MITEL

COMMUNICATIONS DIRECTOR

INSTALLATION AND ADMINISTRATION GUIDE
FOR VIRTUAL MITEL COMMUNICATIONS DIRECTOR (vMCD)
RELEASE 6.0

MITEL®

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Installation and Administration Guide for
Virtual Mitel Communications Director (vMCD)
Release 6.0

Chapter 1: Introduction

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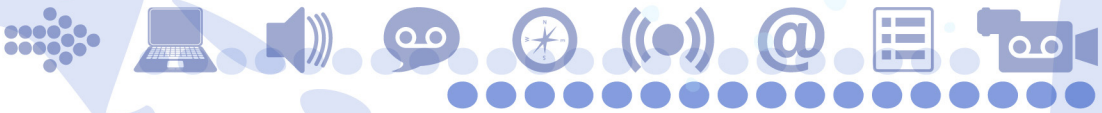


Chapter 1

Introduction

About this Guide

The Virtual Mitel Communications Director (vMCD) Installation and Administration Guide is intended for Distributors and Resellers who are installing and configuring MCD as a software blade on a Virtual Appliance created with VMware.

MCD introduces separate brands for the Mitel range of hardware and software-only solutions for the IP communications market. Mitel Communications Director (MCD) is the brand name of the call-processing software that runs on hardware platforms such as the 3300 ICP and industry standard servers. The 3300 ICP name continues as the brand for Mitel hardware platforms that run MCD.

This guide describes the installation, administration, maintenance, and troubleshooting of the virtual MCD (vMCD). It does not describe the setup and operation of the VCenter Server with the VSphere Client. Refer to the VMware documentation for details.

About the Virtual Mitel Communications Director (vMCD)

VMware recently introduced the vApp, a software solution optimized for the cloud OS. A vApp is a logical entity composed of one or more virtual machines, which can be managed as a unit. The vApp specifies and encapsulates components of an application (such as Mitel Communication Director (MCD)) as well as the operational policies and service levels associated with it. The vApp gives application owners (such as Mitel) a standard way to describe operational policies for an application, which the cloud OS can consistently interpret and run. The vApp is a broad category of virtual applications that are built by independent software vendors (ISVs), system integrators, value-added resellers, and onsite IT administrators.

The Open Virtualization Format (OVF) standard 1.0 is employed to represent a single virtual machine or combination of multiple virtual machines. Note that OVF files are recognized by their *.ova* file extension. The Mitel Communication Director is a virtual application (vApp) which is deployed through vCenter Server with the vSphere Client. The MCD vApp runs on vSphere 4.1, 5.0, or 5.1.

vMCD contains the following software/components:

- MCD for ISS. Please refer to the vMCD Release Notes to confirm the proper Release version currently supported.
- Mitel Standard Linux (MSL), the base operating system on which all other applications reside.
- VMware tools used to manage vMCD
- Embedded Voice Mail Application prompts

vMCD is based on the 3300 ICP software, utilizing only its call control aspects, essentially treating voice as an application independent of any hardware.

vMCD has the following characteristics:

- a hardware-independent, call-control only application
- a vApp that encapsulates both MSL and MCD which is deployed using the vSphere Client. The vSphere Client can be used to deploy vMCD directly onto the ESX/ESXi server or through the vCenter Server.
- Layer 2 switching and VLAN tagging performed by a Layer 2 switch external to vMCD
- includes Media Server functionality such as conferencing, music on hold, and group paging

What's New in this Release?

The following vMCD enhancements are available in vMCD Release 6.0:

- The introduction of support for Medium business configuration during the OVF Template deployment.
- Support for MSL Release 10.0.

About the Documentation Set

To access the documentation pages at Mitel OnLine, go to **http://edocs.mitel.com**. You require a Mitel Online username and password to access the documents on this web site.

Mitel Communications Director:

- *Installation and Administration Guide for Virtual Mitel Communications Director (vMCD)* (this guide) provides installation, administration, maintenance, and troubleshooting instructions for vMCD.
- *Mitel Communications Director for ISS System Administrator Online Help* provides administration and programming procedures for the MCD software blade.
- *Mitel Communications Director for 3300 ICP System Administration Tool Help* provides administration and programming procedures for the call control aspects of the product.

Access Product Documentation

1. Go to **www.edocs.mitel.com**.
2. Select a documentation suite from one of the following drop-down menus:
   - Communications Platforms
   - Messaging
   - Applications & Solutions
   - Software Development
   - End User Documents
3. Log in if asked to do so.

Note: For Technical Bulletins (TB) and Release Notes (RN), click **Knowledge Base** in the **Other Resources** window in the left-side navigation pane.

4. To access IP Phone documentation, select **PDF Guides** from the **End User Documents** drop-down menu at the top of the page.

View or Download a Document

To view a document:

- Click the document title.

To download a document:

- Right-click on the document title, and then click **Save Target As**.
  OR
  When viewing a PDF document, click the disk icon.

Applications Management Center (AMC) Licensing

The Mitel Applications Management Center (AMC) is an online service accessed through the web that provides licensing, monitoring, management, and a variety of other services for installations of software applications.

About AMC Licensing

The AMC allows licensing keys to be automatically created at all times (24 hours a day, 7 days a week) through remote license keys generation.

The AMC is also the procurement and provisioning interface for AMC-delivered products and services. As a reseller of Mitel products, you receive a unique licensing account on the AMC. By logging in to the AMC with the username and password you are given when you obtain your account, you can view a list of your AMC-enabled products, check their status, and add services to any of them.

When you place a new order for products with the Mitel Customer Care Center, the order information is entered into the AMC system. The AMC places the purchased licenses into your licensing account for use in creating an application record. You must then log in to the AMC and create the application record; assign purchased products, features, and options to that application record; and then activate the customer's Mitel Standard Linux (MSL) operating system (OS) before you can install the MCD application.

vMCD uses the AMC to obtain licensing information, which is required for installing main base software, for installing upgrade software (language packs excluded), and for installing system option upgrade software (language packs excluded). You must install vMCD and then register it with the AMC online in order to be able to upgrade the MCD software blade and all purchased options.

vMCD also synchronizes its licenses periodically with the AMC. A failure to synchronize with the AMC within a timely period may results in having the MCD application enter into license violation. When working off-line where connectivity to the AMC is restricted, it is recommended to use a Designated License Manager (DLM) as a replacement for the AMC. The recommended license configurations are described in "vMCD Licensing" below.

vMCD is delivered in a software only format for field installation on a VMware server running vSphere 4.1, 5.0,or 5.1, as specified in the *Mitel Communications Director for Industry Standard Servers (ISS) and Virtual Mitel Communications Director (vMCD) Engineering Guidelines*. The software can be obtained by downloading the OVF (.ova) file from Mitel OnLine and then importing the file onto the server.

vMCD Licensing

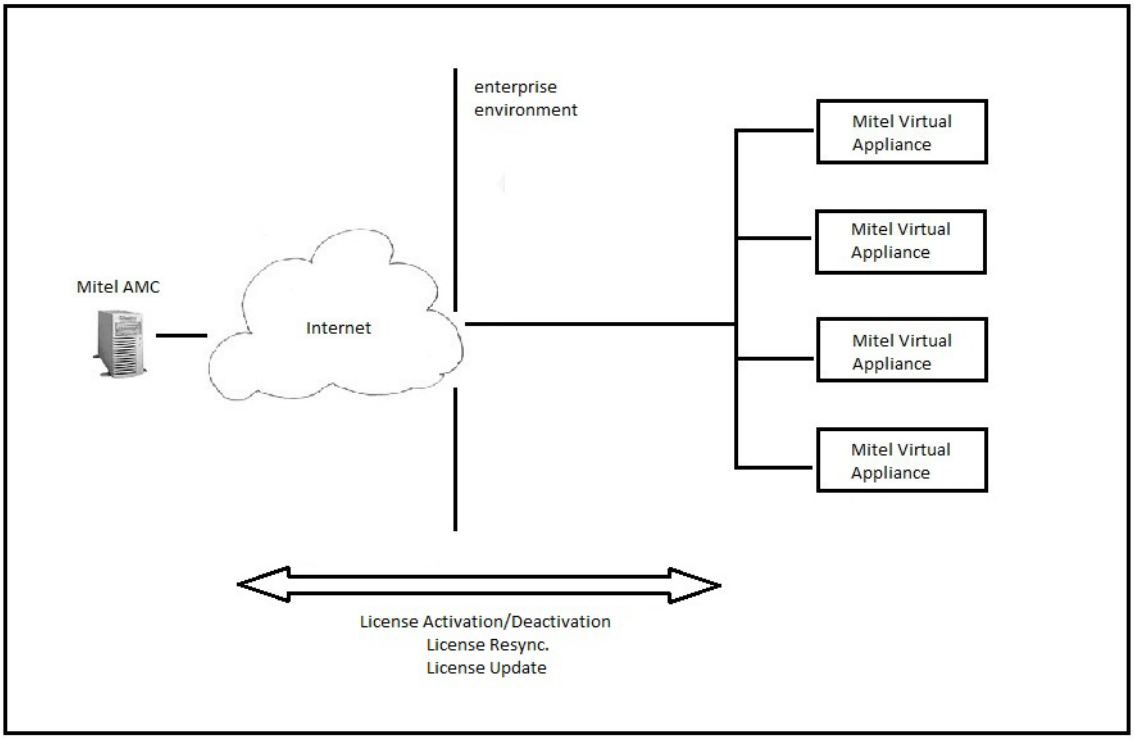
In Release 6.0, vMCD supports three distinct mechanism to activate, update, and synchronize licenses with a "license server":

- Direct on-line connectivity with the AMC

- On-line connectivity with the AMC through an enterprise firewall
- Use of a Designated License Manager (DLM) as the "license server"

Direct on-line connectivity with the AMC

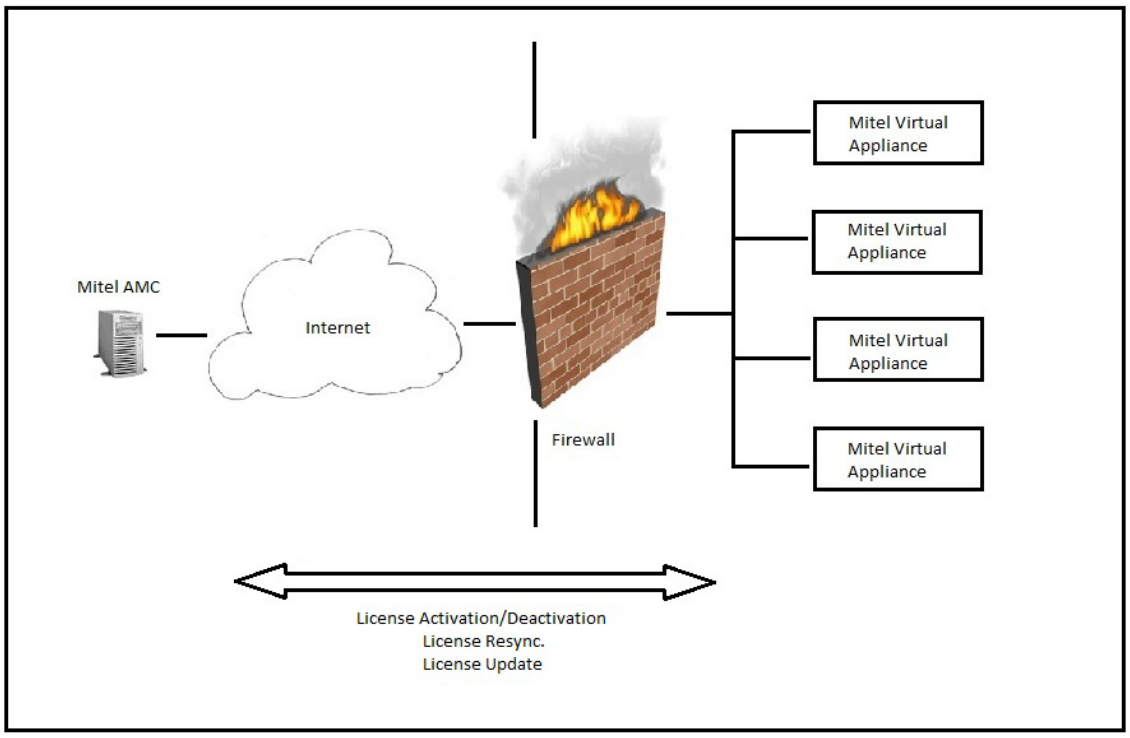
The following figure illustrates how the Mitel Virtual Appliance interacts with the AMC to activate and synchronize licenses.



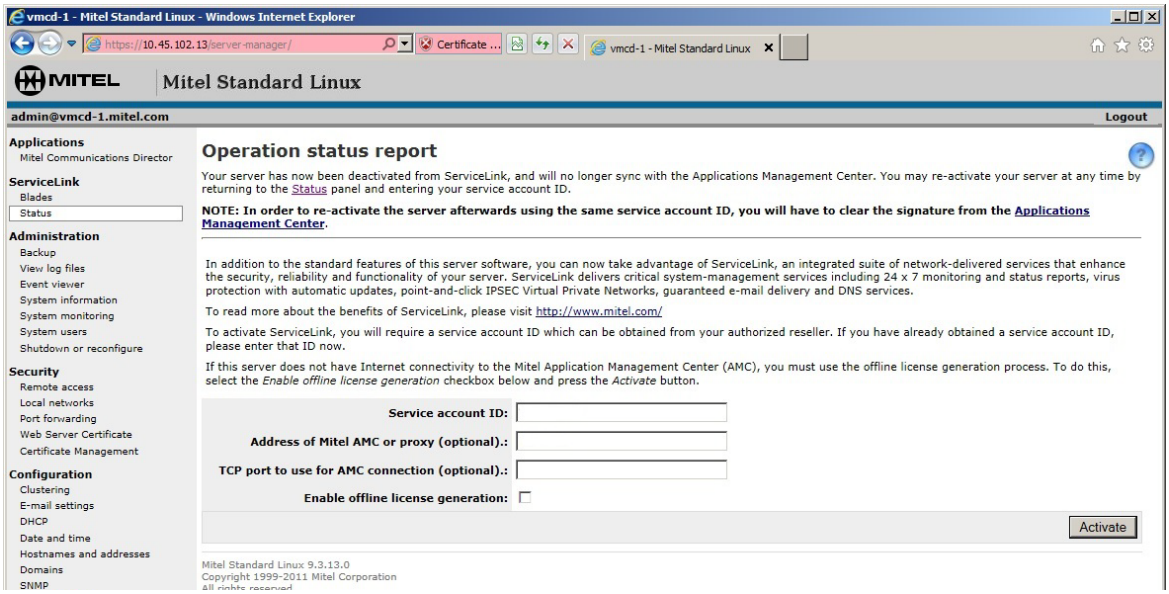
Since there is no firewall filtering network traffic between the Mitel AMC and Mitel Virtual Appliances, licensing can be done online without restrictions. License requests and responses can flow through the Internet without any blockage. One of the main disadvantage of this configuration is the security exposure to the hostile Internet environment.

On-line connectivity with the AMC through an enterprise firewall

The following figure illustrates the network connection between the Mitel AMC and Mitel Virtual Appliances with a firewall provisioned to allow Mitel licensing traffic.

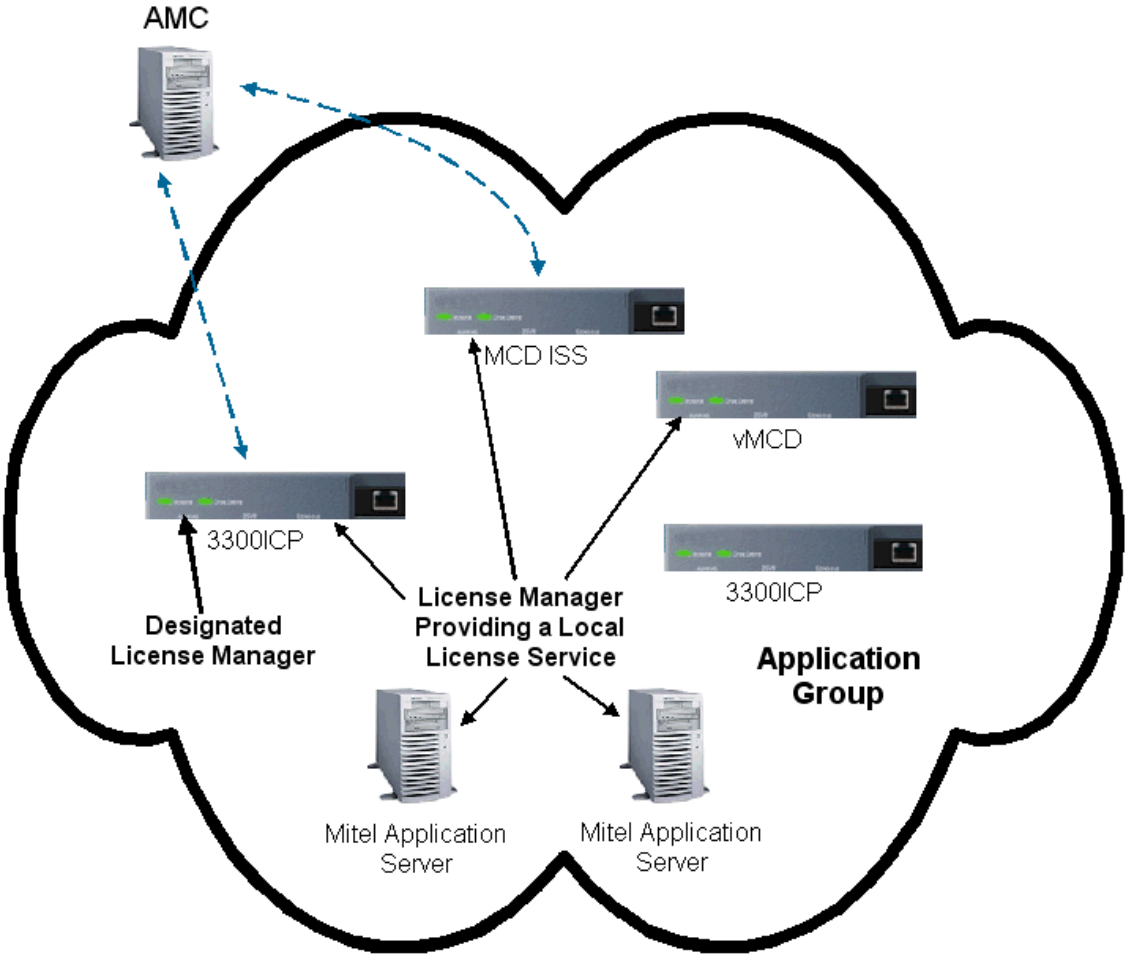


Mitel online licensing requires at least one of the TCP port 22, 8222, or 80 be opened to allow online licensing network traffic (SSH2) to flow through. The firewall is acting as a licensing proxy server and is configured in the Server Manager status panel when vMCD is initially licensed as illustrated below:



Use of a Designated License Manager (DLM) as the "license server"

This configuration requires that vMCD be configured as member of an Application Group and share its licenses with the Designated License Manager (DLM), as illustrated in the figure below. Please refer to the *Mitel Communications Director for 3300 ICP System Administration Tool Help* for a description of how to configure vMCD as a member of the Application Group using a DLM.



Requesting a New AMC Account

To request an AMC account, send an e-mail containing the following information to amc_accounts@mitel.com:

- Name of your certified Technician
- Full company name
- Company mailing address
- Phone 1/Phone2

- Fax number
- Admin e-mail (address of the person who should receive notification of service expiry dates)
- Tech e-mail (address of the person who should receive notification of update releases and other technical notices)
- Company URL (if any)
- Your Mitel SAP account number
- Specify if you would like your user ID and password delivered to you by fax, phone, or both (for security reasons user IDs and passwords are not sent by e-mail).

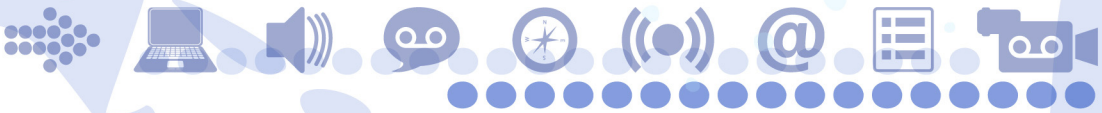
Note: Please allow two business days for your AMC account to be created.

Accessing your Account

To access your account for the first time:

1. Go to the Mitel Online login page and log in to your Mitel OnLine account.
2. In the grey menu bar, point to Online Tools and then click AMC.
3. Sign in with your unique AMC ID and password to establish your "single sign on". On subsequent visits, you access your AMC account directly after signing in to Mitel OnLine.

For information about using the AMC, click the online Help link in your AMC account.



Chapter 2

Installation

Overview

vMCD is installed using the vSphere Client connected directly to the ESX/EXSi 4.1, 5.0, or 5.1 server or through the vCenter Server.

The MCD Virtual Appliance must be installed on a Nehalem generation server running VMWare ESXi 4.1, 5.0, or 5.1.

Collect Site Requirements

The following table itemizes the information you will need on hand during installation and configuration. For efficient installation, it is recommended that you gather this information beforehand.

Item		Notes	Your Information
1.	Administrator Password	For password strength, choose a password that contains a mix of upper and lower case letters, numbers, and punctuation characters, and that is not a dictionary word.	
2.	Domain Name of MSL Server	Names must start with a letter; can contain letters, numbers, and hyphens.	
3.	System Name of MSL Server		
4.	MSL Server IP Address Subnet mask. Gateway IP address	The MSL Server IP address An appropriate subnet mask for the MSL Server IP address. The IP address of the router.	
5.	System IP Address for MCD for ISS blade	The IP address for the MCD for ISS system. Note that this address must be in the same subnet as the MSL address.	
6.	Application Record ID	The number generated when you purchase the MCS product from AMC.	
7.	vSphere Client application installed on a PC	The vSphere Client is used to deploy vMCD. The vSphere Client acts as a console to operate virtual machines and as an administration interface into the vCenter Server systems and ESX/ESXi hosts. Refer to the VMware website for detailed installation procedures and additional documentation.	

Item		Notes	Your Information
8.	(Optional) vCenter Server(s) installed on the network	A service that acts as a central administrator for ESX/ESXi hosts connected on a network. This service directs action on the virtual machine and the hosts. The vCenter Server is the working core of vSphere. Refer to the VMware website for detailed installation procedures and additional documentation.	
9.	ESX/ESXi 4.1, 5.0, or 5.1 installed on the server	Use the latest software version as specified in the *Mitel Communications Director for Industry Standard Servers (ISS) and Virtual Mitel Communications Director (vMCD) Engineering Guidelines.*	

Requirements

vMCD must be installed on servers as specified in the *Mitel Communications Director for Industry Standard Servers (ISS) and Virtual Mitel Communications Director (vMCD) Engineering Guidelines*.

The minimum software release installed on the server must be as specified in the *Mitel Communications Director for Industry Standard Servers (ISS) and Virtual Mitel Communications Director (vMCD) Engineering Guidelines*.

Install the Software

Installing and activating vMCD consists of the following steps:

- Logging in directly to the ESX/ESXi hosts or to the vCenter Server using the vSphere Client application.
- Deploying vMCD as a virtual machine and virtual application operating on VMware vSphere 4.1, 5.0, or 5.1.
- Powering up the Virtual Machine and commissioning MSL/MCD.

Before you Begin

The following conditions must be in place before you begin the installation process:

- VMware ESX/ESXi release 4.1, 5.0, or 5.1 installed on an Intel based server with a minimum Xeon 55xx Series @ 2Ghz or better (supporting Core i7/Intel Nehalem architecture), with hyper-threading enabled.
- vSphere Client installed on a Windows workstation. Refer to the VMware website for detailed installation procedures and additional documentation.
- (Optional) vCenter Server deployed on the network. Refer to the VMware website for detailed installation procedures and additional documentation.
- Internet access to allow licensing from the Applications Management Center (AMC).
- A DNS server that is reachable from the platform.
- IP addresses available for MSL and the vMCD. Effectively, you need one address for MSL and one address for MCD for ISS on the same subnet as the MSL server. The addresses do not need to be consecutive.
- vMCD software is contained in an Open Virtualization Alternative (OVA) format archived file. This archive OVA file contains the OVF 1.0 descriptor and VMDK file.
- Verify that the correct versions of the software and applications are correct.
  Go to Mitel Online at https://www.ebiz.mitel.com. Point to **Support**, **Technical Support**, then click **Software Downloads**.
- If you are cloning the MCD virtual machine, or transferring the virtual machine to a different server you may need to clear the Hardware ID (part of the AMC process).

Install the vMCD Software

Installing the vMCD software includes deploying the OVA archived file, configuring the MSL server, and configuring the MCD for ISS software blade.

To deploy the MCD Virtual Appliance OVA archived file:

1. Retrieve the MCD VMware OVA archived file from Mitel on-line.
2. Launch the vSphere Client.

3. Click **File ->Deploy OVF Template. . .**.The *Deploy OVF Template* screen displays.
4. Select one of the following:
   - **Deploy from file**
     if the OVF template file was downloaded to the local computer or to a network share drive, then click **Browse** to locate the file.
     Note: On Microsoft Vista operating systems, select *.ova* in the **File Type** drop down menu.

     Caution: Do not install vMCD from any CD ROM drive that may be attached to the virtual machine. The CD ROM interface is not present in the vSphere Client and should not be added since it may impact the overall performance of the system.
   - **Deploy from URL**
     if the OVF template file is on the internet or accessible through a web browser; enter the URL of the location of the file.
5. Click **Next**. The *OVF Template Details* screen displays.
6. Click **Next**. The end user license agreement screen displays.
7. Click **Accept** to accept the license agreement, then click **Next**. The *Deploy OVF Template Name and Location* screen displays.
8. Enter a meaningful name for vMCD, or accept the default name.
   Click **Next**.
   Note: When deploying vMCD in a vCenter environment, the wizard may additionally prompt for a Datastore and Network Mapping if several options are available. Please contact your Data Center administrator for more details on which Datastore or Network Mapping to use.

   The *Deploy OVF Template Ready to Complete* screen appears.
9. Select **Small business, Medium,** or **Enterprise** as appropriate from the **Configuration** drop-down list. The **Resources required** area will show those requirements based on the selection.
   Click **Next**.
10. Select the Datastore where the virtual machine files will be stored. This option only appears if multiple Datastores are available.
    Click **Next**. The *Deploy OVF Template Disk Format* screen appears.
11. Click **Thick provisioned format**. This is the default selection.
    Click **Next**.
12. If the network defined in the OVF template doesn't match the name of the template on the host to which you are deploying virtual MBG, you are prompted to configure the network mapping. Contact your Data Center administrator for more details about which Network Mapping to use.
13. Click **Next**. The *Deploy OVF Template Deployment Ready to Complete* screen appears.

14. Review the information and click **Finish**.
    vMCD will be generated and deployed on the server.

    Time: This process may take up to 10 minutes to complete depending on network traffic and the performance of the server.

15. When the dialog indicating that the deployment is complete appears, click **Close**.
    The vMCD appears in the inventory list in the left side navigation pane.
16. Click on the newly created vMCD.
17. In the main display window on the right, click **Power on the virtual machine**.
18. When the vMCD has powered up, you can begin configuring the MSL server.

To configure the MSL server:

1. Open the virtual machine MSL Server Console in one of the following ways from within the vSphere Client:
   a. Right-click on the newly created vMCD and select **Open Console**.
   b. Click **Launch Virtual Machine Console** icon  in the tool bar.

      Note: VMware Tools are pre-loaded as part of vMCD.

   c. Click the **Console** tab in the main display window.
2. The MSL Server Console window appears. Place and click the cursor in the console window to continue. If at any time you want to have the cursor available for other desktop activities, press the CTRL + ALT.
3. Follow the MSL server configuration procedures as described in the *MSL Installation and Administration Guide*.
4. When the MSL server configuration is complete, it might be necessary to add a local network to MSL if you intend to access vMCD from a different network from which it is installed. The process consists of adding a local network, subnet, and router to the Local Networks panel in the server manager as follows:
   a. Login using the *admin* user ID and password created during the MSL server configuration.
   b. Using the arrow keys, select **10 - Access Server Manager**.
   c. Login using the same administrator user ID and password as in **Step a** above.
   d. Using the arrow keys scroll down to **Local Networks**.
   e. Use the down arrow key to select **Add Network**. Press ENTER.
   f. Use the down arrow key to enter the following:

      -Network Address (e.g. 10.0.0.0 if you intend to open up to the entire Class A subnet)

      -Subnet Mask (e.g. 255.0.0.0 if you intend to open up to the entire Class A subnet)

      -Router Address (e.g. Gateway IP provided during the MSL server configuration)
   g. Use the down arrow to select **Add**, then press ENTER.
      A status screen displays indicating success at creating the Local Networks.

h. Type **Q** to quit, then select **Exit** and **Yes**.

i. Using the down arrow key, scroll to **Exit** from the MSL Server Console.
Press ENTER.

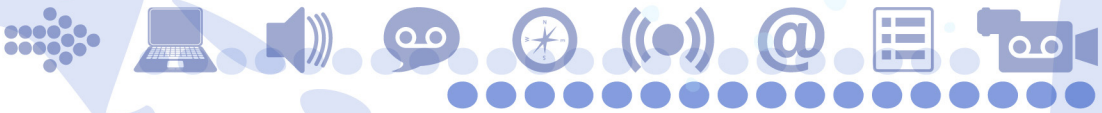
j. You are now ready to configure the Mitel Communication Director application.

To configure the Mitel Communication Director application.:

1. Open a browser window and enter the IP Address of the MSL Server (which was set up during the MSL Server configuration above).
2. Login into the Server Manager with the user name '*admin*' and the password you gave when configuring the MSL server.
The Server Manager is accessed by entering the following URL:
http://<*www.hostname*> OR <*IP address of the MSL Server*>
3. Click on **Status**, located in the left-side panel under the **ServiceLink** heading.
4. Enter the Application Record ID (ARID). Click **Activate**.
It may take a few minutes for the software to activate.
5. When activation is complete, click on **Mitel Communications Director**, located in the left-side panel under the **Applications** heading.
6. On the next screen click **Modify**.
7. Configure the System IP address for the MCD for ISS blade. The IP address should be in the MSL network subnet.See “Collect Site Requirements” on page 13.
8. Click **Save**.

Time: The IP address configuration may take up to 10 minutes to complete.

9. Test the installation:
   a. Log into the MCD for ISS System Administration Tool using the System IP address configured in Step 7.
   b. Navigate to the **License and Options (LOS)** form.
   c. Check that the license information is properly displayed.
   Ensure that licenses allocated in the **Licence and Options (LOS)** form are purchased. The MCD database restore will fail if the Allocated Licenses are not set properly.
   d. Check that configuration options (especially for non-North American deployments) are correct.



Chapter 3

Maintenance and Troubleshooting

Maintenance

Hardware

The MCD for ISS software blade does not require certain hardware, therefore the following maintenance commands are not required and not described:

- Show Status Redundant
- L2 maintenance commands
- DSP maintenance commands
- SWAP

Hardware maintenance is now specific to the servers and associated components upon which the software has been installed. Please refer to those manufacturer's documentation for hardware maintenance.

Software

Software maintenance involves upgrading the MCD application software. There are four scenarios by which to upgrade the MCD software:

- Re-deploy vMCD
- Upgrade the MCD for ISS blade from the AMC (which can be done either automatically using the online Upgrade capability within the Server Manager, or manually)
- Upgrade from earlier releases of vMCD

For the first two scenarios, backup the MSL and MCD databases prior to the upgrade and restore them after the upgrade.

Note: It is not necessary to back up and restore the MSL and MCD databases when using the automatic online upgrade utility in Server Manager. The online upgrade utility automatically backs up and restores the databases.

The following guidelines are for re-deploying vMCD versus upgrading the MCD for ISS software blade:

- For a new Software Release, the required software upgrade method is to re-deploy vMCD unless specified otherwise in the Software Release Notes. A new vMCD would typically contains a new MSL server version.
- For a Software Update (SP) release or patch, an allowed software upgrade method is to upgrade the MCD for ISS software blade from the AMC unless specified otherwise in the Software Release Notes.

Caution:During the upgrade process, vMCD may need to be restarted which will result in service degradation.

Re-Deploy vMCD

The vMCD re-deployment upgrade process consists of backing up and restoring the MSL and MCD databases, removing the vMCD, and re-deploying vMCD.

Caution:Do not install or upgrade vMCD from any CD ROM drive that may be attached to the virtual machine. The CD ROM interface is not present in the vSphere Client and should not be added since it may impact the overall performance of the system.

Caution:Information entered during the MSL configuration such as the System (Call Server) IP, local network settings, date and time settings, ARID, etc. will be lost during the upgrade process.

Caution:This upgrade process will cause a service interruption.

To re-deploy vMCD

1. Login into the Server Manager with the user name 'admin' and the password you gave when configuring the MSL server. (See “To configure the Mitel Communication Director application.:” on page 17.)
   The Server Manager is accessed by entering the following URL:
   http://<*www.hostname*> OR <*IP address of the MSL Server*>/server-manager
   Note: Take note of the System (Call Server) IP address, local network settings, date and time settings, and Application Record ID (ARID) as this information will be lost during the upgrade process.
2. Backup the Call Server database on an external PC using the MCD ESM backup facility (see “Back up a Call Server Database” on page 27).
   Tip: It is very important to maintain current database backups; backups should be done on a regular basis.
3. Obtain a printout of the **Licence and Options (LOS)** form to determine which configuration options and allocated licenses need to be set after installing the new blade. It is also recommended to export the **System Capacity** form which contains the allocated licenses.
4. From the MSL Server Manager, click **Backup** located in the left-side navigation panel under the **Administration** heading.
5. Select **Backup to desktop** from the **Select an action** drop-down list.

6. Click **Perform**. MSL prepares the system for backup.
7. The *Backup to desktop* screen displays with the estimated backup size. Ensure that your browser and target file system support downloads of this size, and then click **Begin Download**.
8. When prompted to Open or Save, click **Save**.
9. In the file download window that appears, name the file (SMEServer.tgz) and then select the location on the desktop where the file will be saved and then click **Save**. A confirmation message displays. After saving, you can copy the backup file to a network share on your PC. A network share will need to be set-up to allow a MSL restore when re-deploying the new OVA.
10. Launch the vSphere Client and login.
11. Right click on the vMCD and select **Power Shut Down Guest**.
12. With the old vMCD powered-down, re-deploy a new version of vMCD with a different name if the appropriate disk resources are available. This is to ensure that you can revert to the previous version. Once the new version has been verified, you can delete the previous version using the **Delete from Disk** by right clicking on the VM.
13. Configure MSL as follows, by opening the virtual machine MSL Server Console from within the vSphere client, and selecting the **Console** tab in the main display window:
    a. In the MSL Server Console window that appears place and click the cursor in the console window to continue. If at any time you want to have the cursor available for other desktop activities, press the CTRL + ALT.
    b. From the console, select the option to **Restore from backup**.
    c. After the reboot is complete, click **Yes** to continue, and then select **Restore from network share**. You will be prompted for the following:
       • to select a network interface to use for the restore (LAN or WAN)
       • the address and netmask of the local MSL server
       • the address, gateway and domain name of the backup server
       • the network share containing the backup file (from Step 9 above)
       • the username and password required to log in to the backup server.
    d. After responding to all prompts, click **Next** to restore the backup data.
       A progress bar displays while the restore is in progress. When it completes, MSL re-boots the server to activate the restored configuration.
    e. When the reboot is complete, log back in to the server console and perform a synchronization with the AMC if necessary.
14. Ensure that licenses allocated in the **Licence and Options (LOS)** form are purchased. The MCD database restore will fail if the Allocated Licenses are not set properly. If vMCD was previously sharing licenses with a DLM, manually enter the allocated licenses previously captured in step 3 above.

15. Restore the MCD Call Server database restore from the external PC using the MCD ESM restore facility (see “Restore a Call Server Database” on page 28).

Note: You will need to select Use dimensions from backup file in the restore window.

Refer to the product Release Notes for any additional information.

Upgrade the Mitel Communications Director for ISS Software

Upgrading the Mitel Communications Director (MCD) for ISS software can be performed either automatically using the online upgrade capability within the Sever Manager, or manually.

Note: Ensure that there is an internet connection to allow for AMC access.

To upgrade the MCD for ISS software blade using the online upgrade utility

Backing up and restoring the databases are part of the automatic online upgrade process.

1. Log in to the MSL Server Manager using a browser with the user name and password when initially configuring the MSL server (see “To configure the Mitel Communication Director application.:” on page 17).
2. Click on **Blades**, located in the left-side panel under the **ServiceLink** heading.
3. Click **Update List** to view the new versions available from the AMC in the blade list.
4. In the **EMEM Prompts**, click **Upgrade** beside the version being upgraded. Refer to the release notes to retrieve the version of EMEM prompts corresponding to the MCD-ISS version being installed. This is only required if voicemail licenses were purchased.
5. In the MCD for ISS row of the list of blades, click on the **Upgrade** link beside the version being upgraded. The End User License page appears.
6. Scroll to the bottom of the page and click **Accept all licenses**. A page showing the upgrade progress appears.
7. When the installation is complete, click **Clear this report**.

Time: The installation time is dependent on the size of the database being backed up. The system takes approximately 30 to 90 minutes to back up an average-sized database (50 - 100 MB).

8. Click **Mitel Communications Director**, located in the left-side panel under the **Applications** heading. A message appears describing the status of the upgrade.

To re-install the MCD for ISS software blade

The re-install process consists of backing up and restoring the MCD database, removing the current software, and re-installing a new version of the software. MSL database information such as the System (Call Server) IP, local network settings, date and time settings, ARID, etc. is retained in the databases during the upgrade process.

Caution:This upgrade process will cause a service interruption.

1. Backup the Call Server database on an external PC using the MCD ESM backup facility (see “Back up a Call Server Database” on page 27).
2. Obtain a printout of the **Licence and Options (LOS)** form to determine which configuration options and allocated licenses need to be set after installing the new blade. It is also recommended to export the **System Capacity** form which contains the allocated licenses.
3. Log in to the MSL Server Manager using a browser with the user name and password when initially configuring the MSL server (see “To configure the Mitel Communication Director application.:” on page 17).
4. Click **Blades**, located in the left-side panel under the **ServiceLink** heading.
5. Click **Remove**, located in the **MCD for ISS** row of the list of blades.
6. Click **Remove**, located in the **EMEM Prompts** row of the list of blades.
7. Click **Update List** to view the new version available from the AMC in the blade list.
8. Click **Install**, located beside the **EMEM Prompts** name to start the installation to the EMEM prompts. This is only required if voicemail licenses were purchased.
9. Click **Install**, located beside the **MCD for ISS** blade name to start the installation process. The *End User License* page appears.
10. Scroll to the bottom of the page and click **Accept all licenses**. A page showing the installation progress appears.
11. When the installation is complete, click on **Status** located in the right-side panel under the **ServiceLink** heading.
12. Click on **Sync** to retrieve the various licenses and to license the MCD for ISS software.

Time: The licensing process may take up to 1-2 minutes.

13. Log into the MCD System Administration Tool and go to the **License and Options (LOS)** form (see Step 11 of “To configure the Mitel Communication Director application.:” on page 17).

Note: You will be prompted to choose between using the Telephone Directory synchronization via OPS Manager or via System Data Synchronization (SDS).

14. Ensure that the license information and other configuration options such as the Country Variant, match the original options captured from the switch prior to the upgrade (see Step 3).

Notes:

1. Scroll down in the form to view the complete set of configuration options.
2. There is no need to select dimension as it will be restored from the backup file.

15. Restore the MCD Call Server database restore from the external PC using the MCD ESM restore facility (See “Restore a Call Server Database” on page 28).

Note: You will need to select **Use dimensions from backup file** in the restore window.

Refer to the product Release Notes for any additional information.

Upgrades from earlier vMCD releases to vMCD 5.0

The upgrade process to vMCD 5.0 from an existing deployment is shown in the table below. Simply locate the existing deployment in the first column and follow the steps marked with X in the subsequent columns.

Existing Deployment	Upgrade to MCD4.0	Upgrade MCD ISS Blade	Convert DataBase to MCD4.0 GDM	Backup MSL DataBase	Backup MCD DataBase	Add 3300/ISS to vMCD to Application Record Identification (ARID)	Clear HW ID for ARID	Deploy vMCD5.0 OVA File	Restore MSL Database	License with same ARID as previous installation	Restore MCD Database
3300 Pre MCD 4.0	X		X		X	X	X	X		X	X
3300 MCD4.0 OPS			X		X	X	X	X		X	X
MCD on ISS MCD4.0 OPS			X		X	X	X	X		X	X
3300 MCD4.0 GDM					X	X	X	X		X	X
MCD on ISS MCD 4.0 GDM					X	X	X	X		X	X
vMCD MCD 4.0 (GDM)					X		X	X		X	X
3300 MCD 4.1 (GDM)					X	X	X	X		X	X
MCD on ISS MCD 4.1 (GDM)					X	X	X	X		X	X
vMCD MCD 4.1 (GDM)					X		X	X		X	X
MCD on ISS MCD 4.2 (GDM)					X	X	X	X		X	X
vMCD MCD 4.2 (GDM)				X	X			X	X		X
vMCD MCD 5.0 (GDM) -> 5.0 SPx		X									
vMCD MCD 5.0 SPx (GDM) -> 6.0				X	X			X	X		X
vMCD MCD 6.0 -> 6.0 SPx				X	X			X	X		X

Notes:

1. "OPS" refers to an installation or deployment that includes OPS Manager to deploy and manage a network of controllers.
2. "GDM" refers to an installation or deployment that uses the embedded RDN or SDS synchronization of the MCDs. This is the only mode for releases MCD4.1 and above. OPS and GDM are the only options at MCD4.0 where a transition is required to move to GDM operation.
3. The 3300/ISS to vMCD additional record is the upgrade kit as described in the Engineering Guidelines.
4. A backup and restore of the MSL database is required going forward to retain the license information, and therefore eliminate the need to reset the hardware footprint at the AMC.

Offline Upgrades

An offline vMCD software upgrade is supported using the following procedure:

1. Backup the MSL configuration database. See the Mitel Standard Linux Installation and Administration Guide for details. The MSL database must be stored on a network share which is accessible from the network where vMCD is being installed.
2. Backup the MCD (Call Server) database on an external PC using the MCD ESM backup facility (see “Back up a Call Server Database” on page 27).

   Tip: It is very important to maintain current database backups; perform backups on a regular basis.
3. Obtain a printout of the **Licence and Options (LOS)** form to determine which configuration options and allocated licenses need to be set after installing the new blade. It is also recommended to export the **System Capacity** form which contains the allocated licenses.
4. Deploy the vMCD (see “Install the vMCD Software” on page 15).
5. During the deployment, in the MSL Console, answer **Yes** when prompted to restore the MSL database from backup. You will be prompted to specify the domain name, IP address, network share, username/password of the PC where the MSL backup was stored in step 1.
6. Ensure that licenses allocated in the **Licence and Options (LOS)** form are purchased. The MCD database restore will fail if the Allocated Licenses are not set properly. If vMCD was previously sharing licenses with a DLM, manually enter the allocated licenses previously captured in step 3 above.
7. Restore the MCD Call Server database restore from the external PC using the MCD ESM restore facility (see “Restore a Call Server Database” on page 28

Backup and Restore the Call Server Database

Back up a Call Server Database

Tip: It is very important to maintain current database backups; backups should be done on a regular basis.

You need the following information and equipment to backup a database:

- Installer PC
- System IP address
- System Administration Tool username and password

Use the following procedure to back up a database.

Time: The system takes approximately 30 to 90 minutes to back up an average-sized database (50 - 100 MB).

Caution: During a system backup, no other users can access any of the web- based tools (5140/5240 IP Appliance Online Services, Desktop Tool, Group Administration Tool,

or System Administration Tool), or save changes. To avoid blocking other users, we recommended that you perform system backups outside of business hours.

1. Access the MCD System Administration Tool (see Step 11 of “To configure the Mitel Communication Director application.:” on page 17).
2. Click **Maintenance and Diagnostics** from the drop-down menu in the **Selection** area on the left.
3. Click **Backup/Restore**, then **Backup**.
4. Copy the **identitydb.obj** file to your PC (required for every user profile on every PC used for backup and restore). Follow the instructions displayed on the screen.

Tip: Do this only once per PC per user.

5. Click **Browse** to launch the **Save As** dialog box, then navigate to the location on your local drive where you want to save the backup file (for example C:\3300_ICP\backup).
6. Type a name for your backup file, and then click **Save As**.
7. Select the check box for Call History records if you want them included in your backup. Each addition can increase the backup time noticeably.
8. Click **Start Backup**. System will display progress and then a backup complete message.
9. Click **OK**.
10. Verify the presence of the backup file on the local drive.

Restore a Call Server Database

You need the following information and equipment to restore a database:

- Installer PC
- System IP address
- System Administration Tool username and password

Use the following procedure to restore a previously saved database.

Time: The system takes approximately 30 to 90 minutes to restore an average-sized database, during which time the files are copied to the server. Once the files have been copied, you must reset the server. Note that the system can take up to an additional 1 hour to reset.

Caution:You must reboot the server after restoring a database. Service will be LOST during this reboot.

1. Access the MCD System Administration Tool (see Step 11 of “To configure the Mitel Communication Director application.:” on page 17).

2. Click **Maintenance and Diagnostics** from the drop-down menu in the **Selection** area on the left.
3. Ensure that licenses allocated in the **Licence and Options (LOS)** form are purchased. The MCD database restore will fail if the Allocated Licenses are not set properly.
4. Click **Backup/Restore**, then **Restore**.
5. Copy the **identitydb.obj** file to your PC (required for every user profile on every PC used for backup and restore). Follow the instructions displayed on the screen.

Tip: If you are doing the restore on the same PC the backup was saved to and you are logged in as the same user (same user profile), you don't need to copy the **identitydb.obj** again.

6. Type the location of the database that is being restored, or use the browse facility.
7. Click **Yes** if you want to include Hotel/Motel wake-up information in your restore.
8. Choose the Dimension Selections:
   - if there are no changes to the software dimensions, accept **Use Dimension Selections from backup file**

     OR
   - click **Use Current Dimension Selections** if you are restoring the database after programming new Dimension Selection information.
9. Click **Start Restore**.
10. Click **OK**. The system shows an *In Progress* message.
11. When the status window shows *Complete*, click **OK**.
12. **Reset** the system:
    a. Log into the MCD System Administration Tool (see Step 11 of "To configure the Mitel Communication Director application.:" on page 17).
    b. In the Maintenance Commands form enter **Reset** in the **Command** field.
    -When the reset is complete, the database is converted, and the system automatically resets.
    -If you have programmed Dimension Selection, the system reboots automatically one more time.

Tip: While the System Administration Tool is restoring the database, no other users can access any of the web-based tools. We recommend performing restores outside of business hours.

Backup and restore the vMCD

vMCD can be backed up as an OVA file and restored at a later stage.

This process might be useful for the following tasks:

- A dealer could use this process to deploy vMCD, commission the database, export as an OVA file, and re-deploy at a customer site.
- The backup can be used for disaster discovery.

- Moving vMCD to a different server.

To backup vMCD into an OVA file

1. Launch the vSphere Client and login.
2. Right click on the vMCD and select **Power→Shut Down Guest**.
3. Click on the vMCD and select **File→Export→Export OVF Template…**.
4. Choose a name and directory on the local PC where to store the OVA file.
5. Select **Optimized for Physical Media (OVA)**.
6. Select **OK** to proceed with the backup.

To restore vMCD from an OVA file

1. Launch the vSphere Client and login.
2. Follow the steps in "Install the MCD Virtual Appliance Software" on page 13.

Note: Note: Step 3-5, 13 are only required if you intend to change IP configuration for vMCD.

3. Right-click on the newly created vMCD and select **Open Console** to access the MSL Server console.
4. Login with the username admin and the administrator password.
5. From the menu presented select **Configure this server** to update the MSL IP address, Gateway IP, DNS Server, etc.

Activating the new MSL IP configuration will cause the MSL server to reboot.

6. Open a browser window and enter the IP address of the MSL Server.
7. Login into the Server Manager with the username *admin* and the administrator password.
8. Click **Mitel Communications Director** located in the left-side panel under the **Applications** heading and update the System IP address for MCD if required.

Upgrading to a Virtual Environment vMCD

The following information is pertinent for MCD systems that are currently deployed in a "physical" environment that will be migrated to a virtual environment. As an example these include the following products:

- 3300 ICP (user controller or SIP gateway) running MCD4.0 software or above
- MXe Server
- MCD on ISS, and
- A single MCD instance on MICD

These are all considered as "physical" MCD rather than virtual vMCD. A 3300 ICP with PSTN (analogue or digital) gateway functions cannot be made into a vMCD, as the PSTN connections require physical interfaces and connections. A virtual vMCD cannot provide these physical links.

For existing deployed MCD systems, software license upgrades can be performed using one of the following two approaches:

1. A new Virtual MCD can be purchased and the user/options licenses transferred.
2. An upgrade part number can be applied to the existing MCD application record in the AMC.

Both approaches protect the customer's investment in existing user/options licenses as well as provide the ability to transfer the system data across to the Virtual MCD. These approaches are further described herein.

When purchasing a new Virtual MCD software package, Mitel offers the ability to transfer the software licenses from an existing MCD or MCD-ISS deployment to Virtual MCD. This must be done by the authorized PARTNER. However, note that MCD 4.0 or earlier systems cannot transfer user licenses and system options to a Virtual MCD 4.2. These customers must first buy Virtual MCD 4.0, transfer the user/options licenses across and then upgrade to Virtual MCD 4.2.

This approach is useful to consider if the existing 3300 ICPs deployed in the customer's network are being re-deployed as service provider trunking gateways in the event that traditional TDM interconnect to the PSTN is required or as resilient failover controllers.

The second approach for deploying Virtual MCD is by applying the newly created upgrade part number (see section below on Product Part Numbers and Pricing) to a customer's existing MCD server Application Record in the AMC. This will convert the licensing for the deployed system from a native server implementation to a virtual appliance implementation. The upgrade part number can be applied to existing MCD 4.2 Enterprise PBX, Enterprise ISS, and Enterprise Gateway systems. Customer-deployed MCD systems at Release 4.0 or earlier can also take advantage of this upgrade part number so long as they have IP networking enabled. Note that deployed MCD 4.2 Standalone PBX systems must first upgrade to Enterprise PBX.

The new upgrade part number can only be used when converting an existing MCD system to Virtual MCD 4.2.It cannot be applied for upgrades to Virtual MCD 4.0.

It is possible to transfer the user configuration data from an existing MCD to the Virtual MCD through a backup/restore. In this case, any analog lines, digital trunking and EMEM configuration must be removed prior to backing up the database.

Once the Virtual MCD appliance is installed, the MCD software within the virtual appliance can be upgraded by software download from the AMC using standard processes.

Troubleshooting

Installation and Upgrade

Table 1: Installation and Upgrade Troubleshooting

Symptom	Possible Cause	Corrective Action
MSL network interface fails to start while booting MSL.	Different MAC address for the network interface. Attempting to deploy an OVA file for an MCD Virtual Appliance that was already pre-configured with an IP address .	Follow Steps 3 to 5 in “To restore vMCD from an OVA file” on page 30.
MSL network interface fails to start while booting MSL.	Wrong ethernet adapter type being used following an import of an MCD OVA file.	Right click on the MCD Virtual Machine and select Edit Settings. In the Hardware tab, select Network adapter 1. If the Adapter Type is not set to VMXNET 3, the MSL network interface will not start. To mitigate the problem, shutdown the MCD Virtual Machine. Once the virtual machine is powered off, follow IMPORTANT NOTE: in “To restore vMCD from an OVA file” on page 30.
MSL network interface starts but cannot ping the MSL server IP.	Missing local network	Refer to Step 4 in “To configure the MSL server:” on page 17.
MCD for ISS licensing failed.	Incorrect ARID provisioned for the server.	Clear the hardware ID associated with the ARID on the AMC.
		De-activate and re-activate your **ServiceLink** account in the **Status** section of the Server Manager.
A pop-up message indicating that the "Appropriate feature has not been purchased" appears after the database restore.	Completed the database restore without first performing a System Reset.	Ensure that a system Reset is performed during a database restore. See “Restore a Call Server Database” on page 28.

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