Monitoring 3Com CoreBuilder Switch

eG Innovations Product Documentation

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Total Performance Visibility

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Chapter 1: Introduction

The CoreBuilder 3500 Layer 3 high-function switch is a modular, standalone networking device that supports high- performance Fast Ethernet, Gigabit Ethernet, and FDDI interfaces. These CoreBuilder switches not only provide physical connectivity to server components in an IT environment, but also serve as entry points for accessing mission-critical services.

If these switches fail, the business-critical services might become inaccessible to end-users, thus causing the business to lose revenue and reputation. By periodically monitoring these switches for faults, and by proactively resolving the issues that surface, administrators can ensure that users receive continued connectivity to the services of interest. The eG Enterprise provides exclusive monitoring model for monitoring the availability, data transmission and bandwidth usage of the switches.

1.1 How eG Enterprise Monitors 3Com CoreBuilder Switch?

- The eG Enterprise system monitors the CoreBuilder switch using SNMP.
- The CoreBuilder switches are managed manually using the eG administrative interface.

Chapter 2: Managing the 3COM CoreBuilder Switch

The eG Enterprise suite cannot automatically discover a 3COM CoreBuilder switch so that you need to manually add the component for monitoring. To manage a 3COM CoreBuilder switch component, do the following:

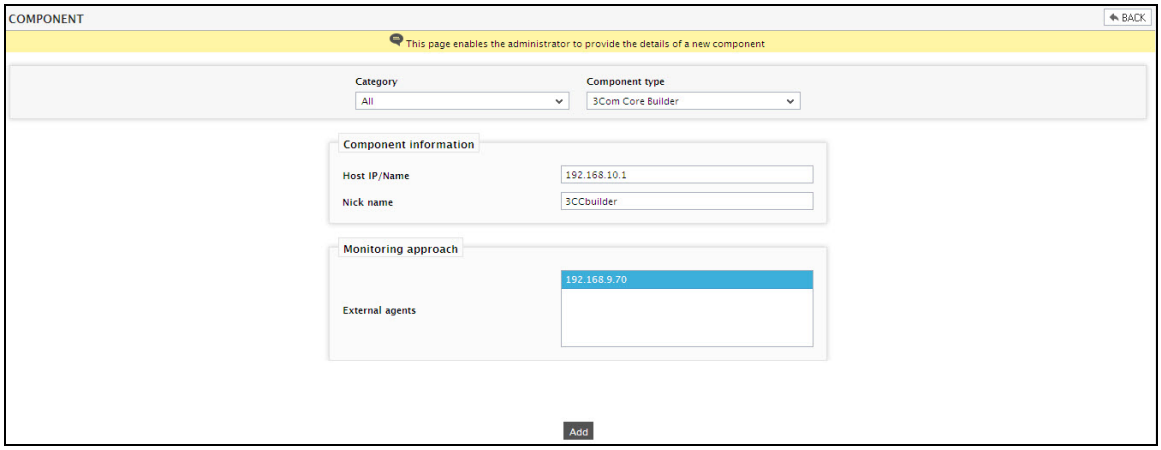
1. Log into the eG administrative interface.
2. Follow the Components -> Add/Modify menu sequence in the **Infrastructure** tile of the **Admin** menu.
3. In the **COMPONENTS** page that appears next, select *3Com Core Builder* as the **Component type**. Then, click the **Add New Component** button. This will invoke Figure 2.1.
4. 

Figure 2.1: Adding a 3Com Core Builder switch component

5. Specify the **Host IP/Name** of the 3Com Core Builder switch component. Then, click **Add** button to register the changes.
6. When you attempt to sign out, a list of unconfigured tests appears (see Figure 2.2).

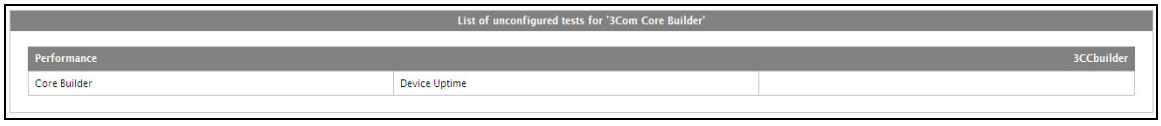


Figure 2.2: A list of unconfigured tests

7. Click on the **Core Builder** test to configure it. This test monitors critical metrics relating to each of the network interfaces of a 3Com Core Builder switch. To know how to configure the test, refer

toSection **3.1.1**

8. Finally, sign out of the eG administrative interface.

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Chapter 3: Monitoring 3COM CoreBuilder Switch

The eG Enterprise system monitors the CoreBuilder switch too using SNMP. The *3Com Core Builder* monitoring model that eG Enterprise has designed, is shown below:

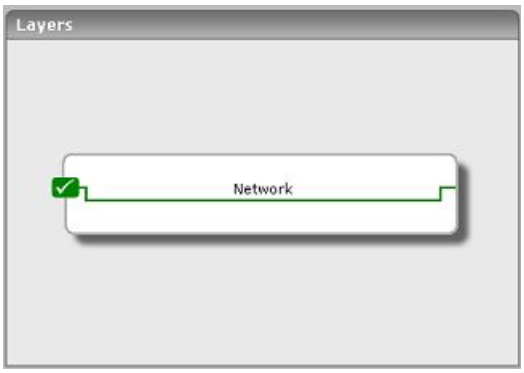

Figure 3.1: The layer model of a 3Com Core Builder

The following section talks about the **Network** layer of Figure 3.1 above.

3.1 The Network Layer

Besides revealing whether the switch is available or not, the tests mapped to the **Network** layer also indicate how well the interfaces supported by the switch are performing (see Figure 3.2).

The external agent monitoring the switch first polls the management module of the SNMP MIB-11, which in turn provides the details of all the other modules, their community strings, etc. Using this information, the agent then contacts the other modules, discovers the network interfaces supported by the switch, and then extracts key statistics pertaining to the availability and speed of each of the network interfaces.

Figure 3.2: The tests mapped to the Network layer of the 3Com Core Builder

As enough has already been said about the **Network** test and the **Device Uptime** test, let us just focus on the **Core Builder** test in Figure 3.2.

3.1.1 Core Builder Test

This test monitors critical metrics relating to each of the network interfaces of a 3 COM CoreBuilder switch.

Target of the test : A 3COM CoreBuilder switch

Agent deploying the test : An external agent

Outputs of the test : One set of results for each interface.

Configurable parameters for the test

Parameters	Description
Test period	How often should the test be executed
Host	The IP address of the host for which this test is to be configured.
SNMPPort	The port at which the monitored target exposes its SNMP MIB; the default is *25*.
SNMPversion	By default, the eG agent supports SNMP version 1. Accordingly, the default selection in the SNMPversion list is **v1**. However, if a different SNMP framework is in use in your environment, say SNMP **v2** or **v3**, then select the corresponding option from this list.
SNMPCommunity	The SNMP community name that the test uses to communicate with the firewall. This parameter is specific to SNMP **v1** and **v2** only. Therefore, if the snmpversion chosen is **v3**, then this parameter will not appear.

Parameters	Description
Username	This parameter appears only when **v3** is selected as the SNMPversion. SNMP version 3 (SNMPv3) is an extensible SNMP Framework which supplements the SNMPv2 Framework, by additionally supporting message security, access control, and remote SNMP configuration capabilities. To extract performance statistics from the MIB using the highly secure SNMP v3 protocol, the eG agent has to be configured with the required access privileges – in other words, the eG agent should connect to the MIB using the credentials of a user with access permissions to be MIB. Therefore, specify the name of such a user against this parameter.
Context	This parameter appears only when v3 is selected as the SNMPVERSION. An SNMP context is a collection of management information accessible by an SNMP entity. An item of management information may exist in more than one context and an SNMP entity potentially has access to many contexts. A context is identified by the SNMPEngineID value of the entity hosting the management information (also called a contextEngineID) and a context name that identifies the specific context (also called a contextName). If the Username provided is associated with a context name, then the eG agent will be able to poll the MIB and collect metrics only if it is configured with the context name as well. In such cases therefore, specify the context name of the Username in the Context text box. By default, this parameter is set to *none*.
Authpass	Specify the password that corresponds to the above-mentioned Username. This parameter once again appears only if the SNMPversion selected is **v3**.
Confirm password	Confirm the Authpass by retyping it here.
Authtype	This parameter too appears only if **v3** is selected as the SNMPversion. From the Authtype list box, choose the authentication algorithm using which SNMP v3 converts the specified username and password into a 32-bit format to ensure security of SNMP transactions. You can choose between the following options: • **MD5** – Message Digest Algorithm • **SHA** – Secure Hash Algorithm
Encryptflag	This flag appears only when **v3** is selected as the SNMPversion. By default, the eG agent does not encrypt SNMP requests. Accordingly, the this flag is set to **No** by default. To ensure that SNMP requests sent by the eG agent are encrypted, select the **Yes** option.
Encrypttype	If this Encryptflag is set to **Yes**, then you will have to mention the encryption type by selecting an option from the Encrypttype list. SNMP v3 supports the following encryption types:

Parameters	Description
	• **DES** – Data Encryption Standard • **AES** – Advanced Encryption Standard
Encryptpassword	Specify the encryption password here.
Confirm Password	Confirm the encryption password by retyping it here.
Onlyup	If this flag is set to **Yes**, then only the network interfaces that are operational - i.e. whose MIB-II operStatus variable has a value "up" - are monitored. If this flag is set to **No**, all network interfaces that have an adminStatus of "up" will be monitored.
Fullduplex	If this value is **Yes**, then it indicates that all interfaces are full duplex. In this case, the eG Enterprise system will compute bandwidth usage % to be, **max(input bandwidth, output bandwidth)*100/total speed**. On the other hand, if this flag is set to **No**, then the computation of bandwidth usage % will be **(input bandwidth + output bandwidth)*100/total speed**.
Timeout	Specify the duration (in seconds) within which the SNMP query executed by this test should time out in this text box. The default is 10 seconds.
Data Over TCP	By default, in an IT environment, all data transmission occurs over UDP. Some environments however, may be specifically configured to offload a fraction of the data traffic – for instance, certain types of data traffic or traffic pertaining to specific components – to other protocols like TCP, so as to prevent UDP overloads. In such environments, you can instruct the eG agent to conduct the SNMP data traffic related to the monitored target over TCP (and not UDP). For this, set this flag to **Yes**. By default, this flag is set to **No**.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Availability	Indicates the availability of a network interface.	Percent	This value is 100 if an interface is operational - i.e., has an operStatus of "up". The value is 0 otherwise.
Data transmit rate	Indicates the rate of data being transmitted from the network interface over a network link.	MB/Sec	This measurement depicts the workload on a network link.
Data received rate	The rate of data being	MB/Sec	This measure also characterizes the

Measurement	Description	Measurement Unit	Interpretation
	received by the network interface over a network link.		workload on a network link.
Speed	Speed of the network interface.	Mbps	Some network interface may dynamically change their speed over time - based on external factors/settings. By tracking the speed of an interface over time, an administrator can be aware of such speed changes.
Bandwidth usage	Indicates the percentage utilization of the bandwidth available over a network link.	Percent	A value close to 100% indicates a network bottleneck.
Note: The speed of a network interface is based on the value of its SNMP MIB-II variable, which is set using router-specific commands (e.g., the "bandwidth" command of a Cisco router). When a network interface has a fixed maximum speed limit (e.g., Ethernet), the percentage bandwidth will be <= 100%. In some instances, service providers offer a minimum committed information rate (CIR). In such cases, the speed of the network interface is not fixed and may be set to the minimum CIR. Since user traffic may be in excess of the CIR at times, the percentage bandwidth measure could exceed 100%. In such cases, the percentage bandwidth measure is to be ignored.			

About eG Innovations

eG Innovations provides intelligent performance management solutions that automate and dramatically accelerate the discovery, diagnosis, and resolution of IT performance issues in on-premises, cloud and hybrid environments. Where traditional monitoring tools often fail to provide insight into the performance drivers of business services and user experience, eG Innovations provides total performance visibility across every layer and every tier of the IT infrastructure that supports the business service chain. From desktops to applications, from servers to network and storage, from virtualization to cloud, eG Innovations helps companies proactively discover, instantly diagnose, and rapidly resolve even the most challenging performance and user experience issues.

eG Innovations is dedicated to helping businesses across the globe transform IT service delivery into a competitive advantage and a center for productivity, growth and profit. Many of the world's largest businesses use eG Enterprise to enhance IT service performance, increase operational efficiency, ensure IT effectiveness and deliver on the ROI promise of transformational IT investments across physical, virtual and cloud environments.

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