

Blue Coat® Systems

SNMP Monitoring with Cacti

*A Guide to Proactively Monitor
ProxySG and ProxyAV Appliances
in SWG and WANOP Deployments*



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Americas:
Blue Coat Systems, Inc.
420 N. Mary Ave.
Sunnyvale, CA 94085

Rest of the World:
Blue Coat Systems International SARL
3a Route des Arsenaux
1700 Fribourg, Switzerland

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Introduction

Cacti is an open-source, web-based network monitoring tool and graphing tool that uses SNMP to gather device information. Cacti polls information at predetermined intervals (for example, every minute), stores the data in a MySQL database, and presents it in graphs on Web frontend applications.

Common usage is to retrieve load and status information from switches, routers, firewalls, servers, proxies, etc., and build a vendor-independent tool for monitoring the health and behavior of the IT infrastructure.

This document explains how to leverage Cacti with Blue Coat's ProxySG and ProxyAV appliances and monitor various statistics, including standard metrics (CPU, memory, network throughput) and advanced metrics (hardware sensors, Cache usage, WAN optimization statistics and HTTP Proxy metrics). The open nature of Cacti and Blue Coat's SGOS operating system allows for extending monitored metrics beyond the scope of this document.

Scenario

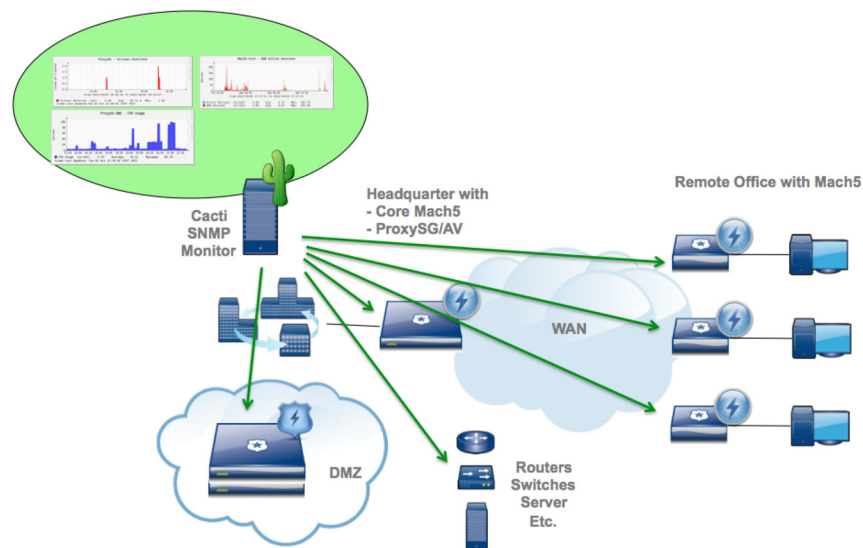


Figure 1-1 Network diagram

Requirements

In this document, Cacti version 0.8.8a is used. Cacti was installed on a CentOS operating system with all of its dependencies. The CentOS operating system was installed as a virtual image.

ProxySG Appliance SGOS Requirements

- ❑ Testing was performed using SGOS 6.3.x. Although earlier releases are expected to work, earlier releases were not tested.
- ❑ The basic SNMP-based metrics should work with SGOS 5.4/5.5/6.1/6.2/6.3/6.4.
- ❑ The advanced metrics are based on Perl scripts parse data from the Advanced URLs. These metrics are expected to work with SGOS 6.2/6.3/6.4.

ProxyAV Appliance AVOS Requirements

- ❑ Testing was performed using AVOS 3.4.x. Earlier releases might work; however, they were not tested.

Cacti Version 0.8.8a

- ❑ Additional modules/packages: Apache2, MySQL, Net-SNMP, Perl, libwww-perl
- ❑ To import the templates referenced in this document, you must install version 0.8.8a.

Note: Cacti does not allow you to import a template into a release that is older than the version in which the template was created. Cacti uses an XML format (including hashes), that contains the Cacti version with which the template was created. All Cacti templates referenced in this document were created with Cacti 0.8.8a; thus, this is the minimum version required to use the templates.

To better understand monitoring of critical resources, refer to the *Blue Coat SNMP Critical Resource Monitoring Guide for SGOS 6.3.x*: <https://bto.bluecoat.com/documentation/pubs/view/SGOS%206.3.x%20>

Configuration Steps

The configuration section walks you through the necessary steps. First, you need to enable SNMP on the monitored devices (ProxySG, ProxyAV, or Mach5 appliances) and create an SNMP community. For advanced scripts you need to enable the HTTP management console on the ProxySG or Mach5 appliance.

Next, Cacti needs to be installed to include the dependencies mentioned in the "Requirements" section of this guide.

Configuration steps are as follows:

1. Enable SNMP on the ProxySG/ProxyAV appliance. See ["Enable SNMP on the ProxySG / ProxyAV Appliance"](#).
2. (Optional) Enable HTTP Console on the ProxySG appliance. See ["Enable HTTP Console on the ProxySG Appliance \(Optional\)"](#) on page 5.
3. Install Cacti. See ["Install Cacti"](#) on page 6.
4. Deploy Perl scripts. See ["Deploy Perl Scripts"](#) on page 6.
5. Import templates. See ["Import Blue Coat-Provided Cacti Templates"](#) on page 7.
6. If you are using the BlueCoat-ProxySG-Advanced template, set Update Data Input Methods. See ["Update Data Input Methods"](#) on page 10.
7. Add devices. See ["Add Devices"](#) on page 11.

Enable SNMP on the ProxySG / ProxyAV Appliance

ProxySG Appliance

To enable SNMP on the ProxySG appliance, complete the following procedure.

Procedure:

1. Enable SNMP Listener on the ProxySG appliance. From the Management Console, select **Configuration > Proxy Services > Management Services**.

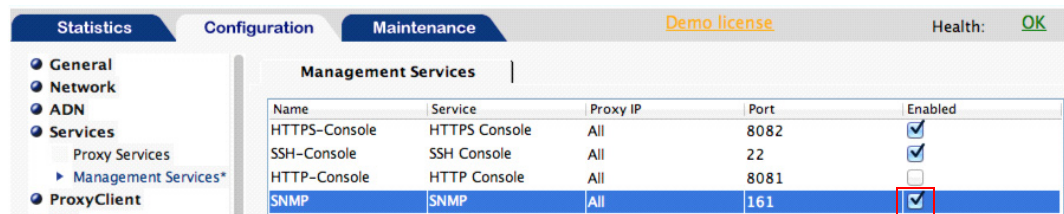


Figure 1–2 Management Services - SNMP

2. Create SNMP Community. From the Management Console, select **Maintenance > SNMP > SNMPv1-v2c Communities**. (See [Figure 1–3](#) and [Figure 1–4](#).)

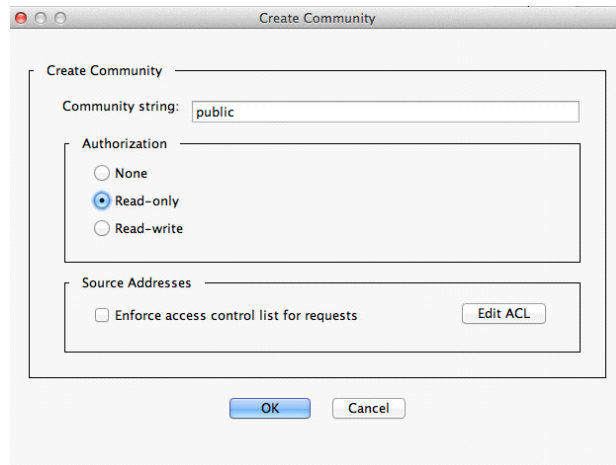


Figure 1-3 SNMP Create Community dialog

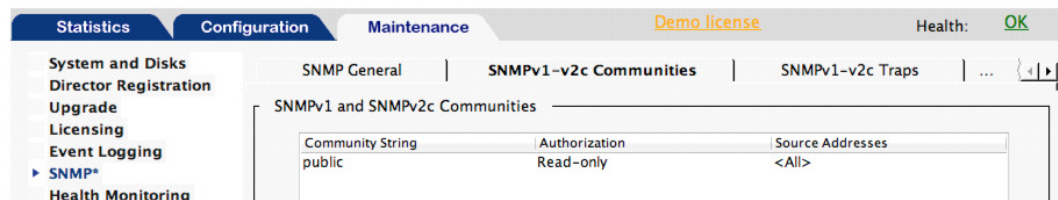


Figure 1-4 Maintenance tab - SNMPv1 - v2C Communities

The following CLI commands are used to enable SNMP service and create an SNMP read-only community “public”.

```
management-services
edit SNMP
remove Explicit 161
exit
edit SNMP
add all 161 enable
exit
exit

snmp
create community public
edit community public
authorization mode read-only
exit
exit
```


Enable HTTP Console on the ProxySG Appliance (Optional)

The HTTP access to the management console is needed for advanced scripts only. These scripts use HTTP to retrieve information from the Advanced URL statistics and do not support HTTPS today.

1. Enable the HTTP Management Console. From the Management Console, select **Configuration > Services > Management Services**. (See [Figure 1–5](#).)

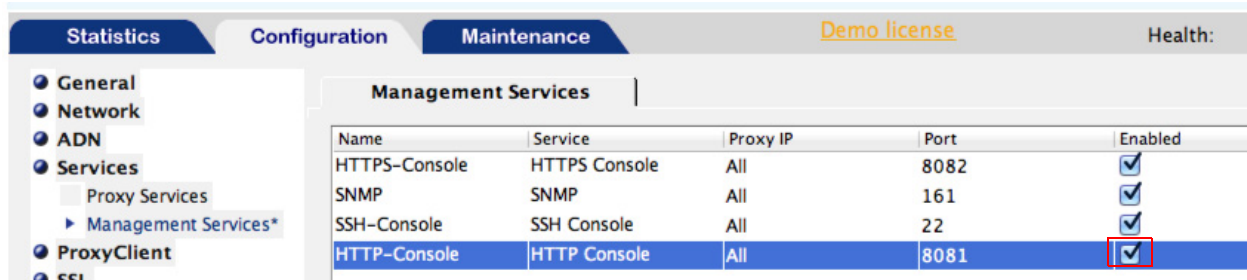


Figure 1–5 Settings for enabling HTTP Console

The equivalent CLI commands are shown below.

```
management-services
edit HTTP-Console
remove Explicit 8081
exit
edit HTTP-Console
add all 8081 enable
exit
exit
```

ProxyAV Appliance

To enable SNMP on the ProxyAV appliance, complete the following procedure.

Procedure:

1. From the Management Console, select **Advanced > SNMP**.
2. Configure SNMP version and community, then enable SNMP. (See [Figure 1–6](#) and [Figure 1–7](#).)

SNMP version: SNMPv2

Read community:

Verify read community:

Figure 1–6 SNMP community dialog



Figure 1–7 SNMP enable setting

Install Cacti

This guide does not provide a complete procedure for installing and setting up a Linux or CentOS operating system, or include how to install Cacti and the additional packages. Refer to the following helpful links for the base setup:

- ❑ Cacti project homepage: <http://www.cacti.net>
- ❑ Cacti templates: <http://docs.cacti.net/templates>
- ❑ CentOS 6.2 x86_64, 64-bit: http://virtual-machine.org/centos-6-x86_64-64bit-vmware-image-download
- ❑ Cacti Installation Guide: <http://www.cyberciti.biz/faq/fedora-rhel-install-cacti-monitoring-rrd-software/>

Cacti Templates and Scripts for Blue Coat Devices

This guide makes use of three Blue Coat-provided Cacti templates:

- ❑ BlueCoat-ProxySG-General
 - Contains a set of 11 metrics and graphs, as well as standard interface statistics
- ❑ BlueCoat-ProxySG-Advanced
 - Contains nine metrics and graphs
 - Leverages eight Perl scripts to retrieve information from Advanced URLs of the ProxySG
- ❑ BlueCoat-ProxyAV
 - Contains a set of 11 metrics and graphs specifically targeted for ProxyAV, as well as standard interface statistics

Deploy Perl Scripts

Before importing and using the provided Cacti import templates, you should deploy the Perl scripts, as these are referenced by the metrics from the BlueCoat-ProxySG-Advanced template.

Note: Deploying Perl scripts is only required if you are using the BlueCoat-ProxySG-Advanced template. You may skip this section if you only plan to use the BlueCoat-SG-General and BlueCoat-ProxyAV templates.

Procedure:

1. Copy the scripts into your Cacti directory in the subfolder "scripts." For example, you can use secure copy (scp) to transfer the files from your local host to the Cacti machine, into the scripts directory. Within a CentOS Cacti installation, this folder should be located at: /usr/share/cacti/scripts.

Example commands:

```
scp adn* user@cacti-host-ip:.  
scp proxySG* user@cacti-host-ip:.
```

The files should be owned by root only.

2. Change the rights of the imported files so that root and non-root users can execute the scripts.

A list of the Perl scripts after the changes is provided below.

```
[root@localhost scripts]# pwd  
/usr/share/cacti/scripts  
[root@localhost scripts]# ls -l adn*  
-rwxr-xr-x. 1 root root 3294 10. Sep 21:07 adn-BDC.pl  
-rwxr-xr-x. 1 root root 2497 10. Sep 21:07 adn-connections.pl  
-rwxr-xr-x. 1 root root 2311 10. Sep 21:07 adn-conn_users.pl  
-rwxr-xr-x. 1 root root 2000 10. Sep 21:19 adn-peers.pl  
-rwxr-xr-x. 1 root root 2466 10. Sep 21:07 adn-savings.pl  
-rwxr-xr-x. 1 root root 2398 10. Sep 21:07 adn-sessions.pl  
-rwxr-xr-x. 1 root root 2027 10. Sep 21:07 adn-users.pl  
[root@localhost scripts]# ls -l proxySG*  
-rwxr-xr-x. 1 root root 2837  2. Okt 15:30 proxySG_workers.pl  
[root@localhost scripts]#
```

3. Test the scripts on the command line.

```
[root@localhost scripts]# pwd  
/usr/share/cacti/scripts  
  
[root@localhost scripts]# /usr/bin/perl adn-BDC.pl  
  
usage: adn-BDC.pl [-i|o] [-c|-n] [-u <username>] [-p <password>]  
ProxySG-IP[:port]  
  
[root@localhost scripts]# /usr/bin/perl adn-users.pl -u admin -p mach5  
192.168.1.201  
  
5  
  
[root@localhost scripts]# /usr/bin/perl proxySG_workers.pl -u admin -p  
mach5 192.168.1.201  
  
workers:14 max:800
```

```
[root@localhost scripts]# /usr/bin/perl adn-sessions.pl -a -u admin -p mach5 192.168.1.201
```

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Import Blue Coat-Provided Cacti Templates

To import Cacti templates provided by Blue Coat, complete the following procedure.

Procedure:

1. Import the Host Template. From the Cacti Web interface, select **Console > Import/Export > Import Templates**. (See [Figure 1-8](#).)
2. Select the Cacti Template File.

Note: The import request will fail if your Cacti version is older than the version used to create the template. At the time of this writing, version 0.8.8a was used to create the templates.

3. Select **Use custom RRA settings from the template**.
4. Click **Import**.

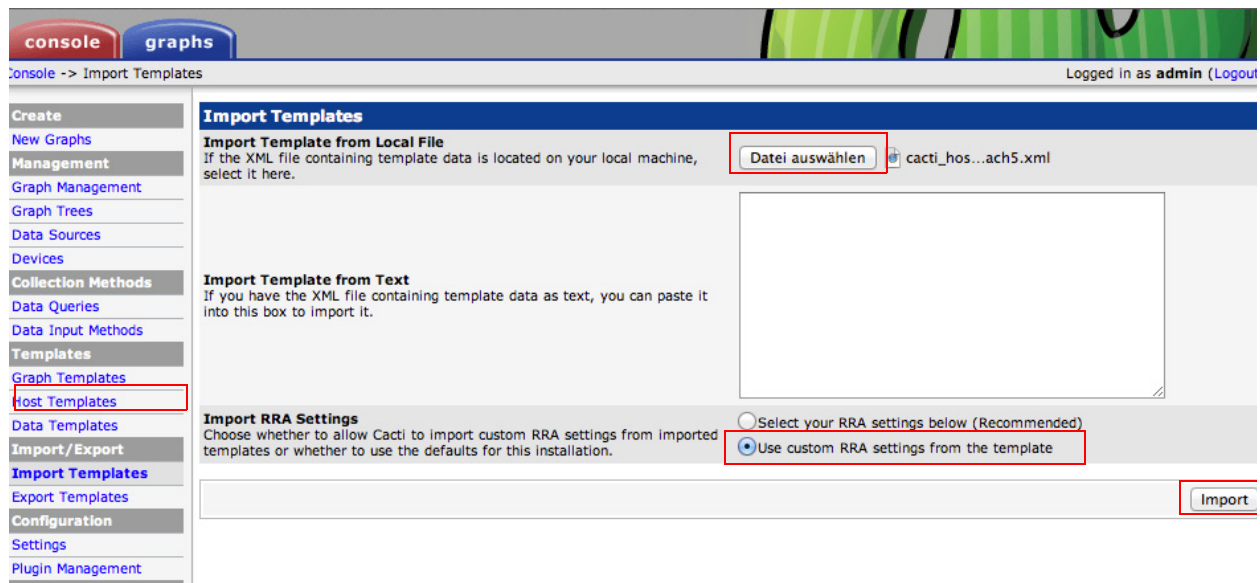


Figure 1-8 Cacti Web interface - Import Templates dialog

The template is imported with a meaningful name and contains graph templates, data templates, and data input methods.

If you import all three Host templates, a total of 25 graph templates and 33 data templates is imported. Cacti displays the content in the following sections:

- ❑ Host Templates (Figure 1-9)
- ❑ Graph Templates/Data Templates (Figure 1-10)
- ❑ Data Input Methods (Figure 1-11)

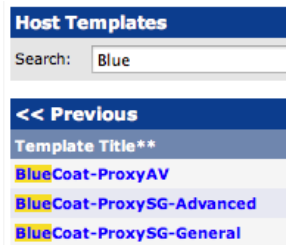
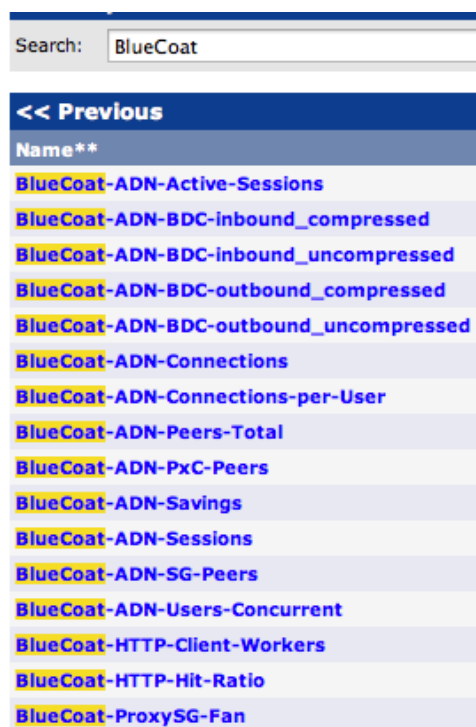


Figure 1-9 Host Templates



Figure 1-10 Cacti Web interface - Graph and Data templates

A total of 16 data input methods is imported with the BlueCoat-ProxySG-Advanced host template. (See [Figure 1–11](#).)



The screenshot shows the Cacti Web interface. At the top, there is a search bar with the text 'BlueCoat'. Below the search bar, there is a table with the following data:

Name**
BlueCoat-ADN-Active-Sessions
BlueCoat-ADN-BDC-inbound_compressed
BlueCoat-ADN-BDC-inbound_uncompressed
BlueCoat-ADN-BDC-outbound_compressed
BlueCoat-ADN-BDC-outbound_uncompressed
BlueCoat-ADN-Connections
BlueCoat-ADN-Connections-per-User
BlueCoat-ADN-Peers-Total
BlueCoat-ADN-PxC-Peers
BlueCoat-ADN-Savings
BlueCoat-ADN-Sessions
BlueCoat-ADN-SG-Peers
BlueCoat-ADN-Users-Concurrent
BlueCoat-HTTP-Client-Workers
BlueCoat-HTTP-Hit-Ratio
BlueCoat-ProxySG-Fan

Figure 1–11 Cacti Web interface - Data input methods (used by Perl scripts)

Update Data Input Methods

Note: Updating data input methods is only required if you are using the BlueCoat-ProxySG-Advanced template. You may skip this section if you only plan to use the BlueCoat-SG-General and BlueCoat-ProxyAV templates.

To update data input methods, complete the following procedure.

Procedure:

1. Update the Data Input Methods with the username and password for your devices. From the Cacti Web interface, select **Console > Collection Methods > Data Input Methods**. (See [Figure 1–12](#).)
2. For every method beginning with “BlueCoat-ADN...” as well as for the “BlueCoat-HTTP-Client-Worker,” make sure the right username and password are set (parameters `-u` and `-p`).
3. Make sure the HTTP management console has been enabled and that the Perl scripts have been deployed.

Security Note: You will need to use the default management console account (“admin”) or create a new account using a local realm. The account needs to have read-write privileges to access some of the Advanced URLs. A read-only account does not work for these scripts. Also note that when using the HTTP management console, account credentials are sent over the wire in clear text.

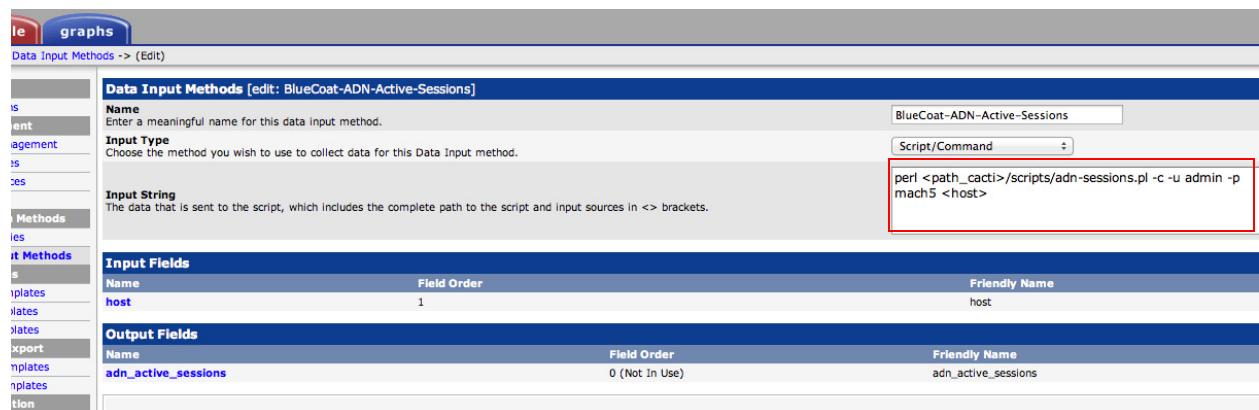


Figure 1–12 Cacti Web interface - Data Input Methods dialog

Add Devices

When adding a device, remember to select one of the imported templates.

Procedure:

1. From the Cacti Web interface, select **Console > Management > Devices**. (See [Figure 1–13](#).)

console

graphs

Console -> Devices -> (Edit)

Logged in as admin (Log

Create

New Graphs

Management

Graph Management

Graph Trees

Data Sources

Devices

Collection Methods

Data Queries

Data Input Methods

Templates

Graph Templates

Host Templates

Data Templates

Import/Export

Import Templates

Export Templates

Configuration

Settings


Plugin Management

Utilities

System Utilities

User Management

Logout User



Devices [new]

General Host Options

Description

Give this host a meaningful description.

SG-Munich

Hostname

Fully qualified hostname or IP address for this device.

192.168.1.201

Host Template

Choose the Host Template to use to define the default Graph Templates and Data Queries associated with this Host.

BlueCoat-ProxySG-General

Number of Collection Threads

The number of concurrent threads to use for polling this device. This applies to the Spine poller only.

1 Thread (default)

Disable Host

Check this box to disable all checks for this host.

☐ Disable Host

Availability/Reachability Options

Downed Device Detection

The method Cacti will use to determine if a host is available for polling.

SNMP Uptime

NOTE: It is recommended that, at a minimum, SNMP always be selected.

Ping Timeout Value

The timeout value to use for host ICMP and UDP pinging. This host SNMP timeout value applies for SNMP pings.

400

Ping Retry Count

After an initial failure, the number of ping retries Cacti will attempt before failing.

1

SNMP Options

SNMP Version

Choose the SNMP version for this device.

Version 2

SNMP Community

SNMP read community for this device.

public

SNMP Port

Enter the UDP port number to use for SNMP (default is 161).

161

SNMP Timeout

The maximum number of milliseconds Cacti will wait for an SNMP response (does not work with php-snmp support).

500

Maximum OID's Per Get Request

Specified the number of OID's that can be obtained in a single SNMP Get request.

10

Additional Options

Notes

Enter notes to this host.

Figure 1–13 Cacti Web interface - Devices dialog

The new ProxySG appliance is displayed in the device list. (See [Figure 1–14.](#))

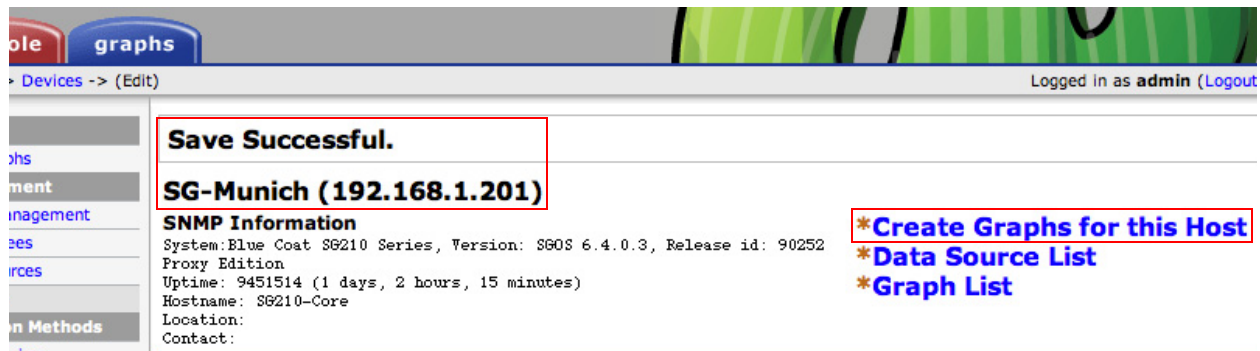


Figure 1–14 Cacti Web interface - Device results

2. Click **Create Graphs for this Host** to continue.
3. Select all offered graphs, then click **Create**. (See Figure 1–15.)

SG-Munich (192.168.1.201) BlueCoat-ProxySG-General

Host: Graph Types: [*Edit this Host](#) [*Create New Host](#)

Graph Templates

Graph Template Name	
Create: BlueCoat-SG-Client/Server HTTP Connection	<input checked="" type="checkbox"/>
Create: BlueCoat-SG-Disk Objects in Cache	<input checked="" type="checkbox"/>
Create: BlueCoat-SG-Disk Usage in Percent	<input checked="" type="checkbox"/>
Create: BlueCoat-SG-HTTP Client Requests (and Hits)	<input checked="" type="checkbox"/>
Create: BlueCoat-SG-HTTP Server Requests	<input checked="" type="checkbox"/>
Create: BlueCoat-SG-Temperature	<input checked="" type="checkbox"/>
Create: BlueCoat-SG-Workers	<input checked="" type="checkbox"/>
Create: BlueCoat-SG/AV-CPU Usage	<input checked="" type="checkbox"/>
Create: BlueCoat-SG/AV-Memory Usage	<input checked="" type="checkbox"/>
Create: BlueCoat-SG/AV-Uptime	<input checked="" type="checkbox"/>
Create: ucd/net - TCP Counters	<input checked="" type="checkbox"/>
Create: ucd/net - TCP Current Established	<input checked="" type="checkbox"/>

Create:

Data Query [SNMP - Interface Statistics]

Index	Status	Description	Name (IF-MIB)	Alias (IF-MIB)	Type	Speed	High Speed	Hardware Address	IP Address	
1	Up	loopback	loopback		softwareLoopback(24)	1000000000	100		127.0.0.1	<input checked="" type="checkbox"/>
2	Up	0:0	0:0		ethernetCsmacd(6)	1000000000	100	00:D0:83:04:FB:C4	192.168.1.201	<input checked="" type="checkbox"/>
3	Up	0:1	0:1		ethernetCsmacd(6)	1000000000	100	00:D0:83:04:FB:C5		<input checked="" type="checkbox"/>

Select a graph type:

Figure 1–15 Cacti Web interface - Graph templates

- (Optional) For better navigation, you can organize your devices in a new "Graph Tree." From the Cacti Web interface, select **Console > Management > Graph Trees > Add.** (See [Figure 1–16.](#))



The screenshot shows the Cacti Web interface with the 'console' and 'graphs' tabs. The 'console' tab is active, and the 'Graph Trees' section is selected in the sidebar. The 'New graph tree' dialog is open, showing the 'Name' field set to 'WAN-Acceleration' and the 'Sorting Type' set to 'Alphabetic Ordering'. A 'Cancel' button is visible at the bottom right.

Figure 1–16 Cacti Web interface - New graph tree dialog

When finished, your tree could look like the example shown in [Figure 1–17.](#)

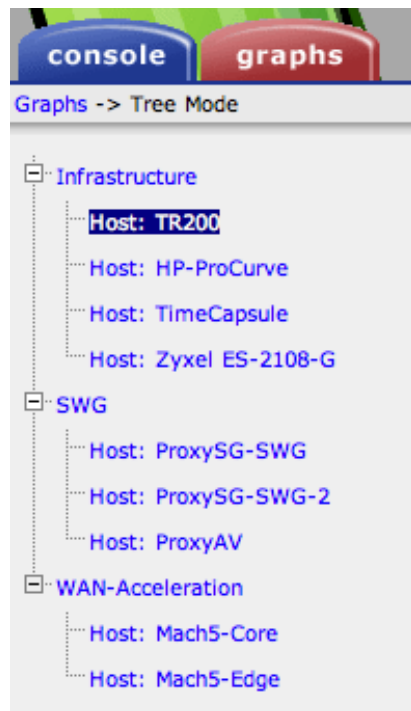


Figure 1–17 Sample graph tree

You have now successfully configured Cacti to report on Blue Coat ProxySG, ProxyAV, and Mach5 devices. It will take some time until the graphs contain meaningful data.

For a detailed reference of every metric and related screen captures, see "[Blue Coat Metric Overview](#)" on page 15.

Blue Coat Metric Overview

This section contains the following topics:

- ❑ "Overview of Selected Basic Metrics (SNMP-based) by Category (Template: BlueCoat-ProxySG-General)"
- ❑ "Overview of Advanced Metrics (Perl Script-based) by Category (Template: BlueCoat-ProxySG-Advanced)" on page 16
- ❑ "Blue Coat Metrics" on page 18

Overview of Selected Basic Metrics (SNMP-based) by Category (Template: BlueCoat-ProxySG-General)

The values listed in [Table 1–1](#) are all retrieved through SNMP, using through standard public SNMP MIB-2 or through Blue Coat's private MIB. Blue Coat provides a MIB file for download for ProxySG and ProxyAV appliances at <https://bto.bluecoat.com>. They can be used for both Secure Web Gateway/Proxy deployments or for WAN optimization (Mach5) deployments.

Table 1–1 Basic Metrics by Category

Category	Metric	SNMP OID	Name	Source Type
System Load / System Availability	CPU Usage	<u>All CPUs:</u> .1.3.6.1.4.1.3417.2.4.1.1.1.4.1 <u>Per CPU-Core:</u> .1.3.6.1.4.1.3417.2.11.2.4.1.8.1 .1.3.6.1.4.1.3417.2.11.2.4.1.8.2 [...]	deviceUsagePercent (CPU) sgProxyCpuCoreBusyPerCent	Gauge
	Disk Usage	.1.3.6.1.4.1.3417.2.4.1.1.1.4.2	deviceUsagePercent (Disk)	Gauge
	Memory Pressure	.1.3.6.1.4.1.3417.2.11.2.3.4.0	sgProxyMemoryPressure	Gauge
	Objects in Cache	.1.3.6.1.4.1.3417.2.11.2.2.2.0	sgProxyNumObjects	Gauge
	Uptime	.1.3.6.1.2.1.1.3.0	sysUpTime	Gauge
Network	TCP Counters	.1.3.6.1.2.1.6.5.0 .1.3.6.1.2.1.6.6.0 .1.3.6.1.2.1.6.7.0 .1.3.6.1.2.1.6.8.0	tcpActiveOpens tcpPassiveOpens tcpAttemptFails tcpEstabResets	Counter
	TCP Current Established	.1.3.6.1.2.1.6.9.0	tcpCurrEstab	Gauge
	Interface Statistics	.1.3.6.1.2.1.2.2.1 <determined via snmpwalk>	IfIndex, IfDescr, IfInOctets, IfOutOctets,...	Counter

Table 1–1 Basic Metrics by Category (Continued)

HTTP	HTTP Client Requests	.1.3.6.1.3.25.17.3.2.1.1.0	proxyClientHttpRequests	Counter
	HTTP Server Requests	.1.3.6.1.3.25.17.3.2.2.1.0	proxyServerHttpRequests	Counter
	HTTP Client Hits	.1.3.6.1.3.25.17.3.2.1.2.0	proxyClientHttpHits	Counter
	HTTP Client Connections	.1.3.6.1.4.1.3417.2.11.3.1.3.1.0	sgProxyHttpClientConnections	Gauge
HTTP (cont)	HTTP Server Connections	.1.3.6.1.4.1.3417.2.11.3.1.3.4.0	sgProxyHttpServerConnections	Gauge
Hardware	Temperature	<u>Motherboard (SG210)</u> .1.3.6.1.4.1.3417.2.1.1.1.1.5.1 <u>CPU (SG210)</u> .1.3.6.1.4.1.3417.2.1.1.1.1.5.2	deviceSensorName deviceSensorValue.1 deviceSensorValue.2	Gauge

Overview of Advanced Metrics (Perl Script-based) by Category (Template: BlueCoat-ProxySG-Advanced)

The values listed in Table 1–2 are all retrieved through scripts utilizing Perl. Make sure Perl and libwww-perl packages are installed.

Table 1–2 Overview of Advanced Metrics by (Perl script-based) Category

Category	Metric	Script and Parameters	Leverages this Advanced URL
ADN / Mach5	ADN Peers	<u>ADN Peers Total</u> adn-peers.pl <u>ProxyClient Peers</u> adn-connections.pl -c <u>ProxySG Peers</u> adn-connections.pl -s	/ADN/show/perf -> BDC_Perf_Stats_0030 (ADN Peers) /ADN/show/dashboard /ADN/show/dashboard
	ADN Concurrent Users	adn-users.pl	/PDM/show-values/ users:current~hourly
	ADN BDC Inbound	<u>BDC Inbound Compressed</u> adn-BDC.pl -i -c <u>BDC Inbound Uncompressed</u> adn-BDC.pl -i -n	/PDM/show-values/BDC:inbound- compressed~hourly /PDM/show-values/BDC:inbound- uncompressed~hourly
	ADN BDC Outbound	<u>BDC Outbound Compressed</u> adn-BDC.pl -o -c <u>BDC Outbound Uncompressed</u> adn-BDC.pl -o -n	/PDM/show-values/BDC:outbound- compressed~hourly /PDM/show-values/BDC:outbound- uncompressed~hourly
	ADN Connections	adn-connections.pl -a	/ADN/show/dashboard

Table 1–2 Overview of Advanced Metrics by (Perl script-based) Category (Continued)

	ADN Connections Ratio per User	adn-conn_users.pl	/ADN/show/perf (takes BDC_Perf_Stats_0030 for connections) /PDM/show-values/ users:current~hourly (Divides connections/user)
	ADN Savings	adn-savings.pl	/PDM/show-values/ adn:traffic:total:unoptimized_bytes~hourly /PDM/show-values/ adn:traffic:total:optimized_bytes~hourly Calc: unoptimized - optimized / unoptimized * 100
	Active Sessions and ADN Active Sessions	adn-sessions.pl -c adn-sessions.pl -a	/AS/Statistics
HTTP	HTTP Client Workers	proxySG_workers.pl	/HTTP/Statistics Max Workers: HTTP_MAIN_0090 Current Workers: HTTP_MAIN_0091

Overview of Graphs by Category (Template: BlueCoat-ProxyAV)

The values listed in [Table 1–3](#) are all retrieved through SNMP, either through standard public SNMP MIB-2 or through Blue Coat's private MIB, which is available for download. Most of them are available for the ProxyAV appliance only.

Table 1–3 Overview of Graphs by Category (Template: BlueCoat-ProxyAV)

Category	Metric	SNMP OID	MIB-Variable Name	Data Source Type
System Health	CPU Usage	.1.3.6.1.4.1.3417.2.4.1.1.1.4.1	deviceUsageName.1	Gauge
	Memory Usage	.1.3.6.1.4.1.3417.2.4.1.1.1.4.2	deviceUsageName.2	Gauge
	AV License Days Remaining	.1.3.6.1.4.1.3417.2.10.1.7.0	avLicenseDaysRemaining	Gauge
	Slow ICAP Connections	.1.3.6.1.4.1.3417.2.10.1.10.0	avSlowICAPConnections	Gauge
AV Scanning	Files Scanned	.1.3.6.1.4.1.3417.2.10.1.1.0	avFilesScanned	Counter
	Viruses Detected	.1.3.6.1.4.1.3417.2.10.1.2.0	avVirusesDetected	Counter
Hardware	Uptime	.1.3.6.1.2.1.1.3.0	sysUpTime	Gauge
	Network Usage Int 0	.1.3.6.1.4.1.3417.2.4.1.1.1.4.3	deviceUsageName.3	Gauge
	Network Usage Int 1	.1.3.6.1.4.1.3417.2.4.1.1.1.4.4	deviceUsageName.4	Gauge

Table 1–3 Overview of Graphs by Category (Template: BlueCoat-ProxyAV) (Continued)

Network	TCP Counters	.1.3.6.1.2.1.6.5.0 .1.3.6.1.2.1.6.6.0 .1.3.6.1.2.1.6.7.0 .1.3.6.1.2.1.6.8.0	tcpActiveOpens tcpPassiveOpens tcpAttemptFails tcpEstabResets	Counter
	TCP Current Established	.1.3.6.1.2.1.6.9.0	tcpCurrEstab	Gauge

Blue Coat Metrics

This section contains graphs for the following metrics:

- ❑ General metrics. (Refer to [Table 1–4](#) on page 18.)
- ❑ Advanced metrics (Refer to [Table 1–5](#) on page 22.)
- ❑ ProxyAV appliance metrics (Refer to [Table 1–6](#) on page 25.)

Table 1–4 General Metrics

Category	Metric	Graph
System Load / System Availability	CPU Usage	<p>ProxySG-SWG - CPU Usage</p> <p>percent</p> <p>100 80 60 40 20 0</p> <p>17:40 18:00 18:20 18:40 19:00 19:20 19:40 20:00 20:20 20:40 21:00 21:20</p> <p>■ CPU Usage Current: 5.03 Average: 19.12 Maximum: 99.79 Graph Last Updated: Tue 02 Oct 21:35:02 CEST 2012</p>
	Disk Usage	<p>ProxySG-SWG - Disk Usage</p> <p>percent</p> <p>20 15 10 5 0</p> <p>17:40 18:00 18:20 18:40 19:00 19:20 19:40 20:00 20:20 20:40 21:00 21:20</p> <p>■ Disk Usage Last: 20.00 Avg: 18.12 Max: 20.00 Graph Last Updated: Tue 02 Oct 21:25:01 CEST 2012</p>

Table 1-4 General Metrics (Continued)

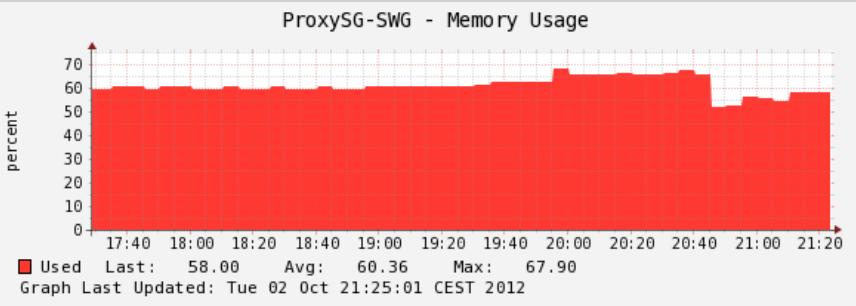
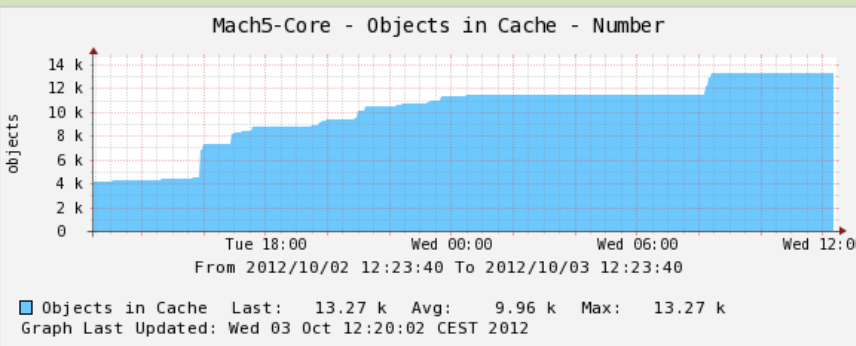
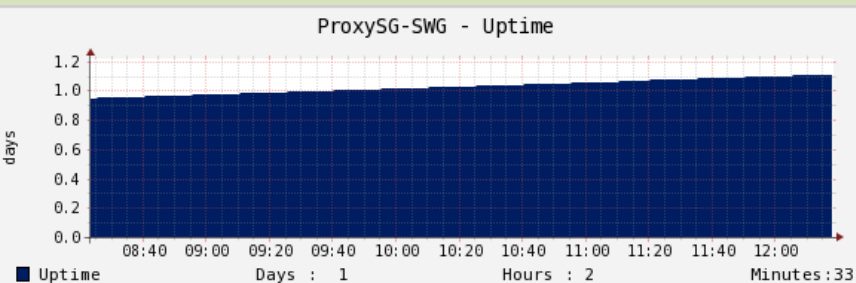
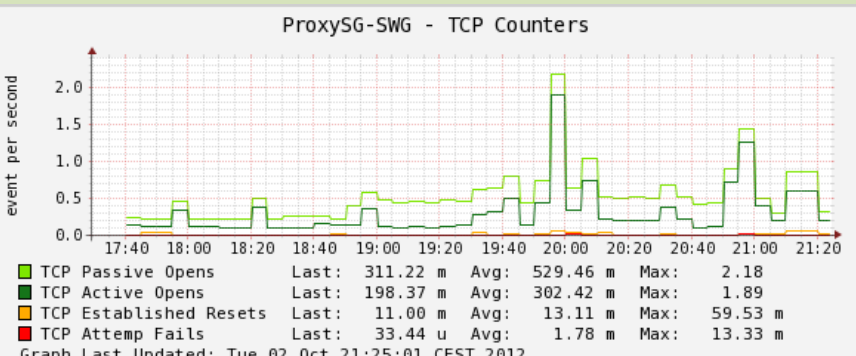
	Memory Pressure	<p>ProxySG-SWG - Memory Usage</p>  <p>percent</p> <p>Used Last: 58.00 Avg: 60.36 Max: 67.90 Graph Last Updated: Tue 02 Oct 21:25:01 CEST 2012</p>
	Objects in Cache	<p>Mach5-Core - Objects in Cache - Number</p>  <p>objects</p> <p>From 2012/10/02 12:23:40 To 2012/10/03 12:23:40</p> <p>Objects in Cache Last: 13.27 k Avg: 9.96 k Max: 13.27 k Graph Last Updated: Wed 03 Oct 12:20:02 CEST 2012</p>
	Uptime	<p>ProxySG-SWG - Uptime</p>  <p>days</p> <p>Days : 1 Hours : 2 Minutes : 33</p>
Network	TCP Counters	<p>ProxySG-SWG - TCP Counters</p>  <p>event per second</p> <p>TCP Passive Opens Last: 311.22 m Avg: 529.46 m Max: 2.18 TCP Active Opens Last: 198.37 m Avg: 302.42 m Max: 1.89 TCP Established Resets Last: 11.00 m Avg: 13.11 m Max: 59.53 m TCP Attemp Fails Last: 33.44 u Avg: 1.78 m Max: 13.33 m Graph Last Updated: Tue 02 Oct 21:25:01 CEST 2012</p>

Table 1-4 General Metrics (Continued)

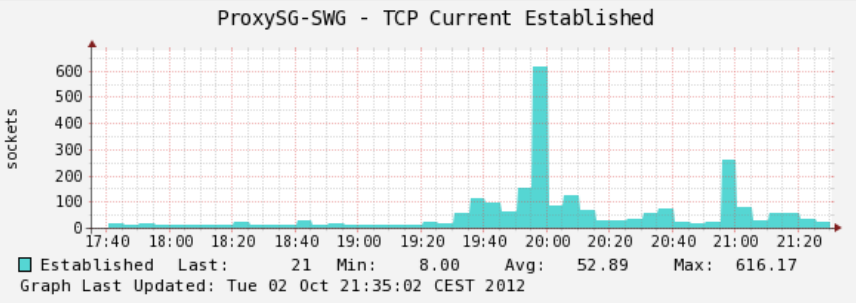
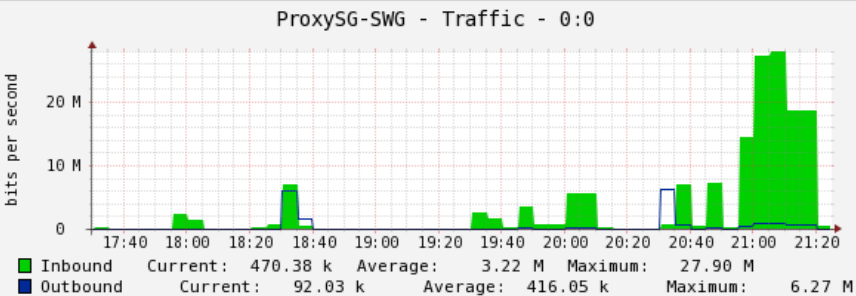
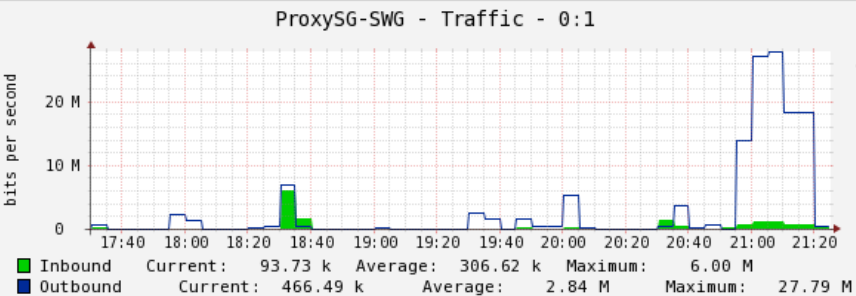
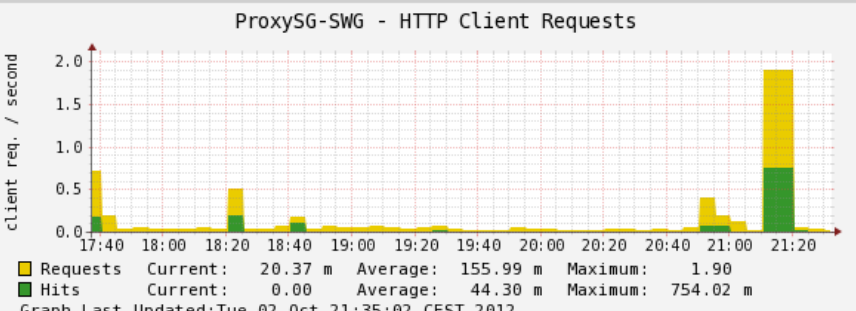
	TCP Current Established	 <p>ProxySG-SWG - TCP Current Established</p> <p>sockets</p> <p>Established Last: 21 Min: 8.00 Avg: 52.89 Max: 616.17 Graph Last Updated: Tue 02 Oct 21:35:02 CEST 2012</p>
	Interface Statistics	 <p>ProxySG-SWG - Traffic - 0:0</p> <p>bits per second</p> <p>Inbound Current: 470.38 k Average: 3.22 M Maximum: 27.90 M Outbound Current: 92.03 k Average: 416.05 k Maximum: 6.27 M</p>  <p>ProxySG-SWG - Traffic - 0:1</p> <p>bits per second</p> <p>Inbound Current: 93.73 k Average: 306.62 k Maximum: 6.00 M Outbound Current: 466.49 k Average: 2.84 M Maximum: 27.79 M</p>
HTTP	HTTP Client Requests HTTP Client Hits	 <p>ProxySG-SWG - HTTP Client Requests</p> <p>client req. / second</p> <p>Requests Current: 20.37 m Average: 155.99 m Maximum: 1.90 Hits Current: 0.00 Average: 44.30 m Maximum: 754.02 m Graph Last Updated: Tue 02 Oct 21:35:02 CEST 2012</p>

Table 1-4 General Metrics (Continued)

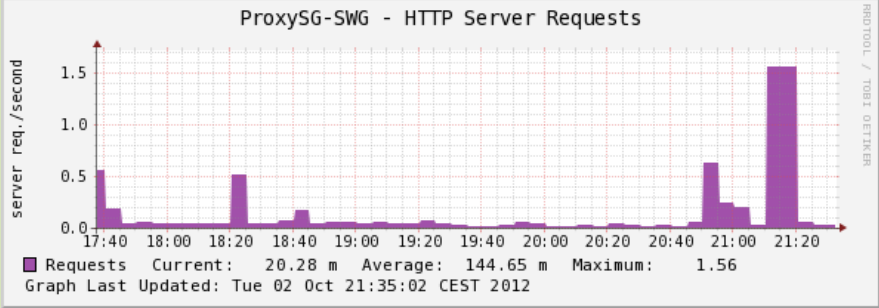
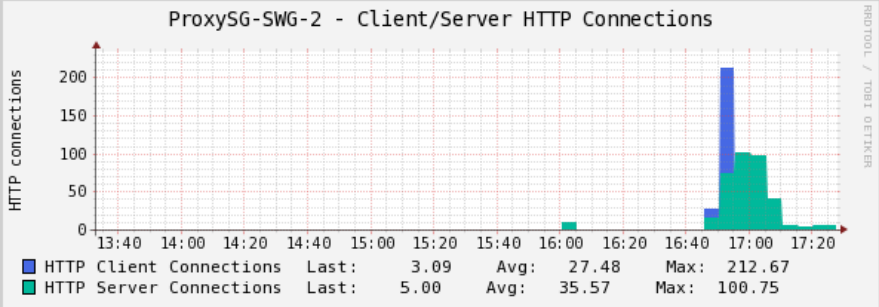
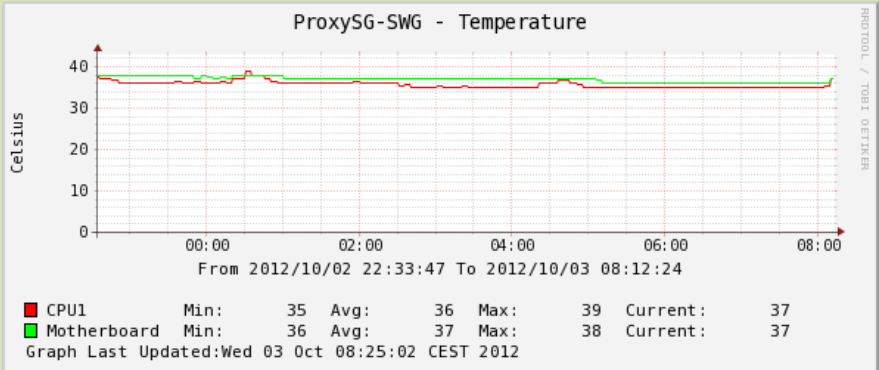
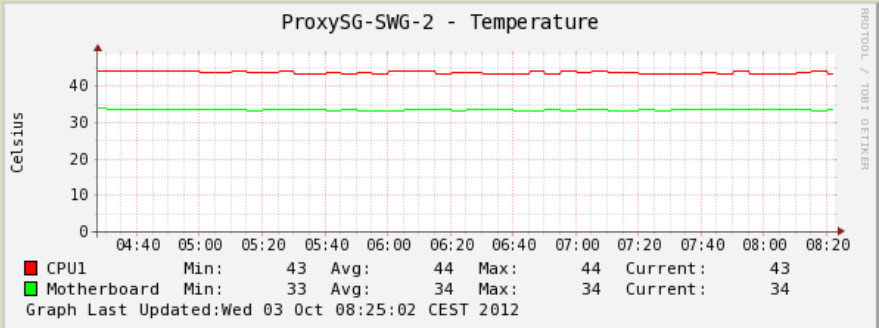
	HTTPServer Requests	<div><div>ProxySG-SWG - HTTP Server Requests</div></div>
	HTTP Client and HTTPServer Connections	<div><div>ProxySG-SWG-2 - Client/Server HTTP Connections</div></div>
Hardware	Temperature	<div><div>ProxySG-SWG - Temperature</div></div>
		<div><div>ProxySG-SWG-2 - Temperature</div></div>

Table 1–5 Advanced Metrics

Category	Metric	Graph
ADN / Mach5	ADN Peers	<p>Mach5-Core - ADN Peers</p> <p>Peers</p> <p>13:40 14:00 14:20 14:40 15:00 15:20 15:40 16:00 16:20 16:40 17:00 17:20</p> <p>■ # of Total ADN Peers Current: 2.00 Avg: 1.21 Max: 2.00 ■ # of SG ADN Peers Current: 1.00 Avg: 1.00 Max: 1.00 ■ # of ProxyClient ADN Peers Current: 1.00 Avg: 205.13 m Max: 1.00</p>
	ADN Concurrent Users	<p>Mach5-Core - ADN Users</p> <p>Users</p> <p>17:40 18:00 18:20 18:40 19:00 19:20 19:40 20:00 20:20 20:40 21:00 21:20</p> <p>■ Users: Current: 2.00 Avg: 2.50 Max: 4.00</p>
	ADN BDC Inbound	<p>Mach5-Core - ADN BDC Inbound</p> <p>Bytes</p> <p>18:20 18:40 19:00 19:20 19:40 20:00 20:20 20:40 21:00 21:20 21:40 22:00</p> <p>■ BDC_in_compressed: Current: 485.99 Avg: 54.91 k Max: 714.23 k ■ BDC_in_uncompressed: Current: 342.00 Avg: 58.04 k Max: 742.51 k</p>
	ADN BDC Outbound	<p>Mach5-Core - ADN BDC Outbound</p> <p>Bytes</p> <p>18:20 18:40 19:00 19:20 19:40 20:00 20:20 20:40 21:00 21:20 21:40 22:00</p> <p>■ BDC_out_compressed: Current: 244.14 Avg: 14.84 M Max: 201.15 M ■ BDC_out_uncompressed: Current: 179.00 Avg: 17.06 M Max: 200.94 M</p>

Table 1-5 Advanced Metrics (Continued)

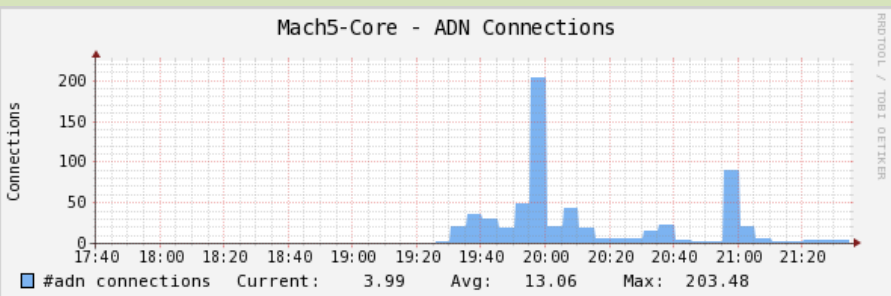
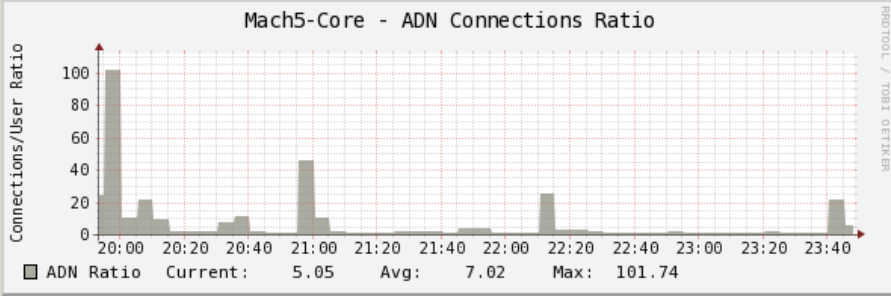
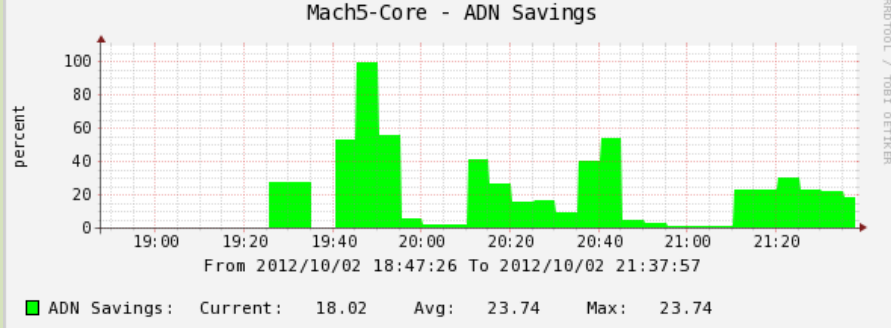
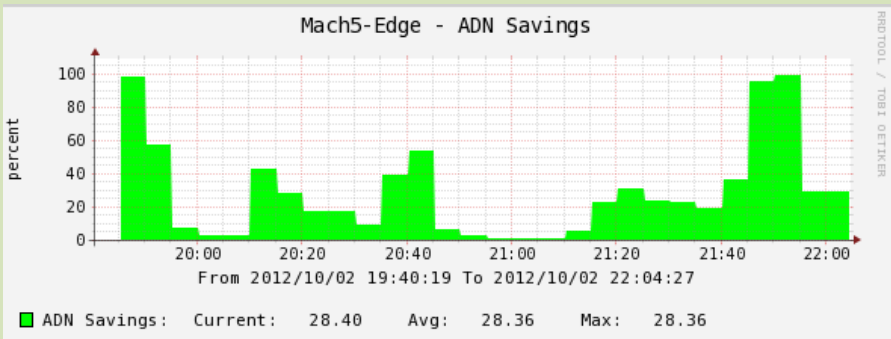
	ADN Connections	 <p>Mach5-Core - ADN Connections</p> <p>Connections</p> <p>#adn connections Current: 3.99 Avg: 13.06 Max: 203.48</p>
	ADN Connections Ratio per User	 <p>Mach5-Core - ADN Connections Ratio</p> <p>Connections/User Ratio</p> <p>ADN Ratio Current: 5.05 Avg: 7.02 Max: 101.74</p>
	ADN Savings	 <p>Mach5-Core - ADN Savings</p> <p>percent</p> <p>ADN Savings: Current: 18.02 Avg: 23.74 Max: 23.74</p> <p>From 2012/10/02 18:47:26 To 2012/10/02 21:37:57</p>  <p>Mach5-Edge - ADN Savings</p> <p>percent</p> <p>ADN Savings: Current: 28.40 Avg: 28.36 Max: 28.36</p> <p>From 2012/10/02 19:40:19 To 2012/10/02 22:04:27</p>

Table 1–5 Advanced Metrics (Continued)

Active Sessions and ADN Active Sessions

Mach5-Core - ADN Active Sessions

Series	Current	Avg	Max
Active Sessions	2.00	4.50	11.95
ADN Sessions	3.01	13.06	203.48

HTTP Workers

Mach5-Core - ADN Active Sessions

From 2012/10/02 13:46:09 To 2012/10/02 21:35:54

Series	Current	Avg	Max
Active Sessions	2.00	7.03	159.48
ADN Sessions	3.01	7.29	203.48

HTTP Workers

ProxySG-SWG - HTTP Client Workers

Series	Current	Average	Maximum
Workers	3.00	9.78	157.91
Max Workers Limit	800.00		

Graph Last Updated: Tue 02 Oct 21:45:02 CEST 2012

Table 1–6 ProxyAV Appliance Metrics

Category	Metric	Graph
System Health	CPU Usage	<p>ProxyAV - CPU Usage</p> <p>percent</p> <p>From 2012/10/02 10:05:06 To 2012/10/02 19:09:50</p> <p>■ CPU Usage Last: 3.30 Avg: 5.89 Max: 100.00 Graph Last Updated: Tue 02 Oct 21:55:02 CEST 2012</p>
	Memory Usage	<p>ProxyAV - Memory Usage</p> <p>percent</p> <p>From 2012/10/02 09:43:59 To 2012/10/02 17:13:42</p> <p>■ Used Last: 63.00 Avg: 62.54 Max: 75.00 Graph Last Updated: Tue 02 Oct 21:55:02 CEST 2012</p>
	AV License Days Remaining	<p>ProxyAV - License Days Remaining</p> <p>days</p> <p>From 2012/10/02 09:50:24 To 2012/10/02 19:06:06</p> <p>■ Days Last: 16.00 Avg: 16.00 Max: 16.00 Graph Last Updated: Tue 02 Oct 21:55:02 CEST 2012</p>
	Slow ICAP Connections	<p>ProxyAV - Slow ICAP Connections</p> <p>active connections</p> <p>From 2012/10/02 22:00 To 2012/10/02 20:00</p> <p>■ Connections Last: 0.00 Avg: 149.01 m Max: 1.00 Graph Last Updated: Tue 02 Oct 21:55:02 CEST 2012</p>

Table 1-6 ProxyAV Appliance Metrics (Continued)

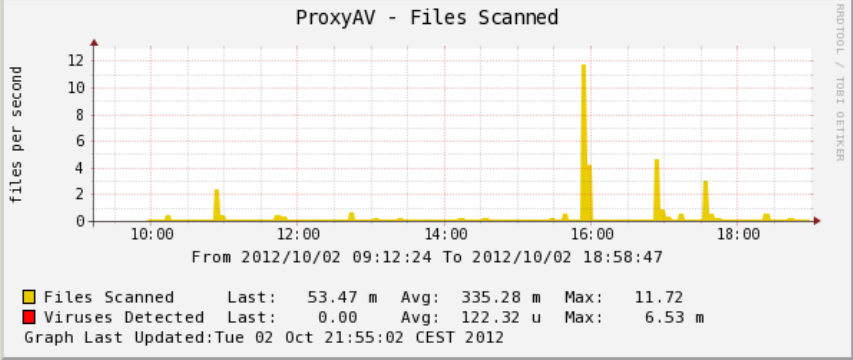
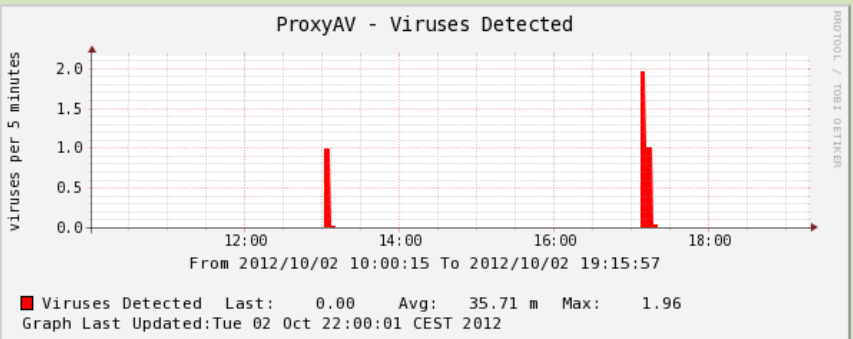
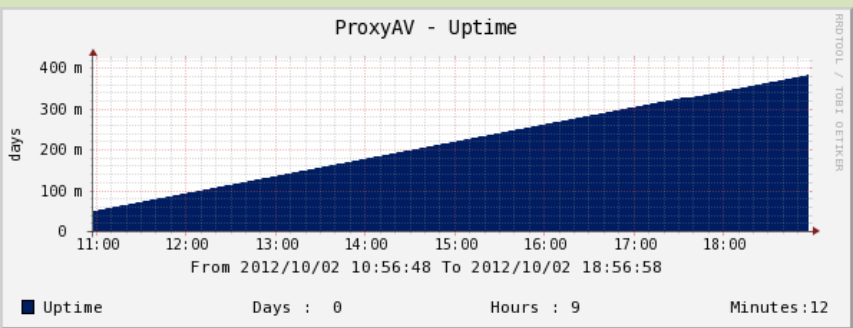
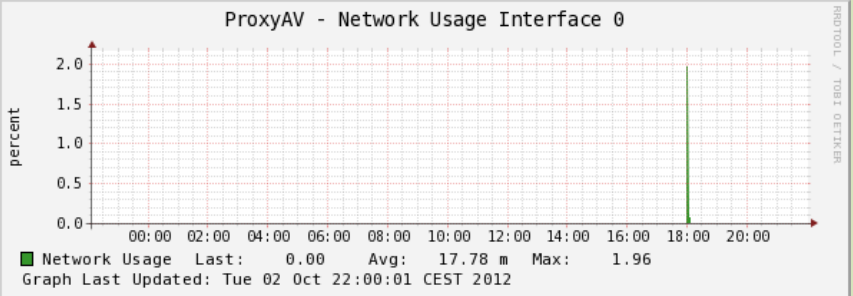
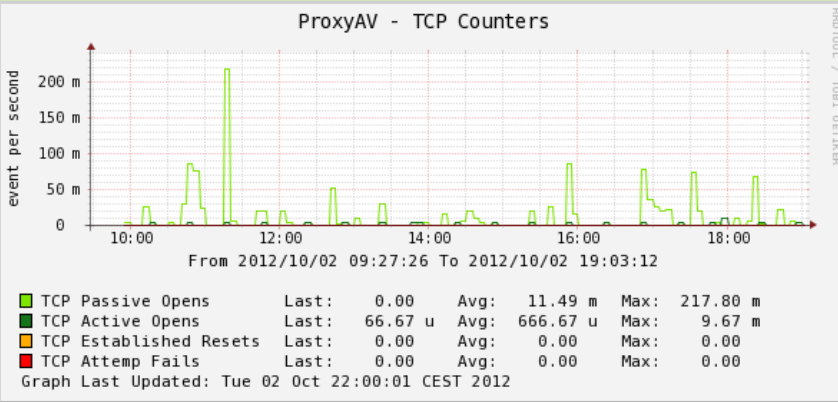
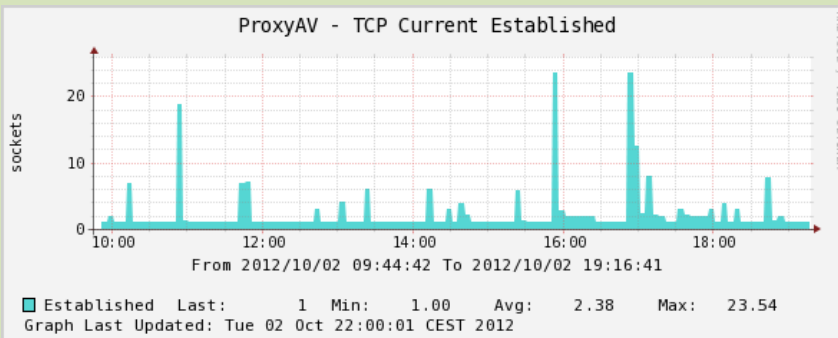
AV Scanning	Files Scanned	 <p>ProxyAV - Files Scanned</p> <p>files per second</p> <p>From 2012/10/02 09:12:24 To 2012/10/02 18:58:47</p> <p> ■ Files Scanned Last: 53.47 m Avg: 335.28 m Max: 11.72 ■ Viruses Detected Last: 0.00 Avg: 122.32 u Max: 6.53 m Graph Last Updated: Tue 02 Oct 21:55:02 CEST 2012 </p>
	Viruses Detected	 <p>ProxyAV - Viruses Detected</p> <p>viruses per 5 minutes</p> <p>From 2012/10/02 10:00:15 To 2012/10/02 19:15:57</p> <p> ■ Viruses Detected Last: 0.00 Avg: 35.71 m Max: 1.96 Graph Last Updated: Tue 02 Oct 22:00:01 CEST 2012 </p>
Hardware	Uptime	 <p>ProxyAV - Uptime</p> <p>days</p> <p>From 2012/10/02 10:56:48 To 2012/10/02 18:56:58</p> <p> ■ Uptime Days : 0 Hours : 9 Minutes: 12 </p>
	Network Usage Int 0/1	 <p>ProxyAV - Network Usage Interface 0</p> <p>percent</p> <p>From 2012/10/02 00:00:00 To 2012/10/02 20:00:00</p> <p> ■ Network Usage Last: 0.00 Avg: 17.78 m Max: 1.96 Graph Last Updated: Tue 02 Oct 22:00:01 CEST 2012 </p>

Table 1–6 ProxyAV Appliance Metrics (Continued)

Network	TCP Counters tcpActiveOpens tcpAttemptFails tcpCurrEstab tcpEstabResets tcpPassiveOpens	
	TCP Current Established tcpCurrEstab	

Conclusion

Systems and network administrators are challenged with ensuring the reliability, stability, and availability of mission-critical systems in the corporate network. With help from the provided templates and scripts, it is easy to integrate Blue Coat's security and WAN optimization products into a powerful monitoring system for your infrastructure.

Cacti provides a network-wide view of the network and security infrastructure including the most important key metrics of Blue Coat devices. Creating a baseline, this integration helps you to understand the usual load level on the deployed Blue Coat infrastructure. Furthermore, it allows for proactive intervention when overload conditions are detected, thus minimizing or avoiding critical situations.

Appendix

Advanced Features

This section provides information on the following features:

- ❑ "Alerting with Cacti"
- ❑ "Thold Features"

Alerting with Cacti

Cacti provides an extensible Plug-In architecture. Some of these ease the daily work with Cacti, help you to discover network devices, or allow alerts on defined thresholds.

- ❑ Link to Cacti Plugins: <http://docs.cacti.net/plugins>
- ❑ One of these Plug-Ins is "thold" (<http://docs.cacti.net/plugin:thold>)

Thold Features

Thold is Cacti's premier Alerting modules that integrate seamlessly with Cacti's Graphing engine. Thold:

- ❑ Leverages Cacti graphs to generate alerts
- ❑ Provides a myriad of alerting options including Hi/Low, Floating Window (Time Based), and Baseline Deviation
- ❑ Includes the ability to notify users of Host Up/Down Events
- ❑ Alerts include warning and alert levels
- ❑ Attaches Cacti graphs to alert emails with links to Cacti graphs
- ❑ Includes Complex Reverse Polish Notation (RPN) expression rules that provide comprehensive alert rule creation
- ❑ Integrates with Cacti's Boost plugin
- ❑ Integrates with Cacti's DSStats Plugin
- ❑ Provides the ability to create and manage notification lists
- ❑ Has the ability to highlight Alert Event Windows on Cacti graphs
- ❑ Can generate syslog messages for all alert types

Troubleshooting

How to Install a Missing libwww-perl Package on CentOS

Some of the perl-scripts utilize functions contained in libwww-perl package. If not installed you might get error-messages like the following.

```
root@localhost scripts]# /usr/bin/perl proxySG_workers.pl
Can't locate LWP/UserAgent.pm in @INC (@INC contains: /usr/local/
lib64/perl5 /usr/local/share/perl5 /usr/lib64/perl5/vendor_perl /usr/
share/perl5/vendor_perl /usr/lib64/perl5 /usr/share/perl5 .) at
proxySG_workers.pl line 21.
```

```
BEGIN failed--compilation aborted at proxySG_workers.pl line 21.  
[root@localhost scripts]#
```

Resolution: Install libwww-perl package with: `yum install perl-libwww-perl`

About Technical Briefs

Technical briefs are designed to illustrate the features and capabilities of Blue Coat products. By describing generic solutions, technical briefs provide a foundation that Blue Coat customers can use to understand how Blue Coat products can be used to solve specific problems.

These technical briefs are not intended to solve customer-specific requests; if you need a customized solution to address a specific concern, contact Blue Coat Professional Services at Professional.Services@bluecoat.com.

