Oracle Warehouse Management Cloud

Technical Requirements Guide

Release 22C

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Get Help

There are a number of ways to learn more about your product and interact with Oracle and other users.

Get Help in the Applications

Access the online help from the user drop-down menu in the Warehouse Management application.

Get Support

You can get support at *My Oracle Support*. For accessible support, visit *Oracle Accessiblity Learning and Support*.

Get Training

Increase your knowledge of Oracle Cloud by taking courses at *Oracle University*.

Join Our Community

Use *Cloud Customer Connect* to get information from industry experts at Oracle and in the partner community. You can join forums to connect with other customers, post questions, and watch events.

Learn About Accessibility

For information about Oracle's commitment to accessibility, visit the *Oracle Accessibility Program*. (if videos) Videos included in this guide are provided as a media alternative for text-based topics also available in this guide.

Share Your Feedback

We welcome your feedback about Oracle Warehouse Managment. If you need clarification, or find an error, you can direct your questions via a service request to *My Oracle Support.*

2 Network Requirements

Network Requirements

As a cloud SaaS application, Oracle® Fusion Cloud Warehouse Management, formerly LogFire, is accessed over the internet. Adequate bandwidth is required to provide a responsive experience. Bandwidth requirements vary based on the volume at a client site. Bandwidth is not the only determining factor for application responsiveness. Among other factors, network related items such as latency and reliability of the network service may affect the application response.

To calculate the bandwidth required at a site, the determining factors are the number of users at the site, split into number of RF device users and number of Desktop Web interface users. This information will be used by Oracle Warehouse Management (WMS) Cloud to recommend a bandwidth for the site. To provide some rough guidance, we recommend a minimum of 1.5Mbps dedicated and that can support about 60 users (45 RF and 15 Desktop UI). Even if user counts are lower than that, we do not recommend going below this minimum bandwidth at a site.

Dedicated Bandwidth

- Shared non-commercial internet services such as cable internet or DSL are not recommended.
- The bandwidth should be primarily allocated for WMS, and not shared for other purposes, so that, for example a laptop user on the same Wi-Fi network playing streaming music or video does not affect the bandwidth available to the WMS. Ideally, the RF Wi-Fi network should not be used for other purposes.

3 Hardware

Hardware

The following section describes the various hardware devices used by end users to access the Oracle Warehouse Management Cloud application or devices that are accessed by the application. The client's IT department is responsible for setting up and configuring these.

Desktop PCs

Oracle Warehouse Management Cloud provides a Desktop Web Interface to access the application. Any recent computer running Windows, Mac OS X, or Linux with a modern browser is supported. A minimum browser resolution of 1440x900 is recommended. The application will work at lower resolutions but screen layout may be sub-optimal. A resolution of 1920x1080 will provide a much better experience.

The following browser versions were used for testing WMS Cloud version 21A:

- Chrome 83
- Firefox 78
- Edge 44
- Safari 14

Earlier versions of these browsers, especially within the past 12 months, and Internet Explorer 11, should mostly work fine. Issues found using these versions will likely not be fixable and the customer may be asked to switch to a supported one.

RF Devices

Oracle Warehouse Management Cloud supports a handheld RF (Radio Frequency) device interface to access the Mobile RF terminal based application. The basic requirement for these devices are:

- Should have a Secure Shell (SSH) app that can connect via secure encrypted SSH protocol to any configurable port number
- Capable of supporting vt100 terminal emulation
- Ability to display at least 24 characters by 16 lines of text, preferably 29 x 19
- Keyboard should have separate alpha and numeric keys with support for Control keys

Typical RF Devices used in warehouses run Windows Mobile Operating systems (version 5.x or 6.x) or Android. WaveLink, Termius, Velocity, some of the SSH applications used by Oracle Cloud WMS customers, and others can be used as well. Note: SSH apps may not be included with the RF Device and may need to be bought separately.

The RF Device vendor may offer other SSH apps. The following are some models used by current Oracle Warehouse Management Cloud customers:

- LXE/Honeywell MX7
- Zebra MC3300
- Zebra/Motorola MC9190/MC9190G
- Zebra/Motorola MC9590/MC9090
- INTERMEC/Honeywell CK3

Note: These sample devices are for the text based Mobile RF application. In order for the device to support the Oracle WMS Cloud Mobile app, it needs to run Android - see the *Mobile App* section for more details.

Note: WebRF is not intended to be a production or high volume solution for RF. It is designed for testing purposes and for low volume use.

Connection Stabilizing Software

Some customers have used connectivity stabilizing software to handle spotty WiFi in warehouse where the handheld device connects to the connection stabilization software, which in turn connects to Oracle WMS Cloud. Oracle does not test or certify such solutions and customers would be responsible for making sure it performs per their needs. Oracle will not be able to debug any issues related to such software.

Computers

To access the RF application from a desktop or laptop, PuTTY is typically used.

Note: The devices and applications mentioned here are for reference. The customer is responsible for acquiring proper licenses etc, if any, as may be required.

Mobile App

Built using Oracle's latest mobile application technology, VBCS (Visual Builder Cloud Service), the Oracle WMS Cloud Mobile app features modern, graphical, mobile screens that can display images and scan barcodes on both iOS and Android-based devices.

This app is available via the Apple App Store and Google Play Store. In a future update, the app will also be released via the VBCS/OIC marketplace so that customers that subscribe to OIC (oracle integration cloud) can customize the app themselves. The WMS Cloud Mobile App leverages the native mobile capabilities of IoS and Android. The app is supported on the following Android and iOS versions/ devices:

Android

- Android 5 and higher
- Will work on regular phones and ruggedized warehouse devices

iOS

- iOS
- iOS 11.4 and higher
- Supports iPhone, iPad and iPod touch

Additional Notes

- You can quickly setup multiple profiles or environments within the app by scanning a QR barcode. This allows you to point the app to different WMS cloud environments.
- The app supports both single and multi-field barcodes using the existing configuration available in the WMS Cloud service.
  - The app can use the device's camera to scan barcodes or can also work with a barcode scanner attachment that converts the barcode into keyboard input.
- The app supports the same literals and language translation configuration and features available with the WMS Cloud web UI and the text based Mobile RF.
- The app supports display and upload of images.
  - The app layout is optimized for phone sized screens rather than tablet sized screens.

Label Printers

Oracle Warehouse Management Cloud supports the Zebra Printing Language (ZPL). Printers manufactured by Zebra as well as many other companies that support the ZPL printing language should work. The customer is required to test and verify that label printing works as expected. Some typical models in use by current clients are Zebra / ZM400, Zebra 105SL, Zebra R110Xi4 and INTERMEC /PD42.

The Oracle Warehouse Management Cloud application prints to label printers at customer locations via network access that must be configured as described in *Network Configuration*. These printers must be configured in the Oracle Warehouse Management Cloud application.

Laser Printers

Report documents are typically generated as a PDF by the Oracle Warehouse Management Cloud application desktop web interface and can be printed to a local printer by the user. As such these printers typically do not need to be configured in the Oracle Warehouse Management Cloud application.

If the ability to print certain PDF documents from the handheld RF interface is used, then laser printers also need to be setup in the application and accessed by the Oracle Warehouse Management Cloud application over the network similar to label printers.

Dot Matrix Printers

These are used for certain shipping documents such as GDD documents common in South American countries. These must be setup as network accessible printers similar to laser printers. Printers that support the ESC-P language are supported. Some sample models used by current clients are:

- PRINTRONIX/P7220
- EPSON / DFX 9000
- EPSON / FX890
- OKI/Pacemark 4410

Print Servers

We recommend that clients use a print server to manage printers that the Oracle Warehouse Management Cloud application needs to access. Printers connected to an external dedicated print server (typically a Windows Server or a Linux Server) are more robust and can handle larger volumes of labels. Printers that use a built in print server (network card or dongle) may have trouble with higher volumes and may have issues with lost labels or repeated labels etc.

Users should base printing choices on the expected volume and type of use. For example, if they are going to routinely print dozens or hundreds of label at a time from the wave, they should have a dedicated print server to avoid problems. In addition, print servers avoid the need to have multiple public IP addresses for printers.

Network Configuration

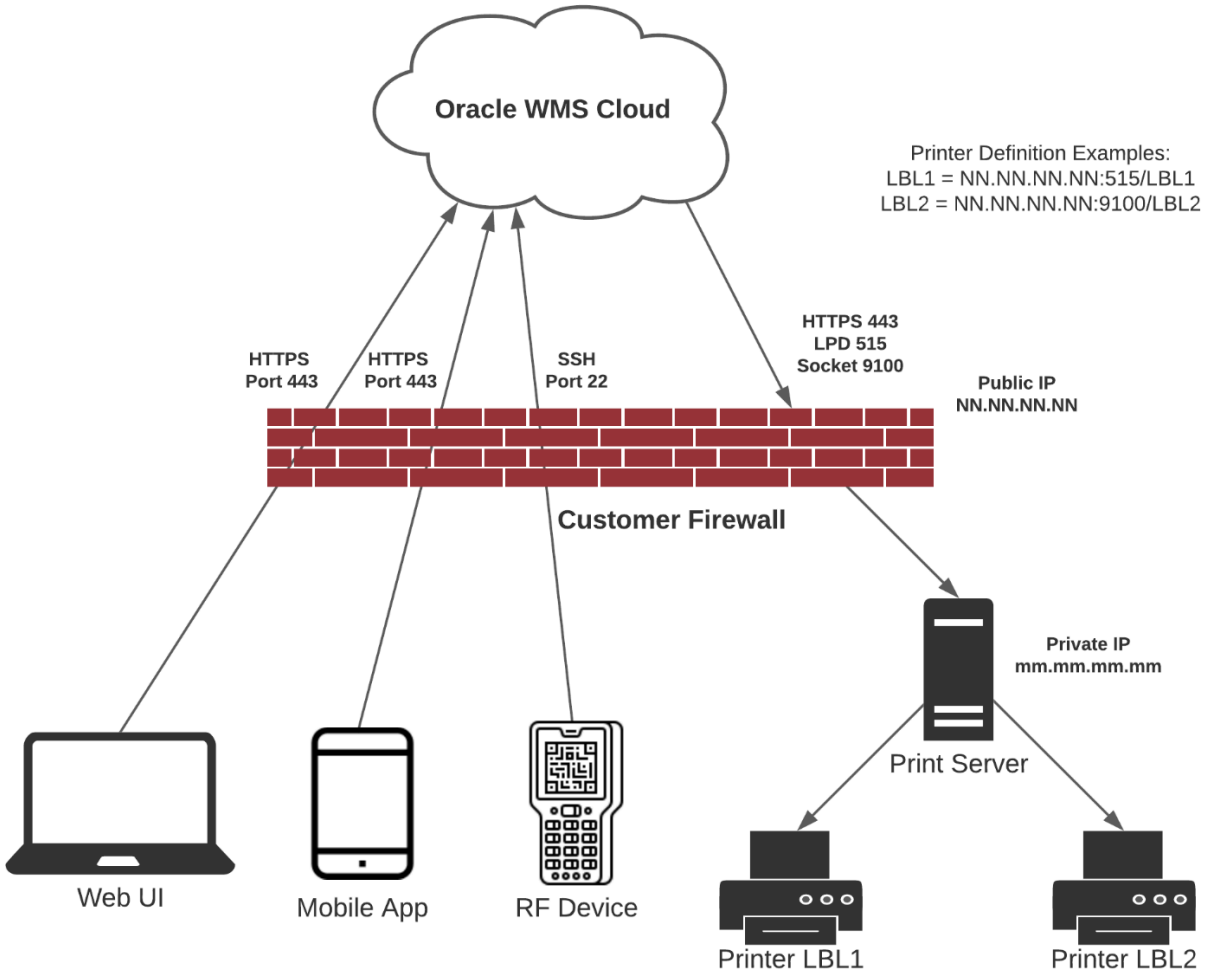
The following diagram describes a typical configuration of how the various hardware devices in a facility running the Oracle Warehouse Management Cloud application access the Oracle Warehouse Management Cloud application. WMS Cloud can be setup to communicate to printers via HTTPS, LPD, or Socket protocols.

Access to Printers

Customers will need to allow access from WMS Cloud to their printers. WMS Cloud publishes IP addresses from which print requests will originate. Customers can configure this on their firewalls to selectively allow access. Using one print server handling multiple printers will usually be easier for network administrators to manage.

Secure Printing

WMS Cloud supports HTTPS as a communication protocol for printing. Customers wanting to encrypt the data being sent from WMS Cloud to their printers can use this option.


Oracle WMS Cloud
Printer Definition Examples:
LBL1 = NN.NN.NN.NN:515/LBL1
LBL2 = NN.NN.NN.NN:9100/LBL2
HTTPS
Port 443
HTTPS
Port 443
SSH
Port 22
HTTPS 443
LPD 515
Socket 9100
Public IP
NN.NN.NN.NN
Customer Firewall
Private IP
mm.mm.mm.mm
Print Server
Web UI
Mobile App
RF Device
Printer LBL1
Printer LBL2

4 Interfaces

Interfaces

Oracle Warehouse Management Cloud supports multiple standard communication mechanisms in addition to client specific custom ones. Standard data formats are XML and flat files. Standard communication methods are Web Services (XML data) or secure FTP (SFTP) for XML or flat files.

> **Note:** To access the latest Interface Specifications, go to the *Oracle WMS Cloud Information Center* From the top of the page, click on the **Documentation** tab at the top, then click the link under **Current Documentation.**

> **Note:** WMS Cloud no longer hosts an SFTP site, though it has the capability to get and put files from and to an external SFTP site via scheduled jobs.

REST WebService XML Payload Size: We recommend XML payloads no larger than 10MB, and preferably less than 5MB, to minimize performance issues. You can achieve this by splitting a data payload into multiple requests. Multiple interface requests can be made in parallel, but we recommend less than 10 simultaneously. The size of output interface payloads sent via REST WebServices can be controlled via the data filtering feature in output interfaces config. Payload limits on the output side, are more dictated by the target system, however there is a hard limit of 20MB in WMS Cloud and it is recommended that payloads be no larger than 10MB.

All languages are supported. We recommend that you use Web Services rather than SFTP as it offers several advantages. It is recommended that UTF-8 encoding is used for data in order to have the widest language compatibility, but other encodings are supported as well such as latin-1 (for western European languages only).

Whichever encoding is chosen must be configured in the Oracle Warehouse Management Cloud system so that data is interpreted accurately. If you have further question please contact The *Oracle Warehouse Management Cloud services and support team*.

5 Authentication

Authentication

Oracle WMS Cloud includes a built-in authentication mechanism using with users can be setup with their own user-id and passwords to access the WMS Web UI, WMS Cloud Mobile App and Mobile RF applications. In addition, it also supports authenticating users against external identity providers (IDP) such as Oracle IDCS or Microsoft Azure AD. It supports multiple authentication mechanisms:

- SAML2 Single Sign On, or SSO in short
  - A web-based authentication standard that can be used only to login to the WMS Web UI
- OAuth2
  - Another authentication standard that can be used for the WMS Web UI, the WMS Cloud Mobile App and Mobile RF.

For more information, refer to the *Oracle Warehouse Management Cloud SSO and Alternate Authentication Setup Guide*(click **WMS latest documentation**, then **Books**.)

API Authentication

Incoming REST API's support the following authentication methogs:

- basic auth (username and password)
- simple token based authentication
- OAuth2 token based authentication (for grant types ROPC and Authorization Code to obtain a token)

There are also API related permissions to be setup within the WMS that controls the ability to read, modify or delete data.

Outgoing REST API's support only basic auth. Outgoing touch points can also be configured to send the payload to external SFTP or SFTP sites.