

<b>Mutare Communication Server (MCS) Specifications</b>	Document #: 145
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## Server Specifications

A medium to high-end equipped dedicated server is required. Generally, choose the fastest processor speed available or one level down. You do not need processors enhanced for graphics. The hard drive holds programs and small data files. Standard configuration supports up to 48 ports. For configurations over 48 ports, contact Mutare.

### Minimum Server Hardware Specifications (TDM):

- Intel Xeon Dual or Quad Core CPU (multiple CPUs recommended)
- At least 4 GB RAM (8+ GB RAM recommended)
- 120 GB hard drive space minimum (fast SCSI recommended; SATA acceptable).
- At least 100 Mbps NIC for Ethernet connection to TCP/IP LAN.
- One full-length PCI-E (PCI Express) slot per Dialogic board used. PCI-X or 5V PCI Legacy slot are also acceptable. Let your Mutare Software project manager know if this option is required.  
*NOTE: For 12-port analog and dual T1 digital cards, the PCI-E slot must either (a) support Power Budgeting, or (b) be x4 or higher to support these cards.*
- Windows Server 2012 R2 or Windows Server 2008 R2 with latest SP recommended. Please contact your Mutare Project Manager if other Windows OS is required.
- Remote Access – VPN Access to network and Remote Desktop to server.

### Minimum Server Specifications (SIP):

- Intel Xeon Dual or Quad Core CPU (multiple CPUs recommended)
- 8 GB RAM
- NOTE: for SIP implementations over 50 ports, additional CPUs and RAM may be needed
- 120 GB hard drive minimum (fast SCSI recommended; SATA acceptable).
- At least 100 Mbps NIC for Ethernet connection to TCP/IP LAN.
- No PCI slots necessary. Quad core or better processor highly recommended.
- 48 SIP port is maximum per server.
- **Physical Server**
  - Windows Server 2012 R2 with latest SP  
OR
  - Windows Server 2016
- **Virtual Server**
  - VMware® ESXi versions 4.1 through 6.5, and the following of Windows guest operating systems:
    - Windows Server 2012 R2 with latest SP  
OR
    - Windows Server 2016
  - Microsoft Hyper-V is not supported.
  - Remote Access – VPN Access to network and Remote Desktop to server.

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### Telephony Requirements

The MCS can support up to 96 telephony ports or channels in a single server for analog or digital configurations. The MCS can support up to 48 SIP ports in a single server. The ports/channels are connected to the MCS either directly from the Central Office (CO) or behind a Private Branch Exchange (PBX) or via SIP.

### Dialogic Boards (Analog or Digital)

Mutare uses four different types of Dialogic Media Processing Boards:

- 4-Port Analog – D/41JCT-LS (Product Code: D41JCTLSEW)  
[http://www.dialogic.com/products/tdm\\_boards/media\\_processing/D41JCT\\_Boards.htm](http://www.dialogic.com/products/tdm_boards/media_processing/D41JCT_Boards.htm)
- 12-Port Analog – D/120JCT-LS (Product Code: D120JCTLSEW)  
[http://www.dialogic.com/products/tdm\\_boards/media\\_processing/D120JCT\\_Boards.htm](http://www.dialogic.com/products/tdm_boards/media_processing/D120JCT_Boards.htm)
- Single T1 – D/240JCT-T1 (Product Code: D240JCTT1EW)  
[http://www.dialogic.com/products/tdm\\_boards/media\\_processing/D240-300JCT\\_Boards.htm](http://www.dialogic.com/products/tdm_boards/media_processing/D240-300JCT_Boards.htm)
- Dual T1 – D/480JCT-2T1 (Product Code: D480JCT2T1EW)  
[http://www.dialogic.com/products/tdm\\_boards/media\\_processing/D480-600JCT\\_Boards.htm](http://www.dialogic.com/products/tdm_boards/media_processing/D480-600JCT_Boards.htm)

Many different combinations of ports can be achieved with these cards. However, analog and digital cards should not be mixed on a single server.

Multiple cards in a single server must be connected with a Multidrop CT Bus cable. This is included with your order when cards are purchased from Mutare. See each card's datasheet via the links above for more information.

Licenses for port usage will be purchased with your application. Contact your Mutare sales representative for more information.

### Connectivity

Phone lines can either be connected to the MCS straight from the CO or from the PBX:

#### *Analog*

Analog pairs (POTS lines) are connected to the cards on the back of the server via RJ11 jacks. Analog ports must be loop start (not ground start). Please ensure that the "cut off on disconnect" feature is enabled for the analog lines.

When the 12-port card is purchased from Mutare, the appropriate "two-to-one" conversion cable is included with your order. See the 12-port card's datasheet via the link above for more information.

#### *Digital*

T1s should be configured as ISDN PRI only. T1 circuits are connected to the cards on the back of the server via RJ48C jacks. Mutare recommends the following specifications when ordering or configuring phone lines:

- ISDN PRI Trunks, configured 23B+D, NI-2 protocol.
- 2-way, with Called Party Number.
- NOTE: There must be a CSU/DSU between the T1 termination and the MCS. Note that some PBX types do not need a CSU/DSU (e.g. Avaya CM). Contact your Mutare Project Manager for details.
- NOTE: If call transferring is required for your application, the CO or PBX **must** supply the ability for the T1 circuit to use Two B Channel Transfer (TBCT).

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If connecting your Avaya Communication Manager to the MCS, see this Avaya document:  
[http://www.avaya.com/master-usa/en-us/resource/assets/applicationnotes/mutare\\_acm.pdf](http://www.avaya.com/master-usa/en-us/resource/assets/applicationnotes/mutare_acm.pdf)

### *SIP*

A SIP proxy server or gateway is required. The MCS will communicate through the customer-provided SIP proxy server or gateway. Most MCS applications simply act as a SIP trunk.

If connecting your Avaya Communication Manager to the MCS via SIP Enablement Services (SES), see this document: [http://www.mutare.com/data/td/228-MCS\\_SIP\\_ACM.pdf](http://www.mutare.com/data/td/228-MCS_SIP_ACM.pdf) The MCS can connect directly to the CM or connect to the Session Manager.

### **Backups and Anti-Virus Software**

Mutare's recommendations for backups and anti-virus software are:

- Backups: Mutare recommends adding the SQL Server database as well as the \OD folder and subfolders to your backup routines.
- Anti-virus: Feel free to install anti-virus software as required by your organization. Please add the \OD folder and subfolders and the SQL Server folders to your exclusions lists for on-demand scanning.