Monitoring LDAP Server

eG Innovations Product Documentation

eG
Total Performance Visibility

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Chapter 1: Introduction

LDAP, Lightweight Directory Access Protocol, is an Internet protocol that email and other programs use to look up information from a server. "LDAP-aware" client programs can ask LDAP servers to look up entries in a wide variety of ways. LDAP servers index all the data in their entries, and "filters" may be used to select just the person or group you want, and return just the information you want. LDAP is not limited to contact information, or even information about people. LDAP is used to look up encryption certificates, pointers to printers and other services on a network, and provide "single signon" where one password for a user is shared between many services. LDAP is appropriate for any kind of directory-like information, where fast lookups and less-frequent updates are the norm.

In environments providing mission-critical end-user services, the LDAP server, by enabling speedy retrieval of information, ensures that the quality of the user experience with the service is top-notch. The non- availability of the LDAP server in such infrastructures could therefore significantly slowdown service delivery, thereby impacting the overall service quality. To avoid such unpleasant consequences, it is imperative that the LDAP server's availability and responsiveness be continuously monitored. eG Enterprise helps administrators in continuous monitoring of LDAP server.

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Chapter 2: How to Monitor LDAP Server Using eG Enterprise?

eG Enterprise is capable of monitoring the LDAP server in both agentless and agent-based manners. To start monitoring the LDAP server, first you have to manage the LDAP component using the eG administrative interface. The procedure to achieve this is explained below.

2.1 Managing the LDAP Server

The eG Enterprise can automatically discover the LDAP server. However, the discovered LDAP component is managed manually. To achieve this, do the following:

1. Login to the eG administrative interface.

2. To manage the LDAP server that is already discovered, directly proceed towards managing it using the **COMPONENTS – MANAGE/UNMANAGE** page (Infrastructure -> Components -> Manage/Unmanage).

3. However, if it is yet to be discovered, then run discovery (Infrastructure -> Components -> Discover) to get it discovered or add the component manually using the **COMPONENTS** page (Infrastructure -> Components -> Add/Modify). Remember that components manually added are managed automatically.

4. Discovered components, however, are managed using the **COMPONENTS – MANAGE /
UNMANAGE** page.Figure 2.2 and Figure 2.2 clearly illustrate the process of managing the *LDAP* server.
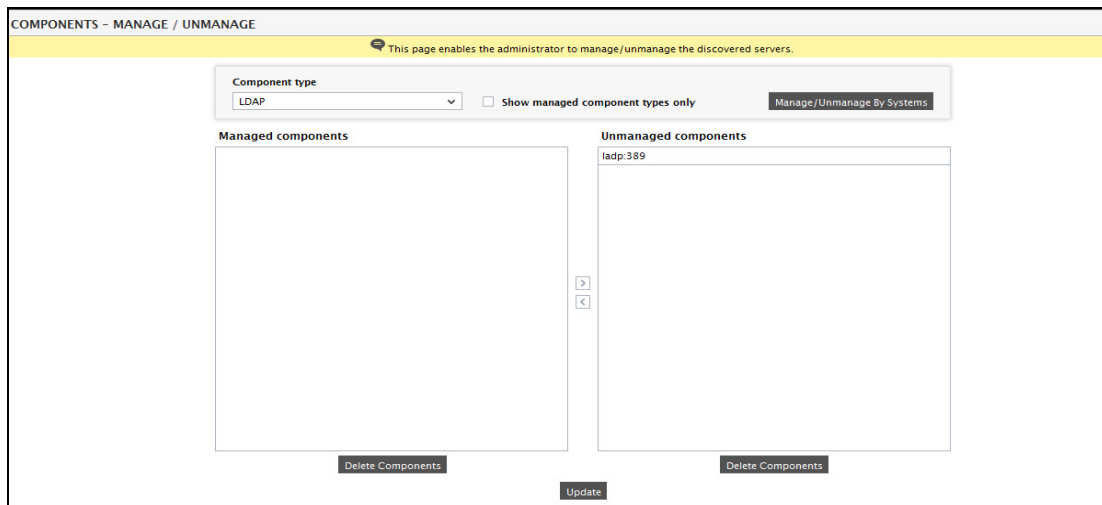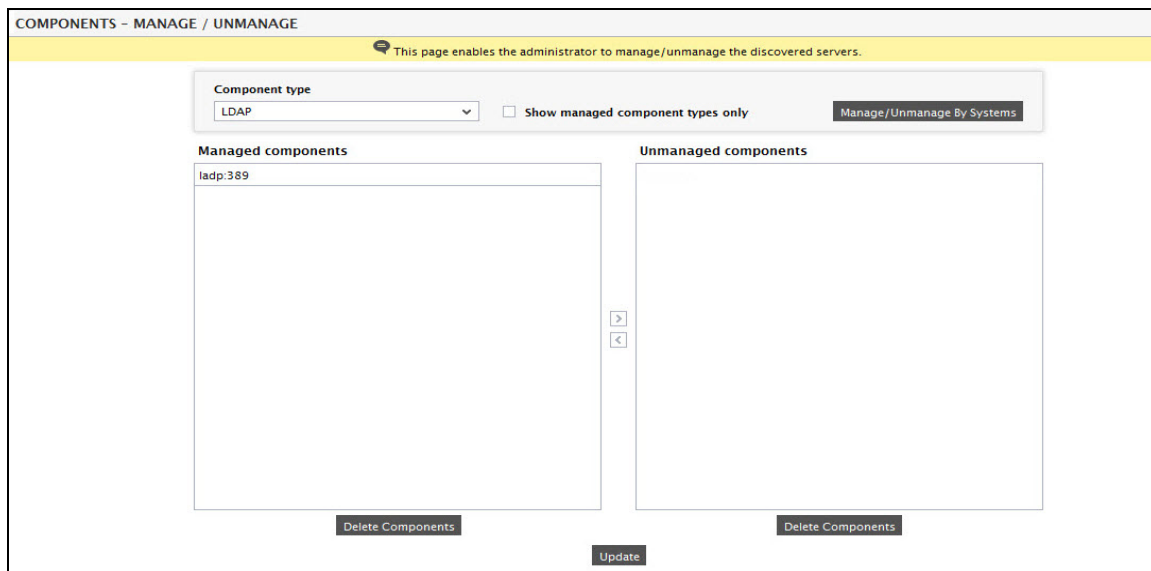
Figure 2.1: Viewing the list of unmanaged LDAP servers

Figure 2.2: Managing the LDAP servers

5. Once the discovered component is managed, sign out of the administrative interface.

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Chapter 3: Monitoring LDAP Servers

eG Enterprise offers a 100%, web-based LDAP server monitoring model, which runs quick availability checks on the LDAP server at pre-set intervals, and in the process, also reports the responsiveness of the server and its overall performance.
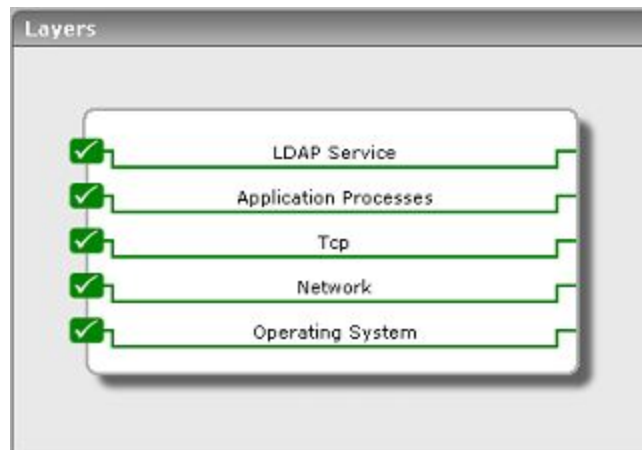

Figure 3.1: The layer model of the LDAP server

Figure 3.1 depicts the layer model of an LDAP server. Since the LDAP service is based on the TCP protocol, the layer model includes measures of the status of the UDP stack of a host. The **Application Processes** layer tracks the health of the processes corresponding to the LDAP server.

The section to come discuss the **LDAP Service** layer only, as all other layers have already been dealt with in the *Monitoring Unix and Windows Servers* document.

3.1 The LDAP Service Layer

The LDAP Service layer tracks the health of the LDAP service. To measure the state of an LDAP server, the eG Enterprise suite uses an Ldap test shown in Figure 3.2.

Figure 3.2: Tests mapping to the LDAP Service layer

3.1.1 Ldap Test

This test emulates a client accessing an LDAP server to issue a query. Based on the response reported by the server, measurements are made of the availability and responsiveness of the LDAP server. Many LDAP servers have been designed to report a number of usage statistics if the query is the special string **"cn=monitor"**. For such LDAP servers, this test also reports a number of usage statistics.

Target of the test : An LDAP server

Agent deploying the test : An external agent

Outputs of the test : One set of results per LDAP server monitored.

Configurable parameters for the test

Parameters	Description
Test Period	How often should the test be executed
Host	The host for which the test is to be configured.
Port	The port on which the specified host is listening.
Search	Specify the Distinguished Name to search for in the LDAP server. By default, this value is set to **"cn=monitor"**. Many LDAP servers (iPlanet/Sun One LDAP, Open LDAP, etc.) expose performance metrics when this DN is used. However, for more recent LDAP versions, the distinguished name has to be represented as a sequence of relative distinguished names (RDN) connected by commas. For instance, the Search parameter can be configured as: *cn=eguser,cn=Users,dc=citrix,dc=eGinnovations,dc=com*

Parameters	Description
DistinguishedName	Represents the server's Distinguished name. This value is to be specified when the server requires explicit authentication of requests. By default, this attribute is set to "*none*", implying that authentication is not required. Where authentication is required, the DistinguishedName has to be represented as a sequence of relative distinguished names (RDN) connected by commas. For instance, your specification can be: *cn=ctxuser,cn=Users,dc=citrix,dc=eGinnovations,dc=com*
Password	Password to be used for authenticating the request. The password is to be specified whenever the DistinguishedName is not "*none*".
Confirm Password	Confirm the password (if specified) by retyping it here.
IsPassive	If the value chosen against this parameter is **Yes**, then the LDAP server under consideration is a passive server in an LDAP cluster. No alerts will be generated if the server is not running. Measures will be reported as "Not applicable" by the agent if the server is not up.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
LDAP availability	Whether a successful response is received from the LDAP server in response to the emulated user request.	Percent	An availability problem can be caused by different factors – e.g., the server process may not be up, a network problem may exist, or there could be a configuration problem with the LDAP server.
LDAP response time	Time taken (in seconds) by the server to respond to a request.	Secs	An increase in response time can be caused by several factors such as a server bottleneck, a configuration problem with the LDAP server, a network problem, etc.
Current LDAP connections	Number of connections currently being processed by the LDAP server.	Number	A high value could result whenever the server is experiencing a problem (due to overload, or because of application problems).
LDAP connection rate	Quantifies the workload in terms of connections per second to the LDAP server.	Conns/Sec	This value directly represents the user workload.

Measurement	Description	Measurement Unit	Interpretation
Operations outstanding	The number of outstanding requests waiting for processing by the LDAP server.	Number	A consistent non-zero value of this metric is indicative of a server bottleneck.
Data transmit rate	Quantifies the traffic handled by the LDAP server in Kbytes/Sec.	KB/Sec	Typically, an increase or decrease in connection rate will result in a corresponding change in the data transmission rate. A deviation from this rule signifies a possible change in the characteristics of applications accessing the LDAP server, or a change in the organization of the LDAP schema.
LDAP TCP port availability	This measure indicates whether the test managed to establish a TCP connection to the server.	Percent	a. Failure to establish a TCP connection may imply that either the web server process is not up, or that the process is not operating correctly. In some cases of extreme overload, the failure to establish a TCP connection may be a transient condition. As the load subsides, the server may start functioning properly again. b. If this measure is 100% but the LDAP availability is 0, this could indicate a problem with the server configuration. Alternatively, the search string provided as a parameter to the LdapTest may not be supported by the corresponding LDAP server. In this case, configure the test based on the directory structure configured for

Measurement	Description	Measurement Unit	Interpretation
			the target LDAP server (i.e., change the "cn=monitor" value with an appropriate alternative).

Note:

The **Processes** test of LDAP servers takes an additional parameter named IsPassive. If the value chosen against this parameter is **yes**, then the LDAP server under consideration is a passive server in an LDAP cluster. No alerts will be generated if the server is not running. Measures will be reported as "Not applicable" by the agent if the server is not up.

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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