

**Oracle® Hospitality Materials
Management System**

Security Guide
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Preface

This document provides security reference and guidance for Materials Management System.

Audience

This document is intended for:

- System administrators installing Materials Management System.
- End users of Materials Management System.

Customer Support

To contact Oracle Customer Support, access My Oracle Support at the following URL:
<https://support.oracle.com>

When contacting Customer Support, please provide the following:

- Product version and program/module name
- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to re-create
- Exact error message received and any associated log files
- Screen shots of each step you take

Documentation

Oracle Hospitality product documentation is available on the Oracle Help Center at
<http://docs.oracle.com/en/industries/hospitality/>

Revision History

Date	Description of Change
July 2018	<ul style="list-style-type: none">• Initial publication
January 2020	<ul style="list-style-type: none">• Revised Basic Component requirement to include MMS Secure Server Web Service and MMS Secure Server Tool

1 Materials Management System Security Overview

This chapter provides an overview of Oracle Hospitality Materials Management System security and explains the general principles of application security.

Basic Security Considerations

The following principles are fundamental to using any application securely:

- **Keep software up to date.** This includes the latest product release and any patches that applies.
- **Limit privileges as much as possible.** Users should only be given the necessary access to perform their work. User privileges should be reviewed periodically to determine relevance to current work requirements.
- **Monitor system activity.** Establish who should access which system components and the frequency, and monitor those components.
- **Install software securely.** For example, use firewalls, secure protocols using TLS (SSL), and secure passwords.
- **Use secure development practices.** For example, take advantage of existing database security functionality instead of creating your own application security.
- **Keep up to date on security information.** Oracle regularly issues security-related patch updates and security alerts. You must install all security patches as soon as possible. See the “Critical Patch Updates and Security Alerts” website: <http://www.oracle.com/technetwork/topics/security/alerts-086861.html>

Overview of Materials Management System Security

Materials Management System Architecture Overview

Materials Management System uses N-Tier Architecture and is a collection of applications and interfaces. They can be deployed anywhere. It is scalable and do not have to be deployed on a single machine.

Technology

Materials Management System product is developed using industry standards of encryption. Every communication can be configured to use SSL if required. It also uses powerful encryption/hashing algorithms (Windows DPAPI, PBKDF2) to encrypt and store sensitive information like application user passwords, application configuration information, DB user passwords.

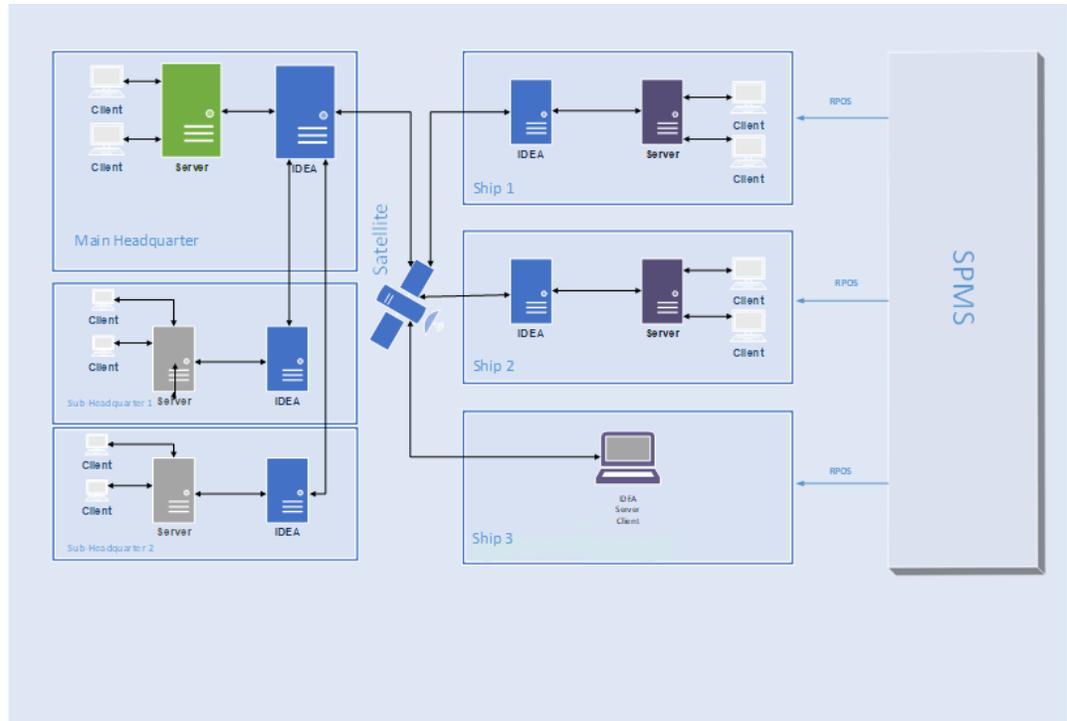


Figure 1 - Material Management System Data flow diagram

User Authentication

Overview

Authentication is the process of ensuring that people are who they say they are.

Client Authentication

All users' credentials of Materials Management System are stored in the database. Anyone who wish to access the clients must provide a valid user name and password. To ensure strict access control of the Materials Management System, always assign unique usernames and complex passwords to each user. Password must follow PCI-DSS guide lines and must be at least 8 characters long including letters and numbers.

Database Users

Materials Management System works with both Oracle and Microsoft SQL Server databases.

Understanding the Materials Management System Environment

When planning your Materials Management System implementation, consider the following:

- **Which resources need to be protected?**
 - You need to protect customer data.
 - You need to protect internal data, such as proprietary source code.
 - You need to protect system components from being disabled by external attacks or intentional system overloads.

- **Who are you protecting data from?**
For example, you need to protect your subscribers' data from other subscribers, but someone in your organization might need to access that data to manage it. You can analyze your workflows to determine who needs access to the data; for example, it is possible that a system administrator can manage your system components without needing to access the system data.
- **What will happen if protections on strategic resources fail?**
In some cases, a fault in your security scheme is nothing more than an inconvenience. In other cases, a fault might cause great damage to you or your customers. Understanding the security ramifications of each resource will help you protect it properly.

Recommended Deployment Configurations

This section describes the recommended deployment configurations for Materials Management System.

The Materials Management System product can be deployed on a single server or in a cluster of servers. The simplest deployment architecture is the one shown in [Figure 2 - Single-Computer Deployment Architecture](#).

This single-computer deployment may be cost effective for small organizations; however, it cannot provide high availability because all components are stored on the same computer. In a single server environment such as the typical installation, the server should be protected behind a firewall.

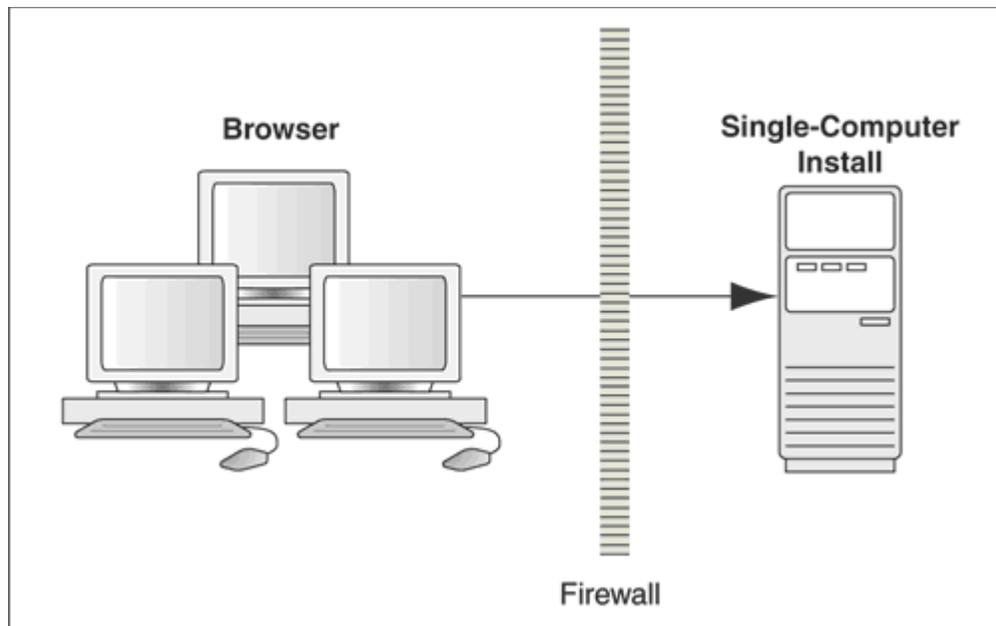


Figure 2 - Single-Computer Deployment Architecture.

The general architectural recommendation is to use the well-known and generally accepted Internet-Firewall-DMZ-Firewall-Intranet architecture shown in [Figure 3 - Traditional DMZ View](#).

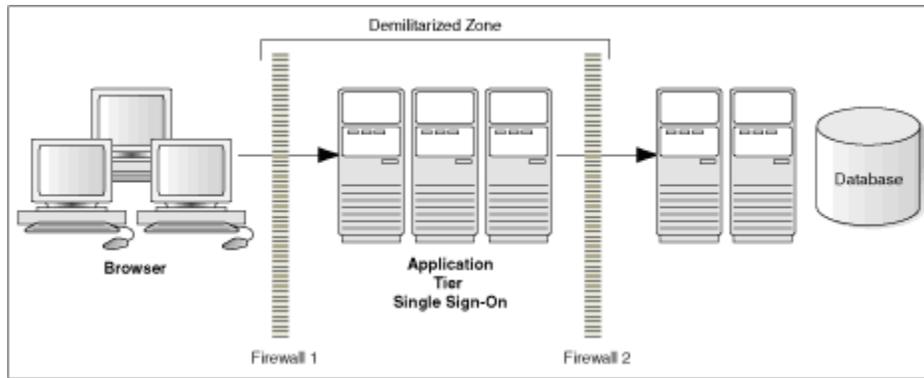


Figure 3 - Traditional DMZ View

The term demilitarized zone (DMZ) refers to a server that is isolated by firewalls from both the Internet and the intranet, thus forming a buffer between the two. Firewalls separating DMZ zones provides two essential functions:

- Blocking any traffic types that are known to be illegal
- Providing intrusion containment, should successful intrusions take over processes or processors

See Materials Management System **Appendix A below**.

Component Security

Operating System Security

Prior to installation of Materials Management System, it is essential that the operating system are updated with the latest security updates.

Refer to the following Microsoft TechNet articles for more information about operating system security:

- [Windows Server 2012 Security](#)
- [Windows Server 2008 R2 Security](#)

Oracle Database Security

Oracle Database

Refer to the [Oracle Database Security Guide](#) for more information about Oracle Database security.

Microsoft SQL Server

Refer to the [Microsoft SQL Server 2012 Security Best Practices](#) Whitepaper for more information about Microsoft SQL Server security.

2 Performing a Secure Materials Management System Installation

This chapter presents planning information for your Materials Management System installation.

Pre-Installation Configuration

Prior to installation of Materials Management System, perform the following tasks:

- Apply critical security patches to the operating system
- Apply critical security patches to the database server application
- Acquire SSL compliant security certificate from Certification Authority

Materials Management System Installation

You can perform a custom installation or a typical installation. Perform a custom installation to avoid installing options and products you do not need. If you perform a typical installation, remove or disable features that you do not need after the installation. The installation requires the user running the installation to have an administrator privileges. No other users have the required access to successfully complete the installation.

When creating a database, enter a complex password that adheres to the database hardening guides for all users.

The following Desktop applications are required for proper operation of the system:

- Materials Management System

The following modules are required for proper operation of the system:

Basic Components for minimum functioning:

- MMS Containers
- MMS Cost Reports
- MMS Cruise Planner
- MMS Database Installer
- MMS Invoicing Module
- MMS Launch Panel
- MMS Micros Export
- MMS Movements
- MMS Purchasing Module
- MMS Recalculate Period
- MMS Receiving Module
- MMS Recipe Manager
- MMS Template Manager
- MMS Warehouse
- MMS Article Manager
- MMS Interface Installer
- MMS Custom Query
- MMS Interface Matrix
- MMS Interface Schedule
- MMS Request
- MMS Vendor Manager

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- MMS Sales Overview
 - MMS Sales Interface
 - MMS Security
 - MMS Options
 - MMS Interface
 - MMS Quote Manager
 - MMS Stock Viewer
 - MMS Inventories
 - MMS Event Viewer
 - MMS Task Manager
 - MMS Reset Module
 - MMS Period Setup
 - MMS Print Manager
 - MMS Change Password
 - MMS Purchasing
 - MMS Updater
 - MMS Secure Server Web Service
 - MMS Secure Server Tool

Integrated Data Exchange Application (IDEA)

- IDEA Configurator
- IDEA Service

Mobile Components

- MMS Web Service
- MMS Web Service Installer
- MMS Mobile

Additional POS Modules

- MMS RPOS Client
- MMS RPOS Systems

Secure Server Web Service Installation

See [MMS_Security_Web_Service_Installation_Guide](#) for more information.

Post-Installation Configuration

This section explains the additional security configuration steps to complete after Materials Management System is installed.

Operating System

Turn On Data Execution Prevention (DEP)

Turn on DEP if required. Refer to the Microsoft product documentation library at <https://technet.microsoft.com/en-us/> for instructions.

Turning Off Auto Play

Turn off Auto play if required. Refer to the Microsoft product documentation library at <https://technet.microsoft.com/en-us/> for instructions.

Turning Off Remote Assistance

Turn off Remote Assistance if required. Refer to the Microsoft product documentation library at <https://technet.microsoft.com/en-us/> for instructions.

Application

Software Patches

Apply the latest Materials Management System patches available on My Oracle Support if available any. Follow the deployment instructions included with the patch.

Passwords Overview

The configuration of Materials Management System product passwords is performed in the Materials Management System Administration module. Administrators are recommended to configure a strong password policy after initial installation of the application and review the policy periodically.

Maintaining Strong Passwords

Ensure that passwords adhere to the following strength requirements:

1. The password must be at least 8 characters long.
2. The password must contain letters, numbers.
3. Must not choose a password equal to the last 3 passwords used.

Change Default Passwords

Materials Management System is installed with a default administrative user and password. Please change the default administrative user password in the Materials Management System, following the above guidelines, after logging in for the first time.

Configure User Accounts and Privileges

When setting up users of the Materials Management System application, ensure that they are assigned the minimum privilege level required to perform their job function. User privileges are described in Access Control of the user guide.

Appendix A Materials Management System Port Numbers

Port Numbers

This is a list of port numbers that are used in Materials Management System. Open a port only if required for some communication.

Service	Port Number
SFTP	22