

# CHAPTER 1

## Introduction

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This chapter provides information on the architecture, system requirements, and deployment models of the Cisco Smart+Connected Personalized Spaces (Smart+Connected PS) application.

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## About Cisco Smart+Connected Personalized Spaces

The Smart+Connected PS application is a part of the Smart+Connected Communities (S+CC) solutions, and it leverages the platform capabilities of the Cisco Service Delivery Platform (SDP).

The Smart+Connected PS solution enables you to plan utilization of resources at your workspace by maximizing office usage and minimizing energy consumption. You can search for and book available workspaces and set your preferences for the light settings, blinds, air conditioning, and so on.

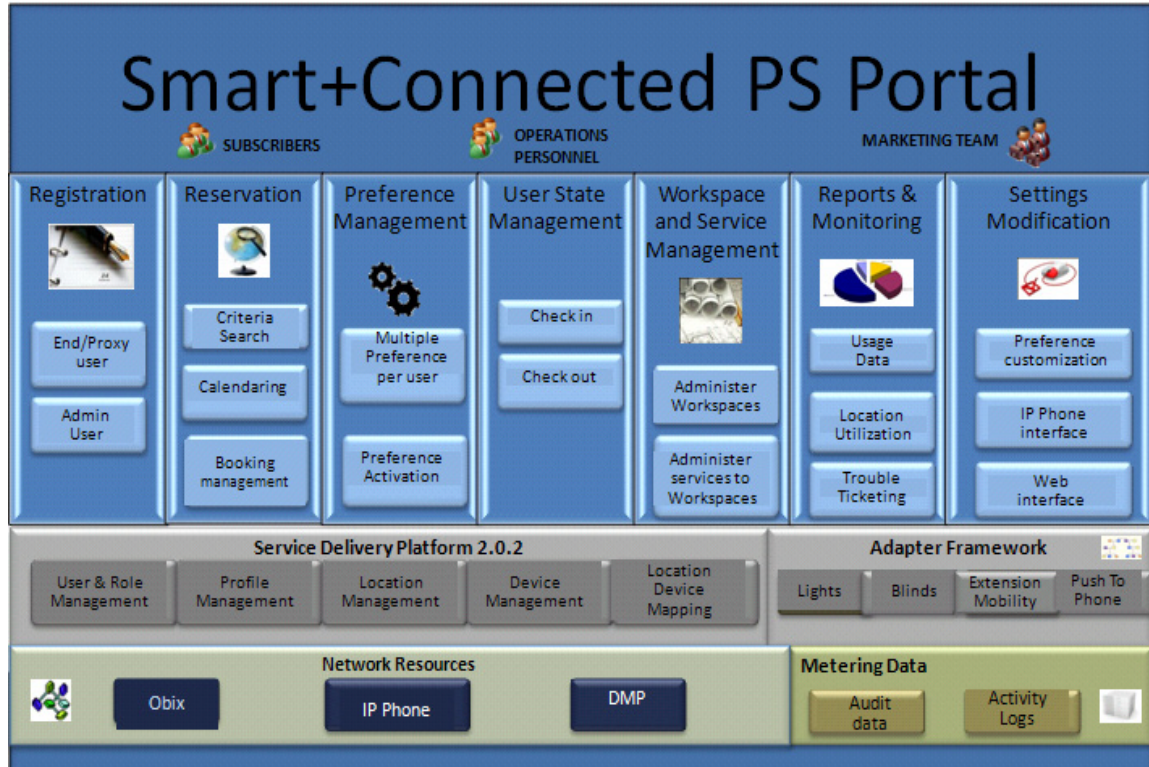
## System Architecture

The Smart+Connected PS solution is a holistic solution with an end-to-end integration for simple, flexible, and dynamic workspaces. It combines the following technologies to achieve a personalized user experience:

- Cisco Unified Communications Manager (CUCM)—For Cisco IP Phone interface integration with the Smart+Connected PS
- Building Automation—For workspace services, such as light setting controls, blinds, and air conditioners
- Digital Signage—To display personalized content, such as images and messages at your workspace

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**Figure 1-1 Smart+Connected PS - System Architecture**



The Smart+Connected PS solution offers the following features:

- Workspace Search—Allows an end-user to search for an available workspace.
- Workspace Booking with Preference Setting—Allows an end-user to book a workspace for either themselves or for another user and preset preferences such as light setting control, blinds, dimmer, air conditioning, and digital signages.
- Checking in and out—Allows an end-user to check-in to the booked workspace at the scheduled time using either the web portal or a Cisco IP Phone available at the workspace. After using the workspace, the end-user is checked out of the workspace.

The Smart+Connected PS Mobile Application allows you to access the Smart+Connected PS application on your mobile devices, such as Android and iPhones. The Smart+Connected PS Mobile Application offers the following features:

- Viewing your upcoming meeting and workspace reservation details.
- Checking in and out of a reserved workspace.
- Ad-hoc checking in from the list of available workspaces.
- Checking in and out using the QR code scanning feature.
- Marking workspaces and people within an enterprise as favorites.
- Setting your preferences for a building and floor.
- Searching for people in an enterprise.
- Calling contacts or sending e-mails to them.
- Importing multiple contacts from the LDAP directory.

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The Smart+Connected PS application provides the multi-language support configuration. Although English is the language that is supported out-of-the-box, other languages can be supported by doing necessary configurations.

## List of Acronyms and Abbreviations

**Table 1-1** *List of Acronyms and Abbreviations*

<b>Acronym</b>	<b>Expansion</b>
BIRT	Business Intelligence and Reporting Tools
BMS	Building Management Systems
CPU	Central Processing Unit
CUCM	Cisco Unified Communications Manager
DB	Database
DMP	Cisco Digital Media Player
DBMS	Database Management System
DNS	Domain Name System
EM	Extension Mobility
HTTP	Hypertext Transfer Protocol
JDBC	Java Database Connectivity
JDK	Java Development Kit
JMS	Java Message Service
JNDI	Java Naming and Directory Interface
JVM	Java Virtual Machine
LAN	Local Area Network
LDAP	Light Weight Directory Access Protocol
NTP	Network Time Protocol
RAM	Random-access Memory
RAC	Real Application Cluster
RDBMS	Relational Database Management Systems
RPM	Redhat Package Manager
RHEL	Red Hat Enterprise Linux
S+CC	Smart+Connected Communities
SDP	Cisco Service Delivery Platform
Smart+Connected PS	Smart+Connected Personalized Spaces
SQL	Structured Query Language
vCPU	Virtual CPU
VM	Virtual Machine

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# System Requirements

Before installing the applications, ensure that your system meets all the necessary requirements.

**Table 1-2** System Requirements

Software/Hardware	Supported Requirements
Operating System	Red Hat Linux (RHEL) 6.3 (64-bit)
Hardware	Minimum requirements are:
Note:	<ul style="list-style-type: none"> <li>• Hard Disk Space—200 GB</li> <li>• RAM—Minimum configuration of 4 GB or above</li> <li>• Processor               <ul style="list-style-type: none"> <li>– 2 vCPU dual core for Virtual Machine (VM)</li> <li>– Intel x86/I386 Architecture for physical machines</li> <li>– Certified on Cisco UCS B-Series and C-Series with Intel CPUs.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• This requirement is for one VM (for example, colocated) or one physical machine.</li> <li>• For a non-cluster setup, you need two VMs, with the listed minimum specifications. In this case, one VM is for the application server, while the second one is for the database.</li> <li>• For a cluster setup, the hardware requirements are based on the deployment scenario and the user requirements.</li> </ul>	
Database	<ul style="list-style-type: none"> <li>• 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.</li> <li>• PostgreSQL 9.0 with character set configured to UTF8 For more information on how to install the PostgreSQL database, see the PostgreSQL documentation.</li> </ul>
Application Server	JBoss 6.0
Java Development Kit (JDK)	JDK version 1.6.0_24
Cisco Service Delivery Platform (SDP)	SDP Version 2.0.2.0
Exchange Server	<ul style="list-style-type: none"> <li>• Microsoft Exchange Server 2007 SP3</li> <li>• Microsoft Exchange Server 2010 SP1, SP2</li> <li>• Microsoft Exchange Server 2013 V2.0</li> </ul>
Directory Services	<ul style="list-style-type: none"> <li>• Active Directory               <ul style="list-style-type: none"> <li>– Windows 2008 Version 6.0</li> <li>– Windows 2003 Version 5.2 R2</li> </ul> </li> <li>• OpenLDAP - 2.3.43.12</li> </ul>

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**Table 1-2 System Requirements (continued)**

Software/Hardware	Supported Requirements
Cisco Digital Media Player (DMP)	DMP 4400: <ul style="list-style-type: none"> <li>• Firmware 5.1</li> <li>• Firmware 5.2.3</li> <li>• Firmware 5.3.5</li> </ul>
Cisco Interactive Experience Client (IEC)	IEP-4632-HW-K9: <ul style="list-style-type: none"> <li>• Firmware 4.155.393</li> </ul>
Cisco IP Phone	<ul style="list-style-type: none"> <li>• Touchscreen: 7975 and 9971</li> <li>• Non-Touchscreen: 7962 and 9951</li> </ul>
Cisco Unified Communications Manager (CUCM)	<ul style="list-style-type: none"> <li>• Cisco Call Manager Version 8.x</li> <li>• Cisco Call Manager Version 9.x</li> </ul>
Browser	<ul style="list-style-type: none"> <li>• Mozilla Firefox Versions 6.0, 14.0, and 15.0</li> <li>• Microsoft Internet Explorer Versions 8.0 and 9.0</li> <li>• Google Chrome Version 23.0</li> </ul>
Digital Signage	Resolutions: <ul style="list-style-type: none"> <li>• 1920 x 1080</li> <li>• 1366 x 768</li> </ul>
Mediation Gateway	Tridium with Obix Versions 3.5.34 and 3.7.x
Remedy	BMC Remedy Version 7.5
Mobile Operating System	<ul style="list-style-type: none"> <li>• iOS Version 6.x</li> <li>• Android               <ul style="list-style-type: none"> <li>– Gingerbread 2.3.x</li> <li>– Ice Cream Sandwich 4.0.x</li> <li>– Jelly Bean 4.1.x</li> </ul> </li> </ul>

## Types of Server Setup

You can install and deploy the Smart+Connected PS application by using one of the following methods:

- Non-Cluster Setup—The database and the application server are installed on two different hosts.
- Cluster Setup—In this type of deployment, the database is installed on a server and the application server is installed on a cluster of servers. This setup provides high availability.

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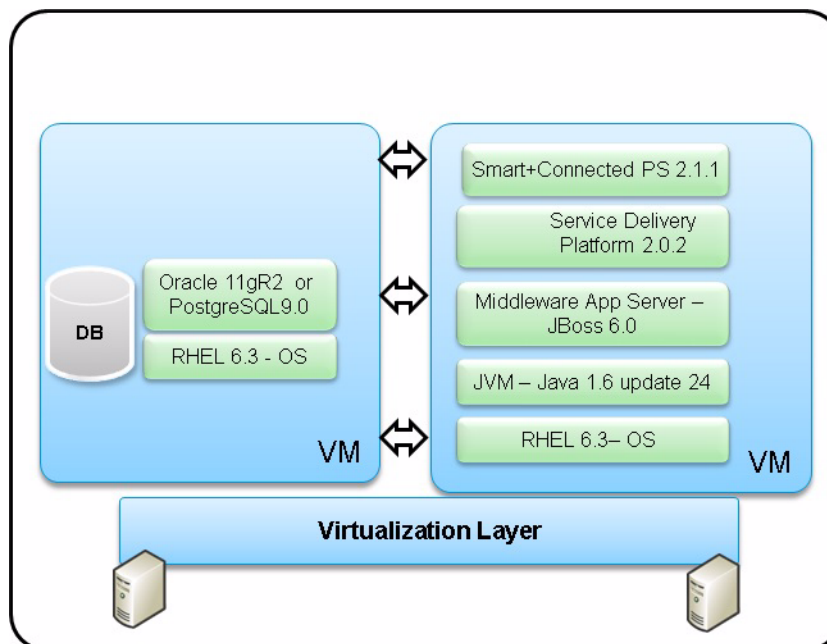
This guide describes the installation process in a colocated, non-cluster, and cluster server setups.

- [Non-Cluster Server Setup, page 1-6](#)
- [Cluster Server Setup, page 1-7](#)

## Non-Cluster Server Setup

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

**Figure 1-2**      **Non-Cluster Server Setup**

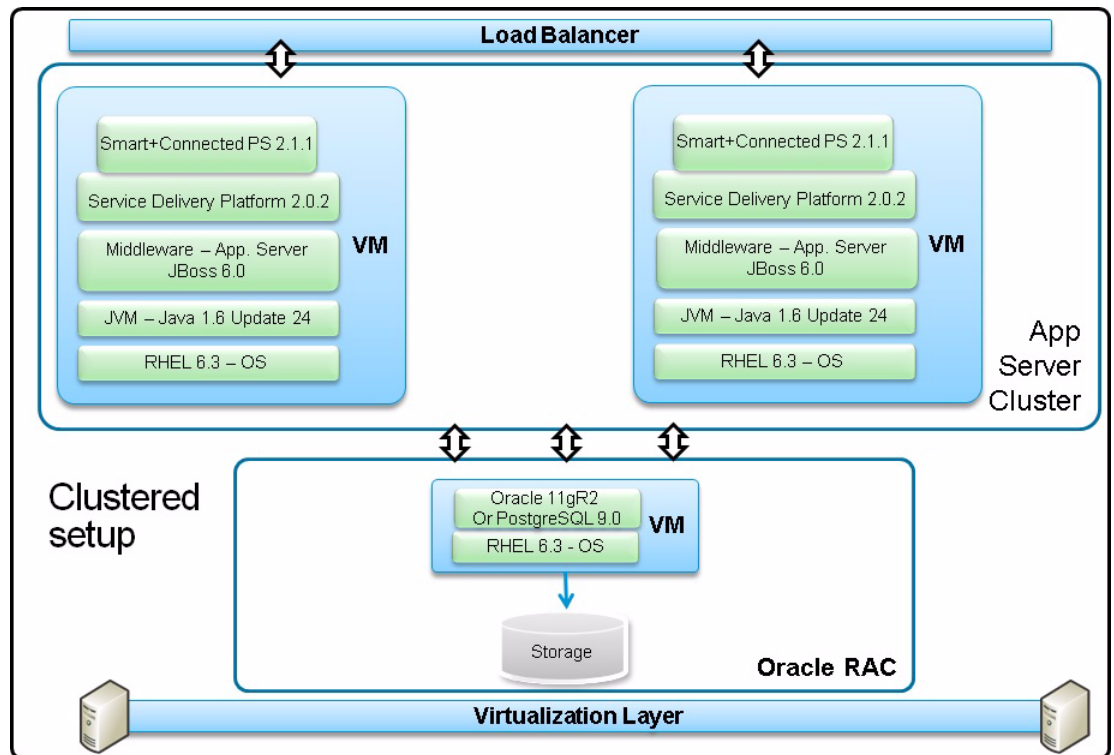


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## Cluster Server Setup

A cluster setup consists of multiple servers 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 servers. Cluster setup acts as a single server instance with increased scalability, load balancing, and high availability.

**Figure 1-3 Cluster Setup**



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