

MITEL PERFORMANCE ANALYTICS

RELEASE 3.1

ENGINEERING GUIDELINES



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Mitel Performance Analytics Engineering Guidelines
Release 3.1 - May 12, 2020

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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.

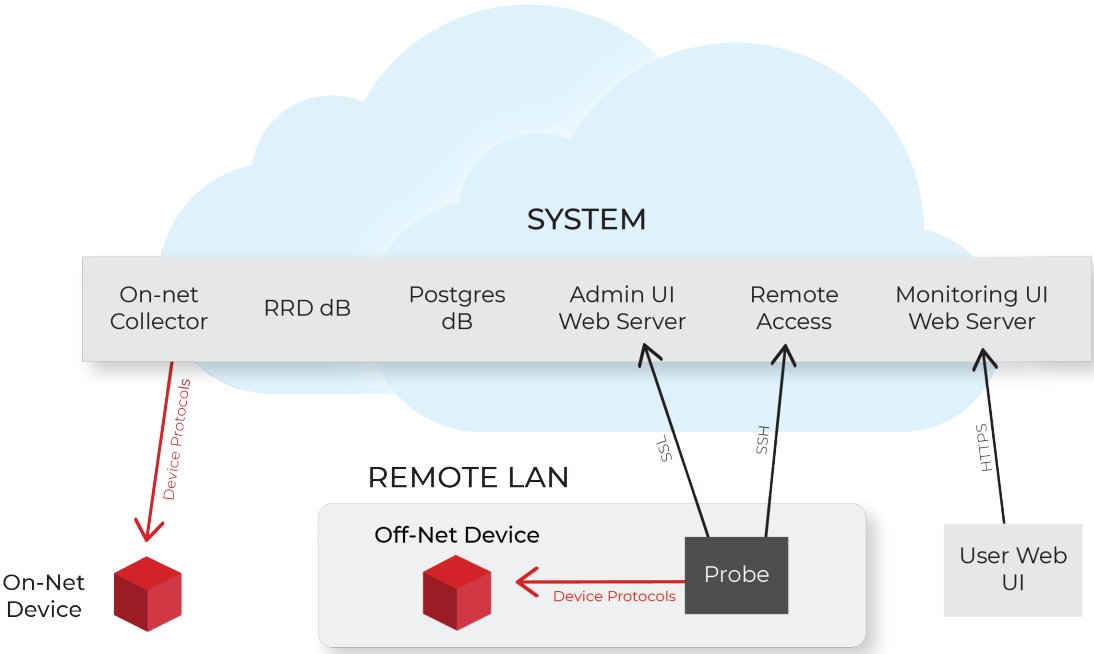
REVISION HISTORY

| 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 |
| July 31, 2018 | Mitel Performance Analytics R2.3 General Availability |
| January 16, 2019 | Mitel Performance Analytics R3.0 General Availability |
| May 12, 2020 | Mitel Performance Analytics R3.1 General Availability |

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 18.04 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.
- A maximum of 30 MiVoice Connect switches can be monitored by Mitel Performance Analytics per end customer.

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.

CAPACITY REQUIREMENTS

The Probe software is designed to be lightweight and to impose minimal host requirements. The Probe(s) are configured based on your Mitel Performance Analytics system requirements.

- For up to 10 monitored devices, you can use the pre-configured Martello Appliance
- If there are more than 10 monitored devices, a virtual appliance with a minimum of 2 GB of RAM is required. Contact Mitel for engineering guidelines.

PROBE CAPACITY

For users that have Mitel Performance Analytics installed on-site 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.

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:

Probe Installation Requirements

| 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 |
| 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 |

| APPLICATION | IP PROTOCOL AND PORT | IP SESSION SOURCE | IP SESSION DESTINATION |
|---------------------|---|-------------------|------------------------|
| 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.

Note: To view the Probe Status panel, ensure that the **Collect Probe Status** option is enable in the Probe Settings. See "Probe Settings Configuration" on page 1.

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/TLS 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. |
| 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. |

Mitel Performance Analytics Engineering Guidelines

| PROTOCOL OR APPLICATION | IP PROTOCOL AND PORT | IP SESSION INITIATOR | DESTINATION | COMMENT |
|-------------------------|----------------------|----------------------|---------------------------------------|---|
| 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.

Important: Your browser cache must be cleared completely whenever Mitel Performance Analytics is upgraded to a new release version.

FTP SERVERS

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

