



How to Use TeamQuest® Performance Software to Manage the Performance of Microsoft Exchange

White Paper
TQ-WP03 Rev. B Release 9

Summary

This document focuses on how TeamQuest Performance Software helps Microsoft Exchange administrators manage the performance of Microsoft Exchange server. It provides examples of performance parameters and demonstrates how to turn them on performance parameters within TeamQuest software, and provides examples of some performance parameters. It describes how to create workloads to help you group certain processes to easily manage your Microsoft Exchange system(s). It also describes how to set alarms on Microsoft Exchange statistics so you are notified when a certain performance parameter reaches a value above a defined threshold. Since e-mail messaging is becoming pervasive in the business world and you must manage increasing amounts of information, you need powerful performance software products to satisfy the requirements brought on by your Microsoft Exchange server. This document provides the information needed to monitor and plan for the future growth of your e-mail system.

Please refer to the final page of this document for important legal notices and information regarding how to contact TeamQuest Corporation.

Like what you see? [Subscribe](#).

Brief Introduction to TeamQuest Performance Software

TeamQuest's suite of products warrants a bit of an introduction before we delve into how they can be used in your data center. The products are specifically designed for managing the performance and capacity of IT systems. The individual members of the suite are:

- TeamQuest Alert
- TeamQuest On the Web
- TeamQuest View
- TeamQuest Model

TeamQuest Alert provides multi-system monitoring for event management with built-in performance evaluation. It helps you manage the performance of hundreds or thousands of heterogeneous servers scattered across multiple locations. It alerts you to impending performance problems and helps you to make a diagnosis.

TeamQuest On the Web is a tool for providing remote, Web-based access to performance reports. It is great for providing reports to management or to line organizations wanting to see if service levels are being met. You can get both real-time and historical information, and it works with a variety of servers and applications.

TeamQuest View is a comprehensive performance analysis tool that helps you find underutilized capacity, identify trends, and diagnose problems and drill down to the root cause. It does both real-time and historical analysis. You can run TeamQuest View on a variety of platforms because it works with either Motif or Windows user interfaces.

TeamQuest Model uses analytic and simulation modeling to make predictions about system performance. It is ideal for capacity planning and server consolidation projects. TeamQuest Model helps you find a configuration for providing high-value services to your line organization clients at minimum cost.

TeamQuest is unique in the industry because it provides a complete performance management solution, ranging from monitoring to full-fledged capacity planning.

TeamQuest solutions can:

- Detect problems early
- Determine the root cause quickly
- Predict the future

TeamQuest solutions scale well for data centers with hundreds of heterogeneous servers. Some competitive vendors tout their ease of installation, implementation, and use. However, TeamQuest backs up that claim. If you check Web sites for TeamQuest's competitors, you might discover that they claim to be quick and easy to install, implement, and use. If you check with customers, you will discover that TeamQuest's products actually are. TeamQuest software installs on a single server in 15 minutes and on 100 within two days. TeamQuest technical support personnel are highly knowledgeable and responsive. TeamQuest specializes in optimizing IT performance. TeamQuest employees help IT organizations efficiently meet the needs of their clients.

Microsoft Exchange Architecture Brief Overview

Microsoft Exchange server is based on a client/server architecture. The server has a directory database of possible recipients and storage space for the messages. On the client, Microsoft Exchange software enables users to compose and send messages, as well as receive and read messages. The messaging protocols and application program interfaces (MAPI) provides the interface components permission to communicate between the client and server [Reference 1].

Like what you see? [Subscribe](#).

How To Use TeamQuest Performance Software to Manage the Performance of Microsoft Exchange

Microsoft Exchange Server has four core components [Reference 2]:

- System Attendant (SA)
- Directory Service (DS)
- Message Transfer Agent (MTA)
- Information Store (IS)

An additional service called EVENTS Service lets the administrator develop and deploy scripts to respond to events generated by the Exchange Server. Those components are [Reference 2]:

- Internet Email Service
- Internet News Service
- Directory Synchronization
- Schedule + Free/Busy Connector (Outlook Calendar Features)

Other add-on utilities like the Lotus Notes connector, CC-Mail connector; and Site connectors are available as separate Microsoft Windows system services [Reference 2].

High-Level Overview

The following section will get you started so that you can monitor MS Exchange Server with TeamQuest Performance Software.

- By default, TeamQuest Manager does not collect MS Exchange performance parameters. The MS Exchange Statistics section will explain how to enable data collection.
- Once you have enabled the MS Exchange performance parameters, you will want to create reports so you can further analyze the collected information. TeamQuest reports are very flexible and allow you to view your data in several different ways. “Creating Reports” shows you an example of an MS Exchange report.
- A unique feature to TeamQuest Performance Software is the ability to create workloads. “Creating Workloads” quickly shows how TeamQuest Performance Software does this. This is very helpful to MS Exchange administrators because they can use specific MS Exchange names to help determine the amount of resources a certain component is using.
- “Setting Alarms” describes how to set alarms and send SNMP traps using TeamQuest software on the MS Exchange data. This is important to the MS Exchange administrator so that you can effectively keep your system(s) up and running 24/7 hours a day.

Like what you see? [Subscribe](#).

How To Use TeamQuest Performance Software to Manage the Performance of Microsoft Exchange

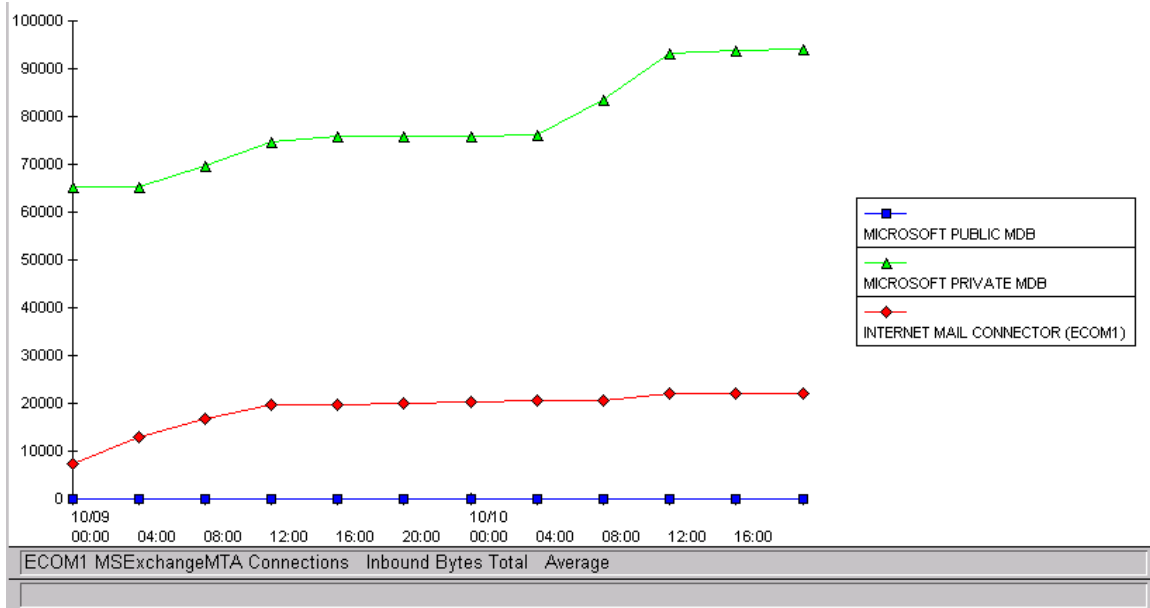


Figure 1
Microsoft Exchange MTA Connections

Microsoft Exchange Server Statistics

Microsoft Exchange software has numerous performance parameters to help in the administration of the application. TeamQuest Performance Software allows you to look at those performance parameters in greater detail. Determining which performance parameters to turn on varies for each site depending on the administrator's needs. TeamQuest Performance Software collects Microsoft Exchange statistics in the following areas:

- MExchange DS
- MExchange ES
- MExchangeIMC
- MExchangeIS Private
- MExchangeIS Public
- MExchangeIS
- MExchange Internet Protocols
- MExchangeMTA
- MExchangeMTA Connections
- MExchangeWEB
- Network Interface
- TCP
- System
- Memory
- PhysicalDisk
- LogicalDisk
- Objects
- Redirector
- Processor

When you install Microsoft Exchange software, its performance parameters are entered into the registry. TeamQuest Performance Software retrieves these performance parameters for analysis.

Like what you see? [Subscribe](#).

How To Use TeamQuest Performance Software to Manage the Performance of Microsoft Exchange

While it is important to monitor a variety of these performance parameters, this paper highlights only a couple of them as examples.

Turning On Microsoft Exchange Performance Parameters

By default, to conserve CPU time and disk space, the System Activity Agents collect only a subset of all the available metrics on your system. To analyze MS Exchange, you must turn on the MS Exchange performance parameters that you are interested in collecting. Use the following steps to turn on the collection of MS Exchange performance parameters:

Note: To do this you must have administrator access.

1. Go to your Microsoft Exchange Server.
2. Go to the TeamQuest Manager browser interface and log in.
3. From the TeamQuest Manager navigation bar, click the Collection Agents link.
4. In the Name column, click on the System Activity Agent. (The Edit page for the System Activity Agent is displayed).
5. To change the settings:
 - a. Click the Edit link to the right of the Statistics Collected field.
The field opens to allow you to make changes.
 - b. Click in the box next to the statistic that you would like to collect.
 - c. Once you are finished making your selections, click the Save button at the bottom of the page. Your changes are saved to the database and you are returned to the Edit page of the System Activity Agent.
6. When your configuration settings are complete, click the Finished button.
7. You are returned to the Collection Agents page.
8. To notify the Agent Manager of the configurations changes, click the Activate Changes link from the TeamQuest Manger navigations bar.

Like what you see? [Subscribe](#).

Host: ECOM1
Welcome, tq!
Database: Production

TeamQuest Manager TeamQuest Model TeamQuest On the Web Help Site Map Logout

Agent Manager
Collection Agents
System
Application
User Defined
Service Agents
Alarm Policy
Workload Policy
Reduction Policy
Derived Statistic Policy
Database Settings
Analysis Tools

System Activity Agent Configuration

Statistic name containing:

794 of 794

[Refresh Available Statistics](#) | [Restore Original Settings](#)

Collected	Statistic
<input type="checkbox"/>	
<input checked="" type="checkbox"/>	Cache:::Copy Read Hits %
<input checked="" type="checkbox"/>	LogicalDisk:::% Free Space
<input checked="" type="checkbox"/>	LogicalDisk:::Free Megabytes
<input checked="" type="checkbox"/>	MSEExchange Internet Protocols:::Active Connections
<input checked="" type="checkbox"/>	MSEExchange Internet Protocols:::Bytes Received
<input checked="" type="checkbox"/>	MSEExchange Internet Protocols:::Bytes Received/sec
<input checked="" type="checkbox"/>	MSEExchange Internet Protocols:::Bytes Sent
<input checked="" type="checkbox"/>	MSEExchange Internet Protocols:::Bytes Sent/sec
<input checked="" type="checkbox"/>	MSEExchange Internet Protocols:::Incoming Queue Length
<input checked="" type="checkbox"/>	MSEExchange Internet Protocols:::Incoming Queue Size
<input checked="" type="checkbox"/>	MSEExchange Internet Protocols:::Outgoing Queue Length

Local intranet

Figure 2
TeamQuest Manager System Activity Agent Configuration

Creating Reports

To view the performance parameters you want to monitor, you must connect to your Microsoft Exchange system with TeamQuest View, TeamQuest Alert, TeamQuest On the Web, or TeamQuest Model. For example, using TeamQuest View, establish a session to the system that contains your Microsoft Exchange application. Select the parameters that you would like to chart and chart them. There are many different graphs to choose from that can present the data in any way that you like. Also in TeamQuest View you can do correlation and statistical analysis on your reports for further in-depth analysis and understanding of the data.

Like what you see? [Subscribe](#).

How To Use TeamQuest Performance Software to Manage the Performance of Microsoft Exchange

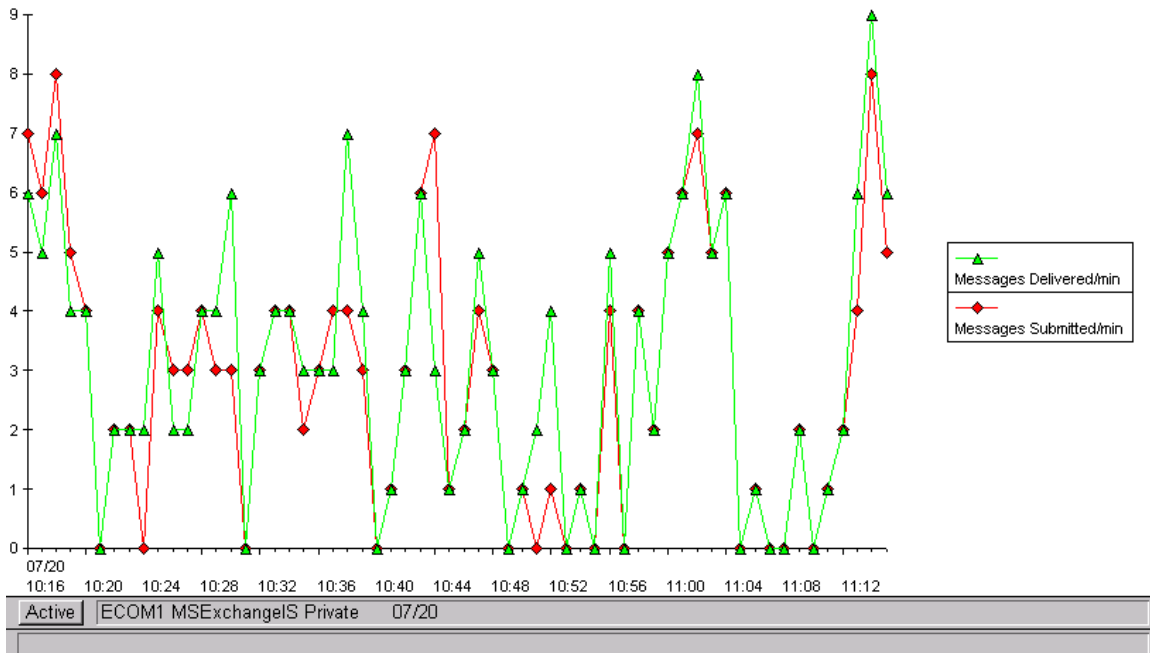


Figure 3
Microsoft Exchange IS Private Messages

Creating Workloads

Creating workloads is a unique TeamQuest Performance Software feature that helps you use specific business names to determine the amount of resources a certain area is using. This feature helps you further analyze your system's performance. A workload is a logical classification of work on a computer system. It is the breakdown of resource consumption into functional business units. Workloads are very helpful because you can take individual processes and group them together into a single unit. Workloads are used by TeamQuest View, TeamQuest On the Web, and TeamQuest Model.

The following are sample workload names that you may use to isolate Microsoft Exchange processes from the rest of your system.

- Exchange Information Store—command = store
- Exchange Message Transfer Agent—command = emsmta
- Exchange Directory Service—command = dsamain
- Exchange System Attendant—command = mad
- Exchange Internet Mail Service—command = msexcimc
- Exchange Event Service—command = events

Like what you see? [Subscribe.](#)

How To Use TeamQuest Performance Software to Manage the Performance of Microsoft Exchange

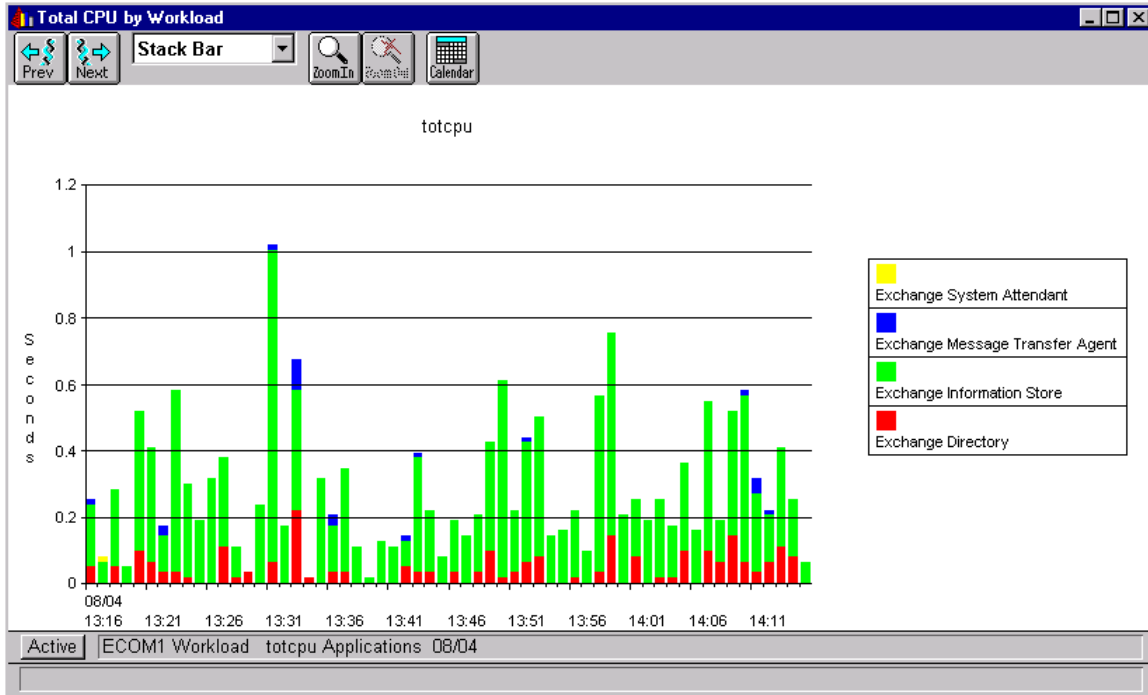


Figure 4
Total CPU by Workload Report

Setting Alarms

Once you have collected Microsoft Exchange data, you can set alarms. TeamQuest Performance Software agents collect data from various data sources at the sample interval defined for the user-specified aggregation set. The agents check the data obtained at each sample interval to determine if the data values exceed user-specified threshold limits. If a data value for a parameter is found to exceed a threshold, the agent generates an alarm to alert you that a threshold condition has been met. That alarm can be sent to many different areas such as a pager or, an e-mail messenger, or it can launch a script to automatically correct the problem.

TeamQuest Performance Software provides a browser-based administration for alarm configuration. To access the main menu page for the browser-based administration, use the following URL: <http://system:port>, where system is the name of the system where the TeamQuest Manager component is installed and port is the port number assigned for TeamQuest http requests. You then must enter a username and password to access the alarm administration main menu. Once you are finished, you can view your alarms in TeamQuest View, TeamQuest Alert, or TeamQuest On the Web.

Like what you see? [Subscribe](#).

How To Use TeamQuest Performance Software to Manage the Performance of Microsoft Exchange

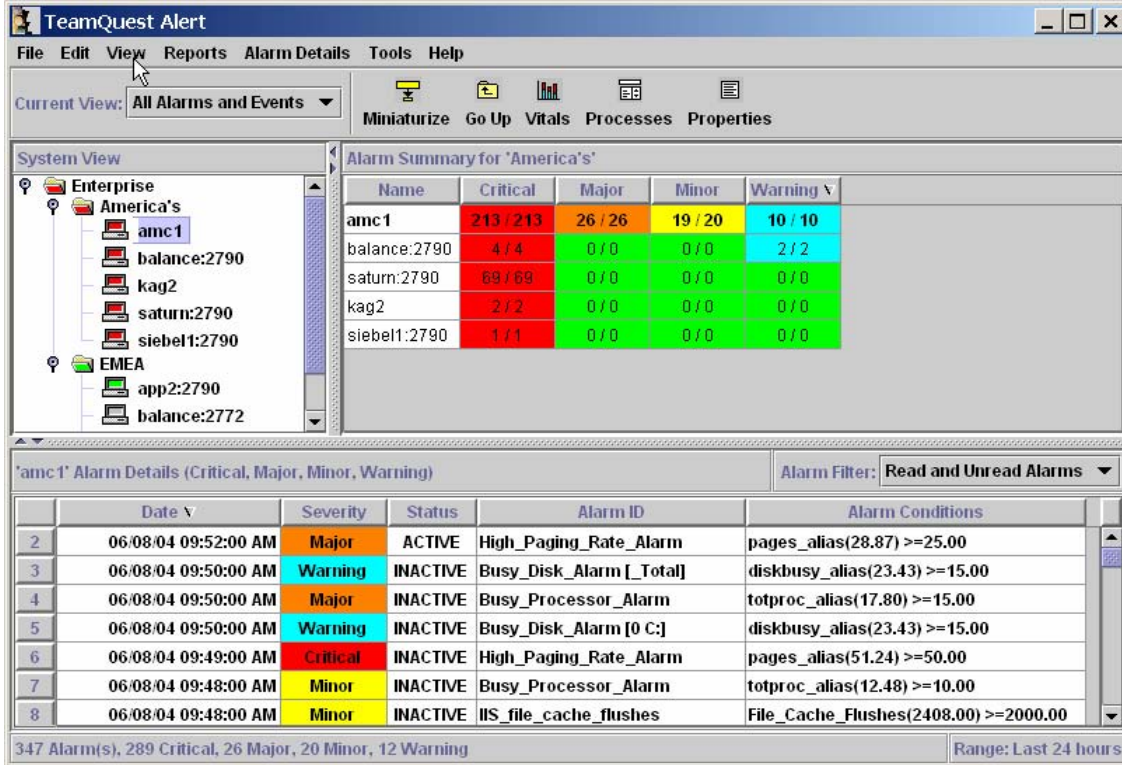


Figure 5
TeamQuest Alert Alarm Report

Conclusion

This document explained how TeamQuest Performance Software can assist you in monitoring your Microsoft Exchange server. It is important to have a good understanding of how different parameters can influence the way your system performs. Abnormal performance issues occur and it's important that you know how to handle them. It is critical to look at the history of your Microsoft Exchange server so you know what your normal day is. The information provided in this document should enable you to effectively monitor the performance of your Microsoft Exchange server.

Bibliography

1. Carol Kerr, "Monitoring Your Microsoft Exchange Server," *Proceedings of CMG 98*, Anaheim, CA.
2. Gregg Todd et al., *Microsoft Exchange Server 5.5 Unleashed*, 1998 SAMS Publishing.
3. *TeamQuest Performance Software for Microsoft Windows Systems, Administration Guide*, TQ-16020.1

Like what you see? [Subscribe](#).

TeamQuest Corporation

Americas

One TeamQuest Way
Clear Lake, Iowa 50428
USA
+1 641 357-2700
+1 800 551-8326
info@teamquest.com

Europe, Middle East and Africa

Box 1125
405 23 Göteborg
Sweden
+46 (0)31 80 95 00

United Kingdom
38 The Old Woodyard
Hagley Hall
Hagley
Worcestershire DY9 9LQ
+44 (0)1562 881889
emea@teamquest.com

Asia Pacific

Level 6, 170 Queen Street
Melbourne, VIC 3000
Australia
+61 3 9641 2288
asiapacific@teamquest.com

Legal Notices

TeamQuest and the TeamQuest logo are registered trademarks in the US, EU, and elsewhere. All other trademarks and service marks are the property of their respective owners. No use of a third-party mark is to be construed to mean such mark's owner endorses TeamQuest products or services.

The names, places and/or events used in this publication are purely fictitious and are not intended to correspond to any real individual, group, company or event. Any similarity or likeness to any real individual, company or event is purely coincidental and unintentional.

NO WARRANTIES OF ANY NATURE ARE EXTENDED BY THE DOCUMENT. Any product and related material disclosed herein are only furnished pursuant and subject to the terms and conditions of a license agreement. The only warranties made, remedies given, and liability accepted by TeamQuest, if any, with respect to the products described in this document are set forth in such license agreement. TeamQuest cannot accept any financial or other responsibility that may be the result of your use of the information in this document or software material, including direct, indirect, special, or consequential damages.

You should be very careful to ensure that the use of this information and/or software material complies with the laws, rules, and regulations of the jurisdictions with respect to which it is used.

The information contained herein is subject to change without notice. Revisions may be issued to advise of such changes and/or additions.

U.S. Government Rights. All documents, product and related material provided to the U.S. Government are provided and delivered subject to the commercial license rights and restrictions described in the governing license agreement. All rights not expressly granted therein are reserved.

Like what you see? [Subscribe](#).