Aastra MX-ONE® Telephony System

Aastra MX-ONE is a complete IP-based communications system. Not only does MX-ONE provide excellent voice communications, it also provides the necessary applications to offer true mobility and Unified Communications. MX-ONE is based on an open software and hardware environment, using standard servers with a SUSE LINUX® operating system.

Aastra MX-ONE focuses on enhanced SIP implementations to target our strategy regarding openness, cloud computing and video support. Customers can also benefit from SIP end-user services and the management solution continues to be improved with its single point of entry approach, offering a simple and efficient way of managing the system.

MX-ONE - Building Blocks

The MX-ONE communications system consists of two basic components: MX-ONE Telephony Server and MX-ONE Media Gateway.

MX-ONE Server Options

High-capacity Telephony Server software, running on a standard server platform, can handle up to 15,000 SIP users and 15 media gateways. Servers and media gateways can be combined to form either a complete centralized system or a large multi-server distributed system over a geographically dispersed area. Up to 124 servers can be combined in a single system with up to 500,000 users.

- **Turn-key server solution**, based on HP ProLiant servers. Both the **LINUX®** operating system and Telephony Server application software are installed and pre-configured

Main technical characteristics:

- Intel® Xeon® Processor E5620: Quad Core, 2.40 GHz
- 6 GB RAM, 96 GB HDD, redundant fans
- Redundancy options:
  - > RAID hot-plug disk drives
  - > Redundant power supply

- **A signed software** image that can be installed on an HP ProCurve ONE zl Services Module

- **Software-only** is available for use with general standard servers. For more detailed information, please, see the table on page 3

- **Aastra Server Unit - Embedded (ASU-E)** can be delivered as a part of MX-ONE Lite GW or MX-ONE Classic GW version or separately in a 1U chassis, making extra space in the Lite and Classic for 2 more extension boards. It can also be used to host a variety of applications, such as messaging applications or any other Aastra certified applications you may want to install. The server board requires little space and only 35 W of power. It is able to monitor CPU temperature and send an alarm if the predefined level has been exceeded

Main characteristics:

- Core™ 2 Duo Processor 2.26 GHz
- 4 GB RAM, expandable up to 8 GB
- One SATA HDD with 160 GB, expandable to 2x160 GB SATA HDD (the HDD can be changed to SSD, 80 GB each)
- SW RAID 1 support
- 2 Ethernet ports
- 1 VGA port
- 4 USB 2.0 ports

MX-ONE 1U chassis with ASU-E

MX-ONE Media Gateways

MX-ONE Media Gateways come in different configurations and sizes, offering scalability and flexibility to meet the needs of enterprises. The Media Gateway Unit (MGU) provides the opportunity for a multi-gateway configuration, i.e. up to 15 MGUs can be associated to one server. There are two different versions of MX-ONE Media Gateways:

- MX-ONE Lite – 3U chassis, more suitable for the IP environment and branch office scenario with the space for one MGU board, one ASU-E, plus one or three boards, depending on an external server is used or not

MX-ONE Lite

- MX-ONE Classic – 7U chassis, targeted mainly for the mixed environments with space for 16 boards

MX-ONE Classic

MGU

Media Gateway Unit (MGU) main characteristics:

- 8 E1 interfaces
- 256 RTP resources (concurrent calls)
- Used for MX-ONE Lite and MX-ONE Classic

MX-ONE Management Suite

Aastra MX-ONE offers a complete range of applications for administrators and end-users. From the perspective of end-user administrators, MX-ONE appears as one system. MX-ONE Manager is a complete management suite consisting of:

- MX-ONE Manager Telephony System – For configuration of system functions
- MX-ONE Manager Provisioning – For user configuration data
- MX-ONE Manager Availability – For system performance management

MX-ONE Main Functionality

Powerful range of features

- Support for full range of SIP terminals and soft phones, as well as H.323 terminals, Mobile Extension, Wi-Fi, DECT/SIP DECT and TDM (analog and digital) terminals
- 500 system and end-user features, such as different types of diversion, free seating and executive/secretary services
- Attendant services, like PC-based workstation, directory search, as well as traditional services including camp-on busy
- System based services such as IP and QSIG based networking with full feature transparency, routing, number analysis, call information logging, CSTA version 3 and a wide range of applications
- Full range of public trunk interfaces including ISDN, CAS/MFC, DPNSS and analog trunks
- Full support for SIP trunking with certification from many service providers worldwide

MX-ONE Redundancy

HLR redundancy

IP/SIP extension implementation in MX-ONE is designed in accordance with the HLR architecture used in mobile networks. An IP user has a "home server" that corresponds to the Home Location Register (HLR) in mobile networks. The user can be handled by any server in the system as long as the home server can be accessed.

A Visitor Location Register (VLR) is created in the visited server and part of the user data is copied from the HLR to the VLR. The Gatekeeper/SIP Proxy database redundancy feature in MX-ONE allows an IP user to register with any available server in the network and the IP user can be reached by incoming calls even if the "home server" is out of service.

Server bonding redundancy

By server bonding, two or more Ethernet interfaces look like one logical interface to the MX-ONE server, all in order to improve availability and performance. Thanks to this method, MX-ONE offers a higher level of reliability. In the case one interface or switch fails the other one takes over.

UC deployments with third-party products

CSTA V3 – XML support

The latest version of MX-ONE supports CTI monitoring in accordance with Computer-Supported Telecommunications Applications 3, also called CSTA Phase 3. The CSTA Phase 3 is based on the ECMA-269 standard. The existing CSTA Phase 1/TSAPI implementation is also supported, as was the case in previous releases.

Microsoft® OCS 2007 R2/Lync 2010/Exchange 2010 UM certification

MX-ONE Telephony Server can be integrated with the Microsoft Office Communications Server (OCS) 2007 as a complementary solution, providing end-user services like instant messaging and integrated presence. Certification between MX-ONE and Microsoft OCS 2007 R2 is based on direct SIP connection between the servers. MX-ONE can also be integrated with the Microsoft Lync and Microsoft Exchange Server 2010 UM as a complementary solution providing end user services like voice mail and auto attendant.

IBM® Lotus Sametime

MX-ONE has been verified with IBM Lotus Sametime Unified Telephony (SUT1) middleware, offering a direct SIP integration between MX-ONE and IBM Lotus Sametime. A further level of integration is provided through our A2P2 certification of iLink's TeamCall middleware and Sametime client plug-in, offering third party call control of MX-ONE terminals with the IBM Lotus Sametime client.

HP ProCurve Alliance
The MX-ONE is certified with the HP ProCurve ONE Services zl Module as the first UC and mobility application for integration with HP's market-leading networking infrastructure.

Unified Communications

MX-ONE offers a variety of end-user Unified Communications options that can be tailored to suit individual telephony needs.

- The **Aastra Mobile Client (AMC**) is a mobile terminal client that creates automatic access to the Aastra Mobile Extension service for mobile integration with the communications system. The optional dynamic mobile Least Cost Routing (LCR) feature minimizes mobile roaming charges by having the call setup routed through the least costly path.
- **AMC+** provides some extra services on top of AMC, like dual mode, directory search etc. It will turn a mobile phone into a SIP phone when the user is in range of Wi-Fi access and in that way drastically reduce the cost. The AMC+ UC (presence and IM) functionality can also make your team working more efficient and lower the mobile SMS cost.
- **Unified Messaging (OneBox)** provides end-users with a complete range of voice messaging options, starting from basic voice mail to a comprehensive unified messaging system (voice/fax/e-mail services). It is fully compatible with Microsoft Outlook, Lotus Notes and Novell Groupwise, with a variety of integration options.
- The **Contact Management Suite (CMG)** offers advanced operator functionality and all core features of UC with focus on open standards. The CMG suite is divided into four user groups: attendants, business users, automatic services and administrators. CMG offers everything from attendant applications, visit management, calendar connection, tools for collaboration and conferencing to the soft phone clients etc. CMG is integrated with Microsoft Office/ Outlook, Lotus Domino/Notes and Novell/GroupWise.
- **The Aastra BluStar SIP soft phone** provides end-users with easy and efficient use of their phones from any computer, regardless of location, as long as there is a connection to the company network. Besides a complete range of SIP based telephony services, it provides corporate directory look-up, outlook contacts integration, click-to-dial, call logging, presence management, instant messaging, teleconferencing, etc.

- Additionally, the MX-ONE communications system can be combined with the **Aastra Solidus eCare** multimedia contact center application suite for top-of-the-range customer care services. Solidus eCare is a suite of applications and services that offers true skills-based routing functions, agent desktop applications, as well as management applications for server-based contact centers.

User Capacity* for Aastra MX-ONE/Server									
Config.	**SIP**	**H.323**	**DECT**	**Digital**	**Analog**	**Mobile**	**S0**	**CAS ext**	**Total**
1	15,000								15,000
2	14,000	1,000							15,000
3	13,360	1,000	640						15,000
4	12,720	1,000	640	640					15,000
5	10,160	1,000	640	640	2,560				15,000
6	5,160	1,000	640	640	2,560	5,000			15,000
7	4,840	1,000	640	640	2,560	5,000	320		15,000
8	4,200	1,000	640	640	2,560	5,000	320	640	15,000

** Dependent on server and gateway capacity*

MX-ONE V.4 Technical Data	
Supported standards	
	SIP V2*, IPv4, T.38 Fax
	H.323 v4 ; both extension and trunk side
	DHCP, HTTP, HTTPS, Telnet, TFTP, SNMP, FTP, SSH, TLS, SRTP Web Services: CSTA Phase 1 and 3; XML, ANS.1, TSAPI, TAPI
Supported voice codecs	
	G.711 with a-law and µ-law, G.729a, G.729ab with voice activity detection (silence suppression & comfort noise generation), G723.1, G722 (extension side) and G.168 (echo cancellation)
Quality of Service	
	Diffserv (RFC 2474) for trunks and extensions
	IEEE802.1 p/Q extension-side only
	Compatible with cRTP header compression algorithms
Call Accounting	
	CDR/SMDR records compatible with third party accounting systems

** Full support for SIP V2 for both extension and trunk-side applications. Compliance with more than 40 SIP RFCs, providing interoperability with a wide variety of SIP terminals and SIP trunking service providers*

System Capacity:	Per Server	Per System
Servers	-	124
Media Gateway Units (MGUs)	15	1,860
PRIs (ISDN or QSIG)	64 E1 or 87 T1	7,936 / 10,799
Users	15,000	500,000

Minimum Requirements for «Software-Only» Option		
Up to 900 Users	**Up to 2,500 Users**	**Up to 15,000 Users**
SUSE LINUX Enterprise Server 10 SP3	SUSE LINUX Enterprise Server 10 SP3	SUSE LINUX Enterprise Server 10 SP3
CPU, 3 GHz	CPU, 2 GHz (Core Duo Processor)	CPU, 2.4 GHz (Quad Core Processor)
RAM, 2 GB	RAM, 2 GB	RAM, 6 GB
Hard drive, 40 GB	Hard Drive, 72 GB	Hard Drive, 72 GB
	2 LAN ports	2 LAN ports

MX-ONE Lite and MX-ONE Classic - Power Supply			
	Input Voltage	**Output Voltage (V DC)**	**Max Power Consumption**
External AC/DC (Classic)			
	110-230 V AC	-48	250 W/power module
Built-in AC/DC (Lite)			
	90-240 V AC or -40 - 56 V DC	-48	130 W

MX-ONE System Management Suite	
	MX-ONE Manager Telephony System* - central management of MX-ONE
	MX-ONE Manager Provisioning for all user data for MX-ONE, OneBox, CMG, AMC etc.
	MX-ONE Manager Availability

**See MX-ONE Manager Telephony System datasheet for details about functions and features*

MX-ONE Optional Applications	Terminals
OneBox (Unified Messaging)	Analog phones: Aastra Dialog 4100 and Aastra 7100a
Contact Management (CMG) Product Suite	Digital phones: Aastra Dialog 4200
Solidus eCare (contact center application)	IP phones: Aastra Dialog 4400 IP and Aastra 7400ip (incl. Dialog 5446 Premium)
Aastra Mobile Clients (AMC / AMC+)	Aastra SIP phones: Aastra 67xxi family
BluStar Client (soft phone)	Aastra Cordless Phones: DT69x, DT390, DT4x2, DT4x3
InAttend (attendant console)	SIP DECT: Aastra 142d, Aastra 610d, Aastra 620d, Aastra 630d
Aastra Collaboration Link	
Hospitality solution	

**See terminal datasheets for functionality with MX-ONE communications system*

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