

MiVoice MX-ONE 6.3

SOLUTION OVERVIEW



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1 INTRODUCTION

1.1 SCOPE OF THIS DOCUMENT

This document provides a high-level description of the MX-ONE solution. It includes a brief description of the system components, the network architecture, and external interfaces together with general feature descriptions for MX-ONE.

In this context, the term user is defined as an end-user within the enterprise that uses MX-ONE for daily communication. The user can access MX-ONE through several different terminals or applications.

Throughout this document there will be references to other documents that provide more detailed information about different subjects.

1.2 GENERAL INTRODUCTION TO MIVOICE MX-ONE 6.3

MiVoice MX-ONE is a complete communications solution that is highly flexible and designed to address the business communication needs in different vertical segments and sizes, scaling from 100 to 500,000 users in a single system.

The MX-ONE architectural design gives the possibility to deploy the system in a centralized communications server / media server configuration or as a distributed system with several communications servers and media servers or media gateways spread out in multiple locations. This flexible design makes it possible to achieve excellent total cost of ownership without compromising performance or functionality, regardless if you are a large multi-national company with many locations, a regional company with a main site and a few smaller sites, a branch offices or a single site company.

For smaller sites / systems MiVoice MX-ONE can also be delivered as a compact server appliance with Unified Communication and Collaboration applications (UCC) pre-installed, called MiVoice MX-ONE Express. The MX-ONE Express includes a turnkey server with VMware installed, where the call manager as well as the UCC & FMC applications' virtual machines are pre-loaded and ready to go. Additionally, setup wizards are included to provide a smooth and prompt initial setup of the applications and the call manager configurations. This will significantly reduce the initial installation and setup time.

MiVoice MX-ONE also support a monthly subscription based licensing model, where the partner / customer pays for actual used licenses on monthly basis. This commercial option is called MiVoice MX-ONE SaaS (Software as a Service) and is offered by qualified Mitel partners.

The MiVoice MX-ONE Software as a Service deployment option is provided by Mitel partners that are offering managed services or Private Cloud services to their customers. The commercial setup for the solution offers the possibility to modify the number of users and user profile licenses used on monthly basis if minimum agreed limits and subscription periods are maintained. The MiVoice MX-ONE SaaS system will automatically report the license usage for a given period, for auditing and billing purposes. Each tenant customer will have their own MX-ONE system and application instances in a virtualized Private Cloud environment (partner data center or premise based). On selected markets, MiVoice MX-ONE SaaS is also offered as a UCaaS (Unified Communication as a service) where Mitel hosts the data center.

Not only does MX-ONE provide excellent voice and video communications with a comprehensive set of telephony features, but it also comes with a complete set of applications to provide true mobility, Unified Collaborative Communications and Contact Centers. The combined solution addresses Enterprise communications need for all types of businesses in over 100 countries worldwide.

MX-ONE supports high security standards and provides a range of options for achieving the desired level of redundancy on a per customer and site basis. To care for personal safety, the MX-ONE solution has built in support for Emergency Notification/911/999/112 - functionality. To further address safety/security and customer support demands the MX-ONE solution includes Mitel's MiVoice Call Recording as well as support for Mitel Mass Notification. MiVoice Call Recording is a system for professional voice documentation, recording of audio and complementary metadata, paired with a powerful user interface for managing and using the stored media an efficient manner.

1.2.1 STANDARDS BASED APPROACH

MiVoice MX-ONE is designed for use in an open standard-based software and hardware environment, using industry standard servers with LINUX SUSE & Windows server operating systems. Furthermore, together with strong support for open standards, such as SIP, CSTA III / TR87 and Web services, it comes with support for a full range of network and user side interfaces, enabling connection to a variety of public networks as well as 3rd party systems and applications. MX-ONE also provides a strong migration capability, where existing MD110 and Mitel TSW customers can maintain a portion of already made investments and migrate to new technology and services at their own pace.

Additionally, the management solution of MX-ONE is based on industry standards that IT departments are familiar with, making it easy to integrate into the corporate IT infrastructure.

1.2.2 UNIFIED COMMUNICATION & COLLABORATION

Mitel's MiCollab Unified Communication and Collaboration (UCC) portfolio is designed to provide business with effective collaboration amongst its employees, business partners and customers. With MX-ONE customers can benefit from native UCC through integration of Mitel's MiCollab portfolio, offering multimedia collaboration (voice, video, sharing and IM) through a variety of softphones and CTI call control clients for PCs, tablets and smartphones. These clients can, of course, be combined with SIP end-points, ranging from the Mitel Conference & Video phone to a full range of HD quality SIP desktop and wireless terminals.

Mitel's MiCollab portfolio provides businesses with a comprehensive, end-to-end UCC, offering a versatile and consistent user interface across different devices. MiCollab offers a natural collaboration experience and fully embraces trends such as presence information, IM, multi-party and personal video communication as well as increased use of smart phones and tablets in the workplace. Mitel's focus across the portfolio is a unified user experience, facilitating user-adoption through a consistent look and feel, regardless of the device used. Mitel MiCollab helps users work together more effectively, e.g. on the fly video communication with remote workers, road-warriors and teams working on the same project to exchange ideas more easily and collaborate more efficiently.

In keeping with Mitel's strategy of openness, MiCollab uses open and standardized interfaces to address integrations with 3rd party applications. For customers, having adopted Microsoft (MS) Skype for Business (SfB) for their IM/Presence needs, MiCollab provides a SfB plug-in that enables SfB users to manage their MX-ONE end-points (Click to dial and CTI call control) directly from the SfB Client. Furthermore, MiCollab integration with MS Exchange allows click to dial capabilities directly from the user's outlook account.

For team collaboration Mitel offers MiTeam, a workgroup collaboration package, directly integrated into the MiCollab mobile clients (iOS and Android) and the MiCollab web client. MiTeam is designed to improve team collaboration, with persistent communications forums that allow for contextual and searchable message threads. The team collaboration services are included in the UCC Premium bundle.

MiTeam is the natural extension of today's team collaboration, built on experiences of how teams communicate and collaborate in a mobile-first workplace. MiTeam is a work-stream communications and collaboration tool that provides a highly collaborative, persistent workspace for team-based meetings, conversations, content collaboration and project management.

Furthermore, the portfolio includes the MiCollab AWW (audio, web and video) suite that is a multi-media meet-me web conferencing solution designed to provide businesses with effective group collaboration, including web-based desktop sharing and video conferencing. Its web-based conference administration portal allows users to setup and manage all aspects of their conferences from a single interface. MiCollab users can access their conferences directly with a click of a mouse from any MiCollab client.

1.2.3 COLLABORATION MANAGEMENT - MANAGING HOW YOU WISH TO BE REACHED

Another aspect to consider is collaboration management or the possibility to manage how calls are routed based on a user's presence or activity. The Mitel CMG offers solutions to fully automate this process by integrating into a company's calendar system and setting diversions or personal number

routing profiles for a user, based on their calendar activities. The system comes with a web-based self-service portal (Mitel CMG Web) that allows users to set these call routing options based on their preferences. Once they are setup, the user no longer has to worry whether or not his diversions are set and if customer calls are being handled in his absence. He can even change them on the fly, through a simple press of a button, if something urgent comes up that was not planned. The web portal also offers other services, such as directory search, presence and line state and click to call. It is designed using responsive web technology, enabling it to be used on any device - PC, mobile or tablet - regardless of location. This means that even out of the office, Mitel CMG users have access to their services on any mobile device with a browser. Additionally, it integrates with other parts of the portfolio, such as Mitel MiCollab for PC or Mitel Mobile Client (MMC) as an embedded link.

The Mitel Virtual Reception option provides auto-attendant, VM and reception/visitor services. These are value add services that complement the collaboration management suite to provide users with a complete suite of services that provide enhanced customer services. If Virtual Reception is included with the Mitel CMG deployment, Mitel CMG Web users will also have access to extra capabilities in the self-service web portal, including management their personal IVR settings, visual VM and visitor management services. Note that Mitel CMG is mainly introduced in Nordic countries.

1.2.4 ATTENDANT SERVICES - A COMPANY'S FACE TO THE WORLD

When professional attendant services are needed with MX-ONE, Mitel InAttend is the platform of choice. It is a Windows-based client-server architecture that integrates with a customer's AD and calendar systems. Attendants have a full featured PC-based client that offers all the expected features for a professional attendant, including SIP softphone (or hard-phone) with advanced attendant call handling features (keyboard or mouse), multiple queues, A/B panels, advanced directory search, view users' presence, line state and calendar activities, messaging, etc. In other words, everything attendant needs to provide fast and efficient service to customers.

The Mitel presence engine is embedded in the solution enabling the attendants to get real time presence and line state. It uses industry standards based interfaces, such as SIP/simple, CSTAIII and UCMA to provide rich presence information from different systems, including MX-ONE, Cisco and MS Skype for Business. This makes sure the attendants have federation of all relevant status information in one place, regardless of the system users connected to it. The key benefits are efficiency and better customer service.

Furthermore, Mitel InAttend has tight integration with Mitel CMG, enabling attendants to see and even manage user presence/activities and diversions. Mitel InAttend is a scalable solution that can start with as little as one attendant for medium sized companies, yet scale to large organizations with 100 or more attendant consoles.

1.2.5 MOBILE USERS

Supporting mobility is a matter of supporting the communication needs of a user with a mobile behavior. Different users will have different needs, and the needs may differ over time. Therefore, MiVoice MX-ONE offers a wide range of products and components that together provides solutions to support mobile user's communication needs. Access via wireless technologies is an important part of the mobility solution

1.2.5.1 *Fixed Mobile Convergence*

Today's users are expecting to have all types of communication services combined and integrated in the same application GUI, on the device of their choosing, whether in the office or when they are on the move.

MX-ONE sets the standard for Fixed Mobile Convergence (FMC) with its mobile extension feature, whereby mobile phones are integrated as an integral part of the office communications system with access to a complete feature set.

MX-ONE together with the Mitel Mobile Client and MiCollab mobile and our corporate communications suite takes Unified Communications a step further by adding true mobility. This combination leads to full freedom for employees to choose how and where to perform their duties irrespective of device and geographical location.

1.2.5.2 *On-site mobility*

For organizations with many users rowing around the companies' facility and/or where high quality telephony services are critical the Mitel SIP DECT technology offers powerful and flexible solutions. With controlled radio spectrum, the coverage and capacity can be tailored for the needs. Through integration of Mitel's alarm and messaging applications with other business critical systems, customer and user unique solutions and tools can be provided.

1.2.6 ONE PRODUCT SOLUTION ADDRESSING DIFFERENT BUSINESS MODELS

The MX-ONE design and license models are built to work either as Customer Premises (CPE) deployment or as Cloud or hybrid Cloud deployment. Its license model is built up to enable support for either a traditional Capital Expenditure (CAPEX) model or Operating Expense (OPEX)-based subscription models. The license reporting software embedded in the system allows accurate and secure license usage monitoring needed for a subscription-based licensing model. The system license usage information is reported on monthly basis, enabling a "pay for what you use" model.

The MX-ONE Private Cloud offering provides customers the same user-experience as a traditional premises-based deployment and only differs in the license delivery model. The main highlights:

- Monthly subscription-based licensing options for private cloud & managed service deployments (Software as a Service, SaaS)
- Virtualized, software-only, tenants for straight deployment in the cloud
- Focus on SIP end-points for advanced functionality and cost efficient provisioning / deployment
- Provides a migration path for existing CPE-based MD110/Mitel TSW customers towards the cloud (hybrid Cloud solution)

1.2.7 TOTAL COST OF OWNERSHIP (TCO) - FUTURE PROOF PLATFORM THAT PROTECTS CUSTOMER INVESTMENTS

MX-ONE is continuously evolving to meet today's user requirements and to be on par with IT infrastructure evolutions. The MX-ONE communications server platform used a 64-bit OS architecture and supports IPv6, enabling customers to evolve when the time comes. Whether the customers decide to build their own infrastructure or choose an outsourced private cloud deployment, the underlying solution provides the same level of enterprise-class services.

MX-ONE is a native SIP soft-switch offering multi-media UCC support addressing the needs of today's communication market, whether on premise or in the cloud. But, not all customers are ready to transition straight away to a fully SIP based architecture and prefer a stepwise approach towards IP and UCC-based communications. For this reason, we have always maintained support for the most common legacy protocols using media gateways for both subscriber and trunk side connectivity. This capability is partly thanks to its heritage from the MD110 and Mitel TSW platforms, where hundreds of features were developed over the years and carried through to the next generation products. It is one of the reasons that the MX-ONE offers our existing installed base arguably the best migration path on the market today, allowing customers to build on their already made investments and migrate to SIP and Unified Communications when it makes sense for their business.

1.2.8 SOFTWARE MAINTAINANCE AND ASSURANCE (SWA)

Mitel's Software Assurance program complements your provider's service offers, giving you the security of staying current with the latest functionality and innovations delivered for the MiVoice MX-ONE solutions. Software Assurance provides access to the latest software releases and vendor support via your Mitel trained and authorized partner. Mitel Software Assurance is available for the complete MiVoice system as well as other related Mitel products, such as MiCollab and MiContact Center.

Entitlement to software releases

Keeping your systems current ensures you can maximize your business value by using the latest features, integration updates to your applications and business processes, and a very importantly reduce security vulnerabilities.

Mitel Technical Support

When you have critical or major issues that can't be resolved, or your Mitel trained and authorized partner can't solve on his own, they can contact Mitel technical support experts to drive issues to resolution. These experts apply deep technical knowledge to collect system data, replicate and isolate faults in a lab environment, validate configuration changes, point out third party product integration challenges, or engage Mitel product development when needed.

Coverage

Mitel Software Assurance is offered via Mitel trained and authorized Partners and is initially purchased along with the new Mitel software products for a minimum period of one year. There are two different options for Mitel Software Assurance that offer different levels of support:

Software Assurance Standard

Software Assurance Standard is the simplest software assurance program that includes technical support, with access at 8x5 hours, as well as software corrections, updates and entitlement to major software releases.

Software Assurance Premium

In addition to everything in the Standard subscription, the Premium subscription includes 24x7 technical support. It also includes Mitel Performance Analytics (MPA), a software tool helping to proactively monitor and analyze the system to continuously maintain optimal performance.

2 SYSTEM OVERVIEW

This chapter gives a high-level description of the MiVoice MX-ONE solution.

2.1 GENERAL SOLUTION OVERVIEW

The MX-ONE solution consists of a set of integrated modules, forming a complete communication solution for enterprises communication needs.

<i>Collaboration</i>	MiCollab with MiTeam – Mitel's UCC suite Mitel CMG – Contact management suite	MiVoice MX-ONE platform & management applications
<i>Customer care - front desk</i>	MiContact Center Enterprise – Multi media Contact center InAttend – Professional attendant suite	
<i>Mobility</i>	Mitel Mobile Client, Mobile Extension, Personal Number, DECT, IP/SIP DECT, Wi-Fi	
<i>Unified Messaging</i>	MiCollab Advanced Messaging - UM/Fax & Voice Mail	
<i>End-points</i>	Soft phones, SIP/IP phones, analog and digital phones Mitel Video & Conference Phone DECT and Wi-Fi cordless phones	

The MiVoice MX-ONE portfolio is comprised of the following components:

- **MiVoice MX-ONE**
 - MX-ONE Service Node, the IP-based communication server is the foundation and the core building block. For SIP-only deployments, the required media server functionality is provided purely in software, i.e. no hardware-based Media Gateway is needed for an "all SIP" MX-ONE.
 - MX-ONE Gateways: MX-ONE solution offer bout software-based media GW called Media Server for SIP only deployments and hardware-based gateway for legacy access (E1/T1/BRI/PSTN)
 - MX-ONE Service Node Manager, is a web-based application for configuring and managing telephony functions in MX-ONE. It is also used for creating and storing of configuration files used for IP/SIP terminals and end-points.
 - MX-ONE Provisioning Manager, a web-based application for managing users and extensions in MX-ONE. MX-ONE Provisioning Manager provides a single point of entry for managing user and extension data in the MX-ONE Service Node (Telephony Server), MiCollab, Mitel MiCollab Advanced Messaging, CMG, Mitel Mobile Client (MMC) users as well as SIP DECT users.
 - Mitel Performance Analytics (MPA) is a fault & performance management software for the MiVoice MX-ONE, Mitel applications and other 3rd party systems on the customer's communications network. Partners and IT administrators can deliver proactive service quality

to customers, increasing customer satisfaction, while reducing costs with tools that resolve problems faster. MPA can be deployed as an on-premises or cloud-based solution, and can support multiple customer networks from a single instance.

- Mitel MiCollab portfolio is designed to provide business with effective multi-media collaboration amongst its employees, partners and customers.
 - Mitel MiCollab Application Server, the core component of the Mitel MiCollab system, providing directory, presence and calendar integration for end users. The MiCollab application Server also provides a homogenous environment for deployment and operation of the MiCollab environment and integrated with MX-ONE for smooth and consistent user population and configuration.
 - MiCollab Audio, Web, Video (AWV) is a powerful meeting point and conference server for various forms of collaboration.
 - Unified messaging and voice mail is provided natively in the MiCollab NuPoint engine.
 - Mitel MiCollab clients comprises a Unified Communications SIP soft phone/call control client application for PC as well as mobile apps for iPad/iPhone, Windows mobile and Android that enable corporate users to make and receive voice and video calls over MX-ONE via SIP and to interact with other MiCollab users and MiCC agents through IM (Instant Messaging), e-mail, voice and video. Additionally, the plug-in to Skype-for-Business provides complementary routes towards MiCollab UCC.
 - In addition to traditional clients the MiCollab solution provides a powerful web based user interface to the UCC portfolio. Using web browsers supporting Web RTC MiCollab provides softphone functionality through Web RTC for users inside as well as outside the organizations network.
 - MiTeam is a work-stream communications and collaboration tool that provides a highly collaborative, persistent workspace for team-based meetings, conversations, content collaboration and project management. MiTeam creates a complete, searchable archive that can bring in new team members, or those that need to be kept in the loop, quickly and easily. By recording all aspects of a project from start to finish, it also helps organizations fulfil corporate compliance obligations.
- Mitel MiCollab Advanced Messaging provides features for voice mail and fax mail, including Unified Messaging. MiCollab Advanced Messaging can be used as an alternative to NuPoint in MiCollab deployments, or independently of MiCollab deployments.
 - With Mitel MiCollab Advanced Messaging, you turn your Mitel communications system into a productivity tool. Users can communicate more efficiently, respond more quickly and increase productivity. Mitel MiCollab Advanced Messaging delivers a powerful suite of Unified Communications applications including advanced call processing, auto-attendant, voice mail, e-mail integration, personal assistant, fax, speech driven services, notifications, etc.
 - MiCollab Advance Messaging also tags in to the MiCollab clients providing a homogeneous user interface.
- Mitel CMG Suite
 - Mitel CMG Web is a set of services that enables business users to manage their day-to-day activities. With the CMG Web, users can do “smart-search” directory services, click-to-dial, manage activity timeline and their call-routing preferences based on their calendar/activities. Integration with the Mitel presence engine enables users to see in real-time their colleagues’ rich presence information, including Mitel CMG client presence status, calendar activity and line state from all available sources provided by the Mitel BluStar (BS) Server.
 - Mitel Virtual Reception - Automated speech and reception services. Virtual Reception is a set of automated self-services that significantly reduce wait time and attendant workload, increasing at the same time customers’ flexibility and efficiency.
- Mitel MiContact Center Enterprise, a suite of applications and services for server-based contact centers.

- MiCC Enterprise offers an enterprise-wide contact center solution with IP and mobility across multiple sites. This enables distributed customer service organizations to behave as one single unit. MiCC Enterprise is the power that enables people to be provided with the best contacts. Empowered with Mobile Extension, MiCC Enterprise also enables remote or roaming connectivity. Customers are guaranteed access to the most appropriate agent – wherever they are located and on whichever communications medium they prefer to use (i.e. voice, chat, e-mail, SMS, Facebook, Twitter or fax). MiCC Enterprise provides skills-based routing across these media types, a single point of management and an integrated management information system across the contact center. The solution consists of software applications focused on the agent, management and customer self-service functions.
- MiVoice Conference and Video Phone, is a compact audio and video conference room unit offering an HD quality user experience. It integrates fully with the MiCollab AWW conferencing suite for voice, video and content sharing. Additionally, it can host a 4-way video conference and interoperates with Mitel MiCollab clients.
- Mitel Mobile Client, a smart phone application that makes the mobile phone an integral part of MX-ONE.
- MX-ONE end-points supporting all various types of extension interfaces (SIP, IP, analog, digital, Mobile Extension, DECT and Wi-Fi).
- Mitel Border Gateway (MBG), for secure remote Teleworker access from MiCollab clients or Mitel 6900/6800 SIP phones. Additionally, the MBG can provide security for SIP trunks to public networks or remote application servers. MBG can also interconnect with recording systems in order to record the extension traffic routed over it, internal as well as external traffic can be recorded.
- MiVoice Call Recording, our voice documentation and professional interaction management solution, records, stores and organizes telephone conversations in a central, secure network repository for easy retrieval and play back. Quality Management (QM) deliver advanced Contact Center management and quality assurance tools as well as collaboration and information transfer capabilities.
- InAttend, a professional attendant console offering powerful directory search, calendar integration, rich presence integration for fast and efficient call handling.
- Hospitality solution
 - Mitel Connected Guest is a suite of applications primarily for the hospitality industry; hotels, cruise ships, hospitals etc.

The different parts perform different tasks:

1. iCharge is the application that connects the other parts and external applications and products like the PBX, the hotel's front office system, smart TV etc. It also handles the call charging.
2. InnLine is a voice mail system specially designed for hospitality. In addition to hospitality voice mail it also handles wake-up and service- and housekeeping codes.
3. iConnect makes it possible for the guest to use the smart phone as a guest room extension. This is used together with:
4. IP Guest Services that is a smart phone app and a server application that give the guest access to hotel services like hotel information, room service ordering, phone directory etc., all defined by the hotel.
5. IP Connect is handling High Speed Internet Access, mgmt. & billing
6. HotelMGR is a Service ticket management system.

iCharge is mandatory and InnLine is used in virtually all hotels. IP Connect and HotelMGR are not involved in the MX-ONE integration.

2.2 MIVOICE MX-ONE SYSTEM OVERVIEW

2.2.1 MX-ONE COMMUNICATION SYSTEM COMPONENTS

The MiVoice MX-ONE communications system is divided into three main components. The call server component that takes care of the signaling is called MX-ONE Service Node, which is a Linux-based call control software that can either be installed in a private cloud as a VMware virtual machine instance, reside in a standard Intel based server or on a dedicated Mitel Server Unit. The second component is a software based Media Server with DSP resources for handling tone detection, multi-party conferencing and packet switching between different IP end-points (e.g. SIP and H.323), when direct media is not possible. In IP only installations there is no need for additional and dedicated media gateway hardware, the media server can reside in the same Linux machine as the call manager, thus reducing the customer footprint.

As a complementing component, one or several hardware-based Media Gateways can be added to the configuration, to provide the physical interfaces towards TDM subscribers, public networks and auxiliary devices. It also houses DSP resources for handling tones, conferencing, packet-switching towards IP phones (SIP and H.323) and to convert media between different protocols. Any combination of media servers and media gateways, up to a limit of 15, can be connected to the same call server.

2.2.2 SYSTEM ARCHITECTURE

The long-proven scalability and flexibility architecture of MX-ONE allows customers to tailor the solution to fit their specific needs. An MX-ONE communication system can be built as a centralized system with multiple servers, media servers and media gateways in one place or these components can be distributed over multiple locations. In either case, the system is seen as a single logical system with a 100% feature transparency and a common numbering plan.

Scalability

MiVoice MX-ONE allows organizations to easily expand its capacity, add functionalities, modules, gateways, and easily upgrade the servers. A single MX-ONE can scale from 100 users up to well over a hundred thousand users, using any mixture of end-point types, enabling organizations to benefit on the expand-as-you-grow principle of adding users in the system. Multiple MX-ONE systems can be networked with ISDN/QSIG or SIP tie-lines with network services in order to support several hundred thousand users within a global voice network.

Flexible deployment

MX-ONE is a highly flexible solution that supports a variety of deployment options. Multiple instances of servers with media servers and/or media gateways, seen as a single logical system, can be spread over a wide area network to create solutions for small and large customers across geographical locations or collapsed as a centralized system with the servers on a central location.

2.2.3 CLOUD ARCHITECTURE

With the advent of cloud computing technology, the cost to provide high availability, voice and data application hosting, content storage and service delivery will be significantly reduced.

Cloud Computing broadens the horizons across organizational boundaries for "reusability of IT capabilities", which is the very fundamental principle in cloud computing. To realize this computing paradigm, MX-ONE has taken the bold steps in realization with its ability to deploy virtualization.

With MX-ONE it is possible to run MX-ONE Service Node and its UCC applications as virtual machines in a customer VMware environment. Thus, this capability has taken advantage of integrating real time communications as a service in the cloud environment. More importantly with MX-ONE using VMware Virtual Appliance, virtualization is supported and provides an alternative to MX-ONE's Native Resiliency and High Availability options.

Furthermore, MX-ONE can be installed as a soft switch without any hardware based media gateways for pure IP environments. In a virtualized environment, both the communications server and media server reside on the same virtual machine and can benefit for VMware's High Availability options.

2.2.4 MX-ONE EXPRESS

The MX-ONE Express is a pre-packaged MX-ONE UCC & FMC solution on a single appliance server, delivered with applications pre-installed on an ASU-II or as SW-only files for VMware deployments.



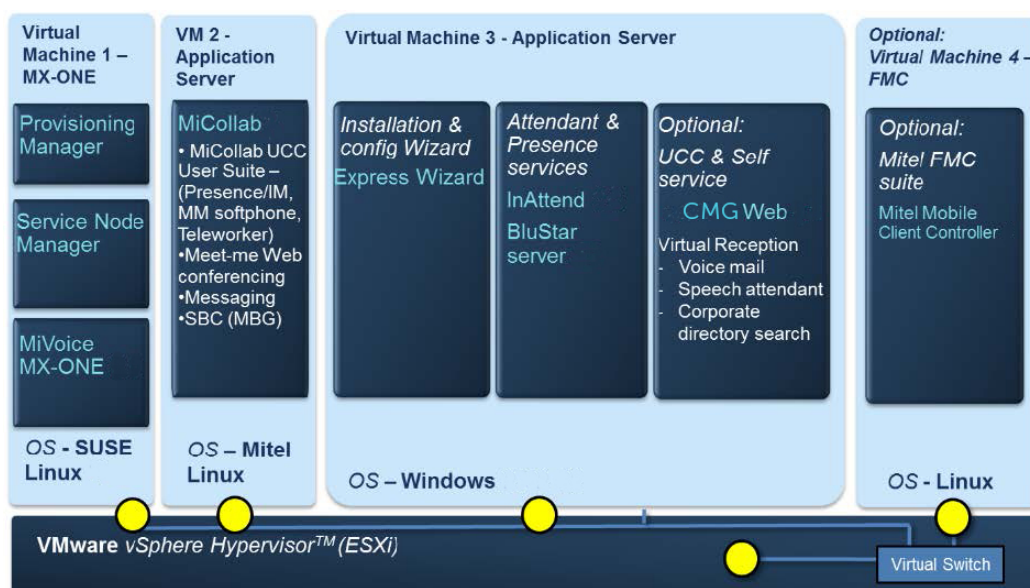
Application Server Unit (ASU-II)

- Processor: I7-4700EQ – 2.4 GHz Quad core processor
- Hard Drive: 512 GB SSD/HDD
- Memory: 16 GB
- Network: 2 x 10/10/1000 Base-T supported

A wizard simplifies the installation and configuration process for MX-ONE and the UCC / UM applications. The following Virtual Machines & applications are part of the bundle:

- SUSE Linux VM - MiVoice MX-ONE Service Node and media server
 - Includes MX-ONE Provisioning Manager & Service Node Manager
- MS Windows VM
 - Mitel InAttend with BS (Presence) server
 - Mitel CMG Web
 - Express setup Wizard
- Optional components:
 - Mitel Linux VM - MiCollab UCC suite (if Express on ASU-II a separate ASU-II unit is required for MiCollab)
 - Mitel MiCollab Advanced Messaging – Windows application
 - Mitel CMG Virtual Reception – Windows application
 - Mitel Mobile Client Controller (Mitel MCC) – Separate Linux VM

The MX-ONE Express bundles includes all the above software. What is installed and activated in the customer environment is, however, dependent on the licenses purchased.



2.2.5 MX-ONE SAAS FOR SUBSCRIPTION BASED LICENSING

The MiVoice MX-ONE SaaS (Software as a Service) deployment option is targeting Mitel partners that are offering managed services or Private Cloud services to their customers. The commercial setup for this solution offers the possibility to modify the number of users and user profile licenses used on a month by month basis if minimum agreed limits and subscription periods are maintained. The MiVoice MX-ONE SaaS system will automatically report the license usage for a given period, for auditing and billing purposes. Each tenant customer will have their own MX-ONE system and application instances in a virtualized Private Cloud environment (partner data center or premise based).

From a usability and functionality perspective, the customer will not see any difference from a premises-based solution, as it is the same software used in both offerings. The only difference is the licensing model and commercial setup.

MX-ONE SaaS has today two UCC licenses package options:

Option 1: MX-ONE SaaS with MiCollab

Option 2: MX-ONE SaaS with CMG Suite

MiVoice MX-ONE SaaS is using the same OVA's as the CAPEX MX-ONE & UCC offering. The only difference is the licenses file that sets the MX-ONE and the UCC application in to subscription mode. The MX-ONE SaaS bundle is a MX-ONE solution package including UC & FMC applications with Feature Bundle user licensing and OPEX/usage reporting for subscription based business. The following applications are part of the package:

Option 1:

- MiVoice MX-ONE Service Node and media server
- MiCollab UCC suite
- InAttend & BS Server (Presence)
- Mitel Mobile Controller (MMC)

Option 2:

- MiVoice MX-ONE Service Node and media server
- MX-ONE Provisioning Manager & Service Node Manager
- Mitel InAttend & BluStar Server (Presence)
- Mitel CMG Web
- Mitel Virtual Reception
- Mitel Mobile Client (MMC)

2.2.5.1 MX-ONE SaaS - License Usage reporting

MX-ONE sends a usage report twice a month as an attachment to an e-mail to pre-determined destinations at Mitel and at the sales partner / service provider. The attachment is a file containing actual license usage data that is configured in the system.

An Excel-based "usage report" tool imports the files and creates license usage reports on a per customer/system basis. The report is broken down per customer system and shows per customer average totals per user profile types as well as used system options during the billing period. For more information about the current feature packages see chapter about feature based licensing structure.

2.2.6 HIGH AVAILABILITY

MX-ONE offers High Availability by supporting different types of redundancy options to cater to different customer requirements. The option or options chosen are based on the deployment scenario e.g. centralized or distributed server architecture, HW server architecture vs. virtualization (Private Cloud), choice of end-points (TDM vs. SIP), main site with branch offices, etc.

Server redundancy options for delivering high availability:

- Home Location Register redundancy (HLR) - In this case, you are deploying IP/SIP phones and have more than one server with load balancing enabled to share the load between servers. The user data is synchronized between the servers. Should one of the servers fail, the IP/SIP phones will re-register to one of the secondary servers (using a guest/backup HLR) automatically and recover most of their features. When the primary server comes back, they will reregister to their primary HLR server. Each server in a HLR redundancy setup can handle up to 15,000 “visitors” IP/SIP end-points.
- 1+1 server redundancy. This is a scenario where a primary server and a dedicated back-up server are configured in a redundancy cluster. Should the primary server fail, the back-up server will take over service within less than a minute. This is an active stand-by setup. There can be a 1+1 redundancy cluster for each server in a MX-ONE logical system.
- N+1 server redundancy. This scenario is similar to the 1+1 scenario, except you have several servers in one location in the same redundancy cluster with a dedicated back-up server that will take over if any one of the primary servers in the cluster fails. The recovery process in an N+1 configuration will take 2-3 minutes as the back-up server must first reconfigure itself with the failed primary server configuration. This is a warm stand-by setup. Up to 10 servers can be in a single redundancy cluster. There is no limit to the number of redundancy clusters in a single logical system.
- High Availability provided via virtualization software (e.g. VMware HA/FT). The MX-ONE Service Node fully support VMware HA scenarios - both High Availability (Warm Standby) and Fault tolerance (Hot Standby) options. It assumes the proper virtualization infrastructure is put in place according to VMware specifications.

Network redundancy

MX-ONE servers and Media Gateways support network redundancy using built in NIC Bonding or Link failover mechanisms. MX-ONE Servers (ASU Series) come with 2 LAN 100/1GB LAN ports that can be configured for network bonding/failover based 802.3 AD to provide network redundancy. Additionally, the MGU based media gateways (Slim, Lite and Classic) have 2 100/1GB LAN ports that can be configured for network redundancy using a link failover mechanism.

Branch Office Survivability

For Branch office situations where there are requirements for local PSTN access and survivability for IP/SIP terminals, sites can be equipped with a remote server and media gateway combination - known as a Survivable Branch Node (SBN). The SBN bundles include the necessary trunk, tie-line and user licenses as well as necessary HW depending on the options or package selected. As it is using standard MX-ONE Service Node software, it can be configured and managed centrally from the MX-ONE Management suite as a remote networked node.

2.2.7 TRUE MOBILITY

Mobility is a concept and a way of working, not just a method to forward your calls to your mobile device.

Mitel offers true mobility where a user is provided with similar services and access to corporate resources from any telephone/device, anywhere, connected to any network.

A user has one telephone number, one mailbox and is handled as one individual, irrespective of which terminal (or terminals) he is presently using.

True mobile access allows the user to log-on to any authorized telephone whether it is a local or remote IP device, an analog telephone connected to any network or a terminal on a DECT or WLAN infrastructure on the corporate premises or in public hot spots.

True mobile access is a native solution of the MiVoice MX-ONE.

2.2.8 SIP - THE BASIS FOR UNIFIED COMMUNICATIONS AND COLLABORATION

SIP is the signaling protocol for establishing real-time multimedia communications. SIP is key to accelerating the transition to Unified Communications in a modern organization. MX-ONE provides a

high level of functionality with both SIP extension and SIP trunk with support for more than 45 RFCs. Mitel continues to develop this architecture in order to provide our customers a natural migration path towards Unified Communications and Collaboration. As an example, MX-ONE SIP extensions now offers a higher level of functionality than what was previously offered with proprietary digital phones.

These same standards are also the basis for integration with 3rd party UC applications and an organizations business processes as well as the connection to the outside world with SIP trunks as an alternative to traditional PSTN networks.

2.2.8.1 *Native SIP implementations with MX-ONE*

SIP-based endpoints - MX-ONE supports a comprehensive portfolio of IP/SIP terminals for audio and video communication including collaboration. The portfolio consists of desk-phones, conference phones, soft-clients, and cordless SIP-DECT. Mitel SIP terminals offer a high level of functionality and scope for design, utilizing embedded XML, which enables a customer to integrate the SIP terminal into purpose built applications.

SIP User licensing - Maximizing value of the software and ensuring reliable access to the system in MX-ONE has taken the leap to introduce a new SIP related user-licensing model, with multi-device support and multimedia licensing. The SIP user licenses are linked to users rather than to devices, making it far more flexible and cost efficient compared to the traditional licensing approach. "Multiple SIP end-points" means that a business user can have one directory number with up-to four active (simultaneously registered) multi-media SIP end-points.

SIP trunking - MX-ONE is certified for many SIP network providers and conforms to the SIP Connect 1.1 standard. MX-ONE's SIP trunking interface is also the basis for integration with 3rd party systems, such as Microsoft Lync /Skype for Business, IBM and other platforms to enable federation between different communications platforms. Furthermore, MX-ONE provides, a SIP tie-line with full network services enabling feature transparency between MX-ONE nodes and certain applications, such as InAttend.

2.2.9 TCO TO BUSINESS FLEXIBILITY

For the organizations and businesses that are still using conventional telephony systems, the rising costs and lack of flexibility increasingly drives them to look for new and more productive / cost-effective ways of communicating. The deployment of converged network communication, delivering Voice over IP (VoIP) and UC applications on the corporate IT network, is a natural and logical evolution. MX-ONE technology responds quickly to changing marketplaces and rapidly adopts technologies that improve business operations and processes for an organization to have a distinct competitive advantage.

Simplified network infrastructure - reduces costs by connecting IP/SIP extensions with IP/SIP phones or SIP clients over the WAN, seamlessly extending features to multiple sites through IP connectivity. SIP trunking, instead of leased TDM circuits, enables a business to optimize network bandwidth and reduce network costs.

Open server architecture - MX-ONE runs on off-the-shelf operating systems and commercially available hardware servers.

Business class telephony features - MX-ONE with the most complete telephony feature offering for medium and large enterprises. No business has to make compromises on how to process critical customer calls.

2.2.10 SINGLE-POINT-OF-ENTRY MANAGEMENT APPROACH

Dealing with complexity in today's dynamic communication infrastructures is one the many challenges faced by IT managers and support staff.

Increased reliance on communication solutions to drive profitability and achieve business goals has broadened the scope of IT and communication support issues while expanding the need for more reliable infrastructures and management tools. The recognition of the issues has amplified the way MX-ONE management system works nowadays.

The single-point-of-entry management approach integrates well with today's IT management platforms and offers full control over your MX-ONE communication networks. MX-ONE offers the following web-

based managers to fulfill administration, provisioning and performance monitoring from one place for the MX-ONE communication systems, the UC applications and the end-points:

- Service Node Manager
- Provisioning Manager
- Mitel Performance Analytics (formerly known as Marwatch)

The management application functionality is carefully developed and expanded to even further simplify and improve support for today's communication infrastructures. Enterprises can more effectively improve the value of their investments and better achieve their business goals and requirements.

2.3 FIXED MOBILE CONVERGENCE (FMC)

The Mitel Mobile Client (MMC) is a smart phone application that is integrated with MX-ONE to provide Fixed Mobile Convergence. An MMC user is seen by the system as a normal SIP user thanks to the MMC controller, a software based FMC gateway that inter-connects the mobile network (via SIP trunk) to the MX-ONE on the customer LAN. The MMC controller can reside as virtual machine or be delivered as an appliance.

An added feature with the MMC controller is the possibility for users to roam between GSM/3G/4G networks and the company Wi-Fi network with seamless handover in either direction (mobile phone dependent) during a call.

The MMC mobile apps for iOS and Android provide a rich graphical end-user interface for a variety of telephony services and offers features such as corporate directory look-up, activity call routing management and presence information.

The MMC also provides call routing without mobile operator support and advanced cost saving features (Dynamic LCR and traveling SIM) for international roaming users. For access to corporate contacts and rich presence information the MMC integrates with the Mitel BluStar Server (presence engine).

2.4 UNIFIED MULTIMEDIA COMMUNICATIONS

2.4.1 MITEL MICOLLAB UCC

MiCollab is the flexible, affordable unified communications and collaboration solution that can be implemented on any network or mobile device to enable faster and more effective business communications.

The MiCollab portfolio is designed to help businesses improve the way their employees communicate and collaborate with a complete suite of productivity enhancing tools for individuals and work groups, including voice, IM, presence, mobility, collaboration, and a range of video options. MiCollab increases the functionality and utility available within the portfolio by adding key features and collaboration tools to provide a uniform end-user experience across any device as well as reducing channel and end-customer costs across the solution lifecycle. Additionally, the MiCollab UCC portfolio is designed with the ability to scale to meet the UCC needs of large enterprises.

The solution provides medium- to large-sized enterprises with a single point of access for all their employees' business communications, enabling organizations to:

- Increase collaboration and productivity of employees by reducing communications latency, managing workflows, and eliminating device and media dependencies.
- Provide a work-stream tool for communications and collaboration that provides a highly collaborative, persistent workspace for team-based meetings, conversations, content collaboration and project management.
- Allow employees to communicate using any device, over any network and from any connected location with complete call control treatment.
- Provide mobile workers with an in-office experience wherever they are around the world, allowing them to stay in touch with colleagues, partners, and customers

- Reduce the total cost of ownership across the solution lifecycle through integrated template-based provisioning starting from the users, common add-moves-and-changes, application configuration, as well as server integration.

Mobile-first! - The Flexible Choice for UC

MiCollab adopts a “mobile first” strategy that converges on a single offer across mobile platforms with a common user experience based on the best of breed components from MMC, BluStar and MiCollab.

- Mitel “mobile first” strategy provides full UCC capability and common user experience on a Converged Mobile Client available for iOS and Android.
- To mobile users the team collaboration services, MiTeam, are bundled and offered to the users via the MiCollab mobile client.
- MiCollab’s converged mobile client lets businesses manage BYOD with various levels of UC capability on iOS, Android, Windows Phone.

MiCollab provides faster and more effective business communications:

- MiCollab is the single tool for business communications, providing the user with presence information, Instant Messaging, softphone, click-to-call, collaboration services, call history and visual voice mail
- Real-time collaboration with point to point and conference room audio, video as well as document and presentation sharing ensure easy, ongoing exchange of ideas and information.

The Licensing model is formed to make it easy moving into the UCC world and stimulate a widespread usage of Mitel’s collaboration tools through three tiers of UCC bundles. MiCollab easily scales to the diverse business and supports needs from customers ranging from basic softphone to full-featured UC users. A single MiCollab deployment can support up to 5,000 collaboration users per server and be peered with up to 8 servers in order to support up to 40,000 users.

UC Client Capabilities	Basic Web Client	UCC Entry	UCC Standard	MiTeam
PC, Mac, & Web Client	Web Client only	●	●	●
CTI Call	●	●	●	●
Click to Call from UC Contacts	●	●	●	●
Do Not Disturb	●	●	●	●
Call Forwarding	●	●	●	●
Visual Voicemail	●	●	●	●
External Contacts (e.g. Outlook, Google)	●	●	●	●
Incoming Call Notification	●	●	●	●
IM / Chat	●	●	●	●
Call History (Filters/Sorting)	All Calls/Missed	All/Missed/Dialed/ Answered	All/Missed/Dialed/ Answered	All/Missed/Dialed/ Answered
Click to Call (Office, Hotkey, URL)		●	●	●
Presence – IM & Voice		●	●	●
Dynamic Status		●	●	●
Calendar Integration (Google, Exchange)		●	●	●
Mobile Client (Android / iOS / Win Phone)		○	●	●
Ad-hoc Meeting / Collaboration			●	●
MiTeam – (Persistent chat / Team collaboration)				●

*) Not presently available with MX-ONE

UCC deployments can now be supported across industry standard servers and Virtual environments (VMware). Consult the MiCollab engineering guidelines for the specific server and virtual machine resource requirements and user dimensioning.

2.4.1.1 MiCollab Client

The MiCollab UC client provides a single access point for all your business communication and collaboration needs. It converges the call control capabilities of Mitel communications platforms with contact management, presence status, and collaboration applications, to simplify and enhance real-time communications. It gives you unprecedented control over your communications and allows real-time access to everyone in the organization, on or off the premises, with user and phone presence information that makes every phone call or instant message (IM) count. Employees can find, communicate, and collaborate with others quickly, simply, and in the moment. MiCollab provides a range of collaboration options from plain document sharing to interactive service, multi-point editing and the MiTeam group collaboration tools. MiTeam is a work-stream offer designed to improve team collaboration, with persistent communications forums that allow for contextual and searchable message threads. MiTeam is included in the UCC Premium bundles.

MiCollab Client offers a solution that meets the needs of your user communities. It delivers increased efficiency and productivity, reduced costs, enhanced responsiveness and streamlined business operations.

Desktop Softphone, Web Portal, and Mobile Client Support

- **PC Softphone:** provides users with access to MiVoice MX-ONE features from a stationary PC or a remote PC or laptop. When remotely connected to a MiVoice MX-ONE platform within the office or via a secure network connection, users can make and receive calls, audio, video as though they were on the corporate network.
- **Web Portal:** provides a web-based interface to a key subset of client features, perfect for users who are remote from the office. Through support of Web RTC web users can also benefit from true softphone services, similar to what is provided via the traditional clients, from inside as well as from outside the company network.
- **Mobile Clients:** supported for iPhone and Android phones now provide additional mid-call control features (hold, transfer & conference) on PBX anchored cell calls when deployed with the MiVoice MX-ONE call manager.



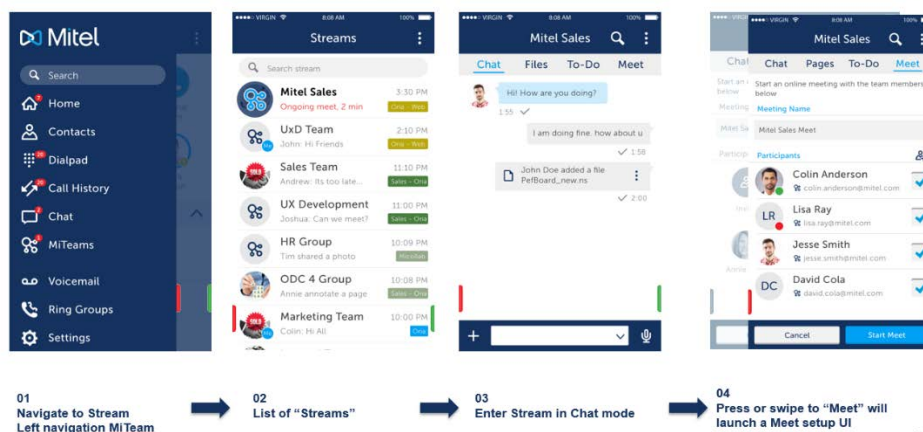
Features and Functionality

- **Simplified Call Management and Logging:** The MiCollab desktop client provides users with the advanced call management features of the MiVoice MX-ONE communications platform. The server logs incoming calls for the MiCollab clients, even when the MiCollab client software is not

running. When a MiCollab client is re-started, the server updates the client with all the cached call log information since the last session. It also stores frequently dialed phone numbers and allows users to call these numbers from a drop-down menu.

- **Presence and Availability:** This feature informs you of a person's availability – whether they are on the phone, away from their desk, or available for secure instant chat or collaboration. You can also tag selected users so that you get a visual indication when they log into MiCollab Client.
- **Contact Grouping:** Corporate, Personal and Favorite contact groups are combined into single view. A Corporate directory group is visible with the flexibility to create additional groups including the ability to import corporate contacts, who are not equipped with a Mitel telephony solution, directly from active directory. Personal contacts from Google or Microsoft® Exchange can also be integrated and imported into the MiCollab Desktop Client application.
- Through “Off-board LDAP” support users can be given access to extended directories as suited for the individual company's needs. In addition, this db can be used to provide name presentation for external calls coming in.
- **Dynamic Status:** provides the user with an easy method of specifying IM, presence, and call routing options when showing a specific Dynamic Status. The status can be changed from within MiCollab Client or it can be automatically updated based on the user's Google® or Microsoft Outlook calendar information.
- **Dynamic Location:** allows Mobile Client users to define the GPS locations to associate with each Dynamic Status and automatically changes Dynamic Status based on GPS location, network / Bluetooth connection or by manual selection.
- **Visual Voice Mail:** provides the user with an intuitive interface to view and listen to Mitel NuPoint Unified Messaging™ (UM) voice mail messages. Alternatively, MiCollab Advanced Messaging can be set-up to offer the corresponding functionality.
- **Corporate IM:** facilitates secure instant messaging and file sharing. Initiate a single or multi-party chat at the click of a mouse and, at the same time, share documents by dragging and dropping files into the chat session.
- **MiTeam** is a set of work-stream communications and collaboration tools that provides a highly collaborative, persistent workspace for team-based meetings, conversations, content collaboration and project management. It also creates a complete, searchable archive that can bring new team members or those that need to be kept in the loop quickly and easily up-to-date. By recording all aspects of a project from start to finish, it also helps organizations fulfil corporate compliance obligations. The group collaboration capabilities are integrated into the MiCollab mobile clients (iOS and Android) and the MiCollab web client.
- Guest access to MiTeam streams can be provided to internal as well as to external users.

MiTeam Mobile Client Experience



Supported Integrations

- **Integration with Mitel Teleworker Solution:** Teleworker allows users to access their corporate voice network through the MiCollab Client softphone, from home or on the road, without the need

for a virtual private network (VPN) connection. Mitel's MBG provides security via its session boarder control services.

- Integration with multi-device ring groups on MiVoice MX-ONE. A MiCollab client user who also has multi-device support can answer an incoming call directed to their desk phone or on a device of their choice – for example, on a cell phone, SIP softphone or home phone. When the call is answered, the MiCollab Client application changes the user's telephony presence to "off hook." This enables MiCollab Client to display the correct telephony status for a user, regardless of whether the call was answered on a user's desk phone, softphone, or mobile device.
- Integration with MiCollab Audio, Web and Video Conferencing: integration with this application allows users to place a video call with the click of a button, and start or schedule collaboration sessions.
- Integration with Business Applications: integrates with popular communications and productivity tools such as Outlook and Microsoft Office. Users can dial from their Outlook contact list, integrate their Dynamic Status with their Outlook calendar, and click-to-dial using smart tags. MiCollab Client also integrates with IBM Lotus Notes, allowing users to dial from their contact list, launch web / video collaboration sessions, and integrate their Dynamic Status with their calendar.

2.4.1.2 *MiCollab Audio Web & Video Conferencing*

MiCollab Audio, Web and Video Conferencing is a Mitel core component allowing users to schedule and create audio and/or web conferences. A web-based interface (MiCollab administrator or end-user portal) is used to schedule conferences, and to view conference calls. All interfaces are directly accessed through the secure HTTPS protocol. Authorization and authentication allows only valid users to access the services. Secure Sockets Layer (SSL) encryption for secured messages and server-side digital certificates are used to meet the highest security requirements. MiCollab Audio, Web and Video Conferencing are integrated into the MiCollab End User portal and provides the following features:

- Instant, flexible calling: Initiate an instantaneous call or to create an ad-hoc conference call from a two-party call. A conference call can also be pre-scheduled.
- To simplify for users and to adopt for various user needs a plug-in to Outlook is provided.
- For users of the Mitel 6900 SIP phones MiCollab can be set up to present next coming conference call together with a dynamic softkey for a "one-click connect" to easily join the conference call.
- Complete conference control and management for the conference leader: Add and drop other call participants as well as Mute selected or all participants, place selected participants on-hold, or end the entire conference.
- Cost-effective conferencing: Delivers the most cost-effective group calling, with ultimate flexibility to customize solutions to best meet individual needs. Supports audio/web bridge with up to 300 participants in a conference session.
- Web-based collaboration tools: Facilitate online meetings, training, and presentations with features designed for sharing your desktop or individual applications and documents. Enhance conferences to increase participation and understanding by using interactive markup tools, user polling, and video-conferencing. Use the file transfer utility to immediately share the outcome of online collaborative sessions by transmitting updated files and presentations to conference participants.
- Conference archiving: Create recordings of conference calls and collaborative sessions for future playback. Conference usage reporting provides conference leaders with information about the usage of their conferences including the list of participants and date and access time information. Reporting is also available to the system administrator for the purpose of conference capacity planning.

2.4.1.3 *NuPoint Unified Messaging*

As part of MiCollab, NuPoint UM provides users with Unified Messaging access to voice, email and fax messages.

- Basic UM provides voice and fax messaging functionality with access to messages using Telephone User Interface (TUI) or through Web View, the web browser interface. Voice

messages can also be forwarded to virtually any email client including hosted email services using SMTP forwarding.

- Standard UM provides voice mail and fax access from virtually any email client including those on hosted email services. Standard UM provides ultimate flexibility in delivering voice messages to email and includes key features such as the ability to turn the MWI off on the user's telephone when a voice message has been accessed from the email client.
- Advanced UM provides full synchronization between a user's email server and the NuPoint UM system. Each voice message has a matching email. When one is deleted, the other is also automatically deleted. Advanced UM integration is available for Gmail, Exchange and Office 365.

NuPoint Unified Messaging is a powerful, voice processing application that provides users with access to voice, fax and email messages in a single location.

2.4.1.4 *MiCollab Advanced Messaging*

MiCollab Advanced Messaging could be used as a more feature-rich alternative UM solution to the built in NuPoint UM solution. (See Chapter 2.8 Unified Messaging Suite).

2.4.1.5 *MiVoice Border Gateway*

The MiVoice Border Gateway (MBG) is a software based multi-service solution that provides the following Session Boarder Controller functionality to Mitel users and systems:

- Teleworker service, for MiCollab softphone clients
- A Web proxy blade that provides a secure method for MiCollab web browser users to connect with their LAN-based applications
- Secure remote SIP access for SIP trunking to external third-party SIP providers
- Remote access for Mitel 6800 SIP phones (requires a dedicated MBG)
- Interface for centralized recording of SIP based end-points

Teleworker Service

To deploy Teleworker service you must:

- Install MiCollab in Network Edge mode or
- Install MiCollab in LAN mode and install a separate MBG server in the DMZ to support the teleworker services

The Teleworker service connects remote MiCollab clients and softphones to the corporate voice network providing full access to voice mail, collaboration tools, and all the other features of the office phone system. When configured for teleworker use, the remote SIP end-point has the following capabilities:

- A SIP Teleworker phone is a SIP-based remote extension of the MX-ONE
- Encryption to provide a secure voice path between the phone and the system across the Internet
- Adaptive jitter buffering and other software enhancements to improve voice quality over the Internet
- G.729 compression to reduce bandwidth requirements
- Operates in the same manner as any other phone connected to the network
- Operates over any broadband LAN connection that provides connectivity back to the corporate office where the MiCollab is located
- Directly accesses the corporate office phone system (for example, voice mail and collaboration tools)
- Support for the SIP protocol for the MiCollab desktop and Mobile SIP softphones
- MiVoice Border Gateway scales teleworker functionality for large enterprise.

Web Proxy Service

An MBG server with web proxy installed in the Demilitarized Zone (DMZ) protects the MiCollab server in the LAN from Internet exposure. In a DMZ configuration, the firewall is the gateway for all IP traffic with the internet. The Web Proxy blade acts as a reverse proxy providing a secure method for remote web browser users, such as web conferencing users, to connect with a MiCollab server located on the corporate LAN. It also provides internet based clients (for example MiCollab clients, not softphone) with access to a MiCollab system located on the LAN. Remote web browser users and clients connect to MiCollab in the LAN through the Web Proxy blade that is installed on a separate MBG server in the DMZ. The Web Proxy also restricts access to only those URLs that belong to the end-user web interfaces for these applications.

Remote SIP phone

The MBG supports remote access from Mitel 6900/6800 SIP phones.

SIP Trunk Service

The MBG application on the MiCollab server supports SIP trunk proxy service. You can use SIP trunks provided by an Internet Telephony Service Provider to connect your MX-ONE platform to the traditional PSTN network. Three components are required to successfully deploy SIP trunks:

- Mitel MX-ONE communications platform with SIP-enabled trunk side
- Internet telephony or SIP Trunking service provider
- MiCollab with MBG SIP Trunk proxy service to connect the service provider to the ICP on the LAN. The MBG SIP Trunk Proxy service on MiCollab also serves as a SIP-aware firewall and eliminates the need for 3rd party firewalls, simplifying configuration and deployment.

A "SIP trunk" in the context of the MBG blade is simply a pair of endpoints, defined by their IP addresses and signaling ports. One of the endpoints is usually your ICP, and the other is your SIP provider's firewall or SBC. A trunk can have any number of "channels," each of which corresponds to an active media stream. A channel license is required for each active channel, so you will need enough channel licenses to cover the maximum number of active calls. As an analogy, a North American ISDN PRI link contains 23 B channels for audio and one D channel for signaling, and can carry a maximum of 23 simultaneous calls. This would be equivalent to a SIP trunk with 23 channel licenses. For SIP Trunking support, you require one SIP Trunking Channel license for each of the maximum number of simultaneous calls you estimate to make. No extra licenses are required for SIP device support.

Secure Recording Connector (SRC)

Via the recording connector a centralized recording system, such as the MiVoice Call Recorder, can be configured to receive RTP/SRTP audio streams from defined SIP end-points through the MBG.

2.4.1.6 MiCollab Plug-in to Skype for Business / Lync

The MiVoice Skype for Business plug-in seamlessly embeds Mitel's comprehensive and feature rich enterprise quality voice capabilities to users of Skype for Business clients. The integration allows Skype for Business users in the office or on the move to access Mitel's voice features including selection of desk phone mode or PC phone mode, click-to-call, answer, hang-up, Do-No-Disturb, In call capabilities such as forward, transfer and embedded conferencing.

MiCollab server running in Integrated Mode with Skype for Business keeps the User and Services database and client database synchronized so they function like a single database on the MiCollab server.

The Mitel integration for Microsoft Skype for Business is designed to support customers that have decided to deploy Skype for Business clients as a general contact management and IM clients for the enterprise and require a cost-effective enterprise voice solution. The Mitel Integration to Microsoft Skype for Business provides access to many Mitel voice capabilities including: desk-phone control (3rd party call control), mobile phone or SIP device control, softphone, mid-call features, phone presence, as well as mobility features to address the ever-increasing use of mobile platforms and smart mobile devices.

2.4.2 MITEL BLUSTAR SERVER – PRESENCE ENGINE

Mitel presence and directory engine, the Mitel BluStar Server is an integral part of the MX-ONE Solution and together they provide full integration for line state monitoring using CSTA3 between the MX-ONE and the Mitel BluStar Server.

The Mitel BluStar Server insures that directory/contact data and rich presence information, including Mitel BluStar Presence, MX-ONE Line state and Calendar integration, is aggregated towards Mitel CMG Web and InAttend users and MMC users.

It also provides a UMCA connector toward Skype for Business to allow federation of SfB Line State/presence with MX-ONE Line State. This is particularly relevant in a hybrid environment when both SfB and MX-ONE are used for voice and sharing common applications such as InAttend. Attendants have immediate visibility of the status of users in both systems enabling them to handle inbound call traffic in an efficient and effective manner. It also allows users in either system to search for a user in the corporate directory and have line state visibility regardless of which system they are based in.

2.5 MITEL CMG

Mitel CMG is a part of the UCC suite for MX-ONE and is mainly used in Nordics. The Mitel CMG suite addresses different business communication needs in the enterprise with focus on presence and activity based call routing powered by advanced directory and attendant console functionality. Mitel CMG enables users to manage and make sure that they are reached in the most satiable way at a given time. Basically, any time a call is not connected to the end user by MX-ONE, Mitel CMG will take care of the call, routing it to other user destinations (mobile or home office phone), to the attendant or to the Mitel CMG Speech Services (IVR and Voice Mail).

Mitel CMG is tailored to fit various user profiles, yet flexible enough to integrate with a wide variety of corporate environments including most standard calendar and presence systems. It provides a mix of tools for attendants and office users, including advanced call handling, activity and availability management as well as automated speech and conference services.

The suite is developed from a user perspective and is a user-friendly activity management application, available from any device, very well integrated with MX-ONE. It is a scalable system that can have virtually an unlimited number of users and attendants. Using SIP and other open standards, it can connect to several systems at the same time, either centrally or distributed over several sites.

Mitel CMG is a complete collaboration solution contributing to both business users and attendants with benefits for both target groups.

Mitel CMG Application Suite consists of several end-user collaboration management applications used in an MX-ONE Solution environment.

The Mitel CMG suite is comprised of the following product areas:

- Advanced Attendant Console
- Presence and Availability Management
- Web-based user interface available in any device
- Calendar connection for integration with company calendar (Exchange, etc....)
- Visitor management
- Speech Office Services: IVR and Voice Mail
- InConference meet-me conference solution

For more information on Mitel CMG, see the relevant Mitel CMG documentation.

2.5.1 MITEL CMG WEB

The main components of this offer consist of an HTML5 based user interface and the Mitel CMG call routing and directory services have been modernized. It also offers full integration with the Mitel BluStar Server to offer rich presence services to Mitel CMG Web users.

Mitel CMG Web is a set of services that enables a business user to manage day-to-day activities. With the Mitel CMG Web, users can do “Smart-search” directory services, click-to-dial, and activity timeline management; also, manage their call-routing preferences based on the calendar/activities. The integration with Mitel's BluStar Server, enables users to see, in real-time, their colleagues' rich presence information, including Mitel BluStar user presence status, calendar activity and line state from all available sources provided by the Mitel BluStar Server.

Mitel CMG Web users can set calendar activities to define how to be reached and route their calls, depending on the situation. As an example, a user can set-up their profile so that when they go into a meeting, Mitel CMG Web will automatically reroute their calls to e.g. an attendant, voice mail or to their assistant. If the user then leaves the office, Mitel CMG Web will route the calls to their mobile or personal number.

As the Mitel CMG Web interface is developed using responsive web technology, the web pages will automatically adjust the content presentation to fit any screen size. This means the web user interface is accessible from any device (PCs, smart phones & tablets) catering to different business user profiles. This offers significant benefit for users, as it avoids the need for different mobile "apps" per OS type, thus assuring a consistent user experience for any user, regardless of the device they are using and their location.

Mitel CMG Web highlights:

- A modern, web-based user interface
- Use on any device – PC, smart phones, tablets – real-time responsive web technology
- Progressive directory search with click-to-dial
- Real time presence info from different sources - including line state
- Activity timeline management - including diversion services
- Quick application for one-click activity management
- Calendar integration
- MS Lync/SFB ready via Mitel BluStar Server integration
- License model harmonized with Mitel's standard licensing system
- Please refer to Mitel CMG CPI documentation for further information

2.5.2 MITEL VIRTUAL RECEPTION - AUTOMATED SPEECH AND RECEPTION SERVICES

Mitel Virtual Reception is a set of automated self-services that significantly reduce wait time and attendant workload, increasing at the same time customers' flexibility and efficiency.

The Mitel Virtual Reception consists of Mitel CMG Speech Office (Interactive Voice Response (IVR) and voicemail), Mitel CMG Speech Attendant and Mitel CMG Visit. The applications share the same communication server - the Mitel CMG Server – and use the same Mitel Web user interface.

The Mitel Virtual Reception highlights are:

- Multi language IVR and voice mail services
- Optional speech driven auto attendant services (ASR)
- Optional personal conference bridge for CMG users – (InConference)
- New web interface for visual voice mail - accessible from the Mitel CMG Web portal
- New web interface for visitor management - accessible from the Mitel CMG Web portal

- Wizard based installation and upgrade

2.6 MITEL INATTEND - PROFESSIONAL ATTENDANT SERVICES

Mitel InAttend is a multi-featured scalable attendant console based on open standards. It is the core application in Mitel's attendant offering and an essential part of the Mitel UCC suite.

In addition to advanced queue and call handling, InAttend offers powerful corporate directory search options, calendar integration, rich presence integration and all necessary information for efficient attendant call handling.

InAttend can be used stand-alone together with LDAP directory sources, preferably the Mitel BluStar Server directory, or together with Mitel CMG, or share directory with MiCollab. Together with Mitel CMG Mitel InAttend is enhanced with extra functionality such as activity management, advanced organization search including support for phonetic name search with nick names and titles etc. as well as visitor management and extra message channels.

InAttend integrates with Mitel BluStar Server.

InAttend Highlights:

- A future proof and scalable solution based on open standards
- Professional attendant services
 - Multiple internal and external queues
 - Efficient handling high volumes of calls
 - Advanced call control capability
 - Real-time information on availability and activity status for all employees including rich presence information
 - User friendly design – user interface defined by attendants' preferences and adjustable to users' needs
 - SIP integration with multiple communication server environments
 - Integration with MiCollab, providing presence including line state, and MiCollab IM
- Mitel BluStar Server presence & CTI services built in
 - Line state and presence information for MX-ONE
 - Presence and line state information from Microsoft SfB and Cisco systems
 - Calendar information (Microsoft Exchange)
 - LDAP integration with AD
- Tight integration with the Mitel CMG suite
 - Advanced directory search options
 - Calendar information (Microsoft Exchange, Lotus Domino, Novell GroupWise)
 - Diversion/activity based routing information

For further information, refer to the product documentation and release notes available on the Mitel knowledge base.

2.7 CONTACT CENTER SUITE

MiContact Center Enterprise is an all-in-one, adaptive and flexible platform for UCC, mobility, contact center, Business Process Automation, analytics and reporting, as well as service and database integration. With the MiContact Center Enterprise Mitel is continuing to build on supporting customers to transform their telephony-oriented call centers to true, two-way, multi-modal interaction hubs. This

transformation provides customers with a choice of interaction methods by implementing multi-channel access capabilities, as well as more sophisticated APIs for business integrations.

MiCC Enterprise is empowered with Mobile Extension to equip remote or roaming agents. Customers can be guaranteed access to the most appropriate agent - wherever they are located and on whichever communications medium (i.e., voice, chat, e-mail, SMS, or fax) they prefer to use.

MiCC Enterprise provides skills-based routing across these media, a single point of management and an integrated management information system across the contact center. The solution consists of software applications focused on the agent, management and customer self-service functions.

For more information: WWW.MITEL.COM/MICONTACT-CENTER-ENTERPRISE

2.8 UNIFIED MESSAGING SUITE

Mitel MiCollab Advanced Messaging provides features and applications for voice mail system that is fully integrated with the MX-ONE via a SIP interface to be sure no calls are lost. Besides the MWI on the user telephones, extra notifications can be sent by e-mail or SMS to one or several devices per users.

The base platform comes with a multi-level auto-attendant functionality to allow inbound caller management as well as end-user voice mail box management. The system provides a web-based user portal for managing voice messages and user preferences. Additionally, optional mobile apps for iOS and Android enable users to get visual VM services where ever they are. Optional features can be added to enable full integration with a customer's back-office applications:

- An optional UM feature enabling full integration with major e-mail systems (Outlook, Lotus notes and Groupwise) with advanced plug-ins for VM management.
- A voice intercept messaging (VIM) option which allows integration with the MX-ONE message diversion feature as well as the Mitel CMG activity setting function.
- A TTS (text-to-speech) option that allows users to listen to their e-mails directly over the phone.
- A fax mail option using T.38 FoIP protocols enables integration with e-mail systems.
- As a complement to the auto-attendant feature, an ASR (Automated Speech Recognition) option can be added to allow inbound callers to say a user's name or ask for a department or service. Additionally, it can be used by internal users to manage their VM box via speech commands.

The MiCollab Unified Messaging platform is particularly strong in large system deployment, environments with mixture of different call server brands, multinational/language support.



Note! Some of the features mentioned above are optional and not licensed with the basic Mitel MiVoice Advanced Messaging VM product. Activation of these optional features is accomplished by simply adding these features to the license file. Others, like Mitel MiVoice Advanced Messaging fax-mail or ARS, may require installing additional software, which is residing on the media kit delivered with the system.

2.9 BROAD END-POINT PORTFOLIO

The end-point portfolio for MX-ONE consists of several terminal families to fulfill all various user demands while in parallel also addressing various technologies and implementation conditions. SIP, being the dominating technology, provides for various forms of soft-phones and clients plus a wide range of desk phones including conference phone.

SIP is also the main extension interface for mobility by providing for cellular phone integration as well as for SIP DECT and Wi-Fi based cordless phones to connect directly with the MX-ONE system. In “all IP” environments analog end-points and applications (fax, modem) can be connected locally or remotely via Mitel’s TA7100 Terminal Adapters. In addition to the SIP based products the portfolio also includes a full range of analog terminals, digital terminals, IP/H.323 terminals and integrated DECT products for various customer needs. For installations where wiring in the facilities is a barrier to IP/SIP deployments due to practical and/or cost related aspects i.e. heritage buildings or isolated locations like a warehouse / factory floor, remote campus buildings, or cruise ships, Mitel’s StreamLine cabling system may be used.

Mitel StreamLine is a unique data network switch delivering Ethernet and Power over Ethernet (PoE) on a single pair of telephony grade wire with up to four times the reach of traditional data switches, along with speeds of 10 MBits/s Full Duplex to the endpoints. In this way, StreamLine transforms the existing voice infrastructure into a data connection with power delivery, ideal for IP Telephony. The StreamLine products supports Mitel SIP and H.323 phones as well as SIP DECT base stations, and yes, the second Ethernet port on the IP phones can be used for a PC connection.

2.10 PROFESSIONAL RECORDING SOLUTION

MiVoice Call Recording can be deployed in several different configurations depending on the customer’s needs, but all configurations leverage the MiVoice MX-ONE’s rich CTI (Computer Telephony Interface) interface (CSTA) and MiCC Enterprise (formerly Solidus) contact center (if available) to provide detailed metadata for the calls which can be used for recording rules, access controls, and search criteria. In addition, MiVoice Call Recording allows users to attach additional metadata to calls to support business-specific needs (e.g. annotations, reason codes, etc.). MiVoice Call Recording combines the metadata with the recorded audio into a proprietary patented file format for later retrieval.

One of the key deployment considerations is how the audio will be captured for recording. There are several options with advantages and disadvantages that are described in the MiVoice Call Recording Engineering Guidelines.

MiVoice Call Recording supports the following audio capture options with MiVoice MX-ONE solutions:

Trunk-side Recording:

- **TDM E1/ISDN Trunks** (legacy trunk interfaces such as T1/E1/PRI) use a physical hardware-based audio “tap” board (Mitel or AudioCodes) inserted “in-line” with the trunk wiring to collect the audio. This is a passive, listening only mode connection.
- **SIP Trunks** are more commonly being adapted by today’s customers. The recording tap remains passive but the collection of the call audio is usually accomplished through a software connection. This method uses a capability of Ethernet switches known as “port mirroring” in which a copy of the data on an Ethernet port can be sent to another port.

Station-side Recording:

- Mitel 69xx, 68xx and 67xx SIP “Active Terminal” Phones
- Mobile Extension users over SIP trunks
- Mitel Secure Recording Connector (SRC)
 - SIP Softphones
 - Mitel SIP DECT Phones

- Mitel 69x, 68xx and 67xx SIP Phones
- Mitel 74xx and 44xx H.323/IP “Active Terminal” sets
- Passive IP Recording (port mirroring)

Mitel Secure Recording Connector (SRC) -- Mitel SRC is a software solution that facilitates the recording of Mitel voice streams by call recording equipment. SRC is positioned on the LAN between the Mitel call manager and the IP phones to be recorded. It accepts requests from authorized call recorder to establish taps in the voice stream. These taps are separate (mirrored) streams from the SRC to the recorder. In this model, the requirement for port mirroring and static addresses is eliminated.

Note: Mitel SRC is a licensing option of the Mitel Border Gateway (MBG) which is required to support this recording configuration. SRC licenses are included with each MiVoice Call Recording port license, however, the partner is responsible for server/licensing requirements supporting the MBG base configuration.

Active IP station-side recording relies on the platform or station set's ability to stream audio from a device to the call recording server. In this model, the requirement for port mirroring and static addresses is eliminated.

- Mitel 6xxx SIP “Active Terminal” Phones - Mitel's 6xxx Series SIP Phones support a capability known as “Active VoIP Recording”. This ability allows the Mitel SIP phone to directly establish a second audio stream from the station set to the call recorder.
- Mitel 74xx and 44xx IP “Active Terminal” Phones - These H.323/IP terminals support a capability known as “Active VoIP Recording” like what is done with the SIP sets. This ability allows the Mitel 74xx and 44xx IP phone to directly establish a second audio stream from the station set to the call recorder.

Passive IP station-side recording entails port mirroring of the RTP (audio) traffic. This method requires stations to have static IP (fixed) or MAC addresses and requires appropriate network configuration; this is typically not preferred. Should always look toward a trunk-side or “active” station-side recording method as first choice.

Limitations - MiVoice MX-ONE:

- InAttend Console - Station-side recording not currently supported, not via SRC nor via active terminal.
However, InAttend has a built-in recording function as complement / alternative to trunk side recording.

2.11 MX-ONE MANAGEMENT APPLICATIONS

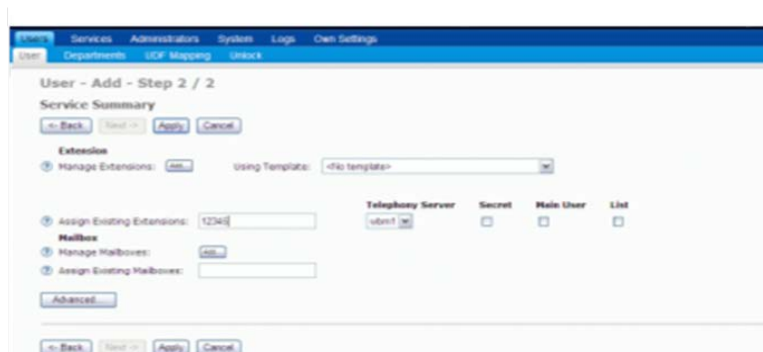
2.11.1 MX-ONE PROVISIONING MANAGER (PM)

MX-ONE Provisioning Manager is an IT friendly web based interface for the complete management of the MX-ONE solution. It is a single point of access for the IT administrator for provisioning of users, extension services and associated applications. It connects into the other components of the solution (Mitel CMG, Mitel MiVoice Advanced Messaging, etc.) via a web services interface to allow users to be provisioned centrally in the Provisioning Manager system and ensure that the information propagated to the other applications. It also can be integrated with an organizations Active Directory system to allow IT managers to enter user data in the AD system and enable it to be synchronized with the Provisioning Manager user data automatically. This further simplifies the process and minimizes the number of management interfaces.

It is tightly integrated to the MX-ONE Service Node Manager with direct pass-through to facilitate Service Node management tasks.

Besides the above-mentioned features, MX-ONE Provisioning Manager also provides the following additional functionality:

- Managing administrator accounts with multiple access levels
- Access to subsystems, for example, MX-ONE Service Nodes, MiCollab, MiCollab Advanced Messaging and Mitel CMG servers.
- Configuration management of MiCollab users, MMC users and SIP DECT user services
- Management access to networked MX-ONE systems or SBNs
- Managing customer groups / tenants
- Installation wizards to simply initial setup
- Importing and exporting user and extension data
- Performing backup of user and extension data
- User account administration, for example, unlocking users.
- End-user self-service.



Manager Provisioning

For more details, see the description for MX-ONE PROVISIONING MANAGER.

2.11.2 MX-ONE SERVICE NODE MANAGER (SNM)

MX-ONE Service Node manager is a task-oriented web-based application providing functions for configuring and operating MX-ONE, for example:

- Performing setup of the MX-ONE Service Node
- Managing media gateways

- Managing trunks and routes
- Managing groups, number plans, common categories, and service profiles
- IP/SIP phone and SIP client provisioning

MGW	Type	Control IP	BPOS	Media IP	Subnet Mask	Default G/W
2A	MGU	10.105.69.235		10.105.69.245	255.255.255.0	10.105.69.1

Manager Telephony System

Normally, the MX-ONE Service Node Manager is used together with the MX-ONE Provisioning Manager. If the administrator is logged into the Provisioning Manager, they can access the Service Node Manager as a subsystem directly from the same interface enabling a single point of access for management of the MX-ONE communications system.

For more details, see the description for *MX-ONE SERVICE NODE MANAGER*

2.11.3 MITEL PERFORMANCE ANALYTICS (MPA) – FAULT AND PERFORMANCE MANAGEMENT

Mitel Performance Analytics is fault & performance management software for the Mitel MiVoice MX-ONE and other Mitel/third-party systems on the business communications network. Channel partners and service providers can deliver proactive service quality to customers, increasing contract renewal rates and revenues, while reducing costs with tools that resolve problems faster. MPA can be deployed as an on-premises or cloud-based solution, and can support multiple customer networks from a single instance.

As a tool for preventive maintenance the Mitel Performance Analytics is uniquely provided as part of Mitel's advanced software maintenance offer, SWA Premium.

Performance and availability monitoring

- MiVoice MX-ONE system information, including user & device license inventory, availability, Simple Network Management Protocol (SNMP) traps and alarms.
- Trap-directed polling for instant identification of critical events.
- MiVoice MX-ONE and UM/UC application servers (Windows/Linux) availability monitoring:
- Performance metrics: CPU and memory utilization, disk usage, file system and interface statistics, ping latency, packet loss
- Performance management threshold alarms
- Windows services activity monitoring (installation and operating status (running & non-running), with configurable alarm levels.

Real-time alerts

MPA issues real-time alerts when problems are detected, speeding problem resolution. Advanced management identifies the most important alerts easily, with customizable alert method (email, SMS, Twitter DM), alert severity (minor, major, critical), as well as the ability to filter alerts and create multiple alert profiles.

Alerts include:

- MiVoice MX-ONE system alarms
- Device availability & reachability
- Device interface availability & utilization
- Windows service status (non-running)

Secure remote access

MPA delivers single click access to any monitored device, with no need for a VPN. This access is authenticated and encrypted with SSL, SSH and HTTPS. An audit log tracks all remote access sessions.

Testing tools

MPA offers rapid access to testing and diagnostics tools used every day by IT professionals: Ping, Traceroute, DNS, MTR and iftop.

Reports

Performance and status reports can be generated on a monthly or on-demand basis, allowing channel partners to demonstrate Service Level Agreement (SLA) assurance to customers. Pre-configured queries provide critical data (i.e.: contact info, license inventory) quickly.

Dashboard

Optimized for viewing on mobile devices or PCs, the MPA dashboard can be accessed using a standard web browser. Critical data such as color coded alarms and a geographic map are displayed for quick detection of important activities. Container-based design provides a customized view for service providers, channel partners and end users. Dashboards can be branded with a partner logo.

Third-party device support

MPA supports a basic level of management for all IP network devices. For devices that support SNMP, MPA provides advanced management. Additional advanced capabilities are delivered using SNMP and vendor specific interfaces for a specified list of devices that include servers and routers.

User and Device Inventory and Reporting

MPA can report license usage as well as telephony user and device details. Inventory views can be customized to show data relevant to the administrators. All inventory data can be reported on by email.

Traffic reporting (for IP/SIP routes and IP/SIP phones)

MPA can report on route utilization (inbound, outbound, overflow and congested) as well as the gateway utilizations per set type (IP Set Calls, IP Set Congested Calls, Legacy Set Calls...)

MX-ONE Backup

Administrators can schedule MX-ONE backups or run them on-demand, the backups can be stored in on the MPA system or an external FTP server.

2.12 **MX-ONE APPLICATION INTEGRATIONS**

2.12.1 **NATIVE CSTA III INTERFACE FOR APPLICATION INTEGRATION**

MX-ONE supports a Computer Supported Telecommunications Applications Version 3 or CSTA III/XML interface offering CTI call control and monitoring with applications such as MiCC Enterprise, Mitel MiCollab, Mitel InAttend and 3rd party applications.

MiContact Center Enterprise

In the case of MiCC Enterprise, the CSTA III protocol is used to enable complete cradle to grave handling of call center traffic transiting via the MX-ONE. The MX-ONE provides queue services for inbound MiCC Enterprise traffic using CTI groups. MiCC Enterprise can then pick calls from the queues and distribute them to agents that are registered as extensions on the MX-ONE. Agents can also invoke in-call features using CSTA III to transfer calls to other users or agents in the system.

Mitel UCC

For integration with the Mitel MiCollab, a CSTA III interface is established between MX-ONE and the Mitel UCC server (presence/CTI engine). This ensures that Mitel UCC users get real-time line information as part of the presence information displayed on the Mitel UCC clients. It is also used to enable CTI call control between a Mitel MiCollab PC user and their monitored MX-ONE extension.

In MX-ONE the CTI feature is designed to align with the SIP principles allowing call control for users with Multiple Terminal Service. The directory number is complemented with a terminal identity in all relevant CSTA events and service requests. MX-ONE provides the application with a list of the users presently registered terminals, allowing the application/user to decide which terminal that shall be used for call control purposes (advanced client functionality). Any application that does not support this terminal identity cannot exercise call control for users of multiple terminals, presently basic multi-terminal CTI control is supported by the MiCollab and BluStar for PC clients.

Mitel InAttend

The MX-ONE CSTA III interface is used for communication with the Mitel InAttend attendant suite (via the Mitel BluStar Server presence engine) for getting real time line state information as part of the presence information presented to the attendants. If the Mitel CMG suite is included with the attendant solution, then the Mitel BluStar web users will also benefit for this interface to get real-time line state information when doing directory searches, for example.

The CSTA III is also an interface that is used for integration of 3rd party applications, such as CTI applications or call centers. Integration with 3rd party applications is ensured via Mitel's third party certification program.

2.12.2 MICROSOFT® SKYPE FOR BUSINESS / LYNC SERVER™ 2013

MX-ONE is fully certified with Microsoft Skype for Business (SfB) / Lync Server 2013 server via a SIP trunk integration. The SIP trunk connection between the systems can be deployed with or without encryption. Mitel MX-ONE supports TLS for signaling and SRTP for media encryption when connected with Mediation Server.

The integration is done between MiVoice MX-ONE and SfB / Lync Server 2013 via Direct SIP to offer the functionality required by the Microsoft UC Open Interoperability Program for enterprise telephony services and infrastructure.

2.12.2.1 Lync Direct SIP integration

In Direct SIP integration, referred to by Microsoft as Enterprise Voice, SfB / Lync 2013 users will have dedicated phone numbers that differs from those used in the MX-ONE.

This enables the Skype for Business client to make and receive external calls through a PC. The calls are routed from the Skype for Business / Lync Server 2013 server through the SIP trunk to the MX-ONE and further to the PSTN and vice-versa. MX-ONE and Microsoft SfB / Lync Server 2013 will behave as networked PBX's, as is typically the case when connecting systems via trunks in the MX-ONE.

2.12.3 MICROSOFT® LYNC RCC INTEGRATION WITH TR-87

TR-87 is support in MX-ONE for CSTA III allowing a third-party application to control an MX-ONE device via CSTA and SIP messages. This service can be used, for example, to connect MX-ONE and Microsoft Lync Server via a function called Remote Call Control.

Mitel has performed an integration validation between MiVoice MX-ONE and Lync Server 2013 via Remote Call Control, where tests were executed to assure the compatibility between the products.

The features that a Lync 2013 client can manage when integrated with MiVoice MX-ONE using RCC are:

- Make an outgoing call
- Answer an incoming call
- Transfer a call to another user (monitored transfer with current conversations)

- Single step transfer
- Forward an incoming call to an internal number (internal and private network extensions)
- Forward an incoming call to an external number
- Redirect an incoming call
- Place calls on hold
- Alternate (toggle) between multiple concurrent calls
- Answer a second call while already in a call
- Dial dual-tone multi-frequency (DTMF) digits

Note: Mitel has internally done successful validation of the RCC solution, via TR87 towards MS Lync 2013. Microsoft RCC feature, as used in the Lync Client, is available on an “as is” basis from Microsoft and therefore not officially supported. For this reason, it is no longer possible to get an official Microsoft certification with MS Lync 2013.

It should also be noted that this type of integration (e.g. RCC) is no longer supported by Microsoft with Skype for Business/Lync 2015. We therefore recommend the Skype for Business Plug-in that is part of the MiCollab suite that offers equivalent functionality. That capability is described in section 2.4.1.6, *MiCollab Plug-in to Lync/Skype for Business*. Also, refer to the MiCollab technical documentation - e.g. MiCollab 7.x Engineering Guide, etc. - for more details around this integration.

3 LICENSING MODELS IN MX-ONE

The licensing structure in MX-ONE is constantly evolving as the demand is changing. While the system has transformed into a SIP based software system, complemented with a wide range of hardware options, alternative licensing and business models are needed.

Capital Expenditure (CAPEX) based business model

À-la-carte configuration and licensing is the classic model. Through this model the system can be tailor-made in order to fulfill the various needs for complex or specific system deployments. À-la-carte is the model to be used for systems migrating from earlier versions towards MX-ONE 6.

To address the demand for a simplified structure, and to align with expectations pure IP-based systems MX-ONE also offers the Feature Bundle based licensing model. Through this model competitive user-bundles are offered, including both the MX-ONE user functionality and a range of matching UCC features in MiCollab. The different "feature-level" profiles or pre-set user profiles are:

- Basic user
- Entry UC user
- Standard UC user
- Premium UC user

For more information about the MX-ONE licensing see New sales & Add-on or Feature based ordering information document for MX-ONE and Mitel CPQ tool.

Operating Expenditure (OPEX) based business model

Furthermore, MX-ONE supports customers and partners who are looking forward towards new business models. In addition to the classic à-la-carte configuration model and the Feature Based configuration model offered with a Capital Expenditure (CAPEX) based business model, the MiVoice MX-ONE also offers native support for cloud-based deployments and an Operating Expenditure (OPEX) based business model. This subscription-based business model is based on the Feature Based configuration model and is offered by partners who qualifies for delivering and charging for the SaaS/OPEX model where customers are charged for actual license usage on monthly basis.

Each SaaS licensed MX-ONE system will automatically send monthly license usage reports as the basis for all invoicing. The license usage information for each MX-ONE SaaS system is sent in the form of an e-mail with a CSV attachment to pre-determined recipients at the Partner and Mitel, which is imported into the MX-ONE license reporting tool for usage based invoicing.

For more information about the MX-ONE SaaS licensing see ordering information document for MX-ONE and Mitel CPQ tool.

3.1.1 UNIFIED COMMUNICATION AND COLLABORATION VIA MICOLLAB

MiCollab user licenses are delivered in the form of feature based bundles together with MiVoice MX-ONE, both in the classic and in the Feature Based license models. The bundles have a tiered structure similar to the MX-ONE Feature Based packages. To minimize complexity, UCC is offered as 3 different license bundles available with pre-defined clients and user functionality provided to the end-users. The MiCollab UCC offer is natively included in the MX-ONE Feature Based licensing model. For the MX-ONE "à-la-carte" licensing model the MiCollab UCC offered as an option, as any other end-point or application. Whenever MiCollab license bundles or options are ordered in the à-la-carte model, the appropriate MX-ONE à-la-carte licenses are automatically included to simplify the ordering process.

For more information about the MiCollab with MX-ONE licensing see ordering guide document for MiCollab and Mitel CPQ tool.

4 REFERENCES

For more information see www.mitel.com, Customer Product Information & Mitel On-Line as well as Mitel InfoChannel.