

MITEL PERFORMANCE ANALYTICS

RELEASE 3.0

ENGINEERING GUIDELINES



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Mitel Performance Analytics Engineering Guidelines
Release 3.0 - January 16, 2019

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INTRODUCTION

Mitel Performance Analytics is a fault and performance management system designed to provide users with fast actionable problem resolution so that optimal service quality levels are maintained for end customers.

Mitel Performance Analytics provides real-time alerts, detailed reporting and ubiquitous accessibility with secure remote access.

DOCUMENT PURPOSE AND INTENDED AUDIENCE

This document is intended for Mitel Performance Analytics deployments where the software is installed on a server in the customer network.

For Mitel Performance Analytics Software as a Service (SaaS) deployments, where the software is hosted in the cloud, refer to the Mitel Performance Analytics online help.

This document provides guidelines and requirements to help customer plan Mitel Performance Analytics installations.

For a complete description of Mitel Performance Analytics, refer to the Mitel Performance Analytics online help.

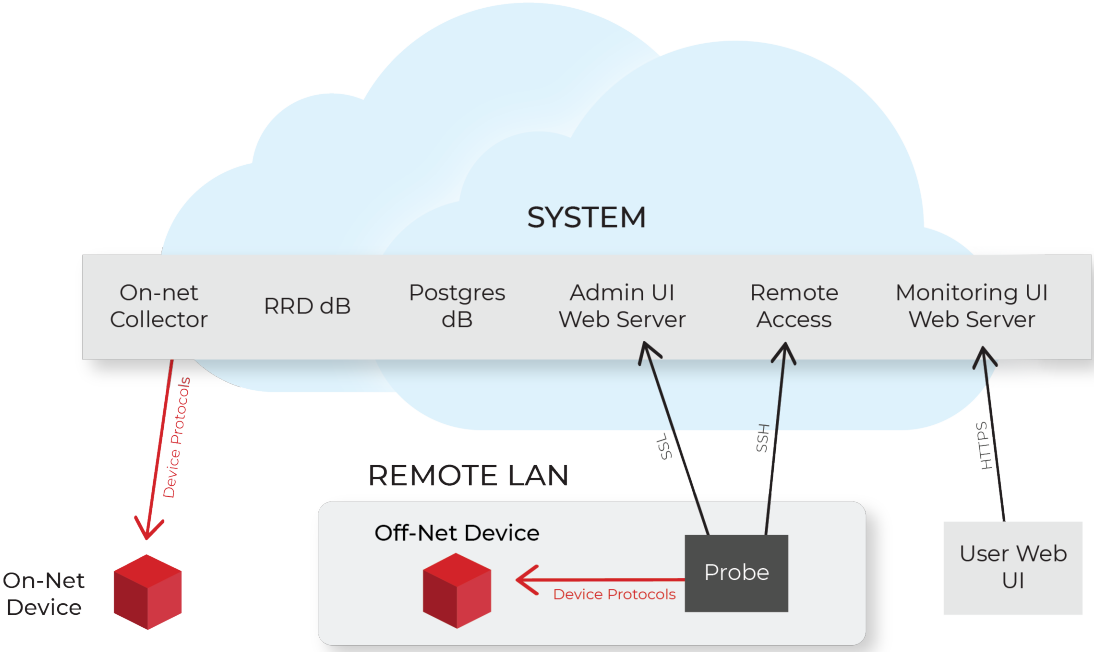
REVISION HISTORY

DOCUMENT DATE	DESCRIPTION
March 29, 2016	Mitel Performance Analytics R2.0 General Availability
January 5, 2017	Mitel Performance Analytics R2.1 General Availability
November 2, 2017	Mitel Performance Analytics R2.2 General Availability
January 16, 2019	Preliminary version for Mitel Performance Analytics R3.0.

MITEL PERFORMANCE ANALYTICS OVERVIEW

ARCHITECTURE

Mitel Performance Analytics consists of a number of web services running on either a cloud-hosted computing platform or on-premises computing platform. There are several components to Mitel Performance Analytics. The remote 'Probe' installed in non-Internet accessible networks maintains databases of status and events, and provides a web portal with access security. Additionally, Mitel Performance Analytics has a Remote Access Service that provides a secure "cross-connect" for remote access to the customer network.



The various Mitel Performance Analytics components can run on a single or multiple servers, depending on capacity requirements.

MITEL PERFORMANCE ANALYTICS SERVER INSTALLATION REQUIREMENTS

MITEL PERFORMANCE ANALYTICS SYSTEM NAME, DOMAIN AND IP ADDRESS

Before you start the installation you must have the IP address and a name for the Mitel Performance Analytics server.

Ensure that:

1. You have chosen a name for the Mitel Performance Analytics server; for example, `mpaserver`.
2. You know the domain name, for example `company.com`, that you want to use for the Mitel Performance Analytics server. If you do not want to use your company's domain name, you can use a domain name such as `mycompany.net`.
3. The server name and domain name are combined to provide the Fully Qualified Domain Name (FQDN) for the Mitel Performance Analytics server. In the previous example, the FQDN is `mpaserver.mycompany.net`.
4. You have the required IP address information, as follows:
 - A static IP address for the Mitel Performance Analytics server; for example, `10.0.5.75`.
 - The Network Mask; for example `255.255.255.0`.
 - The gateway IP address (for example, `10.0.5.1`) and the DNS server IP addresses (for example, `8.8.8.8` and `8.8.4.4`).
5. Your DNS system is configured so that the Mitel Performance Analytics server FQDN resolves to the static IP address of the Mitel Performance Analytics server; for example, `mpaserver.mycompany.net` resolves to `10.0.5.75`.

EMAIL SERVER INFORMATION

Mitel Performance Analytics can send alerts and reports using an SMTP server.

Ensure you have the following information to configure the email server:

- SMTP server name or address; for example, `smtp.gmail.com`
- SMTP server port number; typically 25, 465 or 587.
- From email address: When Mitel Performance Analytics generates an email, it displays this email address as the originator.
- Reply-to email address: Replies to a Mitel Performance Analytics-generated email are sent to this email address.
- SMTP encryption; yes or no
- SMTP authentication; yes or no
- SMTP username and password (for authentication, if required)

RECOMMENDED SERVER CAPACITY REQUIREMENTS

The Mitel Performance Analytics server software is provided as a VMware ESXi 5.1 OVA.

This is a virtual machine image that contains an Ubuntu 14.04 Linux server with the Mitel Performance Analytics server application, a Mitel Performance Analytics Probe, and middleware (for example, Java, Postgres, Apache Tomcat and Nginx).

The resource requirements for Mitel Performance Analytics depend on the number of devices being monitored. The following table describes the recommended virtual hardware based on the number of devices being monitored by Mitel Performance Analytics.

NO. OF MONITORED DEVICES	CPU	RAM	DISK
Up to 50	2 virtual CPUs, each vCPU operating at 1.5 GHz	4-8 GB	50 GB
50 to 100	4 virtual CPUs, each vCPU operating at 1.5 GHz	4-8 GB	70 GB
More than 100	Contact support for engineering assistance		

Important: If you experience slowness with your Mitel Performance Analytics environment and the CPU utilization is sustained above 60%, you need to increase the number of virtual CPUs in your environment.

PROBE INSTALLATION REQUIREMENTS

Mitel Performance Analytics requires a Probe to monitor devices. The Probe enables communication between Mitel Performance Analytics and the customer network. It also acts as a data collector between Mitel Performance Analytics and the monitored devices. The monitored devices send their data to the Probe which then relays it to Mitel Performance Analytics.

For users that have Mitel Performance Analytics installed on premise with their equipment, your installation already contains a Probe and you cannot install another.

For service providers that have Mitel Performance Analytics installed in their data center, your installation already contains a Probe. However, you can install more Probes. Typically, each additional Probe monitors a particular customer.

For cloud-based users, you must install a Probe as part of your configuration.

Mitel Performance Analytics provides Probe installers for Windows, Red Hat Linux (and distributions based on this, such as Mitel Standard Linux), installation as a blade on a Mitel MSL or MiCollab server, and installation as a virtual appliance.

HOST REQUIREMENTS

The Probe is designed to be lightweight and to impose minimal host requirements. Recommended host configurations are listed in the following table.

NO. OF DEVICES TO MONITOR	CPU	RAM	DISK	JAVA ENVIRONMENT
< 10 monitored devices per Probe Appliance	ARM5, 1GHz	512 MB total	512 MB total	Oracle Java Runtime Environment (JRE) 1.8 or later.
< 10 monitored devices per host	Core2 Duo / i3 1 GHz or faster	256 MB Service, 512 MB Host	40 GB free space	Oracle Java Runtime Environment (JRE) 1.8 or later.
< 80 monitored devices per host	Dual Core i5, 2 GHz or faster	1 GB Service, 2 GB Host	40 GB free space	Oracle Java Runtime Environment (JRE) 1.8 or later.
≥ 80 monitored devices per host	Contact Mitel for engineering guidelines.			

PROBE CAPACITY

For users that have Mitel Performance Analytics installed on premise with their equipment, the Probe that is provided with your installation can monitor approximately 100 devices, assuming the monitored network consists of a variety of devices.

For service providers that have Mitel Performance Analytics installed in their data center, the system Probe that is provided with your installation can monitor approximately 100 devices, assuming the monitored network consists of a variety of devices. Every additional installed Probe can monitor a medium sized network consisting of five routers and 10 MiVoice Business devices with automatic backup and SMDR gathering enabled.

For cloud based users, a single Probe can monitor a medium sized network consisting of five routers and 10 MiVoice Business devices with automatic backup and SMDR gathering enabled.

LAN CONNECTIVITY REQUIREMENTS

To provide monitoring and remote access, the Probe must be able to connect to the LAN devices.

The Probe uses the following IP protocols to communicate to devices it is monitoring:

APPLICATION	IP PROTOCOL AND PORT	IP SESSION SOURCE	IP SESSION DESTINATION
SNMP / Performance	UDP, port 161	Probe	Device
SNMP	UPD port 162	Device	Probe
HTTPS / Performance	TCP, port 443	Probe	Mitel Performance Analytics
HTTP	TCP, port 80	Probe	MiVoice Office 250
MiXML	TCP, port 443	Probe	MiVoice Business and MiVoice Business EX
SMDR	TCP, port 1752	Probe	MiVoice Business and MiVoice Business EX
SIP Endpoint Voice Quality	UDP, port 5060	SIP Endpoint	Probe
MiVoice Border Gateway Integration	UDP, port 26262	Device	MiVoice Border Gateway Integration

APPLICATION	IP PROTOCOL AND PORT	IP SESSION SOURCE	IP SESSION DESTINATION
MiVoice Connect Remote Access	TCP, port 5478	Probe	MiVoice Connect Device
Network Testing	Outgoing, any port Incoming or Probe or SIP Device, port 5060	Probe	Probe or SIP Device
MiVoice Office 250 / Message Print	TCP, ports 4000, 44000	Probe	MiVoice Office 250
Avaya IP Office	TCP, port 50802 and ports in the range 50804 to 50813 (defaults, actual ports may range between 49152 and 65289 depending on IP Office services base port) UDP, ports 50794, 50798	Probe	Avaya IP Office
PathSolutions	TCP, port 8084 (default)	Probe	PathSolutions
FTP / Backup	TCP, port 21	Probe	MiVoice Business
SSH / Performance	TCP, port 22	Probe	Device
Ping / Availability	ICMP Echo	Probe	Device

Note: Some of the ports listed in this table are used by multiple devices. The device configuration determined the protocols and ports that are used. For example, if an MX-ONE device is configured to use SNMP, then UDP, port 161 is used. If MX-ONE is also configured for SSH, TCP port 22 is also used.

OTHER PROTOCOLS AND PORTS

If the Probe is used for Remote Access, the Probe must have network connectivity to the LAN devices for the appropriate TCP/IP protocol and port used by the Remote Application.

RECEIPT OF SNMP TRAPS

To receive SNMP traps, the Probe must receive the SNMP packets. These are sent by default on port 162.

The Probe attempts to bind to port 162. If it cannot, it binds to port 1162 instead.

The **Probe Status** panel shows the port that the Probe has bound to. To access the **Probe Status** panel, select **Status** under the **Network Tools** menu for the Probe dashboard.

The following is a typical Probe Status panel:

Component	Message
ProbeConfig	Added: 8 Removed: 0 Updated: 0 LoadFail: 0
CheckForUpgrade	Last Modified: Mon Mar 30 21:33:10 UTC 2015
CollectorManager	Collecting 9 devices with 42 Collectors.
BufferingRemoteRrdUpdater	Buffer size: 0/2048, max age: -1, enqueued: 2552, sent: 2544, dropped: 0, errors: 0, permanent errors: 8, internal errors: 0, HWM: 38, retry later:0
MCDMiXMLCollector	Collecting for 4 MCDs
MBGCollector	Collecting VQ for 1 MBGs
ThreadPoolSNMPTaskRunner	Running 61 tasks, 0.15 Tasks/Second
SNMPTrapReceiver	Listening on port 162
FixedThreadPoolPingTaskRunner	Pinging 8 devices with 5 threads.

To ensure receipt of traps, configure the trap sender to send traps on the port the Probe has bound to.

INTERNET CONNECTIVITY REQUIREMENTS

For remote monitoring, the Probe must have continuous network access to the devices to be monitored and must have Internet access for HTTP/SSL on port 443 to the Mitel Performance Analytics server.

For other, optional services, the Probe connects to either customer specified servers (for file transfer) or to Mitel Performance Analytics servers for Mitel Performance Analytics cloud storage or Remote Access.

Note that the Probe always initiates IP connections; that is, all connections are outbound.

PROTOCOL OR APPLICATION	IP PROTOCOL AND PORT	IP SESSION INITIATOR	DESTINATION	COMMENT
HTTPS	TCP, port 443	Probe	Mitel Performance Analytics server(s)	Required for Remote Monitoring.

Mitel Performance Analytics Engineering Guidelines

PROTOCOL OR APPLICATION	IP PROTOCOL AND PORT	IP SESSION INITIATOR	DESTINATION	COMMENT
HTTPS	TCP, port 443	Probe	Mitel Performance Analytics Cloud File server(s)	Optional, Required for Mitel Performance Analytics Cloud File Storage.
FTP, FTPS Implicit	TCP, port 21	Probe	Customer-defined File server(s)	Optional, used for SMDR file transfer.
SFTP	TCP, port 22	Probe	Customer-defined File server	Optional, used for SMDR file transfer.
FTPS Explicit	TCP, port 990	Probe	Customer-defined File server	Optional, used for SMDR file transfer.
SSH	TCP, port 50000	Probe	Mitel Performance Analytics server(s)	Required for Remote Access.
DNS	TCP and UDP, port 53	Probe	DNS server	Required to resolve host names or URLs to IP addresses.
NTP	UDP, port 123	Probe	NTP server	Required to synchronize Probe system time.

MITEL PERFORMANCE ANALYTICS OPERATIONAL REQUIREMENTS

SUPPORTED BROWSERS

User access to Mitel Performance Analytics requires the use of a Web browser with JavaScript enabled.

Mitel Performance Analytics is officially supported on:

- Firefox, Release 55.0 and later
- Chrome, Release 60.0 and later

Mitel Performance Analytics does work on Microsoft Edge, Release 16; however, it is not officially supported. Mitel Performance Analytics does not work on Release 15 of Edge.

Note: While Mitel Performance Analytics may work on most standards compliant browsers, such as Safari and Opera, Mitel can only commit to resolving issues with specifically tested and supported browsers.

Important: Although Mitel Performance Analytics was never officially supported on Internet Explorer, as of Release 2.2, Mitel Performance Analytics no longer works on this browser. If you are using Internet Explorer, we recommended moving to one of the supported browsers to continue to take advantage of all of the features offered by Mitel Performance Analytics.

ADVANCED USER OPERATIONS

Advanced User Operations (AUO) requires significant MiVoice Business resources to execute.

The maximum recommended number of AUO sessions per MiVoice Business system is two.

Note: This feature is only available with the Mitel Premium Software Assurance Plus license.

FTP SERVERS

Mitel recommends that you avoid using the FreeFTPd server due to known issues and limitations with that product.

