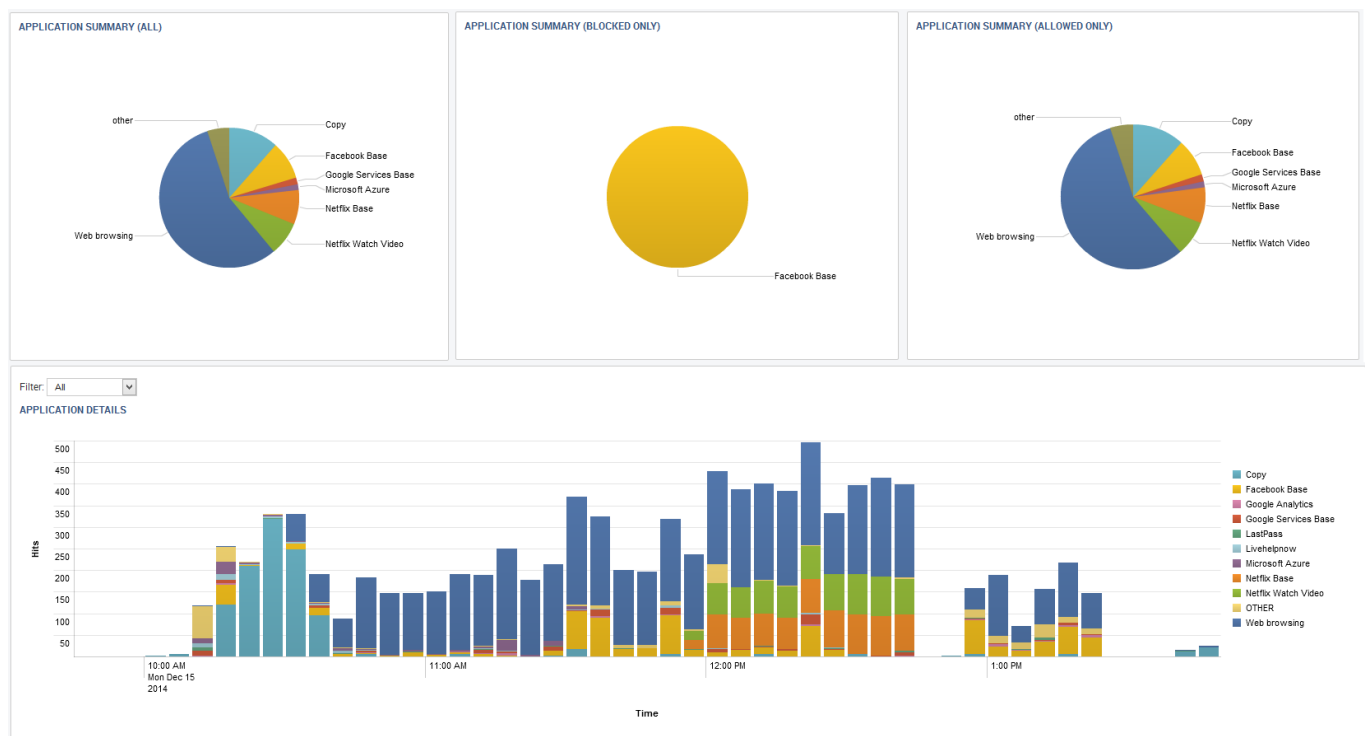


Splunk Integration

<https://campus.barracuda.com/doc/79463282/>

Splunk is a third-party platform for operational intelligence that allows you to monitor websites, applications servers, and networks. The Barracuda CloudGen Firewall app shows information on matched access rules, detected applications, and applied URL filter policies on various fixed and real-time timelines. Data is imported into Splunk via syslog streaming of the Firewall activity log. Currently, Splunk versions 6.0, 6.1 and 6.2 are supported.



Before You Begin

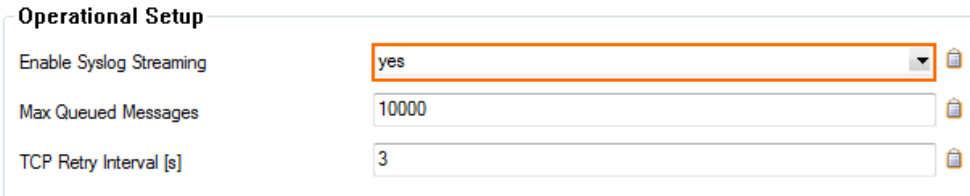
- Download the Barracuda CloudGen Firewall Splunk App from the Splunk Marketplace.
- Install the Barracuda CloudGen Firewall Splunk App on your Splunk Server. For more information, see <http://docs.splunk.com/Documentation/PCI/2.1.1/Install/InstalltheAppManually>.

Step 1. Configure Syslog Streaming on a Barracuda CloudGen Firewall F

Configure and enable syslog streaming for every Barracuda CloudGen Firewall you want to include in the Splunk App.

Step 1.1. Enable Syslog Streaming

1. Go to **CONFIGURATION > Configuration Tree > Box > Infrastructure Services > Syslog Streaming**.
2. Click **Lock**.
3. Set **Enable the Syslog service** to **yes**.



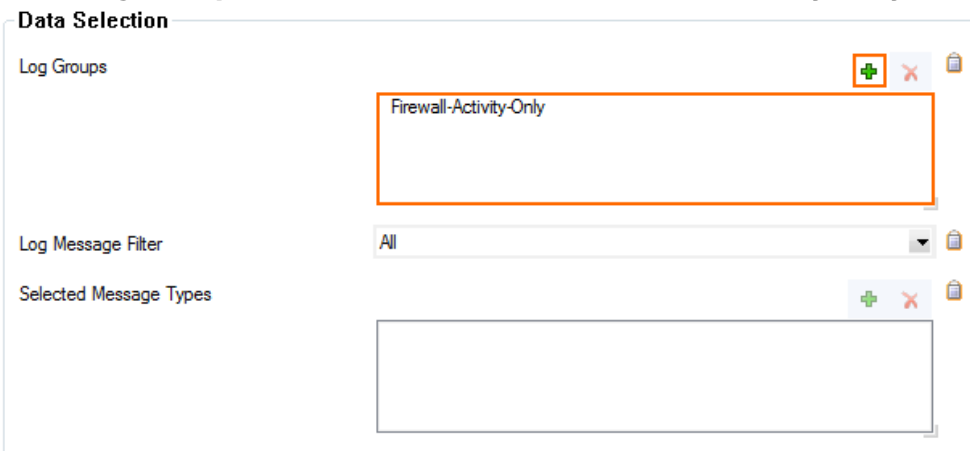
Operational Setup	
Enable Syslog Streaming	yes
Max Queued Messages	10000
TCP Retry Interval [s]	3

4. Click **Send Changes** and **Activate**.

Step 1.2. Configure Logdata Filters

Define profiles specifying the log file types to be transferred / streamed.

1. Go to **CONFIGURATION > Configuration Tree > Box > Infrastructure Services > Syslog Streaming**.
2. In the left menu, select **Logdata Filters**.
3. Click **Lock**.
4. Click the + icon to add a new filter.
5. Enter a **Name** and click **OK**. The **Filters** window opens.
6. Click + in the **Data Selection** table and select **Firewall_Audit_Log**.
Fatal_log and **Panic_log** data can also be streamed to the Splunk server, but are currently not processed by the Barracuda CloudGen Firewall F Series Splunk app.
7. In the **Affected Box Logdata** section select **Selection** from the **Data Selector** dropdown.
8. Click + to add a **Data Selection**. The **Data Selection** window opens.
9. Enter a **Name** and click **OK**.
10. In the **Log Groups** table, click + and select **Firewall-Activity-Only** from the list.



Data Selection	
Log Groups	Firewall-Activity-Only
Log Message Filter	All
Selected Message Types	

11. Click **OK**.
12. In the **Affected Service Logdata** section, select **None** from the **Data Selector** dropdown.
13. Click **OK**.

Top Level Logdata

Data Selection + ✖ 📄

Firewall_Audit_Log

Affected Box Logdata

Data Selector ✔ Selection 📄

Data Selection ✔ ✎ + ✖ 📄 📄 📄

Name	Log Groups	Log Message Filter
DATA01	Firewall-Activity-Only	All

Affected Service Logdata

Data Selector None 📄

Data Selection ✎ + ✖ 📄 📄 📄

Name	Log Groups	Log Message Filter

14. Click **Send Changes** and **Activate**.

Step 1.3 Configure the Logstream Destinations

Configure the data transfer settings for the Splunk server. You can optionally choose to send all syslog data via an SSL-encrypted connection.

1. Go to **CONFIGURATION > Configuration Tree > Box > Infrastructure Services > Syslog Streaming**.
2. In the left menu, select **Logstream Destinations**.
3. Click **Lock**.
4. Click **+** in the **Destinations** table. The **Destinations** window opens.
5. Configure the Splunk server logstream destination:
 - **Remote Loghost** – Select **explicit-IP**
 - **Loghost IP Address** – Enter the IP address of the Splunk server.

- **Loghost Port** – Enter **5140** for plaintext or **5141** for SSL-encrypted connections.
 The Barracuda CloudGen Firewall app can only process syslog data that is received on port 5140 (not encrypted) or 5141 for SSL-encrypted connections.
- **Transmission Mode** – Select **TCP** or **UDP** (only for unencrypted connections).
- **(optional) Sender IP** – Enter the management IP address of the Barracuda CloudGen Firewall or leave blank for the CloudGen Firewall to do a routing lookup to determine the Sender IP address.
- **(optional) Use SSL Encapsulation** – Select **yes** to send the syslog stream over an SSL-encrypted connection.
- **(optional) Peer SSL Certificate** – Import the SSL certificate configured on the Splunk server for this data import.
 Configure the Splunk server to receive SSL-encrypted connections. For more information, see <http://docs.splunk.com/Documentation/Splunk/latest/Admin/Inputsconf>.
- **Override Node Name** – Select **no**

6. Click **OK**.

Destination Address

Remote Loghost	explicit-IP	▼	🗑️
Loghost IP Address	10.0.10.44	📄	🗑️
Loghost Port	5140		🗑️

Data Transfer Setup

Transmission Mode	TCP	▼	🗑️
Sender IP	10.0.10.88	📄	🗑️
Use SSL Encapsulation	no	▼	🗑️
Peer SSL Certificate	<input type="button" value="Show..."/> <input style="border: 1px solid #ccc; padding: 2px 5px;" type="button" value="Ex/Import"/> No certificate present		🗑️
SSL Peer Authentication	verify peer with locally installed certificate	▼	🗑️

Log Data Tagging


Add Range/Cluster Info	yes	▼	🗑️
Override Node Name	no	▼	🗑️
Explicit Node Name			🗑️
Explicit Hierarchy Info	Range-Cluster	▼	🗑️
Add UTC Offset	no	▼	🗑️

7. Click **Send Changes** and **Activate**.

Step 1.4 Configure Logdata Streams

Create a logdata stream configuration combining the previously configured **Log Destinations** and **Log Filters**.

1. Go to **CONFIGURATION > Configuration Tree > Box > Infrastructure Services > Syslog Streaming**.
2. In the left menu, select **Logdata Streams**.
3. Click **Lock**.
4. Click **+** in the **Streams** table.
5. Enter a **Name** and click **OK**. The **Streams** window opens.
6. In the **Log Destinations** table, click **+** and select the **Log Destination** created in Step 1.3.
7. In the **Log Filters** table, click **+** and select the **Log Filter** created in Step 1.2.



Stream Configuration

Active Stream: yes

Log Destinations: Splunk


Log Filters: FILT01

8. Click **OK**.
9. Click **Send Changes** and **Activate**.

Step 1.5 Configure Audit and Reporting

Configure the settings for log policies:

1. Go to **your CloudGen Firewall > Infrastructure Services > General Firewall Configuration**.
2. In the **Configuration Mode** section of the left menu, click **Switch to Advanced View**.
3. In the left menu, click **Audit and Reporting**.
4. Click **Lock**.
5. In the section **Statistics Policy**, set **Generate Dashboard Information** to **yes**.
6. In the section **Statistics Policy**, set **Generate Monitor Information** to **yes**.



Statistics Policy

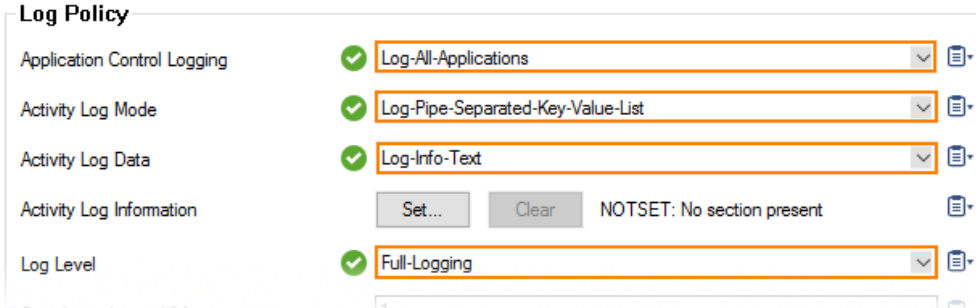
Generate Dashboard Information: yes

Generate Monitor Information: yes

Maximum Storage Size [MB]: 0

Statistics for Host Firewall: no

7. In the **Log Policy** section, set **Application Control Logging** to **Log-All-Applications**.
8. In the **Log Policy** section, set **Activity Log Mode** to **Log-Pipe-Separated-Value-List**.
9. In the **Log Policy** section, set **Activity Log Data** to **Log-Info-Text**.
10. In the **Log Policy** section, set **Log Level** to **Full-Logging**.



Setting	Value
Application Control Logging	Log-All-Applications
Activity Log Mode	Log-Pipe-Separated-Key-Value-List
Activity Log Data	Log-Info-Text
Activity Log Information	Set... Clear NOTSET: No section present
Log Level	Full-Logging

11. Click **Send Changes**.
12. Click **Activate**.

All firewall log data is now being streamed to the Splunk server.

Step 2. Data Input on Splunk

The Splunk server must be configured to receive the syslog data. Verify that you have a **Data input** entry for TCP or UDP port 5140 or TCP port 5141 (SSL) that listens for the incoming syslog streaming connections. You must use port 5140/5141 because the Barracuda CloudGen Firewall Splunk app can only process data received on these ports. For more information, see <http://docs.splunk.com/Documentation/Splunk/6.2.0/Data/Monitornetworkports>.

Step 3. (optional) Enable SSL Encryption for Barracuda CloudGen Firewall Splunk App

If you want to SSL encrypt connections with Splunk, you must modify the inputs.conf configuration file for the Barracuda CloudGen Firewall Splunk App.

1. Copy your SSL certificates to `/opt/splunk-6.2/etc/auth/server.pem` and `/opt/splunk-6.2/etc/auth/box-cert.pem`.
2. Login to the Splunk server via SSH.
3. Edit `$SPLUNK_HOME/etc/apps/BarracudaNGFirewall/default/inputs.conf` and add a section for SSL:

```
[SSL]
serverCert = /opt/splunk-6.2/etc/auth/server.pem
password = password
requireClientCert = true
rootCA = /opt/splunk-6.2/etc/box-cert.pem
```
4. Restart Splunk.

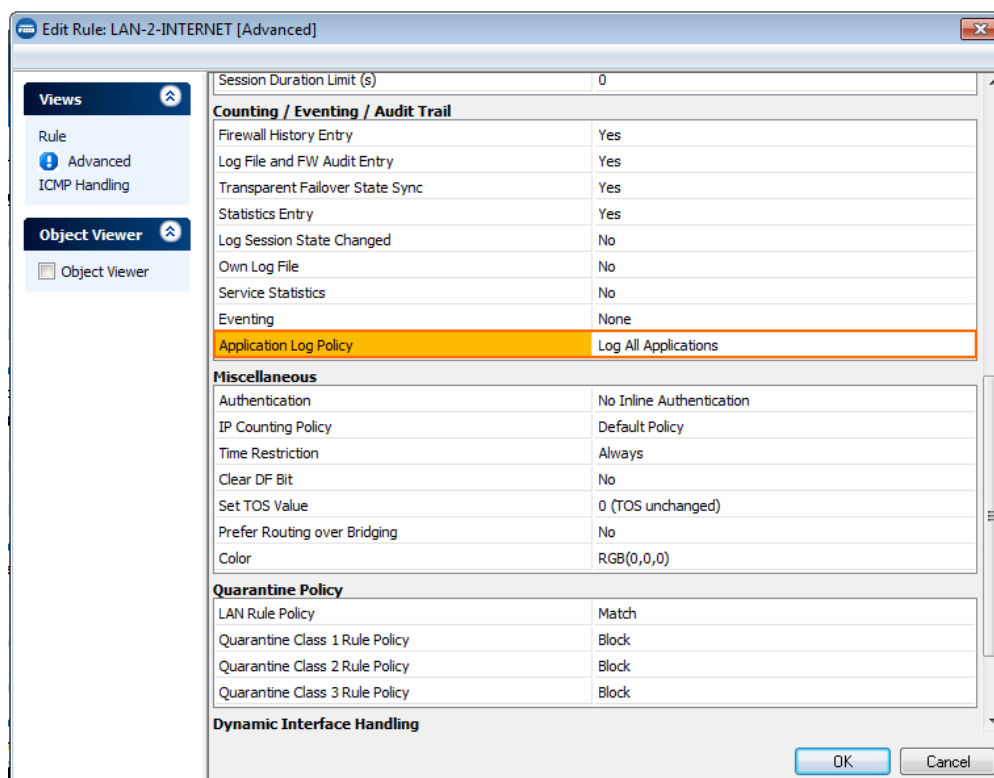
Certificate Troubleshooting

If you see log messages containing the string "alert bad certificate" in the **bsyslog** log file, the **rootCA** certificate is either missing or invalid. Set **requireClientCert** to **false** to disable the certificate check.

```
2014 12 16 09:43:34 Notice +01:00 Syslog connection established; fd='14',
server='AF_INET(127.0.0.1:6224)', local='AF_INET(0.0.0.0:0)' 2014 12 16 09:43:34 Error
+01:00 [18697:4146318224] SSL_connect:14094412: error:14094412:SSL
outlines:SSL3_READ_BYTES:sslv3 alert bad certificate
```

Step 4. Enable Application Logging in the Firewall

Application data is collected on a per-access rule basis. Set the **Application Log Policy** to **Log All Applications** in the **Advanced Firewall Rule Settings** for each access rule that matches traffic you want to include in the data collected on the Splunk server. For more information, see [Advanced Access Rule Settings](#).



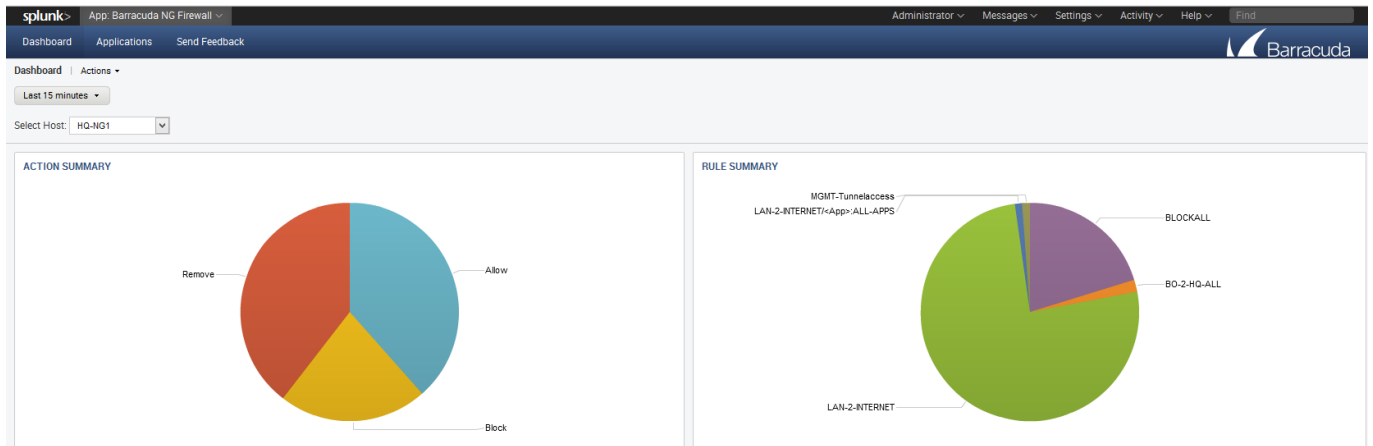
Step 5. The Barracuda CloudGen Firewall Splunk App

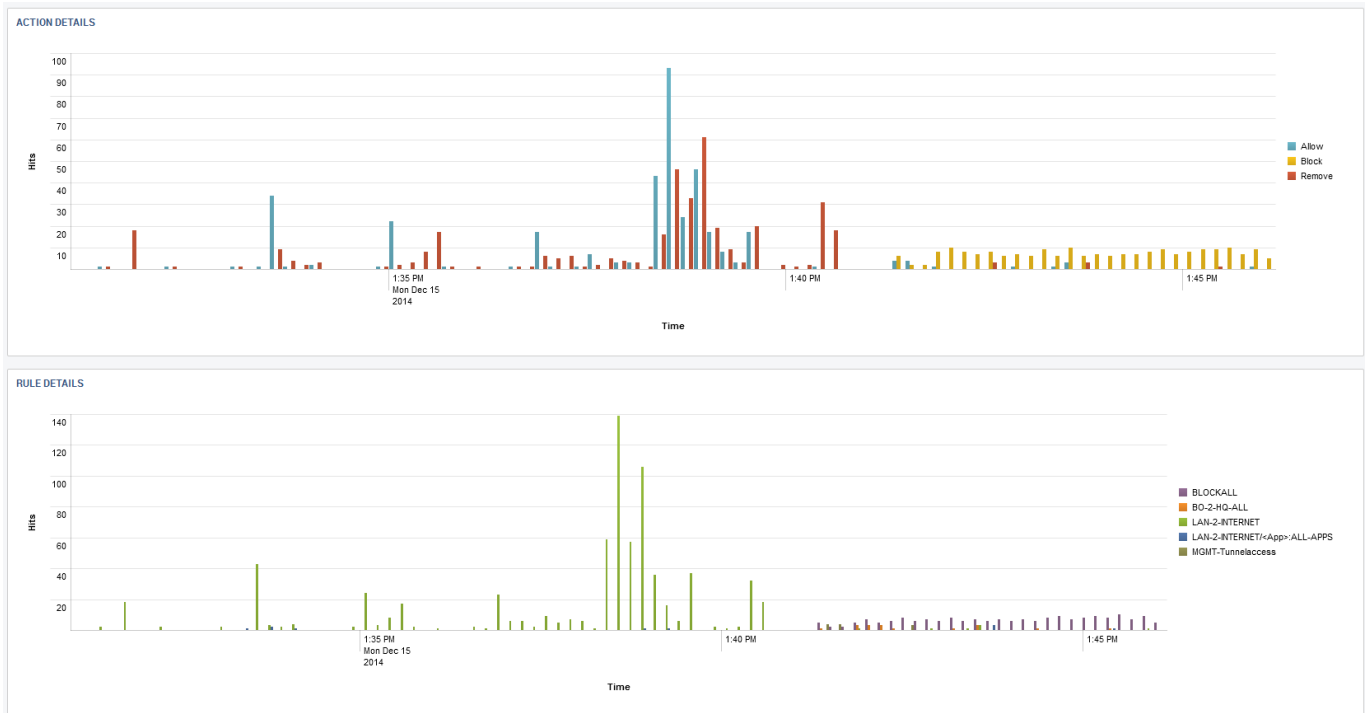
Log into Splunk, and click on the Barracuda CloudGen Firewall app on the Splunk dashboard. Select the Barracuda CloudGen Firewall from the **Select Host** dropdown menu, and then select the **time span** for the query.



Barracuda CloudGen Firewall Dashboard

The app allows you to display connection information based on a fixed time period or in real-time via Barracuda CloudGen Firewall host.





Barracuda CloudGen Firewall Applications

Click on the **Applications** tab of the Barracuda CloudGen Firewall Splunk plugin to view Application Control 2.0 data, such as detected and blocked applications and websites blocked by URL Filter policies.

APPLICATION SUMMARY (ALL)

Application	Hits	Percentage
Web browsing	5288	55.93
Copy	1090	11.53
Facebook Base	832	8.80
Google Services Base	788	8.37
Microsoft Azure	124	1.31
Netflix Base	751	7.94
Netflix Watch Video	738	7.81
Livehelpnow	66	0.70
Google Analytics	52	0.55

APPLICATION SUMMARY (BLOCKED ONLY)

Application	Hits	Percentage
Facebook Base	44	100.00

APPLICATION SUMMARY (ALLOWED ONLY)

Application	Hits	Percentage
Web browsing	5288	56.20
Copy	1090	11.58
Facebook Base	788	8.37
Microsoft Azure	124	1.32
Netflix Base	751	7.98
Netflix Watch Video	738	7.84
Google Services Base	148	1.57
Livehelpnow	66	0.70
Google Analytics	52	0.55

TOP 10 APPLICATIONS (ALL)

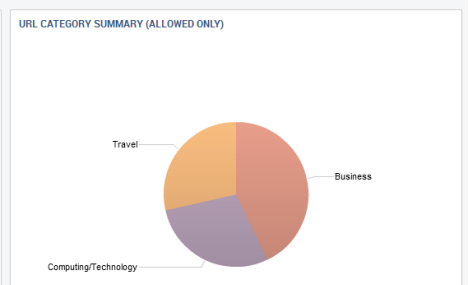
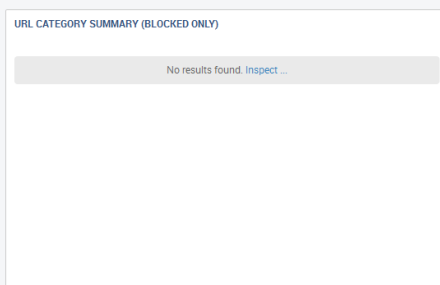
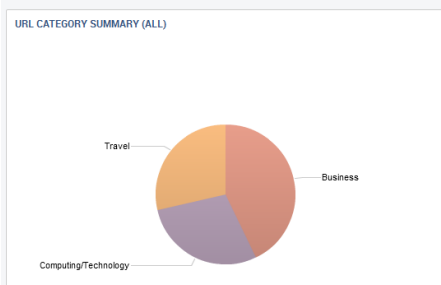
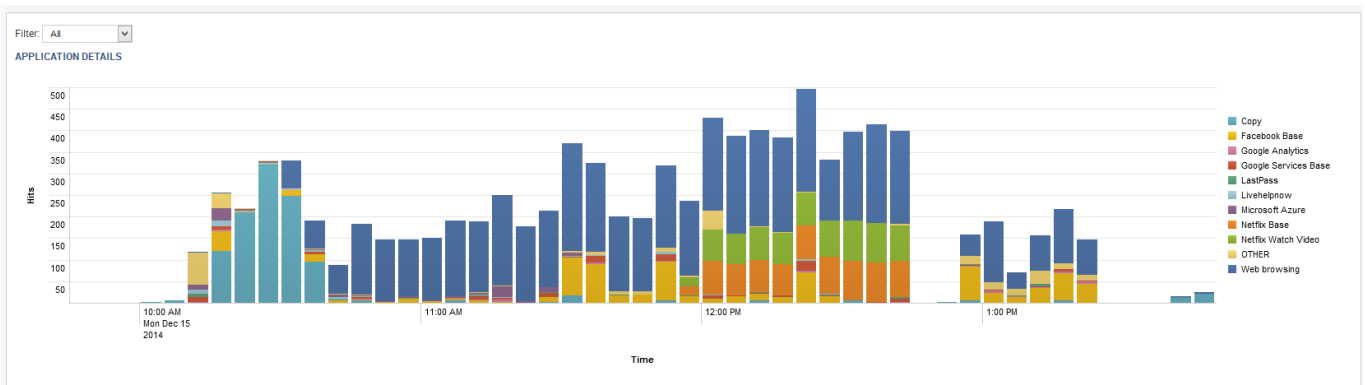
Rank	Application	Hits	Percentage
1	Web browsing	5288	55.93
2	Copy	1090	11.53
3	Facebook Base	832	8.80
4	Netflix Base	751	7.94
5	Netflix Watch Video	738	7.81
6	Google Services Base	148	1.57
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1	Facebook Base	44	100.00

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8	Livehelpnow	66	0.70
9	Google Analytics	52	0.55



Figures

1. splunk_top.png
2. splunk_syslog01.png
3. splunk_syslog01a.png
4. splunk_syslog02.png
5. splunk_syslog03.png
6. splunk_syslog04.png
7. statistics_policy_for_splunk_integration.png
8. audit_and_reporting_for_splunk_integration_v2.png
9. splunk_app_logging1.png
10. splunk_select1.png
11. splunk_dash1.png
12. splunk_dash2.png
13. splunk_app1.png
14. splunk_app2.png

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