Monitoring Microsoft Windows Internet Name Service (WINS) server

eG Innovations Product Documentation

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Chapter 1: Introduction

The Windows Internet Name Service (WINS) provides a distributed database for registering and querying dynamic mappings of NetBIOS names for computers and groups used on your network. WINS maps NetBIOS names to IP addresses and was designed to solve the problems arising from NetBIOS name resolution in routed environments. The main benefit of a WINS server is that it avoids the need for broadcasts to resolve computer names to IP addresses.

Typically, WINS servers use UDP port 137. **This port should be provided when you manually add a WINS server for monitoring**. The steps below highlight how WINS works:

- **Name Registration**: When a WINS client initializes, it registers its NetBIOS name by sending a name request to the configured WINS server. All services get registered as they are initialized in the WINS server database. If the WINS server is available and the name is not registered by another machine, the WINS server returns a successful registration message.

  If the NetBIOS name is already registered in the WINS database, the WINS server will send a challenge to the current registered owner. This request will be sent 3 times at 500ms intervals. If the current owner responds the WINS server will send a negative name resolution response to the WINS client attempting to register the name. If there is no response the registering client will receive a Name Registration response.

- **Name Renewal:** To continue using the same NetBIOS name, a client must renew its lease before it expires. If the client does not renew the lease, the WINS server makes it available to another WINS client. A WINS client will first attempt to refresh its name registration request after 1/8 of the TTL is completed. If the client is successful subsequent name registration requests will occur when 1/2 the TTL is expired.

  If the client is unsuccessful with lease renewal on the initial attempt the client will try every 2 minutes until 1/2 TTL is remaining. At 1/2 of TTL the client will revert to the secondary WINS server if configured in 1/8 TTL intervals. At completion of TTL lease, the WINS client will revert back to the primary WINS server and start the process all over again.

- **Name Release:** Before the expiry of its lease, a client can send an explicit request to release the name assigned to it.

If even one of these steps experience latencies, it could cause a significant delay in the entire process of resolving an IP address to its corresponding NetBIOS name. This could be much worse in large environments where the WINS server might have to handle hundreds of concurrent ‘name

resolution' requests; here, even a seemingly insignificant drop in the processing rate of the WINS server can grow in severity within minutes, and can bring the whole environment to a virtual standstill!

If such adverse consequences are to be prevented, it is recommended that you continuously monitor the processing ability of the WINS server, so that you are promptly alerted when there is any threat to its normal functioning. The eG Enterprise Suite helps administrators in this task.

This document describes the monitoring model that eG Enterprise prescribes for the Microsoft Windows Internet Name Service (WINS) server, and the performance metrics the model collects.

Chapter 2: Administering eG Manager to work with WINS

To do the above, do the following:

1. Log into the eG administrative interface.
2. If a WINS is already discovered, then directly proceed towards managing it using the **COMPONENTS - MANAGE/UNMANAGE** page (Infrastructure -> Components -> Manage/Unmanage). However, if it is yet to be discovered, then run discovery (Infrstructure -> Components -> Discover) to get it discovered or add the WINS server manually using the **COMPONENTS** page (Infrastructure -> Components -> Add/Modify). Remember that components manually added are managed automatically. Discovered components, however, are managed using the **COMPONENTS - MANAGE/UNMANAGE** page. Figure 2.1 and Figure 2.2 clearly illustrate the process of managing a WINS.

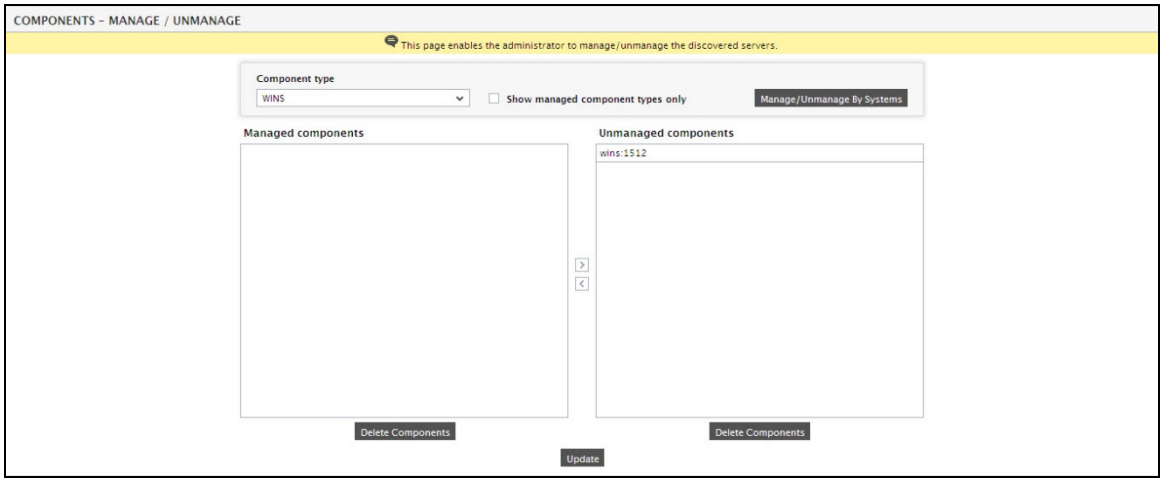

Figure 2.1: Selecting the WINS to be manage

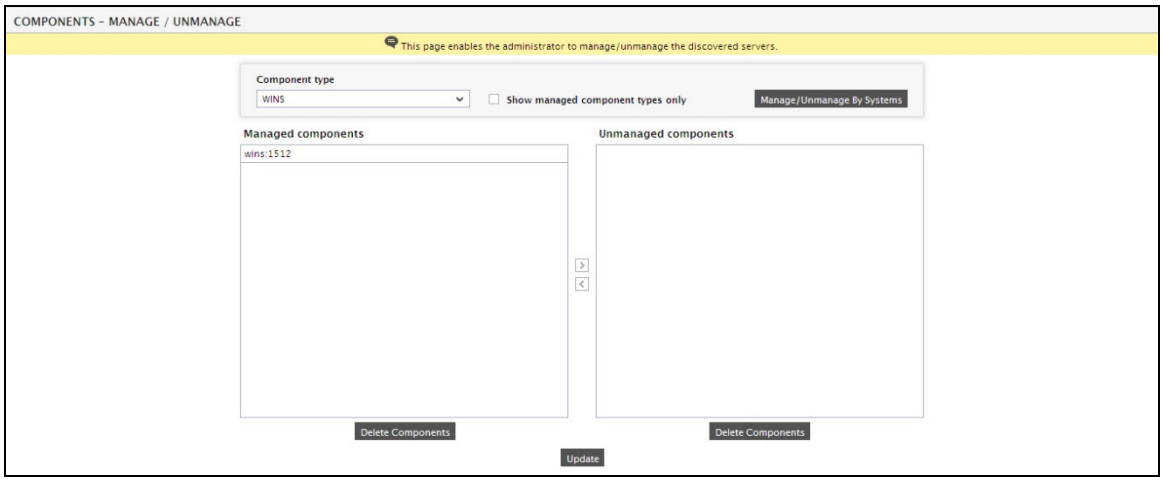

Figure 2.2: Managing the WINS

3. Next, sign out of the eG administrative interface. Then Figure 2.3 appears prompting you to configure the **Windows Processes** test.

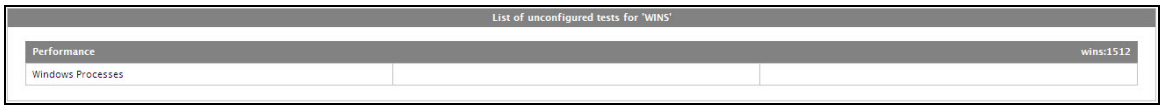

Figure 2.3: List of unconfigured tests for the WINS

4. To know how to configure the **Windows Processes** test, refer to *Monitoring Windows and Unix Servers* document.
5. Finally, signout of the eG administrative interface.

Chapter 3: Monitoring the Windows Internet Name Service (WINS)

eG Enterprise offers a 100% web-based WINS monitoring model (see Figure 3.1) that closely observes the performance of the WINS server in relation to real-time changes in load.

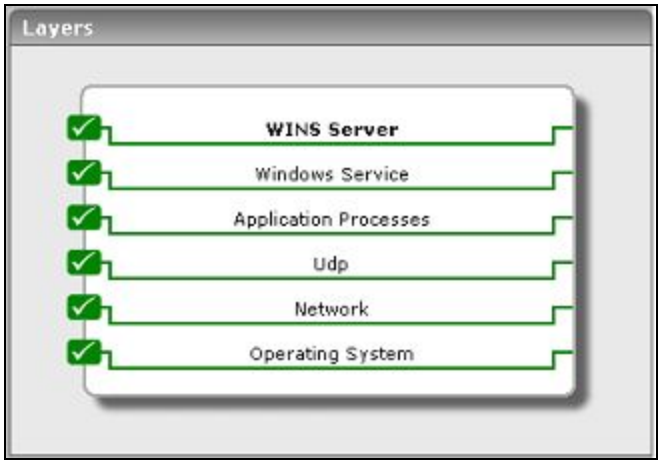

Figure 3.1: Layer model of a WINS server

Figure 3.1 comprises of a set of hierarchical layers, each of which is associated with one/more tests. The eG agent on the WINS server periodically executes these tests on the server, extracts performance data from the server, and instantly alerts administrators of an impending overload or a probable dip in the processing speed of the server.

The sections to come discuss the top layer of Figure 3.1 alone, as all other layers have been discussed in the *Monitoring Unix and Windows Servers* document.

3.1 The WINS Server Layer

Using the **Wins** test associated with it, this layer measures the rate at which the WINS server processes requests.

Figure 3.2: Test associated with the WINS server layer

3.1.1 Wins Test

This test reports general statistics pertaining to the Windows Internet Name Service (WINS).

Target of the test : A Microsoft Windows Internet Name Service (WINS) server

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every WINS server being monitored

Configurable parameters for the test

Parameters	Description
Test period	This indicates how often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port at which the WINS server listens to.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Queries	The total number of queries received by the WINS server	Queries/sec	This indicates the server workload. It is useful for capacity planning and to detect unusual usage situations.
Failed queries	Total number of failed	Failures/sec	The percentage of failed queries

Measurement	Description	Measurement Unit	Interpretation
	queries/sec		should be low. An unusually high number of failed queries can indicate a configuration problem, or a fault in the WINS server.
Releases	The rate at which release requests are received and processed by the WINS server	Releases/sec	
Failed releases	The rate of release failures	Failures/sec	Release failures could result in many names being unused for a period of time, and hence, should be minimized.
Conflicts	The total rate of conflicts seen by the WINS server. This value includes both Unique and Group conflicts.	Conflicts/sec	
Renewals	The total rate of renewal requests received by the WINS server. This value includes both Unique and Group renewals.	Renewals/sec	

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Chapter 4: Conclusion

This document has described in detail the monitoring paradigm used and the measurement capabilities of the eG Enterprise suite of products with respect to **Windows Internet Name Service (WINS)**. For details of how to administer and use the eG Enterprise suite of products, refer to the user manuals.

We will be adding new measurement capabilities into the future versions of the eG Enterprise suite. If you can identify new capabilities that you would like us to incorporate in the eG Enterprise suite of products, please contact support@eginnovations.com. We look forward to your support and cooperation. Any feedback regarding this manual or any other aspects of the eG Enterprise suite can be forwarded to feedback@eginnovations.com.