How to monitor Exchange with Uptime Infrastructure Monitor

Contents

Monitoring the Network

The most critical component of any application is the network that surrounds it. To ensure that your network is available and running smoothly, we suggest monitoring the following components around your Exchange server:

- Monitor the network switches, routers and firewalls that are between your users and your Exchange services.
- Use the DNS service monitor to ensure your mail server name is resolving correctly.
- Use the PING service monitor to ensure that your mail server is responding to network requests.

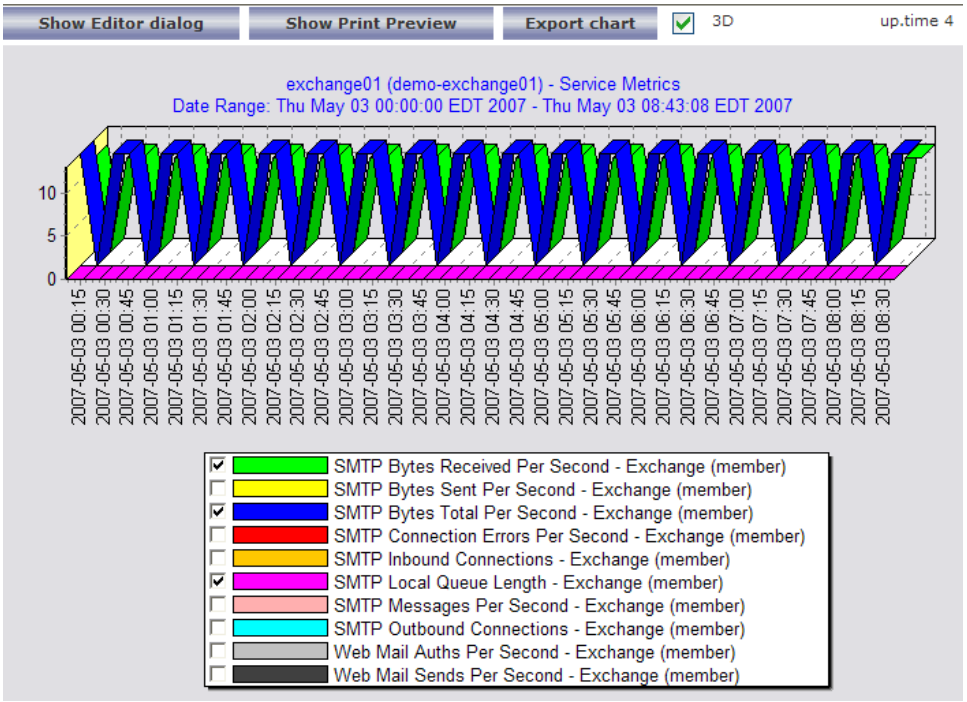
Monitoring Exchange

In this section we will review the monitors that are generally recommended to fully monitor your services.

Monitoring Exchange Performance

We recommend using the service monitors listed below to monitor the internal application performance of your Exchange Server.

- **Exchange Service Monitor**. The Exchange service monitor provides detailed internal performance information from your Exchange Server. We recommend adding this service to your Exchange server (note: click the Save for Graphing checkbox beside each statistic in the service monitor if you want to be able to graph or report on internal performance at a later date). Please see the Microsoft Exchange Performance Metrics article for a full list of metrics available from the Exchange service monitor. The following graph shows an example of Exchange performance statistics collected from an existing Exchange service monitor:



Show Editor dialog
Show Print Preview
Export chart
☑ 3D
up.time 4
exchange01 (demo-exchange01) - Service Metrics
Date Range: Thu May 03 00:00:00 EDT 2007 - Thu May 03 08:43:08 EDT 2007
10
5
0
2007-05-03 00:15
2007-05-03 00:30
2007-05-03 00:45
2007-05-03 01:00
2007-05-03 01:15
2007-05-03 01:30
2007-05-03 01:45
2007-05-03 02:00
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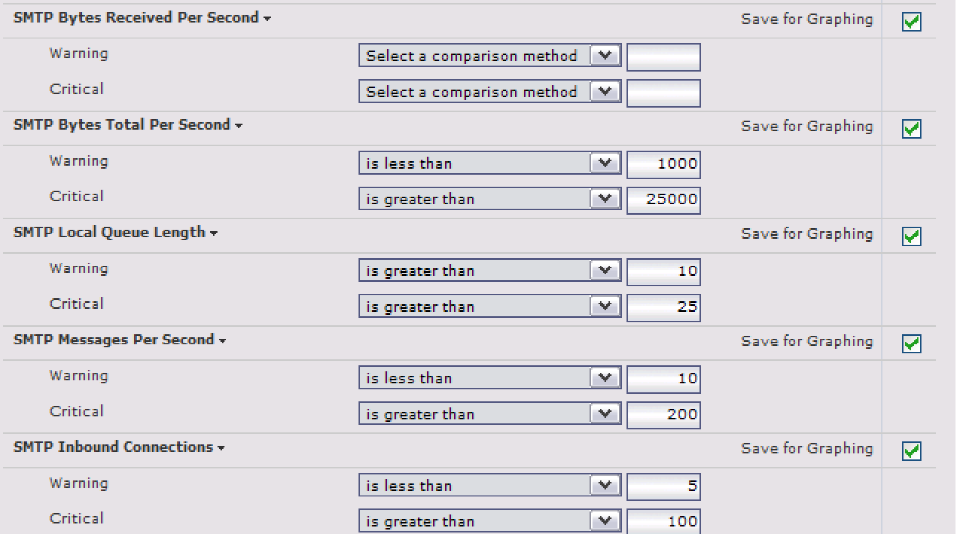
2007-05-03 07:15
2007-05-03 07:30
2007-05-03 07:45
2007-05-03 08:00
2007-05-03 08:15
2007-05-03 08:30
☑ 🟩 SMTP Bytes Received Per Second - Exchange (member)
☐ 🟨 SMTP Bytes Sent Per Second - Exchange (member)
☑ 🟦 SMTP Bytes Total Per Second - Exchange (member)
☐ 🟥 SMTP Connection Errors Per Second - Exchange (member)
☐ 🟧 SMTP Inbound Connections - Exchange (member)
☑ 🟪 SMTP Local Queue Length - Exchange (member)
☐ ■ SMTP Messages Per Second - Exchange (member)
☐ ■ SMTP Outbound Connections - Exchange (member)
☐ ■ Web Mail Auths Per Second - Exchange (member)
☐ ⬛ Web Mail Sends Per Second - Exchange (member)

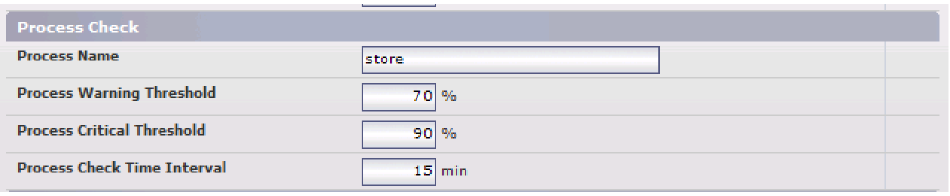
An example of some important Exchange Monitor settings and thresholds:



SMTP Bytes Received Per Second ▾		Save for Graphing	☑
Warning	Select a comparison method		
Critical	Select a comparison method		
SMTP Bytes Total Per Second ▾		Save for Graphing	☑
Warning	is less than	1000	
Critical	is greater than	25000	
SMTP Local Queue Length ▾		Save for Graphing	☑
Warning	is greater than	10	
Critical	is greater than	25	
SMTP Messages Per Second ▾		Save for Graphing	☑
Warning	is less than	10	
Critical	is greater than	200	
SMTP Inbound Connections ▾		Save for Graphing	☑
Warning	is less than	5	
Critical	is greater than	100	

⚠ Many thresholds within the Exchange service monitor will depend on the size and usage of your Exchange server. We suggest enabling the Save for Graphing option on each statistic and then letting the monitor collect data for 2 to 3 days. After that time, review the collected data to see how each statistic has trended over time, and pick thresholds that seem appropriate to your installation.

- **Performance Service Monitor**. The Performance service monitor allows you to monitor the average CPU consumption of your critical Exchange processes over time. We suggest that each Exchange process have a Performance monitor dedicated to it. Each process should not consume more than an average of 70% of system CPU for a period greater than 15 minutes. Here are some example settings for the Performance service monitor:



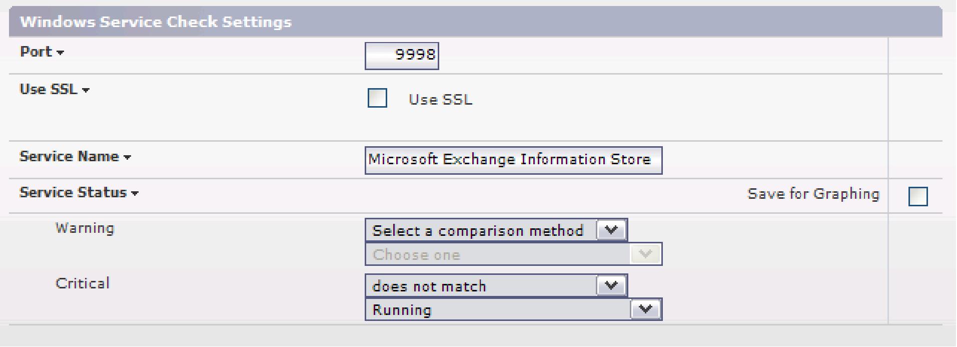
Process Check	
Process Name	store
Process Warning Threshold	70 %
Process Critical Threshold	90 %
Process Check Time Interval	15 min

Monitoring Exchange Services

- **Windows Service Check Monitor**. This monitor can be used to ensure that all required Exchange services are up and running on your server. In some cases you will not require all of these checks but we recommend configuring a Windows Service Check for each service named below. Each service should be in the running state.

Windows Service Name	Application
Microsoft Exchange Event	Exchange Event Controller
Microsoft Exchange IMAP4	IMAP Email Service
Microsoft Exchange Information Store	Primary mailbox store service
Microsoft Exchange Management	Exchange WMI Managemnt Interface
Microsoft Exchange MTA Stacks	Provides Exchange X.400 services.
Microsoft Exchange POP3	Provides POP version 3 services.
Microsoft Exchange Routing Engine	Mail Topological Routing Information Service
Microsoft Exchange Site Replication Service	Replicated Mail Server Synchronization Service
Microsoft Exchange System Attendant	Exchange Maintenance Service

An example Windows Service Check monitor for the *Microsoft Exchange Information Store* is provided below. We recommend creating a similar service monitor for each of the Windows services above.



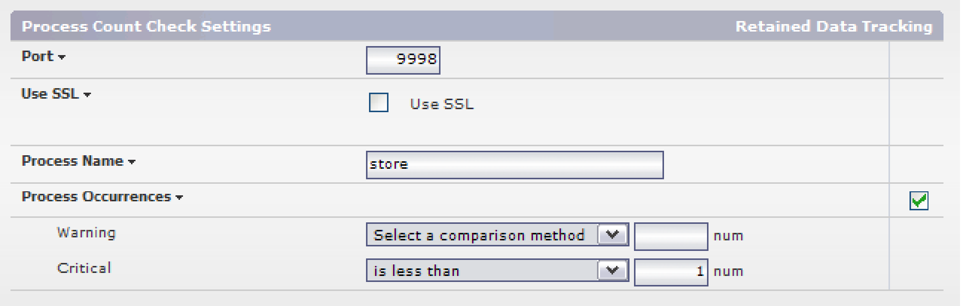
Windows Service Check Settings

Port ▾	9998	
Use SSL ▾	□ Use SSL	
Service Name ▾	Microsoft Exchange Information Store	
Service Status ▾	Save for Graphing	□
Warning	Select a comparison method Choose one	
Critical	does not match Running	

- **Process Count Monitor**. The Uptime Infrastructure Monitor Process Count monitor can be configured to ensure that Exchange processes are present on the host system. We recommend setting thresholds that alert if 0 instances of the processes in the table below are found.

Process Name	Application	Details
store	Exchange Event Controller	'.exe' not required for Windows Processes
exmgmt	Exchange Management Service	'.exe' not required for Windows Processes
mad	General Exchange Service Process	'.exe' not required for Windows Processes

Here are some example settings to check for the *store.exe* process:



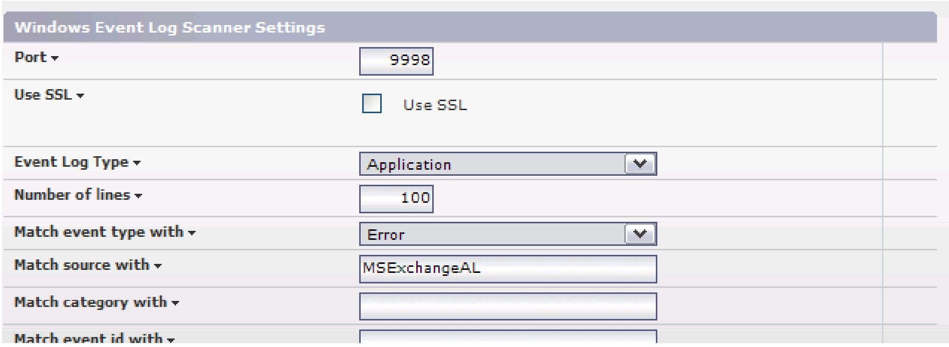
Process Count Check Settings — Retained Data Tracking

Port ▾	9998	
Use SSL ▾	□ Use SSL	
Process Name ▾	store	
Process Occurrences ▾		☑
Warning	Select a comparison method · num	
Critical	is less than · 1 num	

- **Windows Event Log Monitor**. Exchange forces most error messages to the Application and System event logs. Unfortunately there are over 20 different source categories for Exchange errors. The table below indicates some of the most important event sources to monitor with the Windows Event Log monitor. We recommend configuring a monitor for each source with an event type of *Error*. We also suggest creating Event Log monitors for the System event log since System errors are very likely to indirectly impact your Exchange services.

Log Type	Source Name	Event Type
Application	MSExchangeAL	Error
Application	MSExchangeIS	Error
Application	MSExchangeSA	Error
Application	MSExchangeTransport	Error
Application	POP3Svc	Error

Here are some example settings to check for error messages from the *MsExchangeAL* source:



Windows Event Log Scanner Settings

Port ▾	9998
Use SSL ▾	□ Use SSL
Event Log Type ▾	Application
Number of lines ▾	100
Match event type with ▾	Error
Match source with ▾	MSExchangeAL
Match category with ▾	
Match event id with ▾	

Other Monitoring Considerations

- **SMTP, IMAP & POP Service Checks**. To ensure basic availability of each of these services, please reference How to monitor IMAP, POP and SMTP email services.
- **User Authentication**. Uptime Infrastructure Monitor includes both Active Directory and LDAP service monitors to help ensure that the central authentication server is available.
- **Exchange Web Mail**. If your users depend on Exchange Web Mail, you should also monitor the following components:
    - Monitor the Web Mail User Interface with the HTTP service monitor.
    - Monitor the World Wide Web Publishing Service with the Windows Service Check monitor.
    - Monitor the IIS Admin Service with the Windows Service Check monitor.
    - Monitor the w3wp.exe process for performance using the Performance monitor, and availability using the Process Count monitor.
    - Monitor the inetinfo.exe process for performance using the Performance monitor, and availability using the Process Count monitor.

Monitoring the Host Server

Don't forget the value of monitoring the server that is hosting your Exchange Mail Services. Monitoring and alerting on the performance of your servers will be critical to ensure that you maintain server availability and meet capacity demands. Monitoring key performance indicators such as CPU Usage, Disk I/O, Network I/O and Memory usage is essential to ensure your servers are running properly.

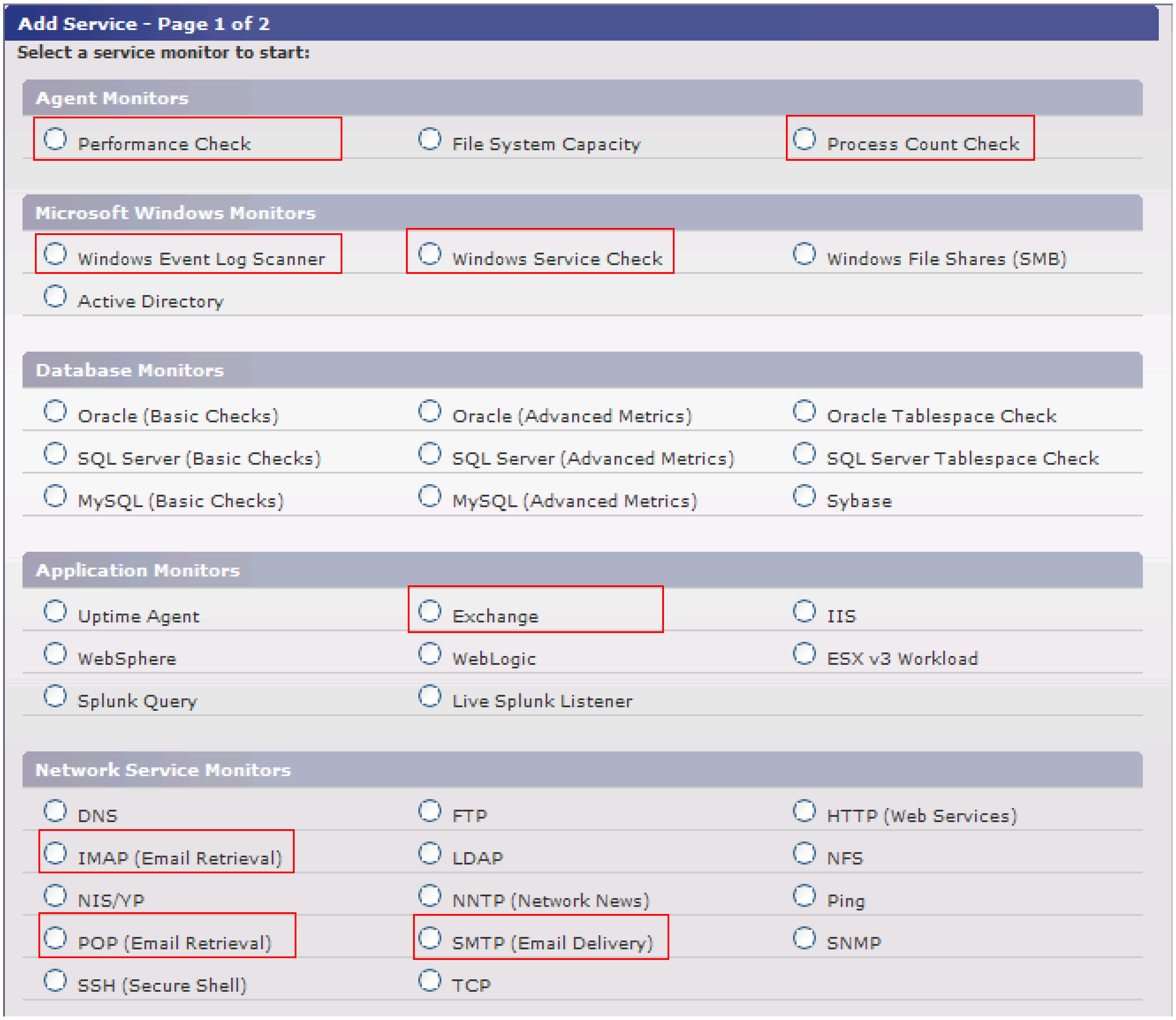
Next Steps

Now that you are monitoring your Exchange Server, it is time to move on to one of these next steps:

- Report Service Outages & Availability.
- Group monitors into an Application.
- Apply monitoring templates to many systems using Service Groups.

Monitor Reference

The following service monitors were used in the monitoring example:



Add Service - Page 1 of 2

Select a service monitor to start:

Agent Monitors

○ Performance Check	○ File System Capacity	○ Process Count Check

Microsoft Windows Monitors

○ Windows Event Log Scanner	○ Windows Service Check	○ Windows File Shares (SMB)
○ Active Directory		

Database Monitors

○ Oracle (Basic Checks)	○ Oracle (Advanced Metrics)	○ Oracle Tablespace Check
○ SQL Server (Basic Checks)	○ SQL Server (Advanced Metrics)	○ SQL Server Tablespace Check
○ MySQL (Basic Checks)	○ MySQL (Advanced Metrics)	○ Sybase

Application Monitors

○ Uptime Agent	○ Exchange	○ IIS
○ WebSphere	○ WebLogic	○ ESX v3 Workload
○ Splunk Query	○ Live Splunk Listener	

Network Service Monitors

○ DNS	○ FTP	○ HTTP (Web Services)
○ IMAP (Email Retrieval)	○ LDAP	○ NFS
○ NIS/YP	○ NNTP (Network News)	○ Ping
○ POP (Email Retrieval)	○ SMTP (Email Delivery)	○ SNMP
○ SSH (Secure Shell)	○ TCP	

Related Documentation:

Application Monitors - Exchange