



A MITEL
PRODUCT
GUIDE

MiVoice MX-ONE

IPv6 Support - Description

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Internet Protocol Support on MX-ONE

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This chapter contains the following sections:

- [IPv6 Support on MX-ONE](#)

MiVoice MX-ONE (formally called MX-ONE) 6.x and 7.x and later versions support both Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6), addressed as part of the MX-ONE solution system.

In MX-ONE Service Node, IP addresses are defined in the system installation.

Note that dual-stack is required for IPv6.

1.1 IPv6 Support on MX-ONE

The MX-ONE solution components need to be deployed in dual-stack mode (IPv4/IPv6). When IPv6 is required, make sure the following requirements are met.

1. DNS version 6 is supported.
2. NTP version 6 is supported.
3. DHCPv6 is supported by the SIP Phones.
4. MX-ONE main components require static IP addresses.

The following table shows infrastructure services required/supported by each version of the Internet Protocol.

MX-ONE -Infrastructure Services	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
DHCP	Yes	No	Yes
DHCPv6	No	Yes	Yes
DNS (A)	Yes	No	Yes
DNSv6 (AAAA)	No	Yes	Yes
SSH	Yes	Yes	Yes

MX-ONE -Infrastructure Services	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
NTP	Yes	Yes	Yes

IPv4 and IPv6 Support on MX-ONE Components and Applications

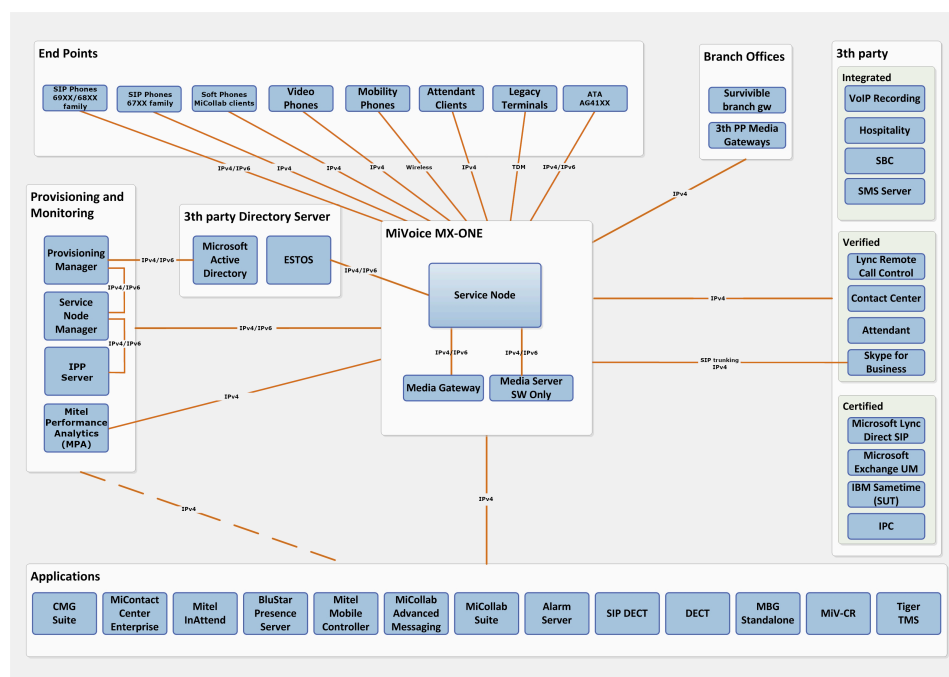
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This chapter contains the following sections:

- IP Support on the Main Components of MX-ONE
- MX-ONE End Points
- Mitel Applications
- Third-Party Products
- IPv6 Support on MX-ONE Features
- MX-ONE IPv4 and IPv6 Scenarios
- MX-ONE - IPv4 Scenario
- MX-ONE – Dual Stack Scenario
- Capacity
- SIP Trunks

The following figure shows high-level view of the IPv4 and IPv6 support on the MX-ONE solution.

Figure 1: IPv4 and IPv6 Support on the MX-ONE Solution - High Level View



2.1 IP Support on the Main Components of MX-ONE

This section provides information on the IP support on MX-ONE components such as media server, PM, gateways, and SNM.

2.1.1 MX-ONE Service Node and Gateways

IPv6 implementation is supported by the main components of MX-ONE. The Service Node, Media Server, and Media Gateway Unit (MGU) support global IP address and site local; however, link local is not supported by these components. The IPv6 addresses are statically assigned to the main components of MX-ONE.

Fully Qualified Domain Name (FQDN) is supported by the MX-ONE Service Node, Media Server, and MGU Ethernet interfaces and it is a preferred choice. FQDNs are used in combination with static IP addresses. FQDNs are resolved by the Domain Name Service (DNSv6), which are in place in the customer network.

MX-ONE supports the following IPv6 address formats:

1. 2001:c7e4:2164:2025: 0000:0000:0000:95/64
2. 2001:c7e4:2164:2025: 0:0:0:95/64
3. 2001:c7e4:2164:2025: 95/64

The following table shows the IPv4 and IPv6 support in the main MX-ONE main components:

MX-ONE Components	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
Service Node	Yes	No	Yes
Media Server	Yes	No	Yes
Media Gateway Unit	Yes	No	Yes

Dual Stack is required because not all components in the MX-ONE solution are IPv6 compliant.

2.1.2 MX-ONE Management System

The following table shows the IPv4 and IPv6 support in the MX-ONE Management applications.

MX-ONE Management	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
Service Node Manager	Yes	No	Yes
Provisioning Manager	Yes	No	Yes

MX-ONE Provisioning Manager (PM) can manage the system in IPv4 and IPv6 when running in dual stack mode.

2.1.3 MX-ONE PM AND SNM Integration with Other Products

The following table shows the IPv4 and IPv6 support of products integrated with MX-ONE PM and MX-ONE Service Node Manager (SNM).

PM and SNM integration	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
Web Services	Yes	No	Yes
PM and IP Phone Software Server (IPP)	Yes	No	Yes
PM and Microsoft Active Directory	Yes	No	Yes
PM and MiCollab	Yes	No	No
PM and MiCollab Advanced Messaging Server	Yes	No	No
PM and CMG Server	Yes	No	No
PM and SIP DECT Manager (OMM and MOM)	Yes	No	No
PM and MMC Provisioning Server	Yes	No	No

2.1.4 Optional Management Application

IPv6 is not supported by the optional MX-ONE management applications.

The following table shows the IPv4 and IPv6 support in the optional MX-ONE management applications.

Optional Management Applications	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
Mitel Performance Analytics (MPA)	Yes	No	No

2.2 MX-ONE End Points

Mitel 68XX and 69XX SIP phone families support IPv6 when using the appropriate version.

Check the 68XX and 69XX SIP phone documentation to further information. The analog terminal adapters family, Mitel TA7100i, supports IPv6 in some services. Check the MX-ONE CPI documentation for further information.

The other terminals used in the MX-ONE solution do not support IPv6.

Endpoints	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
SIP Phones family 69XX	Yes	No	Yes
SIP Phones family 68XX	Yes	No	Yes
SIP Phones family 67XX	Yes	No	No
H.323 Phones all families	Yes	No	No
ATA71XX	Yes	No	Yes
AG41XX	Yes	Yes	Yes
SIP DECT devices	Yes	No	Yes
MiCollab SIP Softphone	Yes	No	Yes

TDM terminals do not support IP.

2.3 Mitel Applications

As part of the MX-ONE solution, MX-ONE is integrated with several Mitel applications.

The applications listed in the following table support IPv4, but not IPv6.

Mitel Applications	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
MX-ONE IP Phone Manager	Yes	No	No
CMG Suite	Yes	No	No
MiContact Center Enterprise	Yes	No	Yes
Mitel InAttend	Yes	No	No
BluStar Presence Server	Yes	No	No
Mitel Mobile Controller	Yes	No	No
MiCollab Advanced Messaging	Yes	No	No
MiCollab Suite	Yes	No	No
Alarm Server	Yes	No	No
SIP DECT	Yes	No	No
SIP DECT OMM	Yes	No	No
SIP DECT MOM	Yes	No	No
IP DECT	Yes	No	Yes
DECT	Yes	No	No
MBG Standalone	Yes	No	No
MiVoice Call Recorder	Yes	No	No

Mitel Applications	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
Tiger TMS	Yes	No	No
Mitel Mass Notification	Yes	No	No

2.3.1 Legacy Applications

MX-ONE legacy applications do not support IPv6.

2.4 Third-Party Products

As part of the MX-ONE solution, MX-ONE is integrated with several Mitel applications.

2.4.1 Directory Services

The meta directory ESTOS supports both IPv4 and IPv6. Contact the ESTOS supplier for versions that support both IPv4 and IPv6.

Third-Party Products	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
ESTOS Meta Directory	Yes	No	No

2.5 IPv6 Support on MX-ONE Features

The following table summarizes the IPv4 and IPv6 support on MX-ONE system features, functionality, and commands.

MX-ONE Features/Functionality/Commands	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
Inter-Server Signaling	Yes	No	Yes
SIP Extensions Signaling (UDP, TCP)	Yes	No	Yes

MX-ONE Features/Functionality/ Commands	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
SIP Extensions Media (RTP)	Yes	No	Yes
SIP Trunking Signaling (UDP, TCP)	Yes	No	Yes
SIP Trunking Media (RTP)	Yes	No	Yes
SIP Extensions Signaling (TLS)	Yes	No	Yes
SIP Extensions Media (SRTP)	Yes	No	Yes
SIP Trunking Signaling (TLS)	Yes	No	Yes
SIP Trunking Media (SRTP)	Yes	No	Yes
Configuration Server (HTTP) – Used with VDP	Yes	No	Yes
Configuration Server (HTTPS) – Used with VDP	Yes	No	Yes
CSTA III – XML (TCP)	Yes	No	Yes
CSTA III – TR87 (TCP)	Yes	No	Yes
CSTA III – XML (TLS)	Yes	No	Yes
CSTA III – TR87 (TLS)	Yes	No	Yes
SNMP	Yes	No	Yes
Quality of Service (QoS) - H.323	Yes	No	No

MX-ONE Features/Functionality/ Commands	IPv4	IPv6	Dual Stack (IPv4 and IPv6)
Quality of Service (QoS) – SIP	NA	No	NA
Call Information Logging (CDRs)	Yes	No	Yes
Alpha Tagging, Black Listing and Searching in external directory	Yes	No	Yes
GIC/ICS	Yes	No	No
Certificates	Yes	No	Yes
IP Domain	Yes	No	Yes
media_server_message	Yes	No	Yes
phone_sw	Yes	No	Yes
Service Node bonding **	NA	No	NA
Media Gateway Unit Link Fail Over **	NA	No	NA

** Not IP layer-dependent

2.6 MX-ONE IPv4 and IPv6 Scenarios

The IP addresses version is specified during the initial installation of MX-ONE. There are 2 options: IPv4 or dual stack (IPv4 and IPv6).

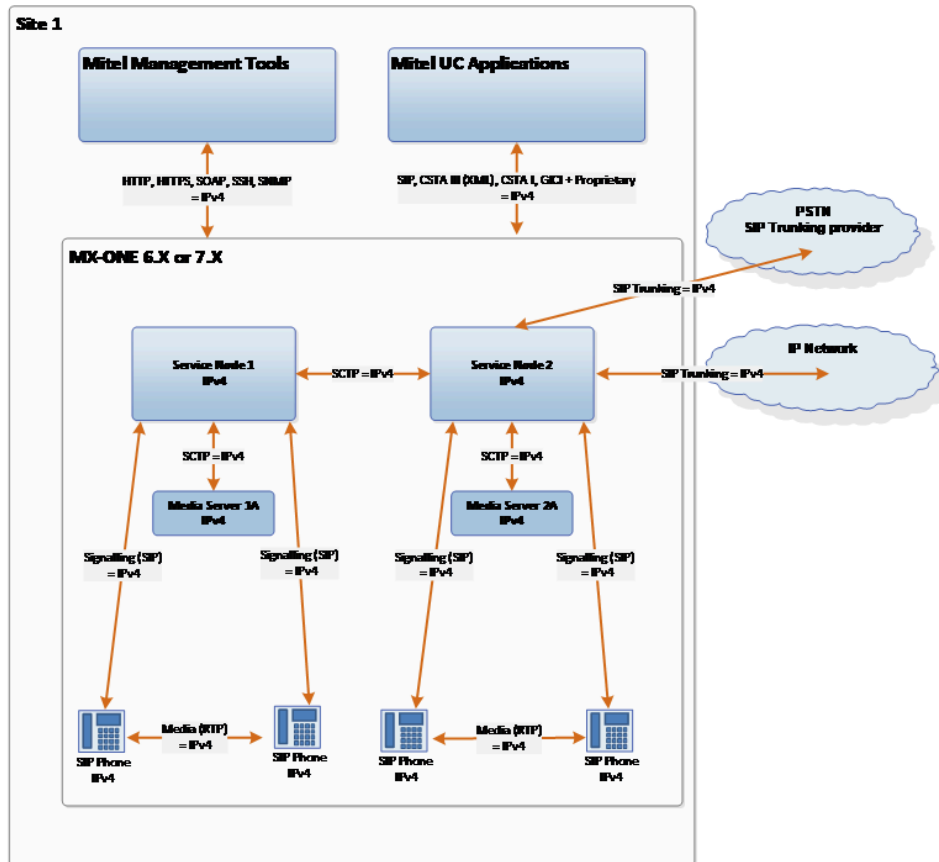
Mitel recommends that customers planning to migrate to IPv6 deploy dual stack. The dual stack setup is performed as part of the initial installation of MX-ONE.

Note that MX-ONE systems (Service Node, Media Server and Media Gateways) deployed in IPv4 mode must be re-installed to deploy IPv6 (dual mode).

2.7 MX-ONE - IPv4 Scenario

MX-ONE is normally deployed using IPv4 addresses as shown in the following. In this type of deployment, all components comprising the MX-ONE solution use IPv4.

Figure 2: MX-ONE - Typical IPv4 Scenario

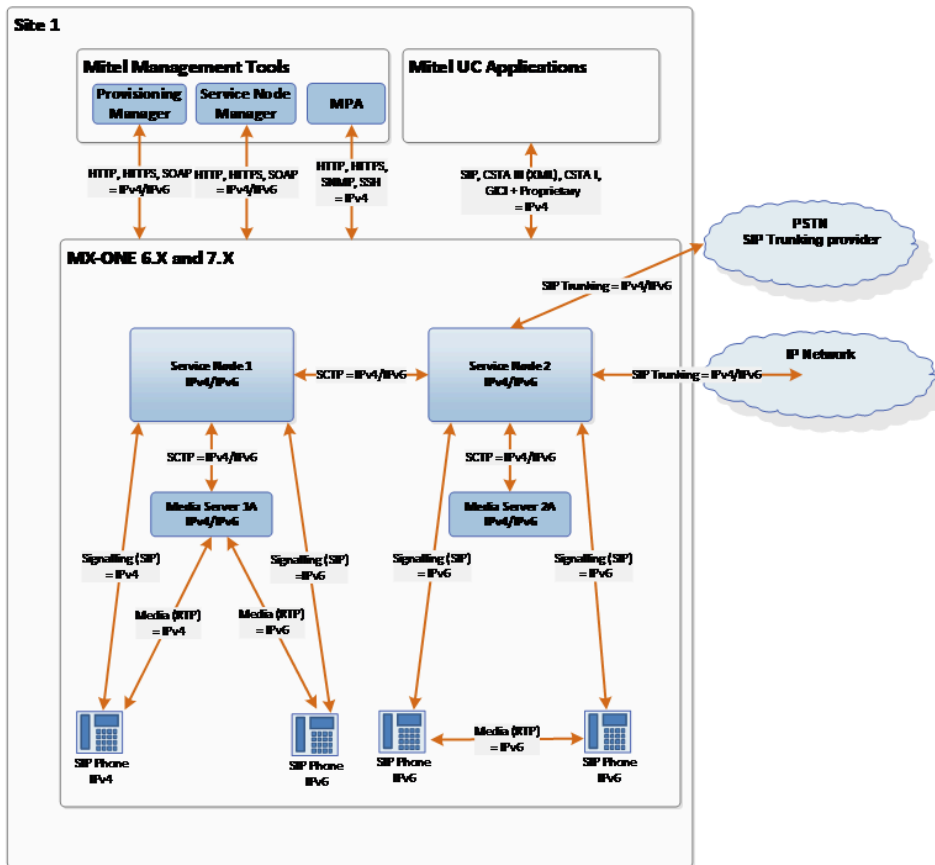


2.8 MX-ONE – Dual Stack Scenario

The following figure shows an example of a typical MX-ONE system deployed in dual stack mode.

MX-ONE Service Nodes and Media Servers are deployed as dual stack and the 68XX or 69XX SIP phones can be deployed either in IPv4 mode or in dual stack IPv6/IPv4 mode.

Figure 3: MX-ONE - Typical Dual-Stack Scenario



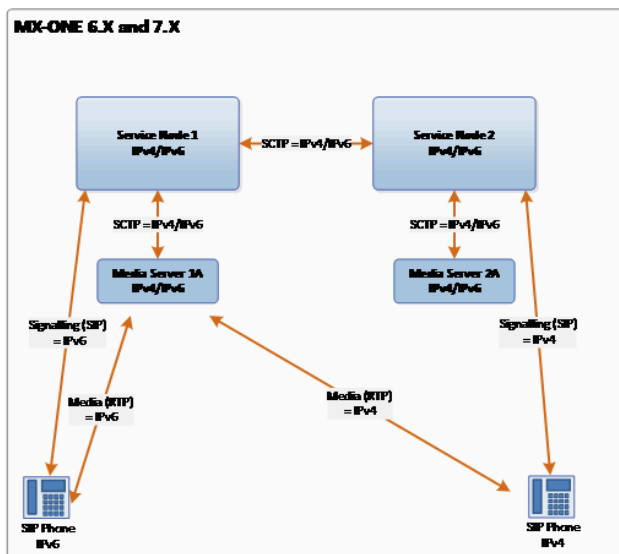
2.9 Capacity

In dual-stack deployments, because calls between IPv4 and IPv6 devices are through forced gateway, an extra load in the media gateway resources is compared to a deployment that uses only either IPv4 or IPv6.

As an example, when there is a call from IPv6 SIP phone to an IPv4 SIP phone, the SIP signaling goes through MX-ONE Service Node and the Media goes through Media Server as a gateway call. The Media Server transcodes the IPv6-IPv4 address without any manipulation in the media packets. The capacity load in such a case is lower than that in a normal gateway call.

In scenario depicted in the following figure, a customer has SIP phones running both IPv6 and IPv4 addresses.

Figure 4: MX-ONE Gateway Call Scenario



The same IPv4-IPv6 scenario described in Figure 4 applies when TLS is used to encrypt SIP signaling and SRTP is used to encrypt the Media.

The codec transcoding is executed in the same way as in an IPv4 implementation.

The following table shows how the different types of extensions are interconnected through media gateways.

Extensions		
Party	Party	Gateway Call
SIP IPv6	SIP IPv6	No
SIP IPv6	SIP IPv4	Yes
SIP IPv6	H.323 IPv4	Yes
SIP IPv6	SIP DECT IPv4	Yes
SIP IPv6	Third Party Device (SIP or H.323) IPv4	Yes
SIP IPv6	Any TDM (Analog, Digital, DECT, etc.)	Yes

2.10 SIP Trunks

SIP trunks require the same Internet Protocol version. If one side supports only IPv4, and the other side supports both IPv4 and IPv6, then IPv4 must be setup on both sides.

