Getting Started

This chapter provides information on the architecture, prerequisites, and deployment models of the Cisco Smart+Connected Meeting Spaces & Cisco Smart+Connected Digital Signage (Smart+Connected MS & DS) application.

Overview

The Smart+Connected MS & DS application allows you to easily access information by using digital signages, IP phones, and the web portal. For example, you can easily view information, such as meeting details, news, energy consumption data, energy saving tips, and so on. The application also allows you to book meetings instantly using touchscreen digital signage and IP phones, manage conference room resources, and report the issues, if any, in the conference rooms. The automatic energy saving settings lead to reduced power consumption and contribute to the eco-friendly policies of the organization. In case of any mishaps, emergency notifications are sent out to the users through IP phone and digital signage.

The Cisco Smart+Connected MS is a solution that leverages the Cisco Service Delivery Platform (SDP). It provides features for conference room management and signage-based messaging using Cisco IP phones. The Smart+Connected MS leads to enhanced enterprise communication as the updated meeting room information is widely available and easily accessible to employees. It also leads to better resource management and energy savings which translate to reduced energy bills and more environment-friendly corporate practices.

The Smart+Connected MS solution allows the end user to do the following:

- Using Digital Signage
  - Book meeting spaces and TelePresence rooms
  - Book conference rooms.
  - View detailed floor plans with locations of conference rooms.
  - View news content associated with the location.
- Using Web Portal and IP Phones

  - Book conference rooms.
  - Manage meeting room devices and equipment.
  - Configure multiple devices to suit your meeting and presentation needs using a single menu selection.
  - Create a case to resolve a fault in a conference room, and convey the same to the others in the organization by sending messages to the digital signage.

In addition, the solution can help in energy savings by automatically switching devices to a standby mode when the meeting room is unoccupied and based on the configuration, turn them back on before the actual occupancy.

As an administrator, you have to manage the overall configuration, maintenance, and content creation for the Smart+Connected MS solution through a web portal. You have to add locations and devices, create users, and associate devices to locations for the solution in the SDP. For more information on performing these tasks, see the *Cisco Service Delivery Platform User Guide* and *Cisco Service Delivery Platform Installation Guide*. After the locations are added, and the devices are associated to them in the SDP, they are available in the Smart+Connected MS portal. You can select a location and associate a configuration to it. The features such as fault messages, device control options, signage menu messaging, and room booking that are added to the configuration can be accessed by the end user from the Cisco IP phones at the location.

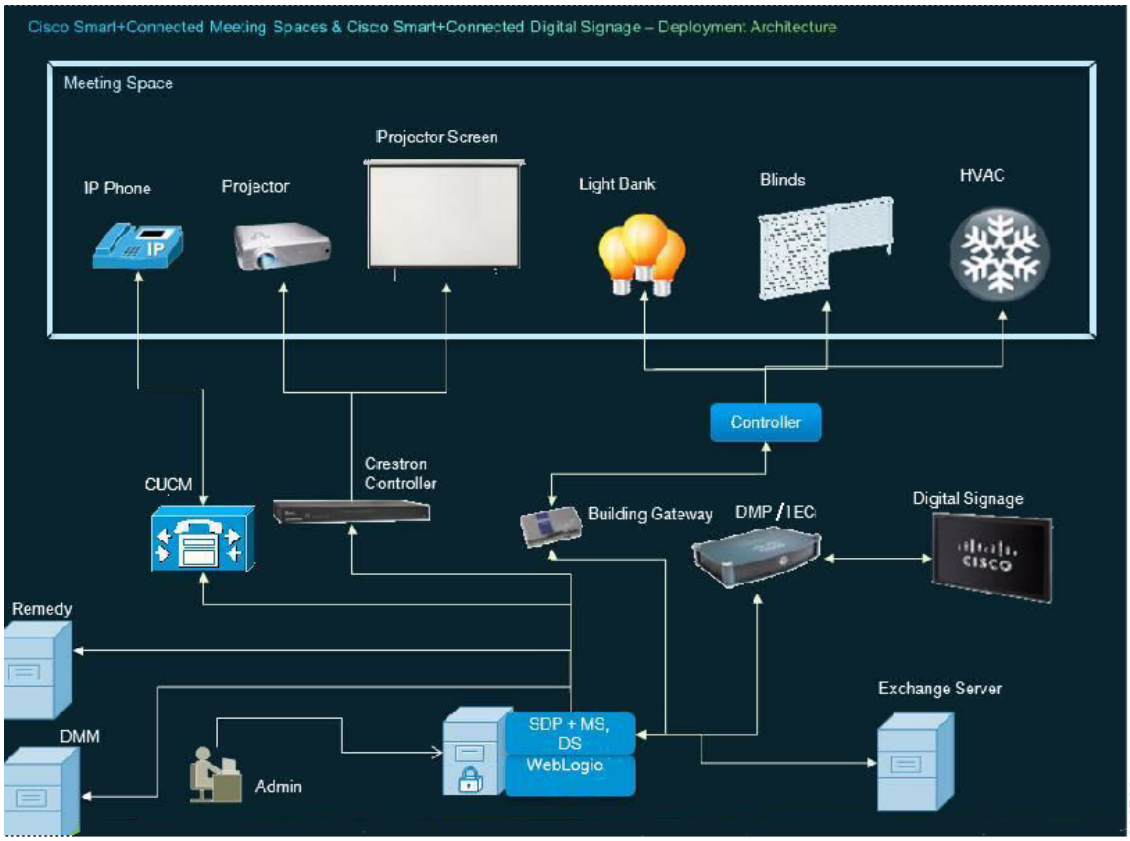
System Architecture

The Smart+Connected MS & DS application communicates with the following:

- Microsoft Exchange—To book meetings and retrieve meeting details.
- Building Management System (BMS)—To control and monitor devices, such as lights, blinds, and air conditioners.
- Content Management System (CMS)—To store the application data.
- Crestron Controller—To control projectors and projector screens.
- Digital Media Player (DMP) and Cisco Interactive Experience Client (IEC)—To display meeting details, notifications, general information, news, energy consumption data, energy saving tips, and so on, on the digital signages.
- Remedy—To raise trouble tickets for the conference room issues.

The Smart+Connected MS & DS application leverages the SDP. For more information on the SDP, see the *Cisco Service Delivery Platform User Guide*.

Figure 1-1 System Architecture



List of Acronyms and Abbreviations

Table 1-1 List of Acronyms and Abbreviations

Acronym	Expansion
MS	Meeting Spaces
DS	Digital Signage
APR	Acoustic Pulse Recognition
CMS	Content Management System
CPU	Central Processing Unit
CTI	Computer Telephony Integration
CUCM	Cisco Unified Communications Manager
DB	Database
DMP	Digital Media Player
DMM	Digital Media Manager
DBMS	Database Management System

Table 1-1 List of Acronyms and Abbreviations (continued)

Acronym	Expansion
EWS	Exchange Web Services
HDD	Hard Disk Drive
HTTP	Hypertext Transfer Protocol
IEC	Cisco Interactive Experience Client
JDBC	Java Database Connectivity
JDK	Java Development Kit
JMS	Java Message Service
JNDI	Java Naming and Directory Interface
JTAPI	Java Telephony Application Programming Interface
LAN	Local Area Network
LDAP	Light Weight Directory Access Protocol
MAC	Media Access Control
NIC	Network Interface Card
NTP	Network Time Protocol
OS	Operating System
RAM	Random-access Memory
RAC	Real Application Cluster
RDBMS	Relational Database Management Systems
RHEL	Red Hat Enterprise Linux
S+CC	Smart+Connected Communities
SDP	Service Delivery Platform
SNMP	Simple Network Management Protocol
SP	Service Pack
SQL	Structured Query Language
UCS	Unified Computing System
UI	User Interface
VM	Virtual Machine

System Requirements

Before installing the Smart+Connected MS & DS applications, ensure that all the system requirements are met.

Table 1-2 System Requirements

Software/Hardware	Smart+Connected MS & DS
Operating System	Red Hat Enterprise Linux (RHEL) 5.5 (64-bit) and 6.3 (64-bit)
Hardware - For Application Server and Database Note: • This requirement is for one VM (for example, colocated) or one physical machine. • For a non-cluster setup, you need two VMs—one for the application server and another for the database. Also, each VM must meet the requirements that are mentioned here. • For a cluster setup, the hardware requirements are based on the deployment scenario and user requirements.	Minimum requirements are: • Hard Disc Space—200 GB • RAM—Minimum configuration of 4 GB or above • Processor – 2 vCPU dual core for Virtual Machine (VM) – Intel x86/II386 Architecture for physical machines – Certified on Cisco UCS B-Series and C-Series with Intel CPUs.
Crestron A/V integration (if applicable)	• Separate host or VM with Windows 2008 R2 Standard SP1 or Windows 7 • IIS 7.5 with .NET framework 3.5 or higher
Browser	• Mozilla Firefox Versions 6.0 and 15.0 • Microsoft Internet Explorer Versions 8.0 and 9.0 • Google Chrome Version 24.0 and 26.0
Database	Oracle Enterprise Edition 11g R2 (11.2.0.2) with character set configured to UTF8 For more information on how to install the Oracle database, see the Oracle documentation.
Application Server	WebLogic Server 11g
Java Development Kit (JDK)	Oracle JDK 1.6.0_24

Table 1-2 System Requirements (continued)

Software/Hardware	Smart+Connected MS & DS
Exchange Server	• Microsoft Exchange Server 2007 SP3 • Microsoft Exchange Server 2010 SP1, SP2 Exchange Web Services (EWS) integration is supported using only the BasicAuth authentication scheme. This needs to be configured in the Microsoft Exchange. • For mailboxes, 'AutomateProcessing' property must be set to 'AutoAccept' so that recurring meeting updates are sent correctly to the solution through notifications. • For mailboxes, 'AddOrganizerToSubject' and 'DeleteSubject' must be set to $false. If this is not done, then the meeting organizer name appears in the in the Subject field instead of meeting subject. Impersonation rights are required on the conference room mailbox for the service account. This allows the service account to connect to the Exchange server and retrieve meeting details from the conference room mailbox. For more information on Exchange impersonation, see: • Exchange 2007: http://msdn.microsoft.com/en-us/library/bb204095(EXCHG.80).aspx • Exchange 2010: http://msdn.microsoft.com/en-us/library/bb204095.aspx
Trouble Ticketing	BMC Remedy Version 7.5
Audio/Visual	The certified Crestron controllers that have been tested with the .NET SDK are: • MC2E (one controller for one projector) • PRO2 (one controller for two projectors) However, the Crestron Control System with Ethernet port supports the Crestron .NET SDK, and therefore can be integrated with the solution.
Mediation Gateway	Tridium with Obix Versions 3.5.34, 3.7.x
Digital Media Player (DMP)	DMP 4400: • Firmware 5.1 for http • Firmware 5.2 for https • Firmware 5.3 for https
Cisco Interactive Experience Client (IEC)	IEP-4632-HW-K9: • Firmware 4.155.393
Digital Media Manager (DMM)	Version 5.2.1

Table 1-2 System Requirements (continued)

Software/Hardware	Smart+Connected MS & DS
Cisco Digital Signage	• 42 inch • 47 inch • 55 inch
Touchscreen	The Smart+Connected MS & DS application is certified on the eLO Touchscreen APR technology model. However, DMP 4400G also supports other touchscreen overlays. For more information on other touchscreen overlays of DMP 4400G, see: http://www.cisco.com/en/US/docs/video/digital_media_systems/dmscompat3.html#wp1100911
IP Phone Model	• Touchscreen: 7975 and 9971 • Non-Touchscreen: 7962 and 9951
Call Manager	• Cisco Call Manager Version 7.1 • Cisco Call Manager Version 8.x • Cisco Call Manager Version 9.x The audio notification feature does not work with Cisco Call Manager 7.1.
Emergency Notification System	• Cisco JTAPI • Singlewire InformaCast
LDAP	• Active Directory – Windows 2008 Version 6.0 – Windows 2003 Version 5.2 R2 • RHEL 5.5 OpenLDAP - 2.3.43.12
Service Delivery Platform (SDP)	Cisco SDP 2.0.2
Language	U.S. English The Smart+Connected MS & DS application provides multi-language support. Although U.S. English is the language that is supported out-of the-box, other languages can be supported by doing necessary configurations.

Deployment Models

You can install and deploy the Smart+Connected MS & DS application using one of the following deployment models:

- Colocated Server Setup—The database and the S+CC application are installed on a single server.
- Non-Cluster Server Setup—The database and the application server are installed on two different instances, either on a physical or a virtual machine.
- Cluster Server Setup—The database and the application server are installed on separate dedicated servers or on a cluster of servers. This setup provides high availability.

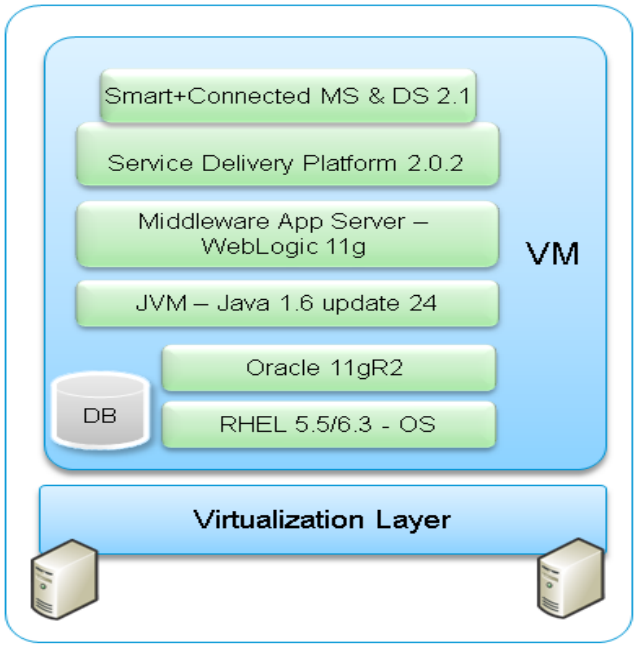
Note This document describes the installation process in the colocated/non-cluster and cluster server setups.

Colocated Server Setup

In a colocated deployment, all the functionalities and layers of the application reside on a single server.

This is the simplest form of the deployment, where the database and the application are installed on the same instance and the setup is self-contained. This is suitable for small enterprises.

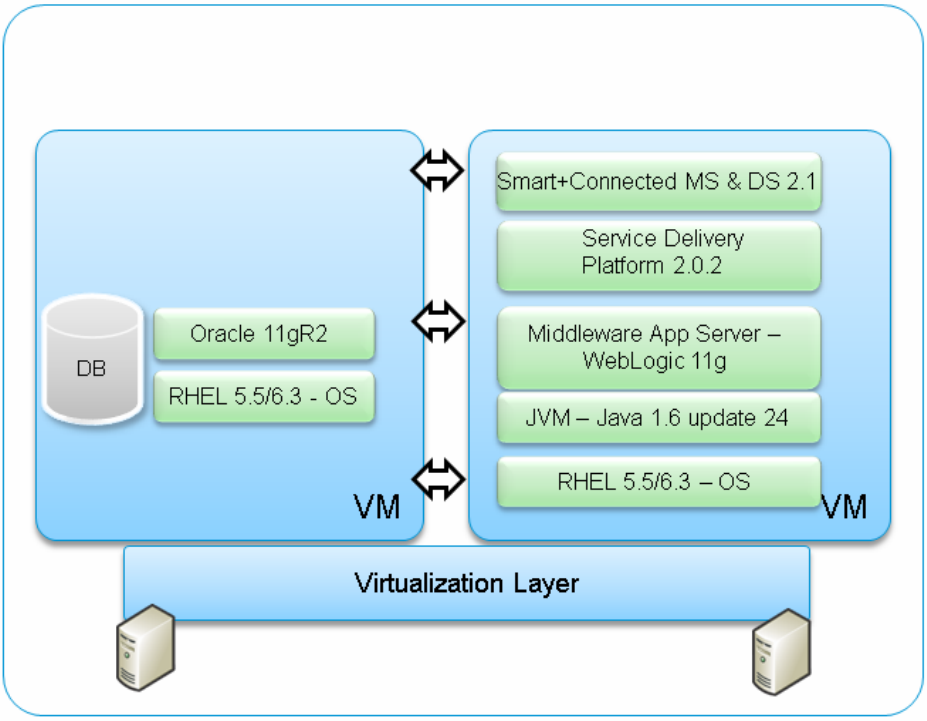
Figure 1-2 Colocated Server Setup



Non-cluster Server Setup

In this setup, the database and the application server are installed on two different instances—either on a physical or a virtual machine. This is a common server setup method for the enterprise installations. The database is setup on one instance and the application server, SDP, and the S+CC application are installed and set up on a second instance.

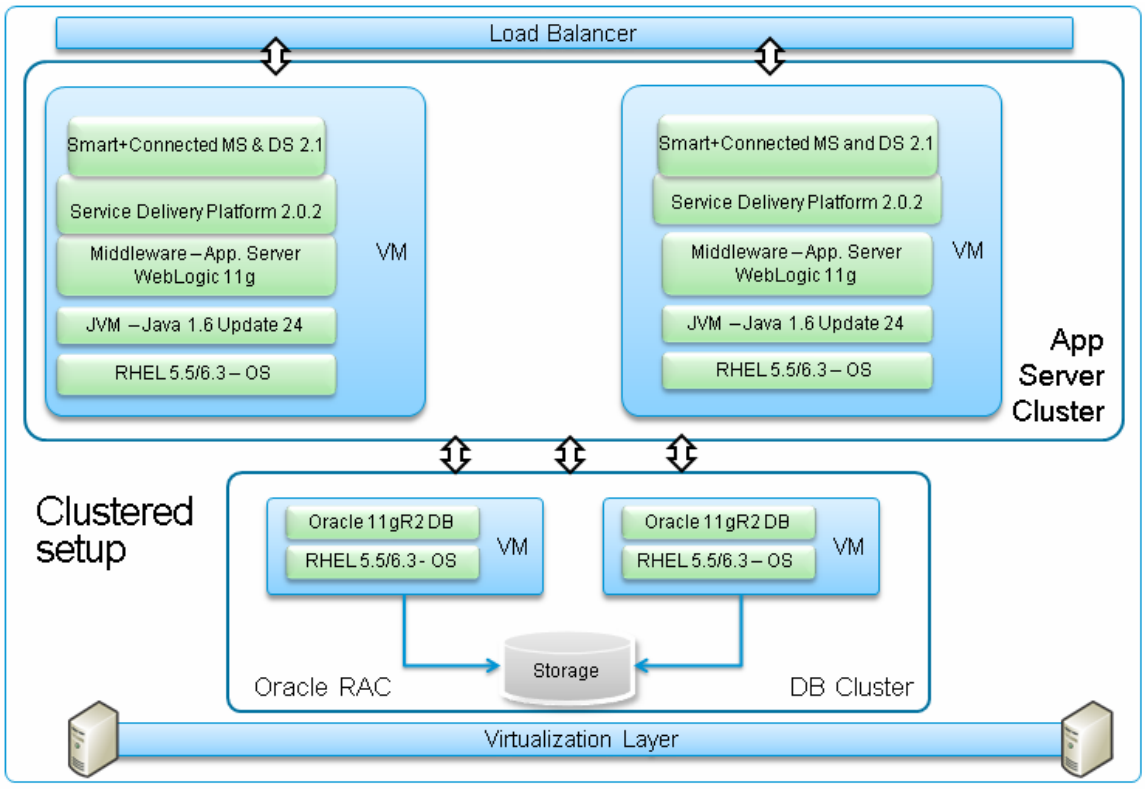
Figure 1-3 Non-Cluster Server Setup



Cluster Server Setup

A cluster setup consists of multiple nodes that run an application simultaneously and work together to provide increased scalability, reliability, and high availability. In a distributed cluster setup, the solution is deployed on the multiple nodes of a cluster.

Figure 1-4 Cluster Server Setup



Deployment Flowchart

The deployment flowchart describes the procedure to deploy the solution and ensure a successful installation.

Figure 1-5 displays the deployment flowchart for a Colocated/ Non-cluster Server Setup .

Figure 1-5 Deployment Flowchart - Colocated/Non-cluster Server Setup

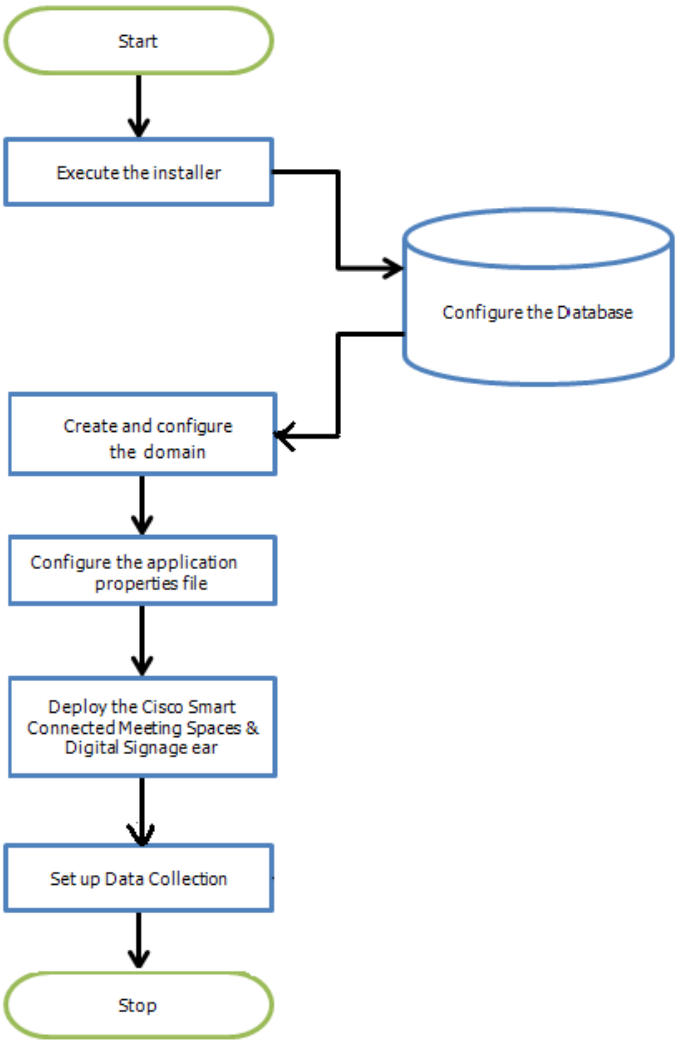


Figure 1-6 displays the deployment flowchart for a Cluster Server Setup.

Figure 1-6 Deployment Flowchart - Cluster Server Setup