an error has occurred” message



This message is displayed when Orion fails to receive a valid response from the LANGuardian system after 30 seconds. The most likely cause of this error is an incorrectly entered IP address for the LANGuardian system.

The error message displays two troubleshooting links to help you track down the problem:

- NetFort settings page

This link takes you to the NetFort LANGuardian Settings page, which is the Orion page where you specify the address and credentials for the LANGuardian system. On this page, verify that you have entered the correct IP address for the LANGuardian system.

- Related LANGuardian page

This link takes you to the LANGuardian page for the report that Orion is unable to display. This will help you to identify the cause of the error. If you can see the report in LANGuardian but not in Orion, it means there is a problem with how Orion connects to LANGuardian. If you cannot see the report in LANGuardian, make sure the LANGuardian system is running and that it is capturing data correctly.

Report displays “this connection is untrusted” message

The LANGuardian REST API is accessed via https and presents an X.509 certificate. By default, this is a self-signed certificate that is generated when the system was installed. Because of this, your web browser will not recognise the certificate and will assert a security exception, such as shown below for Firefox 5.



The easiest way to resolve this issue is to add the untrusted certificate to the certificate store on your web browser. The steps for doing this are browser-specific. For details, see the following links:

Chrome <http://www.google.com/support/chrome/bin/answer.py?answer=98884>

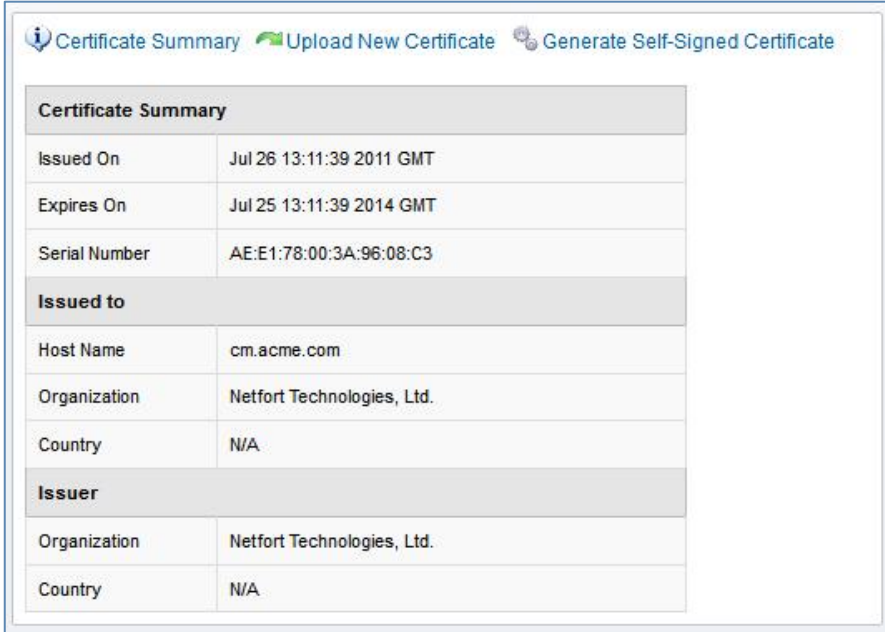
Firefox <http://support.mozilla.com/en-US/kb/This%20connection%20is%20untrusted>

Internet Explorer <http://windows.microsoft.com/en-US/windows-vista/About-certificate-errors>

Safari <http://docs.info.apple.com/article.html?path=Safari/5.0/en/22093.html>

Alternatively, you can upload a signed certificate to LANGuardian, as follows:

1. Log on to the LANGuardian home page.
2. Click the Configuration link in the Administration section.
3. On the Configuration page, scroll down to the System section.
4. Click Change the SSL certificate used by the web server.
5. On the SSL Certificate Management page, click Upload New Certificate or Generate Self-Signed Certificate and follow the on-screen instructions.



Certificate Summary	
Issued On	Jul 26 13:11:39 2011 GMT
Expires On	Jul 25 13:11:39 2014 GMT
Serial Number	AE:E1:78:00:3A:96:08:C3
Issued to	
Host Name	cm.acme.com
Organization	Netfort Technologies, Ltd.
Country	N/A
Issuer	
Organization	Netfort Technologies, Ltd.
Country	N/A

Orion displays “Orion Website Error” message

This message is displayed when you try to access the NetFort LANGuardian Settings page in your Orion implementation while logged in to Orion with an account that does not have administrator rights.

Orion Website Error



The Orion website is currently unable to display this page. Orion polling and alerting services often continue running, though this page cannot be displayed. Please take the following steps to attempt to alleviate the issue:

1. Log in to the website again and navigate to another Orion page, allowing you to isolate the error to this page.
2. Ensure the Orion services are still running.
3. Check that your SQL Server is still running and accessible.

Please notify SolarWinds of this error. We will address and help you fix the issue.

Your specific error is:

You must be an Admin to access this page.

To customize Orion settings or pages, you must be logged in to Orion with administrator rights.

Other problems

If you encounter other problems integrating LANGuardian with Orion, please contact NetFort Support using the email address support@netfort.com.

Advanced integration

When you install the integration pack, it makes the most commonly used LANGuardian reports available in Orion. If you want to display other LANGuardian built-in or custom reports in Orion, you can manually add them.

How it works

LANGuardian includes a SolarWinds menu item on each report page, which allows you to generate HTML code that you can include in the Orion Custom HTML resource you have created for that report.

The LANGuardian HTML code embedded in the Orion dashboard uses JavaScript Object Notation (JSON) to continuously fetch data from the LANGuardian database and keep the Orion Custom HTML resource updated.

From a technical point of view, integration between LANGuardian and Orion is made possible by the LANGuardian REST API.

LANGuardian REST API

REST (representational state transfer) is a software design architecture that is used in the implementation of client-server applications.

Applications based on REST use the HTTP protocol to create, read, and update data over the network.

A REST API (application programming interface) is a set of definitions that specify the parameters that can be used by clients in the HTTP operations they use when interacting with a server.

LANGuardian includes a REST API that you can use to incorporate traffic data from the LANGuardian database into other applications and formats, including:

- SolarWinds Orion
- Microsoft Excel (using the Get Data From Web command in Excel 2007 and higher versions)

- Comma-separated values (CSV), the *de facto* standard for incorporating data files into databases and spreadsheet applications
- HTML IFRAME content that you can include in any web page

Only SolarWinds Orion integration is covered in this guide. Please contact NetFort Support for information about other uses of the LANGuardian REST API.

Displaying LANGuardian reports in the Orion dashboard

You can configure views in Orion that consist of a mixture of Orion and LANGuardian reports.

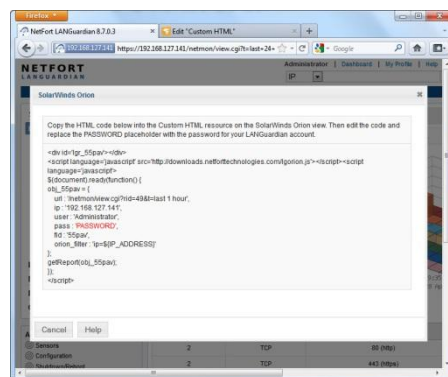
For example, the Orion Node Details page typically provides details of system status parameters such as memory use and packet loss for a given node on the network. By adding LANGuardian reports to the page, you can see additional information such as websites visited, files accessed, and bandwidth used.

Preparation

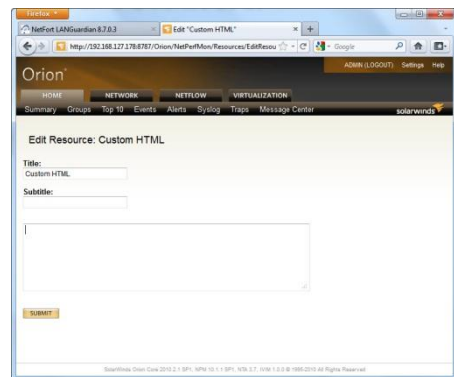
To prepare for adding your LANGuardian report to a SolarWinds view, we recommend you open two browser tabs (or windows).

Open the LANGuardian home page in one tab and open the Orion home page in the other tab.

Follow the LANGuardian-related instructions in the LANGuardian tab and follow the Orion-related instructions in the Orion tab. Then, when it is time to paste the LANGuardian HTML code into Orion, you will be able Select and Copy in the LANGuardian tab, then switch to the Orion tab and click Paste.



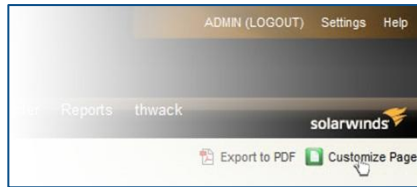
1 LANGuardian tab: Copy




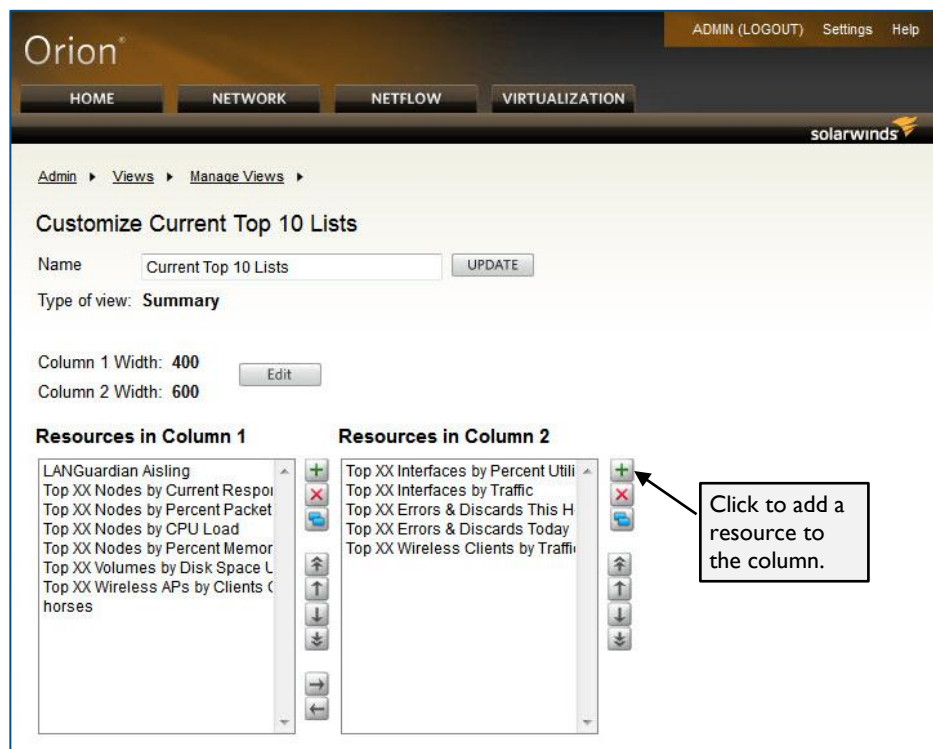
2 Orion tab: Paste

report to the Orion Top 10 page, click Home on the Orion main menu, then click Top 10.

2. Click Customize Page.



3. Select the column to which you want to add the LANGuardian report and click the  icon to add a resource to the column.



4. Orion displays the Add Resources to Column page. Scroll down to the Miscellaneous – Miscellaneous Resources section and expand it.

Orion[®] ADMIN (LOGOUT) Settings Help

HOME NETWORK NETFLOW VIRTUALIZATION solarwinds

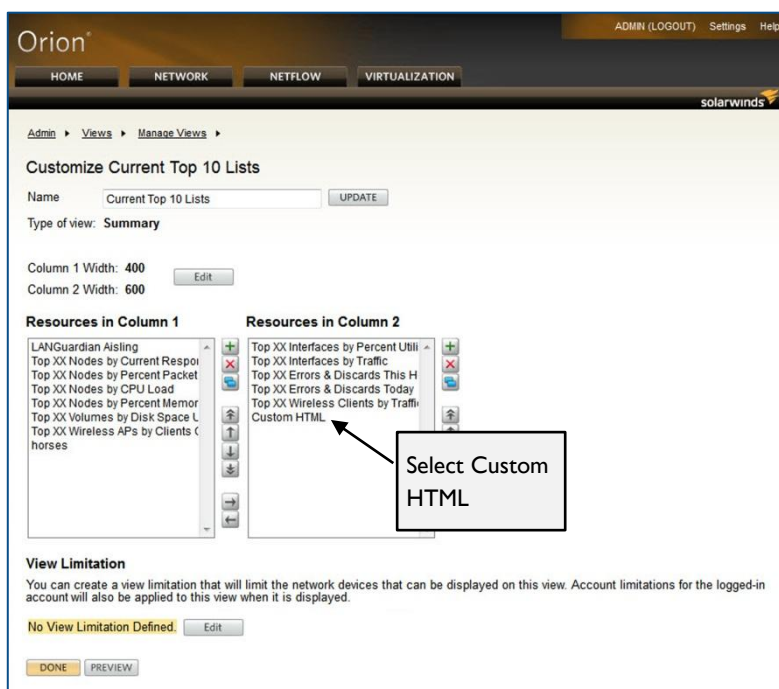
Add Resources to Current Top 10 Lists Column 2

- Node Lists - All Nodes and Grouped Node Lists
- NetFlow Traffic Analyzer Summary - Summary Reports and Charts for NetFlow Traffic Analyzer
- NetFlow Network-Wide Top XX Reports - Network-Wide Reports Showing the Top Items and Traffic for Each Router and Interface
- Summary Reports - Various Reports Showing Problem Areas
- Network Wide Summary Charts - Charts Showing Statistics Across All Managed Devices
- EnergyWise Controls - Charts and Reports for EnergyWise
- EnergyWise Charts - Charts for EnergyWise
- Top XX Lists - Top Response Time, CPU Load, Packet Loss, Traffic, etc.
- Alerts - Defined and Triggered Alerts
- Events - Event Summary and Detail Reports
- Syslog - Syslog Summary and Detail Reports
- Traps - Traps Summary and Detail Reports
- Multiple Series Charts - Multiple Interfaces Chart & Multiple Universal Device Pollers Chart for a Single Node or Summary Page
- Network Maps - Network Maps, Nodes on Maps, Lists of Maps, etc.
- Inventory - Various Network Inventory Reports
- Netfort - Netfort Reports
- thwack - thwack Resources
- Report Writer - Turn a Report from Report Writer into a Web Resource
- Miscellaneous - Miscellaneous Resources
 - Custom Object Resource
 - Polling Engine Status
 - Search for Nodes
 - Short Blank Space
 - Tall Blank Space
 - Custom HTML
 - User Links
 - Search for Interfaces
 - Search for Wireless Clients
- VSAN Summary - VSAN Summary Resources
- What's New - What's New in Orion NPM 10.1
- Virtualization Summary Reports - Resources that display overall application status

SUBMIT

5. Enable the Custom HTML checkbox and click Submit.

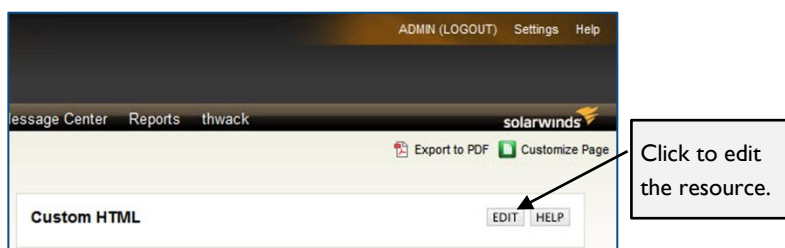
Orion will return to the customization page and you will see the new Custom HTML resource included in the column to which you added it.



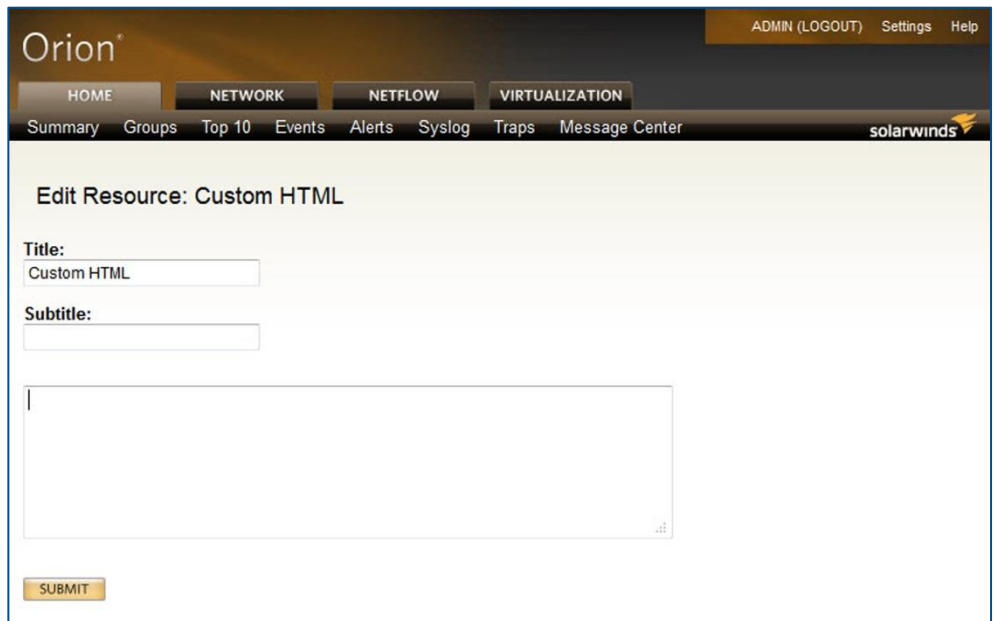
You can change the location of the Custom HTML resource on the page by using the arrow buttons to the right of the column.

Click the Done button to return to the Orion page.

6. Locate the newly added Custom HTML resource on the Orion page. You may need to scroll down the page to bring the new resource into view.



7. Click the Edit button to edit the Custom HTML resource. Orion will display the Edit Resource page.



Modify the Title field to reflect the title of the LANGuardian report you will display in the resource.

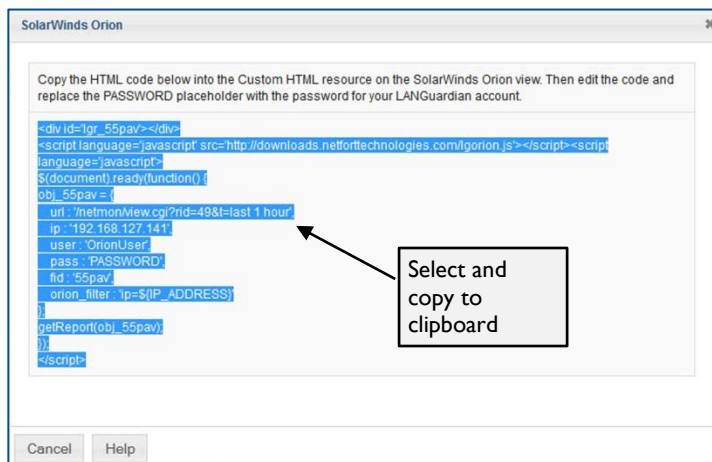
You are now ready to paste the LANGuardian code into the Custom HTML resource.

Adding LANGuardian HTML code to the Orion resource

Follow these steps to add the LANGuardian HTML code to the Orion resource:

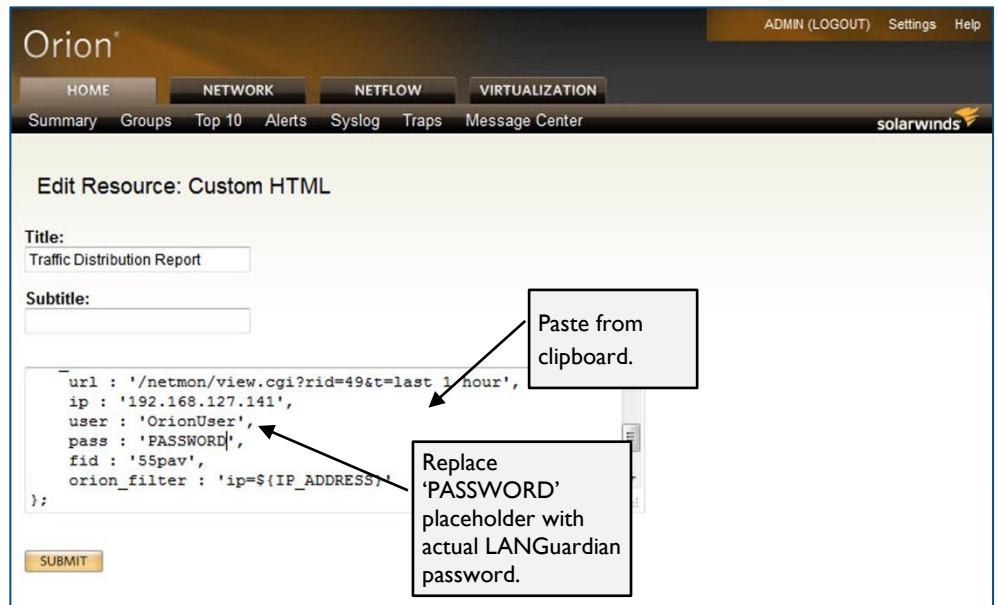
1. In the LANGuardian browser tab:

Select the HTML code in the pop-up window and copy it to the clipboard (press Ctrl-C or right-click and select Copy from the pop-up menu).



Position the cursor in the empty text box on the Edit Resource page. Press Ctrl-V or right-click and select Paste from the pop-up menu.

3. The HTML code you paste into the Orion window contains a placeholder instead of the password for the account that Orion will use to access LANGuardian data.



4. Edit the 'PASSWORD' placeholder and replace it with the actual LANGuardian account password.
5. Click Submit to save your changes.