

## WMS Open Systems Datasheet

WMS Open Systems is a multi-platform product that Manhattan Associates currently sells as a warehouse management system. It runs on a variety of platforms, operating systems, and databases providing flexibility as to how it can be installed.

### Platform requirements for WMS Open Systems

Open Systems typically consists of at least 3 hardware platforms. A Database Server, an Application Server, and a Web Server. Larger installations may have multiple Web Servers with load balancing enabled.

The Database Server stores all the database tables for WMS. The Application Server run the CORBA business object servers to provide services to CORBA Clients. The Application server uses a Manhattan specific interface called DAL to connect to the database server. RF guns run CORBA Clients via a telnet connection back the Application Server. The RF Client runs on the Application Server in a telnet window which is displayed on the RF Gun. The Web Server provides the GUI for the application. The Web Server may connect directly to the database using SQL or may connect to the Application Server as a CORBA Client for certain functionality ( i.e. Wave ).

### Database Server Options

Database Servers are typically installed on 1 box, although some larger clients utilize a failover strategy by having a mirrored database ready to assume operations if the main database fails. More than one warehouse can be run from a database, but in reality, this is almost never done in production. Disk space requirements depend on the transactional volume of the warehouse. The usual configuration is to have a database instance per warehouse.

### Oracle - Operating System Requirements

- Windows 2000 Advanced Server
- HP-UX
- Solaris
- AIX

### SQL Server 2000 Enterprise - - Operating System Requirements

- Windows 2000 Advanced Server

### DB/2 - - Operating System Requirements

- AIX

### Application Server Options

The Application Server is always installed on a single box almost always for a single warehouse. This box needs to have a strong CPU and more memory than the other boxes. The CORBA Servers are multi-threaded ( a process is created for each user, whether RF or WEB ) and each thread consumes memory. The smallest box I've encountered running WMS Application Server in production was a 2 Gigahertz Xeon with 2 Gigs of RAM. Hard drive size is not as critical. A full installation of WMS App Server consumes about 5 Gigs of disk space.

- Windows 2000 Advanced Server
- Solaris
- HP-UX
- AIX

### Other required software

- Visibroker 4.5
- SLNET ( Windows 2000 only )
- Database client libraries ( depends on Database being used )

## Web Server Options

IIS

Windows 2000 Advanced Server

### Other required software

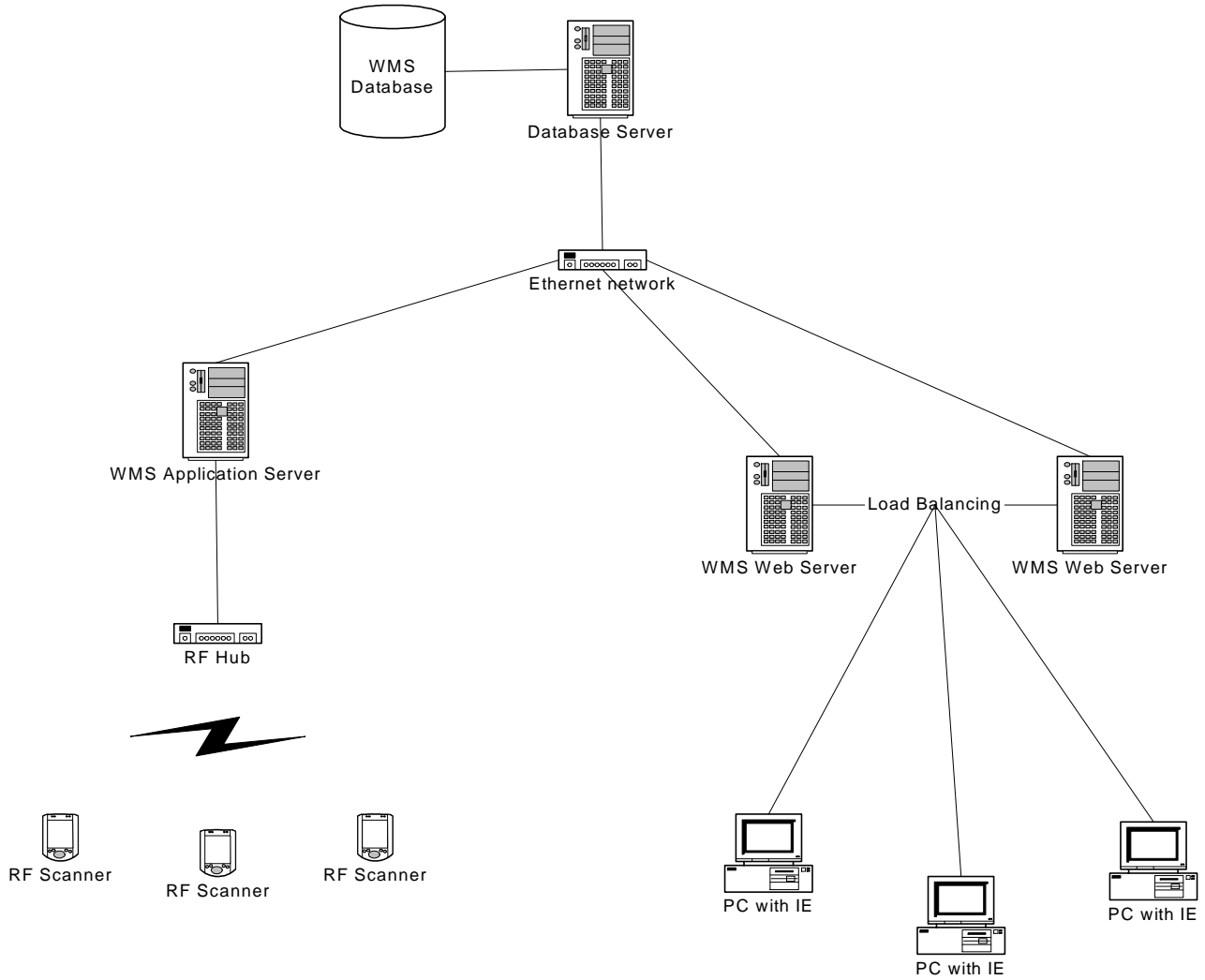
- MSDE - used by the web server to cache some WMS tables.
- Database client libraries ( depends on Database being used )

## Basic Architecture

The CORBA Server and Client programs are written in C++ using the Visibroker CORBA libraries for CORBA functionality. Database access is controlled through another library called DAL ( Database Access Layer ) which is internal to Manhattan. The programs can be compiled to run on any of the platforms by using a set of standard makefiles and scripts which Manhattan has developed. There is also a library containing a standard memory and logging objects called: CLS ( Core Language Services ).

The Web Server uses Javascript and VB script in ASP pages. A COM object written in C++ provides an interface to talk to the Application Server. Database access is via SQL in the code.

# WMS Open Systems ( nTier ) Diagram



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## Glossary

Client - Any program or process that is acting as a "Requestor" of information or services.

CORBA - Common Object Request Broker Architecture. A multi-platform, middle ware product that allows programs to talk to one another and exchange information using an "Object Oriented" approach. CORBA Servers provide business objects and methods that are available using CORBA over a network. A CORBA Clients create an object that allows communication to the server and call methods using that object to obtain and process business objects.

CLS - Core Language Services. Manhattan WMS architecture library that provides standard memory management and logging objects.

Data Access Layer - Manhattan WMS architecture library that supports connecting to a number of different databases. This library provides a standard object oriented interface for programs to use for database access. This allows the programmer to only have to write a single set of code that works with all databases.

makefile - a standard file that defines how to compile and build a C or C++ object.

Server - Any program or process that provides information or services.