



A MITEL
PRODUCT
GUIDE

MiContact Center Enterprise

Virtualization Description

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INTRODUCTION

Mitel provides technical support to Mitel products according to the terms of Mitel Networks Partner Agreements. Hardware, IP network and other infrastructure components are generally left to the discretion of the customer. Mitel works jointly with partners and customers to secure good interaction between Mitel's applications and the customers' infrastructures. Today, these commonly include virtual machines.

This document describes Mitel's position regarding MiContact Center Enterprise and Open Application Server in a virtualized environment using VMware virtual machines.

Mitel is committed to continuously supporting customers in their choice of IT infrastructure. Server virtualization is a leading trend and Mitel recognizes its many important benefits. Mitel's customers often run MiContact Center Enterprise and Open Application Server ("the Application Software") in VMware environments.

BACKGROUND

Mitel supports customers who run the Application Software on approved versions of Windows Server, not on specific general-purpose hardware. In a virtualized environment an abstraction layer, called hypervisor, is installed between the physical hardware (host/server/machine) and the operating system (guest machine). This abstraction layer allows several guest machines co-exist on the same physical hardware in order to share resources like memory, CPU etc. These guest machines are commonly referred to as Virtual Machines, VM.

VM –Virtual Machine according to VMware: *"A virtual machine is a tightly isolated software container that can run its own operating systems and applications as if it were a physical computer. A virtual machine behaves exactly like a physical computer and contains its own virtual (software- based) CPU, RAM hard disk and network interface card (NIC). An operating system can't tell the difference between a virtual machine and a physical machine, nor can applications or other computers on a network. Even the virtual machine thinks it is a "real" computer. Nevertheless, a virtual machine is composed entirely of software and contains no hardware components whatsoever. As a result, virtual machines offer a number of distinct advantages over physical hardware"*

BENEFITS OF VIRTUALIZATION

IT departments are more and more looking at alternatives to reduce the total cost of ownership and increase productivity, however in the last two decades, the number of x86 architecture based servers has increased in the IT segment. In a traditional x86 architecture, only one or few applications share the same hardware. This means a multiplication of servers, each dedicated to a different back office application (mail servers, web servers, databases, CRM, etc.) to ensure enough resources to handle peak traffic. In most of the cases these applications do not use all the power of the server hardware, which as a consequence causes waste of CPU, memory, etc. Additional servers require more power, cooling, physical space, maintenance, etc. which increases the TCO in data centers.

Virtualization software companies address such issues by offering possible ways to optimize server efficiency. For instance, this can be achieved by sharing hardware resources between virtual machines (guest machine).

In general, the advantages of virtualization are:

- IT Hardware Consolidation
 - Improve the efficiency and availability of IT resources
 - Reduce capital costs
 - Maintenance and Hardware savings
 - Infrastructure savings
 - Lower power consumption
 - Reduced cooling requirements
 - Decrease physical space requirements
- Increase Reliability
 - Potentially more reliable failover implementation
- There are also some disadvantages, like:
 - Network complexity
 - Software cost (virtualization SW)

VMWARE VIRTUALIZATION

VMware supports a set of certified Operating Systems and Hardware. The partner or customer and VMware will be responsible for any interactions or issues that arise at the Hardware or Operating System layer as a result of the use of VMware.

Some of VMware's server virtualization products run directly on a computer's hardware. These are called native hypervisors. Customers generally use the native hypervisors for production systems.

Other VMware products add the virtualization layer on top of an operating system. These are called hosted hypervisors. The Application Software is supported on hosted hypervisors only when the installations are for non-production purposes, but for example for training, test and demonstration purposes.

ELM CONSIDERATIONS

The MiCC Enterprise license file is tied to a number of properties of the ELM host. These properties form a fingerprint, most of which must match for licenses to be valid. The fingerprint includes the MAC address of the NIC. To avoid fingerprint mismatch, any MAC address should be static.

VERIFIED VMWARE OPTIONS FOR MiCC ENTERPRISE

Mitel has validated three VMware software options with MiCC Enterprise in a virtualized infrastructure.

The three options are:

- Consolidated setup:
 - Where several applications are consolidated in one or more physical servers. In this case no redundancy is provided by the VMware software.
- Availability setups with VMware vSphere Availability
 - VMware vSphere High Availability setup

Please note that VMware vSphere High Availability (HA) option require a specific network as well as storage infrastructure to be in place. Furthermore, the network and storage implementation are not described by Mitel since they are pre-requisites for implementing VMware's HA infrastructure, described in standard VMware documentation.

For requirements per application virtual machine please always refer to the latest version of System Engineering Guidelines in the technical documentation for MiCC Enterprise.

Before offering MiCC Enterprise in a VMware virtualization environment at a minimum you are required to read at least the following reference documents from VMware:

[Introduction to VMware vSphere Virtual Machines \(ESXi 7.0\)](#)

[vSphere Virtual Machine Administration \(ESXi 7.0\)](#)

[Configure vCenter HA With the vSphere Client \(ESXi 7.0\)](#)

Please, always refer to the latest product documentation.