SYBASE iAnywhere

Administrator Guide for M-Business Anywhere™ Server

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Focus of this guide

This guide provides the information you need to install, configure, and optimize M-Business Anywhere™ Server and includes appendices containing additional technical reference information.

Read this guide if you are an administrator responsible for installing, configuring, and maintaining M-Business Server; for adding users, for creating public channels, or for maintaining either groups or group channels; or for deploying M-Business Client software.

If you are a user who is also a group administrator, read the sections in this book that explain the responsibilities of a group administrator: “Group administrator mode” on page 104 and “The role of a group administrator” on page 152.

This guide is divided into four major sections:

- Introductory chapters
- Installation and configuration chapters
- Administrator Console chapters
- Appendices

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Conventions

Formatting conventions

The following table lists the formatting conventions used throughout this book.

Table 1. Formatting conventions

Item	Treatment	Example
Name of publication	Italic	*Administrator Guide for M-Business Server*
Items on which user is to take an action	Bold	Click the **Reset** button.
Multi-level menu selections	Bold with "»" separator	Choose **Start»Settings» Control Panel**.
Text you type	Bold, fixed width font	Type **`Admin`** in this field.
Text displayed in a file or on the screen	Fixed width font	The screen reads: `Backup Complete`
Keyboard key	Angle brackets	<Enter>
File names and paths	Italic	*.../conf/sync.conf*
Literals in code synopsis	Bold	void **PODSaddRef(**PODSObject* *podsobj***);**
Variables in code synopsis	Italic	void **PODSaddRef(**PODSObject* *podsobj***);**
Variables in text	Angle brackets plus italic	http://<*servername*>:<*port*>

The M-Business home directory

Throughout this guide, <*M-Business_Home*> is used to refer to the M-Business home directory that is created under the location that you specify during installation. The way you specify this is platform-specific:

- **Windows** — in the Choose Destination Location Installer panel. For details, see "Installing M-Business Server on Windows " on page 27.
- **Unix** — by the directory in which you unzip the installer *.tar.gz* file. For details, see "Upgrading M-Business Server on Unix" on page 30.

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Forward slashes in file paths

To simplify instructions that apply to both Windows and Unix platforms, file paths in this guide are listed with directory levels separated by forward slashes (/). Forward slashes in file paths are supported by current versions of Windows, although this convention originated with Unix systems. The only exception to this convention is in Windows installer instructions.

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The M-Business Anywhere documentation set

In addition to this document, there are several other iAnywhere Solutions publications available that you may find useful in setting up and using M-Business Server.

Note
Unless otherwise noted, all of these publications are available from: http://www.ianywhere.com/developer/product_manuals/mbusiness_anywhere/
In order for links between different PDF files to work correctly, you must open the files directly from the web site, or download them from the web site into the same local directory.

- *Developer Quick Start Guide for M-Business Anywhere*
- *Release Notes for M-Business Anywhere*
- *User Guide for M-Business Anywhere Client*
- *M-Business Anywhere, an Introduction*
- *Application Developer Guide for M-Business Anywhere*
- *API Reference for M-Business Anywhere*
- *Ensuring Mobile Security from the Device to the Datacenter*, available from http://www.ianywhere.com/whitepapers/ensuring_security.html

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Related publications

For more information about Adaptive Server® Anywhere, please refer to the following iAnywhere Solutions publications.

- *SQL Anywhere 10* documentation, available from http://www.ianywhere.com/developer/product_manuals/sqlanywhere/1001/en/html/index.html
- *Setting Up Adaptive Server Anywhere as a Cluster Database Service*, available from http://www.ianywhere.com/developer/technotes/asa_cluster_db_service.html

In addition to the iAnywhere documentation, you may want to refer to the following if you need comprehensive information on configuration settings for Apache and Tomcat servers:

- *Apache webserver* documentation, available from http://httpd.apache.org/docs/mod/mod_log_config.html
- *Tomcat 4 Servlet/JSP Container* documentation, available from http://jakarta.apache.org/tomcat/tomcat-4.1-doc/index.html

If the documentation has moved, go to the Apache Jakarta project URL below and search on tomcat 4 servlet documentation to find its new location: http://jakarta.apache.org/

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Contacting iAnywhere Solutions

Technical support

If you need assistance using iAnywhere software, in North America, please contact iAnywhere Technical Support by calling 1-800-8SYBASE (800-879-2273) and then selecting option 3. You can call Monday through Friday (except major US holidays) between 9:00 a.m. and 9:00 p.m. Eastern time. Services will be provided in accordance with your support agreement.

Outside of North America, for your local support number and hours, please see: http://www.sybase.com/contactus/support

Registering as a Named Contact

Calling the 800-number during business hours should always work to get you technical support — a Customer Number is created for you as soon as your purchase is completed. You will find it faster and easier to get technical support, by phone or online, if you have registered as a Named Contact.

When you purchase an iAnywhere product, a *Sybase Technical Support Contact Form* will automatically be emailed to you within 7-10 days. If your company should need to add another Named Contact, or change the one initially registered, call the Technical Support 800-number and request a *Sybase Technical Support Contact Change Form*.

The *Sybase Technical Support Contact Form* will contain your Customer Number, with spaces for you to provide an email address and other identifying information for the Named Contact for your product. Fill in the requested information and fax the form back to the phone number indicated.

When your fax is received, an email will be sent to you, providing your Technical Contact ID number. You can then use this number to speed up the process when you call for technical support, and to access technical support online.

Using the Sybase Online Support Services

A major benefit of using the Sybase Online Support Services is 24x7 availability. Online support also allows you to look up and review past and current support issues.

When you register as a Named Contact, the email sent to you with your Technical Contact ID number also contains instructions for registering and using the Sybase Online Support Services. Follow these instructions to register as a first-time user, or to update your account with information for the new product you have purchased.

If you have any trouble registering for the Sybase Online Support Services, you can of course call iAnywhere Technical Support for assistance!

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Application development — customizing iAnywhere software

If you need help with customizing iAnywhere software to better serve your enterprise, please contact iAnywhere Solutions Professional Services at contact_us@ianywhere.com.

Product information

If you need information about other iAnywhere products for your enterprise, please contact iAnywhere Workforce Sales at contact_us@ianywhere.com.

Feedback on documentation

If you have questions or suggestions about this document or other iAnywhere technical publications, please contact iAnywhere Technical Publications at iasdoc@ianywhere.com.

We would like to receive your opinions, suggestions, and feedback on this documentation. Although we do not reply to individual emails, we read all suggestions with interest and attempt to incorporate them in future releases.

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Part I. Before You Begin

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CHAPTER 1

Introduction

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About M-Business Anywhere

M-Business Server provides a solid, proven foundation for developing and administering mission critical, large-scale mobile deployments. At the heart of all iAnywhere Solutions products, M-Business Server provides all the capabilities necessary to develop, deploy, and manage the most demanding mobile solutions.

M-Business Anywhere Web Edition Standard

M-Business Anywhere Web Edition Standard provides a platform for delivering Web-based content and forms to mobile devices, extending enterprise resources simply and efficiently to employees and customers. Benefits include increased information access, improved communications, and streamlined information distribution by mobilizing critical business information, including corporate intranet, product information/ catalogs, business intelligence, financial and sales data, corporate directory, field data collection/surveys, market and competitive news and more.

Using M-Business Anywhere Web Edition Standard, companies of all sizes can deliver static Web pages and content to mobile devices. With Web Edition Standard, businesses can easily publish static HTML 4.0 Web page content, so they can be viewed offline with Palm OS and Pocket PC devices.

M-Business Anywhere Web Edition Pro

M-Business Anywhere Web Edition Pro combines all of the features of Web Edition Standard, plus support for JavaScript and the M-Business client extension API. JavaScript adds the ability to provide a more interactive experience on a page by adding business or navigation logic to pages and forms, creating robust, two-way Web applications. The M-Business client extension API allows you to write C code that integrates closely with the M-Business Client binaries, with the ability to access any hardware features that are software-controllable. Most of the M-Business client extension API is also accessible from JavaScript.

M-Business Anywhere Application Edition

M-Business Anywhere Application Edition brings the power of enterprise applications, XML Web services and the Internet to mobile devices, significantly reducing development time and providing the lowest total cost of ownership for enterprises deploying interactive mobile applications. M-Business Anywhere Application Edition supports XML Web services, .NET, and advanced Web application development standards, including Dynamic HTML (DHTML), XML, CSS, DOM, and JavaScript. These features allow you to create feature-rich, data-oriented, interactive business applications — typically found only on desktop computers — to mobile devices.

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About M-Business Server supporting components

About M-Business XML conduit

Bundled with M-Business Server Application Edition, M-Business XML conduit provides access to data stored in legacy database systems by supporting synchronization of XML data sources to an on-device API. Support for XML provides seamless integration with industry-leading databases, including Oracle, Microsoft SQL Server, and Sybase. M-Business XML API provides a uniform, cross-platform method to access data with JavaScript. For more information on M-Business XML conduit, see “About M-Business XML conduit ” on page 5.

About M-Business SOAP Server

You can use the M-Business SOAP API to programmatically implement M-Business Server administration functionality. This includes: configuration management, group management, user management, and Web channel management. Third-party vendors can now OEM or embed M-Business Server functionality with a custom user interface. For more information, see “M-Business SOAP API reference” [*M-Business Anywhere API Reference*].

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System requirements

Successful installation of M-Business Server in an enterprise environment requires at least one administrator responsible for installation of the server and creation of users, groups, and channels. This administrator also should confirm that the hardware used meets or exceeds the general installation requirements outlined in the following sections.

Note
Double-byte character set (DBCS) support is provided on Windows only. There is nothing to configure in M-Business Server — character set support is implemented entirely through the HTML pages in your channel content. For information on specifying character sets in HTML pages, see "Working with double-byte character sets (DBCS)" [*M-Business Anywhere Application Developer Guide*].

Requirements for M-Business Server on Windows

- 2 GB RAM and 10 GB disk space (disk space and RAM requirements will vary, depending on user population)
- At least a Pentium 4 2.5 GHz
- One of the following operating systems:
  - Windows 2000 Server with Service Pack 4
  - Windows 2003 Server with Service Pack 1
- One of the following supported browsers (does not have to be running on same machine where M-Business Server is installed):
  - Microsoft Internet Explorer 5.5 or 6.0 or 7.0
  - Mozilla Firefox 2.0

Requirements for M-Business Server on Unix

Requirements for M-Business Server on Linux

- 2 GB RAM and 10 GB disk space (disk space and RAM requirements will vary, depending on user population)
- At least a Pentium 4 2.5 GHz
- Linux kernel 2.4.18 (as implemented in Redhat Linux 8.0)
- One of the following supported browsers (does not have to be running on same machine where M-Business Server is installed):

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- Microsoft Internet Explorer 5.5 or 6.0 or 7.0
- Mozilla Firefox 2.0

Requirements for M-Business Server on Solaris

- 2 GB RAM and 10 GB disk space (disk space and RAM requirements will vary, depending on user population)
- SPARC Ultra with CD-ROM drive
- Solaris 8 or 9
- One of the following supported browsers (does not have to be running on same machine where M-Business Server is installed):
  - Microsoft Internet Explorer 5.5 or 6.0 or 7.0
  - Mozilla Firefox 2.0

Requirements for enabling security

One or more of the following security certificates:

- An ECC security certificate (available from iAnywhere Solutions)
- An RSA security certificate (available from Thawte™ or VeriSign®)

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Getting started task checklist

The following sections outline the major tasks associated with installing and maintaining M-Business Server, as well as with distributing M-Business Client.

Installation and setup

- Review the "System requirements" on page 6.
- Set up the user account under which M-Business Server will run.

  On Windows, see "Setting up a user account on Windows " on page 24.
- Install and set up M-Business Server on your server machine.

  See "Upgrading and installing M-Business Server" on page 23.
- Change database passwords.

  See "Changing database passwords" on page 77.
- If you are using a proxy server, specify proxy settings.

  See "Configuring proxy server settings" on page 85.
- Determine the best security method for your environment, then set up security.

  See "Enabling secure sockets layer (SSL)" on page 58.
- Formulate a policy for user names and login information.

Deploying M-Business Client

There are three common ways to deploy M-Business Client to your users.

> **Note**
> M-Business Client only works with M-Business Server, versions 5.3 and higher, and will not work with earlier versions of M-Business Server.

The most common deployment methods include:

- Providing servername and login (user name and password) information and allowing users to download and install the client software from the M-Business Server Administrator Console interface. For detailed instructions, refer users to "Installing M-Business Client" [*M-Business Anywhere Client User Guide*].

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- Providing users with servername but no login information and instructing users to click the **Download Client Software** link on the M-Business Server login page. Provide users with additional configuration instructions via email.
- Providing client software, installation instructions, and synchronizing instructions via email without allowing users access to M-Business Server.

M-Business Server maintenance

Perform the following maintenance tasks on a daily, weekly, or as-needed basis.

- Back up user and group data.

  See "Backing up the database" on page 94.

- Create and run a database cleaner script

  See "Running a database cleaner script" on page 96.

- Clear server cache. If much of the traffic on your server includes channel pages that are not cache friendly (that is, they contain dynamic graphics, they do not expire, or they do not contain cache-control headers), you may want to clear the M-Business Server cache at least once a week.

  See "Clearing the server cache" on page 87.

- Reset log files. If you have large numbers of users synchronizing frequently to the server, the log files can become quite large. You may want to reset the log files once every week, or as necessary to free up space.

  See "Resetting the log files" on page 97.

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CHAPTER 2

M-Business Server and XML conduit

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M-Business Server overview

With M-Business Server, system administrators can centrally manage information and administer data access for professionals who take critical business information and applications with them on their mobile devices. M-Business Server administrators extend user-interactive Web, intranet, or corporate database content and applications to mobile devices.

M-Business Server architecture

M-Business Server consists of several components, including the Admin Server, the Sync Server, and a database. A typical M-Business Server environment supports clients that are connected via desktop computers, via kiosks, or via wired or wireless modems.

M-Business Admin Server

The M-Business Admin Server (also referred to as the UI Server) provides authorized administrators and users access to M-Business Server through a standard desktop web browser. Using this Web-based interface, administrators can manage users' access privileges, add and remove users, groups, and channels, modify conduit settings, as well as remotely add applications to mobile devices. Users also can use the interface to add personal channels, subscribe to public channels, manage group memberships, as well as view conduit options and synchronization histories.

M-Business Sync Server

The Sync Server handles requests from M-Business Client to perform synchronization functions. The Sync Server determines whether particular pages requested are to be obtained from the source Web server or from the shared cache on the Sync Server.

M-Business Server database

The M-Business Server database is the location where both the Admin Server and the Sync Server store information about users, groups, channels, conduit settings, and server settings, as well as information about devices that have synchronized. M-Business Server ships with Adaptive Server Anywhere as its default database management software.

M-Business Server also can be integrated with an NT Domain and provides the option to authenticate and retrieve user and group information by communicating with the Primary or Backup Domain Controller (PDC and BDC) on NT, or the Domain Controller on Windows 2000 or Windows 2003. If M-Business Server is integrated with an NT Domain, users are authenticated directly against the domain, not against information stored in the Adaptive Server Anywhere database.

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M-Business XML conduit overview

M-Business Server Application Edition comes with M-Business XML conduit. M-Business XML conduit allows an M-Business Client application developer to send structured data to mobile devices, present that data in the M-Business Client browser, and to report changes to that data back to the originating database server through M-Business Anywhere's standard form submission mechanism.

For more information on M-Business XML conduit architecture and on creating applications for use with M-Business XML conduit, see "Using M-Business XML conduit and API" [*M-Business Anywhere Application Developer Guide*].

For information on using the M-Business XML conduit, see "Managing group database channels — M-Business XML conduits" on page 163.

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The UltraLite alternative to M-Business XML conduit

UltraLite® is a separate database product that works seamlessly with M-Business Anywhere. It provides a robust database solution with a high performance synchronization engine that will scale for thousands of users. UltraLite has features, like indexing, which allow searching and improved responsiveness with much larger datasets, rich dynamic SQL support, transaction processing to comply with the existing enterprise rules, and other features expected of a full-featured database. MobiLink also offers robust, flexible bi-directional synchronization with enterprise data stores.

If you need a full-featured on-device database that is easy to synchronize with an enterprise backend database, UltraLite provides this functionality. For more information on the trade-offs between using UltraLite vs. M-Business XML conduit, see "Summary of trade-offs, UltraLite vs. M-Business XML datastore" [*M-Business Anywhere Application Developer Guide*].

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Extending M-Business Client capabilities

M-Business Server Web Edition Pro and M-Business Server Application Edition work with M-Business Client to provide two ways to extend the capabilities that the base software provides.

The implementation of JavaScript lets you use this powerful scripting language within HTML pages. M-Business client extension API allows you to write C code that integrates closely with the M-Business Client binaries, with the ability to access any hardware features that are software-controllable.

M-Business JavaScript engine

The JavaScript engine in M-Business Client provides the ability to:

- Create, remove, and modify form submissions.
- Control wireless connections.
- Display and process dialog and message boxes.
- Perform data validation.
- Create multi-page applications.
- Navigate in the M-Business Client window.
- Invoke M-Business client extension API functions.
- Dynamically populate options lists.
- Read from and write to on-device databases.
- Synchronize via a server conduit with a server database.
- Retrieve database data and display it in a page.
- Write scripts in full ECMAScript version 3 language, with only a few features lacking.

It is generally faster and easier to extend M-Business Client with JavaScript than with C, and the resulting code is cross-platform — it will run on any device supported by M-Business Client.

For more details on the feature set supported by the JavaScript engine, see "JavaScript" [*M-Business Anywhere Application Developer Guide*].

M-Business client extension API

When you require additional capabilities for your application needs, the M-Business client extension API provides you with almost unlimited extensibility for M-Business Client. The M-Business client extension API is an application programming interface that lets the developer access many of the internal functions of M-Business Client, recombining them in any way that you need to in order to build custom, enterprise-level applications for your mobile devices.

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Most of the M-Business client extension API is now accessible from JavaScript. The full M-Business client extension API is accessible from C. JavaScript is the recommended tool to access this API, unless your application requires the speed of compiled code for high data volumes, or if a particular feature you need is only available in C.

The binaries compiled from C code to access the M-Business client extension API are called PODS. PODS applications are downloaded to mobile devices and can run on them even when those devices are not connected to any server. The C code that you write to create a PODS application can issue commands to the device OS and can control any device hardware for which you can get or write device drivers.

For more information on developing applications with PODS (C) or JavaScript, including steps to make a custom POD available to JavaScript, see "Introduction" [*M-Business Anywhere API Reference*].

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Customizing M-Business Server

Edit directive variables in M-Business Server configuration files to customize M-Business Server and control its behavior. Tasks such as enabling security and changing your license key both require that you edit specific directives located in the configuration files.

Further customize M-Business Server by optimizing it to enhance performance. This is important especially if your user base is large or your content volume is high.

Note
If you are upgrading or re-installing M-Business Server for Windows, M-Business Anywhere-specific configuration file settings are migrated during the installation.

Editing configuration files

M-Business Server includes several configuration files. These files are located in the *<M-Business_Home>/conf* directory, where *<M-Business_Home>* is the M-Business home directory that is created under the location that you specify during installation. For more information, see "The M-Business home directory" on page ix.

Caution
The @@. . .@@ variables in *sync.conf.default*, *agsoap.conf.default*, and *server.xml.default* files must not be modified. Values for these variables are set globally in the *defaults* file; change the value of @@. . .@@ variables in the *defaults* file and run the *defaults_setup.bat* script (Windows) or *defaults_setup* script (Unix) to update the values in *sync.conf*.

Table 1. Configuration files

File name	Description
sync.conf	This file contains both Apache and M-Business Anywhere-specific configuration directives for the Sync Server, which runs when users synchronize their devices with M-Business Server.
agsoap.conf	This file contains both Apache and M-Business Anywhere-specific configuration directives for M-Business SOAP Server, which supports creation of the M-Business Administrator Console.
server.xml	This file contains both Apache and M-Business Anywhere-specific configuration directives for the Tomcat server, which acts as the web server for the default administrator UI.

The directives that each configuration file contains come from an associated default configuration file.

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Table 2. Default configuration files

File name	Description
defaults	Contains variable definitions that are used to build the configuration files. The most commonly changed configuration settings are in this file. Use the ***defaults*** file to set the following: ♦ Host names of computers running Admin, Sync, and Adaptive Server Anywhere services ♦ Names of log files ♦ User and group IDs used to run the server processes ♦ Account names and passwords used by M-Business Server to access the database ♦ Limits on the number of connections the database will accept and the number of retries for database accesses ♦ E-mail address displayed on error pages ♦ URL of the home page for the server
sync.conf.default	Used to create *sync.conf*. This file uses the variables defined in the *defaults* file.
agsoap.conf.default	Used to create *agsoap.conf*. This file uses the variables defined in the *defaults* file.
server.xml.default	Used to create *server.xml*. This file uses the variables defined in the *defaults* file.

♦ To edit configuration files

1. Change the directive's variable definition in the *defaults*, *sync.conf.default*, *agsoap.conf.default*, or *server.xml.default* file.

   These files are located in the *<M-Business_Home>/conf* directory, where *<M-Business_Home>* is the M-Business home directory that is created under the location that you specify during installation. For more information, see "The M-Business home directory" on page ix.

   See "Configuring M-Business Server" on page 75 for information on specific settings in these files.

2. Run the appropriate script for your platform.

   Windows: run ***defaults_setup.bat***

   Unix: run ***defaults_setup***.

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The script scans all files in the *<M-Business_Home>/conf* directory that have the extension *.default*, makes the appropriate variable definition substitutions, and saves the changes to the associated configuration file — *sync.conf*, *agsoap.conf*, or *server.xml*.

3. Stop and restart M-Business Server services.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

> **Caution**
> If you have made changes to any of the associated configuration files in the meantime, those changes will be overwritten when you run the *defaults_setup* script. Use the above instructions to correctly edit the configuration files.

To learn more about the settings in the configuration default files:

- Read the comments in those files.
- Read the Apache Server documentation at http://www.apache.org/docs.

For a complete list of M-Business Anywhere-specific directives and what they do, see "Configuring M-Business Server" on page 75.

Optimizing M-Business Server

If your number of users is particularly large and your volume of content is high, you may want to optimize your installation of M-Business Server by editing specific variables in the configuration files. These variables and how to edit them are explained in "Optimizing performance" on page 98. For assistance with integrating existing services, applications, and data, please contact iAnywhere Solutions Professional Services — see "Contacting iAnywhere Solutions" on page xiii.

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Securing M-Business Server: an overview

To protect corporate networks, M-Business Server provides user name and password authentication using 56-bit or 128-bit SSL encryption for end-to-end transactions. In addition, SSL encryption allows M-Business Server to connect securely to other web servers. With SSL enabled, users can synchronize their mobile devices with M-Business Server using secure protocols.

To secure cradle synchronizations between M-Business Server and the desktop computer, either Microsoft Internet Explorer proxy settings and 128-bit RSA certificates or default proxy settings and Elliptical Curve Cryptography (ECC) certificates are used. M-Business Server authenticates users using their user name and password when they connect via the desktop or the mobile device.

To enable security for use with mobile devices, request and install either an RSA certificate or an ECC certificate, or possibly both, depending upon your environment. Pocket PC and Palm devices exclusively use default proxy settings to connect to M-Business Server for online page fetches or wireless modem synchronizations. Therefore, to ensure secure synchronizations when using those synchronization methods, an ECC certificate should be installed on M-Business Server, even if an RSA certificate is used to ensure secure cradle synchronizations. See “Securing M-Business Server: an overview ” on page 20 to help determine which certificate may best suit your needs.

Table 3. Choosing a security certificate

Type of certificate	Synchronization method(s)	Device(s)	Secure?
ECC	♦ cradle ♦ wireless modem ♦ online browsing	♦ Palm ♦ Pocket PC	Yes
RSA	♦ cradle	♦ Palm ♦ Pocket PC	Yes
RSA	♦ wireless modem ♦ online browsing	♦ Palm ♦ Pocket PC	No

For detailed instruction on how to set up security for M-Business Server, see “Security” on page 57.

For more information about the available security options for M-Business Server, see the Technical White Paper, *Ensuring Mobile Security from the Device to the Datacenter*, referenced in “The M-Business Anywhere documentation set” on page xi.

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Part II. Installing/Configuring M-Business Server

- “Upgrading and installing M-Business Server” on page 23
- “External user authentication” on page 47
- “Security” on page 57
- “Configuring M-Business Server” on page 75

CHAPTER 3

Upgrading and installing M-Business Server

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Upgrading and installing on Windows

Preparing for a first-time install on Windows

If you are performing a new install of M-Business Server on Microsoft Windows, ensure that the machine on which it will run has the necessary administrative privileges required to install and configure M-Business Server.

Setting up a user account on Windows

For the purposes of installing and managing M-Business Server, add a new user account on the domain with the following rights:

- Log on as a service
- Log on as batch
- Act as part of OS

For help with creating a new user and assigning these permissions, see the Windows documentation.

After you set up the user account, install M-Business Server. If you are new to M-Business Server, see "Installing M-Business Server on Windows " on page 27.

Upgrading M-Business Server on Windows

If you are using M-Business Server version 4.0 and higher, with the exception of version 4.01, you can upgrade to the current version of M-Business Server.

If you plan to upgrade your system from Windows NT to Windows 2000 when you upgrade to the current version of M-Business Server, see "Upgrading Windows while upgrading M-Business Server" on page 26.

Migrating your data

During an upgrade installation, you will be prompted to back up your current data. If you want to preserve your current M-Business Server data, be sure that you click **Yes** to this prompt.

If you are upgrading from an M-Business Server version earlier than 5.3, you will also be prompted to migrate that data from MySQL to Adaptive Server Anywhere. If you want to preserve your current M-Business Server data, you must click **Yes** to this prompt as well. The switch from MySQL to Adaptive Server Anywhere is not optional.

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Synchronizing migrated data with NT domain integration

If you are using NT domain integration and you migrate your current M-Business Server data, you must run the `AGDomainSync` tool after the migration is complete. Include both the `-a` (add) and `-d` (delete) switches, as follows:

```
AGDomainSync -a -d
```

For more information on the AGDomainSync tool, see "Using the AGDomainSync tool" on page 50.

Pre-populated fields

During an upgrade installation, the installer pre-populates the following fields:

- License Key

> **Note**
> If you are upgrading from version 4.0, you need a new license key. If you are upgrading M-Business Server Web Edition Professional, version 4.1 or 4.2, or M-Business Server Web Edition Standard, version 4.1 and 4.2, your existing license key will work with the current version. If you are upgrading M-Business Server Application Edition, you need a new license key.

- Server Friendly Name
- Host Name
- Port Number

  If the information is correct and you do not wish to change it, simply click **Next** to proceed to the next panel.

> **Caution**
> M-Business Server migrates information only from properly edited configuration files. To confirm you have appropriately changed the configuration files, see "Editing configuration files" on page 17. If you have made additional changes to settings other than the ones noted above, see "Migrating configuration settings" on page 26.

If you have set up security with M-Business Server, your existing RSA or ECC certificate is migrated and you do not need to re-configure M-Business Server for security. During install, you also are given the option of migrating your existing user database.

To proceed with your upgrade on Windows, continue with "Installing M-Business Server on Windows " on page 27.

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Migrating configuration settings

The upgrade process preserves all existing configuration file settings for M-Business Server and M-Business Client, but it does not migrate any other configuration directives you might have created.

♦ To migrate custom configuration settings

1. Back up your existing configuration files.
2. Upgrade to the current version.
3. Make changes as necessary to the new configuration files, closely following the directions in "Editing configuration files" on page 17.

> **Caution**
> Because the settings and sequence of settings in these files changes from version to version, it is important that you not simply copy your backed up configuration files over the newly installed configuration files. To do so could overwrite new settings or could alter the sequence of critical settings.

Upgrading Windows while upgrading M-Business Server

If you are upgrading your system from Windows NT to Windows 2000, or Windows 2003, or upgrading your system from Windows 2000 to Windows 2003 at the same time that you are upgrading to M-Business Server 6.7 we recommend performing the upgrade in the sequence that follows, to ensure successful migration of your user and account data. The following steps require the use of two separate server machines.

♦ To upgrade Windows while upgrading M-Business Server

1. On the machine with the existing installation of M-Business Server and the older version of Windows, back up these directories:

   - *<M-Business_Home>/ASA/data* — database files
   - *<M-Business_Home>/conf* — configuration files
   - *<M-Business_Home>/ASA* — log files

2. On that same machine, upgrade to the current version of M-Business Server.

   See "Upgrading M-Business Server on Windows" on page 24.

3. On the machine with the newer version of Windows, install the current (new) version of M-Business Server.

   See "Installing M-Business Server on Windows " on page 27.

4. Copy the existing M-Business Server database from the machine with the older version of Windows to the machine with the newer version of Windows.

   If you need further assistance upgrading your system, contact iAnywhere Technical Support — see "Contacting iAnywhere Solutions" on page xiii.

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Installing M-Business Server on Windows

This section covers how to install M-Business Server on Windows 2000 or Windows 20003 machines, either with or without NT domain integration.

You may wish to review the *ReadMe.txt* file before installing M-Business Server.

♦ To install M-Business Server on Windows

1. Log in to Windows as a local administrator.
2. On the **Start** menu, choose **Run** .

   The **Run** dialog appears.
3. Enter **e:/MBAnywhereW.exe** in the **Run** dialog

   Where ***e*** is the letter for the correct drive.

   > **Note**
   > You can also start the installer from Windows Explorer by double-clicking the **e:/MBAnywhereW.exe** file.

   The **Welcome** dialog appears.
4. Click **Next**.

   The **Server License** dialog appears.
5. Enter a valid license key, then click **Next**.

   The **Server Functionality** dialog appears. If you believe that your license key should include functionality not listed here, please contact iAnywhere Workforce Sales — see "Contacting iAnywhere Solutions" on page xiii.
6. Click **Next** to proceed to the **License Agreement** dialog.
7. Read the license agreement, then click **Yes** to accept the licensing terms.

   The **Choose Destination Location** dialog appears.
8. Confirm or change the location of the M-Business Server install, then click **Next**.

   > **Note**
   > The directory which you specify for Choose Destination Location sets the path in *<M-Business_Home>*.Throughout the rest of this guide, *<M-Business_Home>* is used to refer to the M-Business home directory that is created under the location that you specify here.

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> **Caution**
> If you change the default location, do not specify a path that includes any spaces in any of the directory names.

9. If you are installing M-Business Server with NT domain integration, you will see the **Domain List** dialog. If not, proceed to step 11.
10. In the **Domain List** dialog, enter the name of the NT domain you wish to integrate, then click **Next**.

    If you want to integrate with multiple NT domains, enter the domain names separated by a comma (DOM1, DOM2, DOM3).
11. Enter a **User Friendly Server Name**, then click **Next**.

> **Note**
> This is the server name that users will see in M-Business Connect on the desktop and on the device.

12. Enter the **Sync Port** for M-Business Sync Server, then click **Next**.

> **Note**
> The default port used by M-Business Sync Server is port 80. It is not recommended that you install M-Business Server on a machine currently running a web server, but if you do, enter another port number, for example, 8092, in this field.

13. Enter the **UI Port** for M-Business Admin Server, then click **Next**.

> **Note**
> If you change the UI Port setting from the default, you will need to run a script after the installation is complete. Step 20 below provides detailed instructions. Be sure that you do not skip this step.

14. Enter the **Database Port** for M-Business Admin Server, then click **Next**.
15. Enter the **Soap Server Port** for M-Business SOAP Server, then click **Next**.
16. Enter the **Host Name** or IP address (if you do not have DNS access) of the M-Business Sync Server, then click **Next**.
17. Answer any existing database prompts.

> **Caution**
> If you are upgrading or re-installing M-Business Server, you are prompted to back up and migrate your existing database. If you wish to preserve existing data, click **Yes** on both of these prompts; specify a location for the backup files using the **Browse** button.

18. Wait while the **Setup Status** dialog indicates progress.

    This portion of the installation process takes a while.

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If you are upgrading or re-installing M-Business Server, you may receive a **ReadOnly File Detected** message. Check the box for **Don't display this message again**, then click **Yes**.

The **InstallShield Wizard Complete** dialog displays when the installation is complete.

19. Click **Finish** to complete the installation and reboot your machine.

> **Tip**
> If you encounter problems during installation, view the *install.log* file. This file is located in the <*M-Business_Home*> directory, which is the M-Business home directory that is created under the location that you specify during installation. For more information, see "The M-Business home directory" on page ix. For other troubleshooting tips, see "Configuring M-Business Server" on page 75.

20. If you changed the UI Port setting from the default, after completing the installation process and rebooting your machine, run the *agreservedsubs.bat* script:

    - At a command prompt, navigate to the ***<M-Business_Home>/conf*** directory.
    - Enter **`agreservedsubs.`**

After installing M-Business Server, ensure database security by changing the default passwords. For detailed instructions, see "Changing database passwords" on page 77.

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Upgrading and installing on Unix

Upgrading M-Business Server on Unix

Note
Before upgrading M-Business Server on Solaris 2.6, make sure you have installed the following Solaris 2.6 patches:
- patch number 105591, C++ shared library
- patch number 107733, linker patch

If you are using M-Business Server version 4.0 and higher, with the exception of version 4.01, you can upgrade to the current version of M-Business Server.

If you have modified your configurations settings, see "Preserving configuration settings" on page 31 before proceeding with the upgrade installation.

Preparing to upgrade

To install M-Business Server to the same location as your existing installation (example: */usr/local/<M-Business_Home>*):

♦ **To prepare to upgrade**

1. cd to the ***/usr/local/<M-Business_Home>/conf*** directory.

   Note
   If you are installing in a different location, cd to the directory where you want to install M-Business Server.

2. Stop all M-Business Server processes:

   ```
   ./agserver stop all
   ```

   Caution
   All existing ASA servers must be stopped for M-Business Server installation to work properly. The above command stops only the ASA server supporting M-Business Server. If any other ASA servers are running on the same machine, you must stop them all before proceeding.

3. Rename the old directory prior to running the new installation.
4. Install M-Business Server.

   See "Installing M-Business Server on Unix" on page 31.

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Migrating your data

During an upgrade installation, you will be prompted to back up your current data. If you want to preserve your current M-Business Server data, be sure that you type **Y** for "Yes" in answer to this prompt.

Preserving configuration settings

Note
If you install the new version of M-Business Server over the previous version, in the same directory, the install script will preserve most of the changes you have made in the *defaults* file.

Although the upgrade process preserves copies of your configuration and default files, it may not automatically migrate all changes that you may have made in those files to the upgraded versions of those files; you should check these files and manually re-enter any changes you have made to your old configuration and default files that were not preserved.

♦ **To restore configuration settings after upgrade is complete**

1. Compare each of the backed up files with its newly installed counterpart and in the new files, then replace any values that were manually edited in the backed up files.

   For example, if in a previous release you changed the `MaxClients` setting in the *sync.conf.default* file to 100 and you want to retain this setting, you will need to make this exact change in the new *sync.conf.default* file.

   Caution
   Because the settings and sequence of settings in these files changes from version to version, it is important that you not simply copy your backed up configuration and default files over the newly installed configuration and default files. To do so could overwrite new settings or could alter the sequence of critical settings.

2. Save your changes.
3. Restart M-Business Server services.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

Installing M-Business Server on Unix

Installing M-Business Server on Linux

You may wish to review the *ReadMe.txt* file before installing M-Business Server.

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♦ To install M-Business Server on Linux

1. Log on as root.
2. Copy the ***MBAnywhereL_6.7.<build>.tar.gz*** file to a location on your hard drive where you want to install M-Business Server.

   For example, ***/usr/local***.

   Note
   The file you download will have the build number in the position of *<build>* in the file name above.

   Note
   The directory in which you install M-Business Anywhere sets the path in *<M-Business_Home>*.

   Caution
   Do not specify a path that includes any spaces in any of the directory names.

3. Unzip the ***MBAnywhereL_6.7.<build>.tar.gz*** file by typing:

   ```
   gzip -d MBAnywhereL_6.7.<build>.tar.gz
   ```

   Replace <***build***> with the build number in the actual file name.

4. To create the ***MBAnywhereL_6.7.<build>*** directory, type:

   ```
   gtar -xvf MBAnywhereL_6.7.<build>.tar
   ```

   Replace <***build***> with the build number in the actual file name.

   Note
   This is the directory at the end of the path in *<M-Business_Home>*. By default, this directory is named *MBAnywhereL_6.7.<build>*, with the build number in the position of *<build>*.

5. To change to the ***<M-Business_Home>/conf*** directory, type:

   ```
   cd <M-Business_Home>/conf
   ```

6. To install and start up M-Business Server services, type:

   ```
   ./installMBAnywhereL_6.7.<build>
   ```

   Replace <***build***> with the build number in the actual file name.

7. To verify that all services are running (`asa`, `sync`, `admin`), type:

   ```
   ./agserver status
   ```

After installing M-Business Server, ensure database security by changing the default passwords. For detailed instructions, see "Changing database passwords" on page 77.

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Installing M-Business Server on Solaris

You may wish to review the *ReadMe.txt* file before installing M-Business Server.

♦ To install M-Business Server on Solaris

1. Log in as root.
2. Copy the file ***MBAnywhereL_6.7.<build>.tar.gz*** to a location on your hard drive where you want to install M-Business Server.

   For example, ***/usr/local***.

   Note
   The file you download will have the build number in the position of <*build*> in the file name above.

   Note
   The directory in which you install M-Business Anywhere sets the path in <*M-Business_Home*>.

   Caution
   Do not specify a path that includes any spaces in any of the directory names.

   Note
   The `gzip` and `gtar` commands used below are required because `tar` on Solaris does not support long file names. If you do not have `gtar` and `gzip` on your machine, you can download them from the web.

   Download **`gzip`** from:

   http://www.gnu.org

   Download **`gtar`** from:

   http://www.sunfreeware.com
3. To create the ***MBAnywhereS_6.7.<build>*** directory, in the current directory where you placed *MBAnywhereS_6.7.*<*build*>*.tar.gz*, type:

   ```
   gzip -dc MBAnywhereS_6.7.<build>.tar»gtar-sparc -x
   ```

   Replace ***<build>*** with the build number in the actual file name.

   Note
   This is the directory at the end of the path in <*M-Business_Home*>. By default, this directory is named *MBAnywhereS_6.7.*<*build*>, with the build number in the position of <*build*>.

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4. To change to the *<M-Business_Home>/conf* directory, type:

   cd <*M-Business_Home*>/conf

5. To install and start up M-Business Server services, type:

   ```
   ./installMBAnywhereS_6.7.<build>
   ```

   Replace **<*build*>** with the build number in the actual file name.

6. To verify that all services are running (`asa`, `sync`, `admin`), type:

   ./agserver status

After installing M-Business Server, ensure database security by changing the default passwords. For detailed instructions, see "Changing database passwords" on page 77.

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What gets installed

When you install M-Business Server, the directories listed below are created.

Note
In all the paths listed below, *<M-Business_Home>* is the M-Business home directory that is created under the location that you specify during installation. For more information, see "The M-Business home directory" on page ix.

- ***<M-Business_Home>*/ASA/data**

  Contains the Adaptive Server Anywhere database (*agdb.db*), and its log file (*agdb.log*).

- ***<M-Business_Home>*/ASA/*win32*** (Windows) or ***<M-Business_Home>/ ASA/bin*** (Unix)

  Contains the Adaptive Server Anywhere - AGDB service (Windows) or asa server process (Unix), supporting DLLs (Windows) or daemons (Unix), and commands that can be used to administer the database.

- ***<M-Business_Home>/bin***

  Contains the M-Business Server executable.

- ***<M-Business_Home>/cache***

  Contains cached HTML pages retrieved from the network.

- ***<M-Business_Home>/conduits***

  Contains necessary information for M-Business Server conduits.

- ***<M-Business_Home>/conf***

  Contains configuration files and commands used to set up M-Business Server.

- ***<M-Business_Home>/lib***

  Contains conversion string tables for localized versions of M-Business Server.

- ***<M-Business_Home>/logs***

  Stores error and access log file.

- ***<M-Business_Home>/samples***

  Contains sample files for C# and Java.

- ***<M-Business_Home>/tomcat/webapps/admin***

  Contains the M-Business Server administration pages that you use to set up channels and groups.

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- ***<M-Business_Home>/tomcat/webapps/device***

  Contains the M-Business Server device pages necessary to support content downloaded to the different device types that are supported.

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Setting up special database configurations

Setting up Adaptive Server Anywhere as a cluster database service

To minimize system downtime and ensure high availability of your M-Business Anywhere database, you can set up its Adaptive Server Anywhere database server to run as a service within a Microsoft failover cluster. For detailed instructions, see *Setting Up Adaptive Server Anywhere as a Cluster Database Service*, referenced in "The M-Business Anywhere documentation set" on page xi.

Using a remote database

The M-Business Anywhere installer sets up the supporting database on the same machine where M-Business Anywhere is installed. Follow the steps below if you need to configure M-Business Anywhere to use a remote database.

Using a remote database on Windows

♦ **To use a remote database on Windows**

1. Start the **ODBC Data Source Administrator**.

   From the **Control Panel**, open **Administrative Tools**, then **Data Sources (ODBC)**.

2. Click the **System DSN** tab.

3. Select **AGDB** and choose **Configure**.

4. Click the **Database** tab and change the server name.

   The M-Business Server database name is <*servername*>_AGDB, where <*servername*> is the name of the server where the database is installed. You need to change the <*servername*> portion of the database name to the name of the remote server.

5. Click the **Network** tab.

6. Uncheck all but **TCP/IP**.

7. Enter the following string in the box to the right of TCP/IP, replacing anything that is already there:

   ```
   port=<port>;host=<hostname>;broadcast=no
   ```

   Replace <*port*> with the port number of the ASA server you want to connect to; the installation default is 8099.

   Replace <*hostname*> with the name or IP address of the server you want to connect to.

8. Click the **Login** tab and click **Supply user ID and password**.

9. For **User ID** enter **`sync`**, and for **Password** enter **`password`**.

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> **Note**
> If you have changed the password for the `sync` user, enter your new password instead of `password`.

10. Click **OK**.

    You are returned to the ODBC Datasources Administrator.

11. Click **OK**.

    You are returned to the Control Panel.

Using a remote database on Unix

In the following steps, the two servers involved are referred to as follows:

- Machine A is where all of the M-Business Server components except the database are to be installed.
- Machine B is where the database is to be installed.

♦ To use a remote database on Unix

1. Install the same version of M-Business Anywhere on both machines.
2. From machine A, ping machine B to verify basic network connectivity.
3. On machine B, stop the following M-Business Server daemons: **`sync`**, **`admin`**, and **`soap`**.

   Leave only `asa` running.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

4. On machine A, run the ASA **`dblocate`** utility from within the ***asa_config.sh*** shell script — enter the following commands in sequence:

   ```
   cd <M-Business_Home>/ASA/bin
   source asa_config.sh
   dblocate
   ```

   <M-Business_Home> above is the is the M-Business home directory that is created under the location that you specify during installation. See "The M-Business home directory" on page ix.

   The `dblocate` utility should find the instance of ASA running on machine B. It may *not* if the machines are on different subnets.

5. Still within the ***asa_config.sh*** shell script on machine A, run the ASA **`dbping`** utility to verify that you can communicate with the remote database on machine B — enter the following command:

   ```
   dbping -c "ENG=<machineB_name>; uid=agdb; pwd=password;
       CommLinks=tcpip(Host=<machineB_IPadr>;
       ServerPort=8099)"
   ```

   Where:

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<*machineB_name*> is the network name of machine B.

<*machineB_IPadr*> is the IP address of machine B.

`password` is the default password for user `agdb` after installing M-Business Server; change this if you have changed that password.

If `dbping` fails to communicate with ASA on machine B, you have a network or communication problem.

6. Still on machine A, open the***<M-Business_Home>ASA/bin/.odbc.ini*** file in a text editor and modify it to look like this:

```
[ODBC Data Sources]
AGDB=<do_not_modify>

[AGDB]
Userid=sync
Password=password
ServerName=<machineB_name>
CommLinks=tcpip(Host=<machineB_ipadr>;
    ServerPort=8099)
```

Where:

- <*do_not_modify*> is something that you should not change.
- <*machineB_name*> is the network name of machine B.
- <*machineB_IPadr*> is the IP address of machine B.
- `password` is the default password for user `agdb` after installing M-Business Server; change this if you have changed that password.

7. Save and close the ***<M-Business_Home>ASA/bin/.odbc.ini*** file.

8. Back within the ***asa_config.sh*** shell script on machine A, enter the following command, which uses the ODBC DSN file you just saved:

```
dbping -m -d -c "DSN=AGDB"
```

If the command is successful, the following output is displayed:

```
Adaptive Server Anywhere Server Ping Utility Version 8.0.2.3605
Loaded ODBC driver dbodbc8.so
Connected to ASA 8.0.2 (4301) server "<machineB_name>" and database
"AGDB".
Ping database successful.
```

9. Do a final test by executing a simple query — from a Unix shell window, enter the following command:

```
dbisqlc -c "DSN=AGDB"
```

Note
No changes in configuration files are necessary unless you change the ODBC DSN name.

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Accessing M-Business Server

To access the M-Business Server web-based administration interface — the Administrator Console — use your web browser. The M-Business Server Login page serves both administrators needing access to the M-Business Server Administrator Console and users wanting access to their personal pages.

Follow the steps below to access the administrator console and to set up authorized administrative access.

Windows only: Accessing M-Business Server from the host machine

To access M-Business Server from the host machine:

- Choose **Start»Programs»M-Business Anywhere»M-Business Anywhere Server**.

  The M-Business Server login page appears. The address is shown as http://<*servername*>:8091/shared/login.html, or http://<*servername*>:<*portnumber*>/shared/login.html if you installed on a different port number.

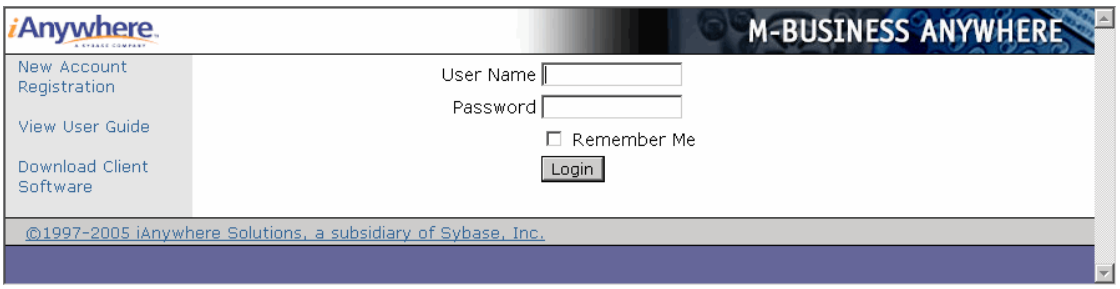
Windows and Unix: Accessing M-Business Server from another machine

- **To access M-Business Server from another machine**

1. Open a web browser on the host machine or another machine.
2. Go to **http://<*servername*>:8091** . If you are using a port other than 8091, go to **http://<*servername*>:<*port number*>.**

   The M-Business Server login page appears. The address is shown as http://<*servername*>:8091/shared/login.html, or http://<*servername*>:<*portnumber*>/shared/login.html if you installed on a different port number.

   In organizations where M-Business Server is installed on multiple machines, <servername> should be the name of the machine running the M-Business Admin Server service.



3. In the **Username** field, enter **`admin`** .

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By default, the M-Business Server admin account does not have a password. Create a password after logging in.

4. Click the **Login** button.

   The Server Status page appears. The Mode shown in the upper right corner confirms whether you are logged into M-Business Server as an administrator.

For information on creating a password and using the web-based administration pages, see "Introducing the Administrator Console" on page 103.

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Starting, stopping, and restarting M-Business Server

Many M-Business Server tasks, such as changing configuration file directive variables, require you to stop and restart M-Business Server services. When necessary, refer to these instructions for starting, stopping, and restarting on Windows.

When you restart the server, the currently running process is stopped, then a new one is started. If a user is connected when the server is restarted, the connection is dropped and the task the user was performing (typically a synchronization operation) fails.

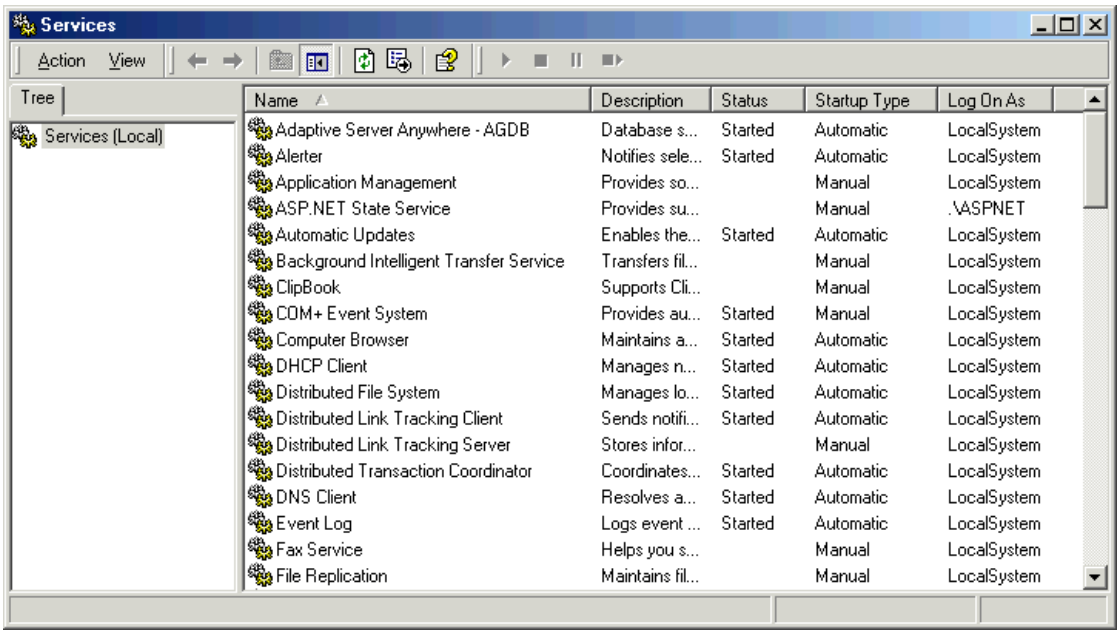
Note
To minimize inconvenience to your users, restart M-Business Server services at a time when it is least likely to be accessed by your users.

Starting, stopping, and restarting M-Business Server on Windows

- **To start, stop, and restart M-Business Server on Windows 2000 or Windows 2003**

1. Choose **Start»Settings»Control Panel**.
2. Double-click the **Administrative Tools** icon, then double-click the **Services** icon.

   The Services dialog appears.



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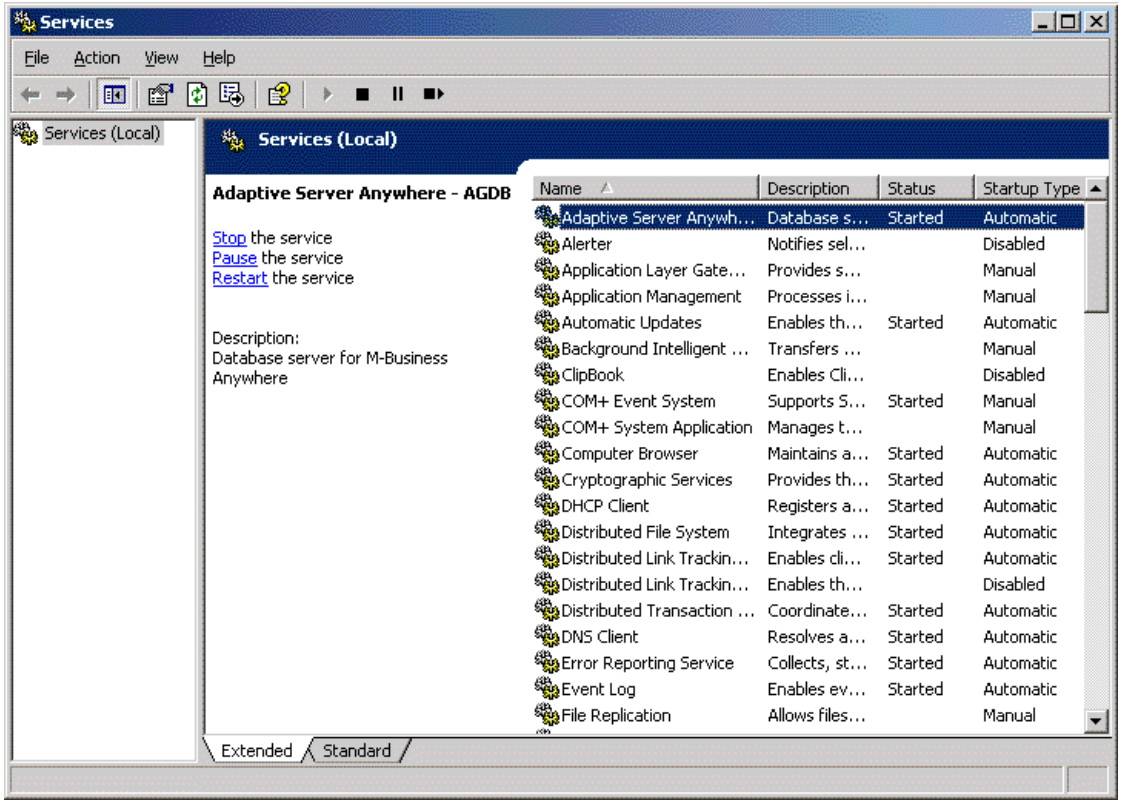

3. Locate the **Adaptive Server Anywhere - AGDB** service and verify its status. If the **Adaptive Server Anywhere - AGDB** service is stopped, start it manually by selecting it and clicking the icon for **Start Service**.

4. Follow the same procedure for **M-Business Admin Server**, **M-Business SOAP Server**, and **M-Business Sync Server**.

   Depending on your licensing, you may not have all of these services installed. Follow the procedure for any of these services that are listed.

Tip
If you have the Microsoft Management Console (MMC) installed, you can use this shortcut: **Start»Programs»M-Business Anywhere»M-Business Anywhere Server Manager**.

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Tip
You also can start/stop the Windows services using a command line interface. To do so, enter the following commands:

```
net start (or stop) "ASANYs_agdb"
net start (or stop)"M-Business Admin Server"
net start (or stop) "M-Business Sync Server"
```

Starting, stopping, and restarting M-Business Server on Unix

- **To start, stop, and restart M-Business Server on Unix**

1. Log in as **root**.
2. In a Unix shell window, type:

   ```
   cd <M-Business_Home>/conf
   ./agserver start (or stop or restart) all
   ```

3. To verify that the servers started, enter the following command:

   ```
   ./agserver status
   ```

Note
After starting or restarting the server, you should verify that the server processes are running. If they are not, you must start them manually. The order in which you start the server processes is important. Either use the all option as shown in step 2 above, or start them in this order: **asa**, **soap**, **admin**, **sync**.

If you need to ensure that the server restarts immediately without waiting for existing sessions to finish, use **force-restart** in place of **restart**. You also should use force-restart when restart is not working, which can occur if the server is hung.

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Uninstalling M-Business Server

Uninstalling M-Business Server on Windows

The uninstaller will ask if you wish to delete or preserve your pre-existing database. If you choose **Yes**, the M-Business Server database that contains user, group, and channel information will be preserved.

♦ To uninstall M-Business Server on Windows

1. Choose **Start»Settings»Control Panel.**
2. Double-click the **Add/Remove Programs** icon.
3. Select **M-Business Server**, then click **Change/Remove** (Windows 2000 and Windows 2003).

Uninstalling M-Business Server on Unix

Uninstalling on Solaris removes M-Business Server, as well as the database of user, group, and channel information. If you want to preserve the database, move the directory *<M-Business_Home>/ASA/data/* to a new location before uninstalling.

> **Note**
> *<M-Business_Home>* is the M-Business home directory that is created under the location that you specify during installation. For more information, see "The M-Business home directory" on page ix.

♦ To uninstall M-Business Server on Unix

1. Log in as root.
2. Change directories to ***<M-Business_Home>/conf***.

   ```
   cd <M-Business_Home>
   ```

3. Stop the synchronization process by typing:

   ```
   ./agserver stop all
   ```

4. Go to the ***<M-Business_Home>*** parent directory:

   ```
   cd ../..
   ```

5. Remove the ***<M-Business_Home>*** directory by entering:

   ```
   rm -r <M-Business_Home>
   ```

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CHAPTER 4

External user authentication

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About external user authentication

M-Business Server supports external authentication of users by either NT domain controllers or a lightweight directory access protocol (LDAP) server. With external user authentication, user IDs and passwords are maintained in the external system. This means that NT domain or LDAP user accounts are reused by M-Business Server.

The M-Business database then mirrors the user ID and password information in the external system. When a user password is changed in the external system, M-Business Server uses the new password automatically. Adding and deleting users is also handled by the external system.

- With NT domain integration, you add and delete users from the User Manager for Domains (in NT) or from the Active Directory Users and Computers snap-in (in Windows 2000), not from the M-Business Server Administrator Console.
- With LDAP, you add and delete users from through the LDAP server instead of the M-Business Server Administrator Console.

Benefits of external user authentication

External user authentication simplifies the system administration of user accounts, enabling administrators to have a single location in which they can maintain user accounts and passwords. Initial setup of M-Business Server is faster and easier because the user base is imported from an existing source.

Limitations of external user authentication

When you implement external user authentication in M-Business Server, the M-Business database mirrors the only user ID and password information from the external system. No other information from NT domains or LDAP servers is made available to M-Business Server.

Specific limitations with NT domain integration

The following limitations apply specifically to NT domain integration with M-Business Server:

- **Workgroup information.** M-Business Anywhere imports only user information from NT domains. If you want to parallel any of the NT domain workgroup structures in M-Business Anywhere, you will have to recreate them as groups in the Administrator Console. For more information, see "Creating a group" on page 155.
- **Multiple global Active Directory groups.** M-Business Server only imports users from a single global Active Directory group.
- **Duplicate account names.** If you have multiple domains (or use local accounts and a domain), user names must be unique across all domains. For example, DOMAIN ONE\jdoe and DOMAIN TWO\jdoe will cause the second name added to fail.
- **Local groups within groups.** The contained groups are not processed.

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- **Local groups that contain domain accounts.** The domain accounts (if from a different domain) are not processed.

Specific limitations with LDAP

The following limitations apply specifically to external user authentication through lightweight directory access protocol (LDAP) with M-Business Server:

It is recommended that you use only one to avoid user name conflicts.

- **Group information.** M-Business Anywhere imports only user information from LDAP. If you want to parallel any of the LDAP group structures in M-Business Anywhere, you will have to recreate them as groups in the Administrator Console. For more information, see "Creating a group" on page 155.
- **Duplicate account names.** Although multiple LDAP servers are supported, it is recommended that you use only one to avoid user name conflicts.
- **Initial setup.** In M-Business Anywhere version 6.7, setting up external user authentication through LDAP requires assistance from iAnywhere Professional Services. For contact information, see "Contacting iAnywhere Solutions" on page xiii.

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Implementing NT domain integration (Windows only)

If you use NT domain integration, you cannot use M-Business Server to modify user names, passwords, or other related attributes of users. User authentication is administered through the NT domain user management. All M-Business-specific information about these users is still maintained through the Administrator Console.

By default, when you install M-Business Server with NT domain integration, all users on the domains that you specify immediately can use M-Business Server. However, after installing M-Business Server with NT domain integration you will not see any users when you first access the M-Business Server administration pages. Authenticate users in one of two ways:

- **Individually**

  When a user synchronizes or logs on to the UI using his Windows user name and password, M-Business Server uses the NT domain controller to validate the user's Windows user name and password and automatically creates an account for that user.

  The ability to add users individually is enabled by default. To disable the automatic creation of user accounts and limit the use of M-Business Server to just one group or domain of users, edit the configuration files to turn off the NTDomainAutoCreateAccount preference. See "Auto-creating user accounts from an integrated NT Domain" on page 79. In this case, add users to and delete users from M-Business Server by using the AGDomainSync tool. See "Using the AGDomainSync tool" on page 50.

- **By running the AGDomainSync tool**

  To authenticate all users at one time, use the AGDomainSync tool. See "Using the AGDomainSync tool" on page 50.

Using the AGDomainSync tool

> **Note**
> You must run the AGDomainSync tool under an account with Domain Administrator privileges in order to retrieve all of the user names.

After installing M-Business Server, use the AGDomainSync tool to add all users to M-Business Server. When an administrator logs in to the M-Business Server administration pages, then chooses **Users»List All Users**, the list of user accounts in the Adaptive Server Anywhere database displays.

Subsequent use of the AGDomainSync tool allows administrators to synchronize their integrated NT domain with the M-Business Server user database. Update the M-Business Server user database by running the AGDomainSync tool on a regular basis to add and delete users.

This section provides instructions for using the AGDomainSync Tool along with examples.

You can use the following command to run the AGDomainSync tool:

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```
AGDomainSync [-a][-d] <conf_file> ["<NT Group Name>"]
```

The following legend describes the individual elements of the above command:

- Use the command **-a** to ADD accounts to the database.
- Use the command **-d** to DELETE accounts from the database.
- The <***conf_file***> is mandatory. It is the full path to an M-Business Server configuration file. For example, ***C:/M-BusinessAnywhereServer/conf/sync.conf***.
- The <***NT Group Name***> is optional. If used, only accounts in this group are added. If you omit the group name, the default is: Domain Users for a Domain, and Users for a local machine.

For help with using the AGDomainSync Tool, type the **`AGDomainSync -?`** command.

You also may want to use the AGDomainSync Tool for the following tasks:

- "Importing users from a group on an installed domain" on page 51
- "Importing users from a group on a local machine" on page 51
- "Importing or deleting all users on an installed domain and a local machine" on page 52
- "Scheduling the AGDomainSync tool" on page 52

Importing users from a group on an installed domain

♦ To import users from a group on an installed domain

1. Open a command prompt window.
2. Navigate to the <***M-Business_Home*>*/bin*** directory.
3. Type:

   ```
   AGDomainSync -a ../conf/sync.conf "AvantGoGroup"
   ```

Importing users from a group on a local machine

♦ To import users from a group on a local machine

1. Navigate to the <***M-Business_Home*>*/conf*** directory.
2. Open the ***defaults*** file.
3. Navigate to the NTDomain Default Settings variable, **`@@yourdomainlist@@`**.
4. Change **`your.domainlist.here`** to **`.`** (period) to indicate the domain is on a local machine.
5. Run the ***defaults_setup.bat*** script in the <***M-Business_Home*>*/conf*** directory.

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6. Stop and restart M-Business Server services.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

7. Open a command prompt window.
8. Navigate to the <***M-Business_Home*>*/bin*** directory.
9. Type:

   ```
   AGDomainSync -a ../conf/sync.conf "LocalGroup"
   ```

Importing or deleting all users on an installed domain and a local machine

To import or delete all the users on a domain (for example, REDMOND) and the local machine, where *sync.conf* has the setting `SyncPref NTDomain Validation` set to REDMOND,.:

♦ To import or delete all users on an installed domain and a local machine

1. Open a command prompt window.
2. Navigate to the <***M-Business_Home***> ***/bin*** directory.
3. Type:

   ```
   AGDomainSync -a -d ../conf/sync.conf
   ```

Scheduling the AGDomainSync tool

♦ To add the AGDomainSync tool as a scheduled task

1. Click **Start»Settings»Control Panel**, then double-click on the **Scheduled Tasks** folder (Windows 2000 or Windows 2003).
2. Click **Start»Settings»Control Panel**, then double-click on the **Scheduled Tasks** folder.
3. Double-click the **Add Scheduled Task** icon.
4. Click **Next** in the first Scheduled Task Wizard panel.
5. Click **Browse** and navigate to the <***M-Business_Home*>*/bin*** directory.
6. Select the ***AGDomainSync.exe*** file.
7. Choose the schedule you want (we recommend choosing **daily** for now; you can change it later).
8. Choose a time (off peak hours are best).
9. Provide a valid NT domain name, username, and password (this should be the same user you provided when you installed M-Business Server), then click **Next**.
10. Select the **Open advanced properties...** checkbox, then click **Finish**.

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11. Click in the **Run** field, then press the <**End**> key.
12. Type **`-a -d`**, then click **OK**.

> **Tip**
> Later, if you want to edit the scheduled task, right-click the task in the **Scheduled Tasks** folder, then choose **Properties** from the shortcut menu.

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Implementing external user authentication through LDAP

If you mirror user IDs and passwords from a lightweight directory access protocol (LDAP) server, you cannot use M-Business Server to modify user names, passwords, or other related attributes of users. User authentication is administered through the LDAP server. All M-Business-specific information about these users is still maintained throughout the Administrator Console.

♦ To implement external user authentication through LDAP

1. Install M-Business Server using an NT domain integration license.

   Windows: In the Domain List dialog, enter any arbitrary string and click **Next** to continue with the rest of the installation.

   Unix: Complete a normal installation — there are no different requirements for LDAP.

2. Open the ***<M-Business_Home>/sync.conf.default*** file in a text editor.

3. On Windows only, comment out the lines for the following NT domain integration settings by placing a "#" character at the start of the line:

   - `ExternalAuthLibrary`
   - `UseSSPIForNTAuth`
   - `NTDomainValidation`
   - `NTDomainCache`
   - `ExternalAuthCreatesUsers`

4. Immediately below these NT domain integration settings, uncomment and manually set the LDAP settings listed below. For explanations of these settings, see "LDAP adaptor configuration settings" on page 216.

   - `LDAPServers`
   - `LDAPSearchBase`
   - `LDAPSearchFilter`
   - `LDAPFullName`
   - `LDAPFirstName`
   - `LDAPLastName`
   - `LDAPUseSSL`
   - `LDAPDefaultUser`
   - `LDAPDefaultPassword`

5. Immediately after the line for the `LDAPDefaultPassword` setting, add the following lines:

   - **`SyncPref ExternalAuthCreatesUsers TRUE`**
   - **`SyncPref NTDomainAutoCreateAccount TRUE`**
   - **`SyncPref ClientShouldHashPassword YES`**

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- On Windows, enter this line...

  SyncPref ExternalAuthLibrary "<*M-Business_Home*>\bin\ldapprovider.dll"

  On Unix, enter this line...

  SyncPref ExternalAuthLibrary "<*M-Business_Home*>\bin\ldapprovider.so"

6. Save the file.
7. Open the <***M-Business_Home*****>*/agsoap.conf.default*** file in a text editor.
8. Repeat steps 3-5 above on this file.
9. Run the ***defaults_setup*** script located in the <***M-Business_Home*****>*/conf*** directory.

   Windows: Run ***defaults_setup.bat***

   Unix: Run ***defaults_setup***
10. Restart M-Business Server.

    See "Starting, stopping, and restarting M-Business Server" on page 42.

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CHAPTER 5

Security

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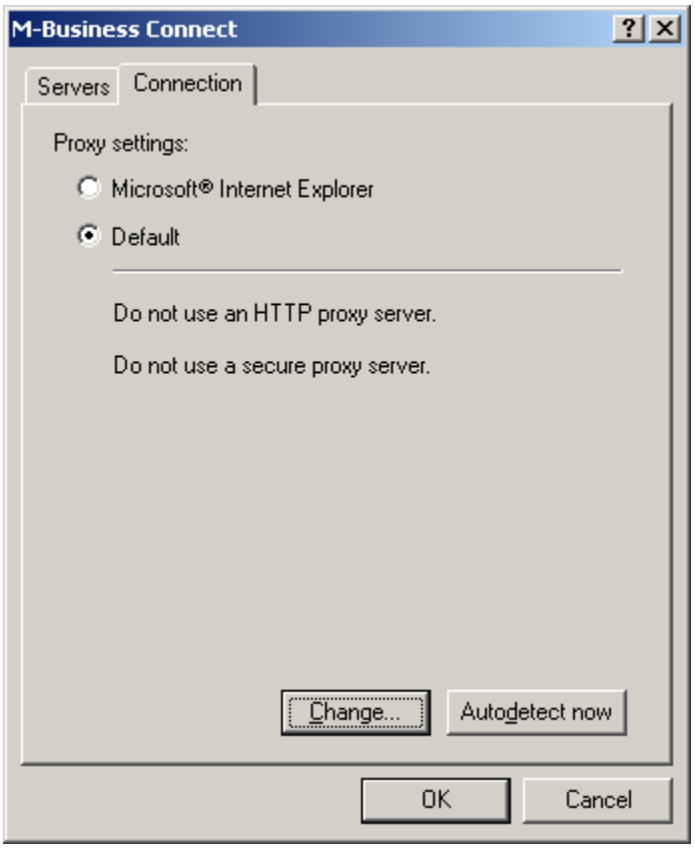
Enabling secure sockets layer (SSL)

This chapter contains instructions on enabling the Secure Sockets Layer (SSL) security option for use with M-Business Server. For a general overview of this security option, see “Securing M-Business Server: an overview ” on page 20.

Note
If you are upgrading or re-installing M-Business Server and have already enabled SSL, your existing ECC or RSA certificate is migrated and you do not need to re-configure M-Business Server for security.

Depending on whether you install an ECC or an RSA certificate, M-Business Connect will use either the Default or the Microsoft Internet Explorer proxy settings to provide users with a secure connection during synchronizations to M-Business Server.

- “Setting up default proxy settings: ECC certificate” on page 60
  - Requires installation of an ECC security certificate.
  - Requires no action on the part of the users.



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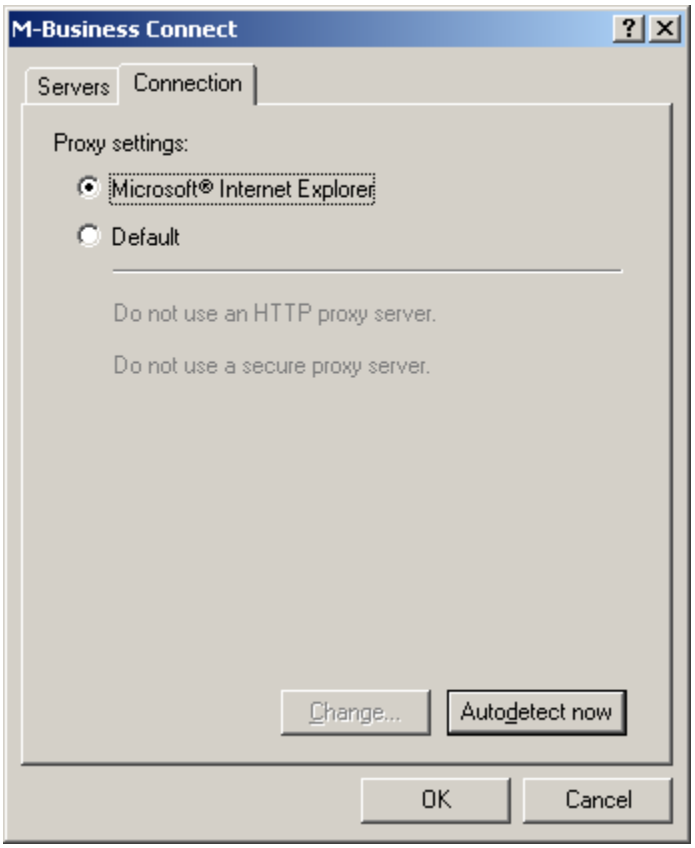
- “Setting up Microsoft Internet Explorer proxy settings: RSA certificate” on page 65
  - Requires installation of an RSA security certificate.
  - Requires users to choose the **Microsoft Internet Explorer** proxy setting in M-Business Connect.
  - May make it easier for users to access AvantGo Mobile Internet or other servers residing outside the company firewall.



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Setting up default proxy settings: ECC certificate

To set up default proxy settings, you need to install an ECC certificate, which you obtain from iAnywhere Solutions. After generating a certificate request and a private key, configure security settings for M-Business Server.

Generating an ECC certificate request and a private key

Use the **`reqtool`** program to generate a private key and a request for an ECC certificate from iAnywhere Solutions. The private key enables M-Business Server to encrypt its transactions. You will send the certificate request to iAnywhere Solutions for signing; iAnywhere Solutions will then sign your certificate with the iAnywhere Solutions Root Certificate and send you your certificate file, which you must install on your server.

Perform the steps below to generate a private key and a certificate request. Press <**Enter**> after each entry to continue.

♦ To generate an ECC certificate request and a private key

1. Run the reqtool program.

   Windows:

   - Open Windows Explorer
   - Navigate to the <***M-Business_Home>/conf*** directory
   - Double-click the ***reqtool.exe*** file

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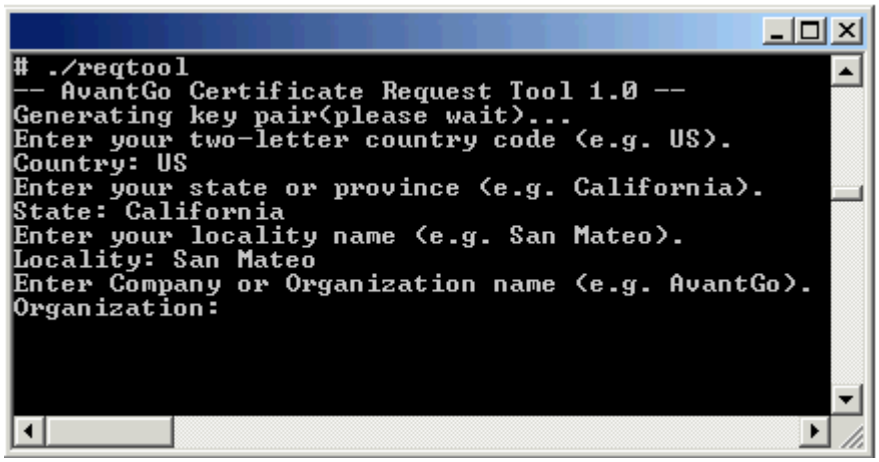
Unix:

- Open a Unix shell window
- `cd` to *<M-Business_Home>/conf* directory
- Enter **`./reqtool`**



The `reqtool` executable runs.

2. Enter your country code (Example: U.S.).
3. Enter your state or province (Example: California).

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4. Enter your locality/city (Example: San Mateo).
5. Enter your company name (Example: MyCompany, Inc.).
6. Enter your organizational unit, branch, or division (Example: Internal Support).
7. Enter the common name of the server on which M-Business Server is installed.
8. Enter a password that will protect your private key.

   Note
   This password must consist of fewer than 64 strictly alphanumeric characters (i.e., only A-Z, a-z, and 0-9 will be accepted).

9. Enter your M-Business Server license key.

   Note
   This information is required.

10. Enter a file name for the request (Example: *companyname.req*)

    The `reqtool` auto-generates this file and places it in your <***M-Business_Home*>*/conf*** directory.

11. Enter a file name for the private key (Example: *companyname.priv*).

    The `reqtool` auto-generates this file and places it in your <***M-Business_Home*>*/conf*** directory.

Successful execution of `reqtool` produces three files: a certificate request, an encrypted private key, and a log file. The log file contains the passphrase to the encrypted private key.

Together, these three files provide everything someone would need to eavesdrop encrypted traffic between M-Business Client and M-Business Server. For this reason, it is critical that you never send the encrypted private key or the passphrase to any outside party, including iAnywhere Solutions.

iAnywhere Solutions needs only the certificate request to issue you a certificate. If you encounter problems installing your certificate, our support department may request a copy of the `reqtool` log file. Make sure that you remove your private-key password from the log file before sending it to us. Once you have successfully installed your certificate, you may want to consider deleting the log file entirely.

Sending the certificate request to iAnywhere Solutions

Once you have generated your certificate request, you will need to send it to iAnywhere Solutions for signing. Your security certificate will be granted valid for one year; you will receive a new certificate, for free, every year. When the old certificate expires, however, you will need to generate a new certificate request, then send it to iAnywhere Solutions for signing. The Server Status page in the Administrator Console displays the expiration date for your certificate as the License Expiration Date.

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♦ **To send the certificate request to iAnywhere Solutions**

1. Address an email to cert_request@ianywhere.com .
2. Type **`Certificate Request`** in the subject line of your email.
3. Attach to the email the certificate request file you created.

   See "Generating an ECC certificate request and a private key" on page 60.

Appending your private key to the certificate

Once you receive your certificate file, you will need to append your private key to the end of the file and copy the resulting complete certificate file to the ***<M-Business_Home>/conf*** directory.

Note
Your certificate file is returned to you as a compressed file. You will need a utility suitable for uncompressing this type of file, for example, WinZip.

♦ **To append your private key to the certificate**

1. Open your private key file in a text editor and copy its contents.
2. Open your certificate file and paste the contents of your private key file to the end.
3. Save and close the certificate file.
4. Copy the certificate file to the ***<M-Business_Home>/conf*** directory.

Configuring security settings for M-Business Server

To enable SSL on M-Business Server, edit the security module settings in the *sync.conf.default* file. For more information about editing default files, see "Editing configuration files" on page 17.

♦ **To configure security settings for M-Business Server**

1. Using a text editor, open the file ***<M-Business_Home>/conf/sync.conf.default***
2. Search for and delete all instances of **`#SSL:`** in the file.
3. In the line containing the **`Sagd_CertFileName`** directive, delete the **`#ECC:`**, then change:

   - the path to the ECC certificate (if necessary)
   - the name of your certificate

   For example, change

   ```
   #ECC:Sagd_CertFileName @@ServerRoot@@/conf/sslecdsa.crt
   ```

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to:

```
Sagd_CertFileName @@ServerRoot@@/conf/yourcompany-MM-DD-YYYY.crt
```

4. In the line containing the **Sagd_KeyPassword** directive, delete the **#ECC:** and replace the default password with the password you created in "Generating an ECC certificate request and a private key" on page 60.
5. Save the changes.
6. Run the ***defaults_setup*** script located in the <***M-Business_Home*>*/conf*** directory.

   Windows: Run ***defaults_setup.bat***

   Unix: Run ***defaults_setup***
7. Stop and restart M-Business Server services.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

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Setting up Microsoft Internet Explorer proxy settings: RSA certificate

To set up Microsoft Internet Explorer proxy settings, install an RSA certificate, which you obtain from either Thawte or VeriSign. After installing the certificate, configure security settings for M-Business Server. If you are installing a trial certificate, also install the certificate on M-Business Client.

Generating an RSA certificate request and a private key

Use the *reqcert* script to generate a request from iAnywhere Solutions for an RSA certificate and a private key.

The steps below guide you through generating a certificate request and a private key, then reformatting your private key for use with your server.

♦ To generate an RSA certificate request and a private key

1. Run the ***reqcert*** script.

   Windows:

   - Open Windows Explorer
   - Navigate to the **<*M-Business_Home*>*/openssl/bin*** directory
   - Double-click ***reqcert.bat*** file

   Unix:

   - Open a Unix shell window
   - **`cd`** to **<*M-Business_Home*>*/openssl/bin*** directory
   - Type **`./reqcert.sh`**

   The script runs. You will be prompted to enter password and identification information. Press <Enter> after each response, or to skip to the next field.

2. Type your PEM pass phrase, then press **<Enter>**.

3. When prompted, provide the following information, pressing <Enter> after each response:

   - Your country code (example: U.S.).
   - Your full state or province (example: California).
   - Enter your locality/city (example: San Mateo).
   - Your organization name (example: MyCompany, Inc.).
   - Your organizational unit (example: Internal Support).
   - The common name of the server on which M-Business Server is installed. Use the fully qualified server name (example: enterprise.myco.com).
   - Your email address.

4. The script ends.

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The script creates two files: your private key (*privkey.pem*) and your certificate request (*certreq.csr*).

The following sections provide instructions for using these files to request an RSA certificate.

Obtaining a trial certificate

You can purchase from Thawte (http://www.thawte.com), or VeriSign (http://www.verisign.com), or another vendor of your choice, an RSA certificate that you then install on your server to enable secure transactions. According to Thawte, it can take between 5 and 12 days to receive your licensed certificate.

You also can request a trial certificate from Thawte to use while you are waiting for your licensed certificate to arrive. Follow these instructions to obtain a trial certificate so that you can begin sending secure messages to your wireless handhelds without having to wait for your licensed certificate to arrive.

♦ To obtain a trial certificate

1. Open the ***<M-Business_Home>/openssl/bin/reqcert.csr*** file in a text editor.
2. Copy the contents of the file, including the **`Begin Certificate`** and **`End Certificate`** lines.
3. In your browser, go to your certificate vendor's website.
4. Follow the directions on the website to obtain a certificate.

Completing your certificate file

♦ To complete your certificate file

1. Make sure you have both your certificate from your vendor and the certifying authority root certificate from that vendor.
2. In your text editor, open a new file.
3. In your text editor, open the certificate file from your vendor.
4. Copy the contents of the certificate file into the new file.
5. In your text editor, open the root certificate file from your vendor.
6. Copy the root certificate.

   Include the **`Begin Certificate`** and **`End Certificate`** lines.
7. Append the copied root certificate to the end of the certificate in the new file in your text editor.
8. Open the ***<M-Business_Home>/openssl/bin/privkey.pem*** file in a text editor.
9. Copy the private key found there.

   Include the **`Begin Encrypted Private Key`** and **`End Encrypted Private Key`** lines.
10. Append the copied private key to the end of the file containing your certificate and the root certificate.

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You now should have one text file containing three items in this order: your certificate, the certifying authority root certificate, and your encrypted private key.

11. Save the file to the *<M-Business_Home>/conf* directory with the name ***trial-cert.crt***.

Configuring security settings for M-Business Server

In order to enable SSL on M-Business Server, you will need to edit the *sync.conf.default* file. For more information about editing default files, see "Editing configuration files" on page 17.

♦ To configure security settings for M-Business Server

1. Open the *<M-Business_Home>/conf/sync.conf.default* file in a text editor.
2. Search for and delete all instances of **#SSL:** in the file.
3. In the line containing the **Sagd_RSACertFileName** directive, delete the **#RSA:**, then change:

   - the path to the RSA certificate (if necessary)
   - the name of your certificate

   For example, change

   ```
   #RSA:Sagd_RSACertFileName @@ServerRoot@@/conf/sslagrsa.crt
   ```

   to:

   ```
   Sagd_RSACertFileName @@ServerRoot@@/conf/trial_cert.crt
   ```

4. In the line containing the **Sagd_RSAKeyPassword** directive:

   - Delete the **#RSA:**
   - Then change **password** to the PEM pass phrase you entered in "Generating an RSA certificate request and a private key" on page 65.

5. Save the changes.
6. Run the ***defaults_setup*** script located in the *<M-Business_Home>/conf* directory.

   Windows: Run ***defaults_setup.bat***

   Unix: Run ***defaults_setup***

7. Stop and restart M-Business Server services.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

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Installing the trial certificate on M-Business Client

♦ **To install the trial certificate on M-Business Client**

1. Copy the certificate file to the desktop with which your M-Business Client synchronizes, then right-click the file.
2. Click **Install Certificate**.

   The Certificate Import Wizard appears.
3. Click **Next**.
4. Select the option that allows Windows to select the certificate store for you, then click **Next**.
5. Click **Finish**.
6. Click **Yes**, then click **OK**.

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Setting security preferences for M-Business Client

After installing a security certificate and setting the security preferences on M-Business Server, you will need to set security preferences for M-Business Client.

Depending on how you deploy M-Business Client to your users, either you will set the security preference for your users, or you will instruct your users to enable security for themselves.

Informing users to set security

If you are planning to provide the M-Business Client executable to your users, you will need to inform them to set up security immediately after installation or before they synchronize for the first time.

If you set up M-Business Server without security initially, but later turn it on, in order to synchronize securely to the server, your users must perform these steps. If users do not enable security, they will not be able to synchronize their devices to a secure server.

Along with the appropriate hostname, user name, and password information, provide the following instructions to your users.

♦ To inform users to set security

1. Choose **Start»Programs»M-Business Client»M-Business Connect**.
2. Click **Add**.
3. Enter your hostname and user name, then click **Set Password**.
4. Enter your password, then click **OK**.
5. Click **Test**, to test the server connection.

   You will be prompted to enable security.
6. Click **Yes**.
7. If you have installed an RSA certificate, click the **Connection** tab and select **Microsoft Internet Explorer** proxy settings.

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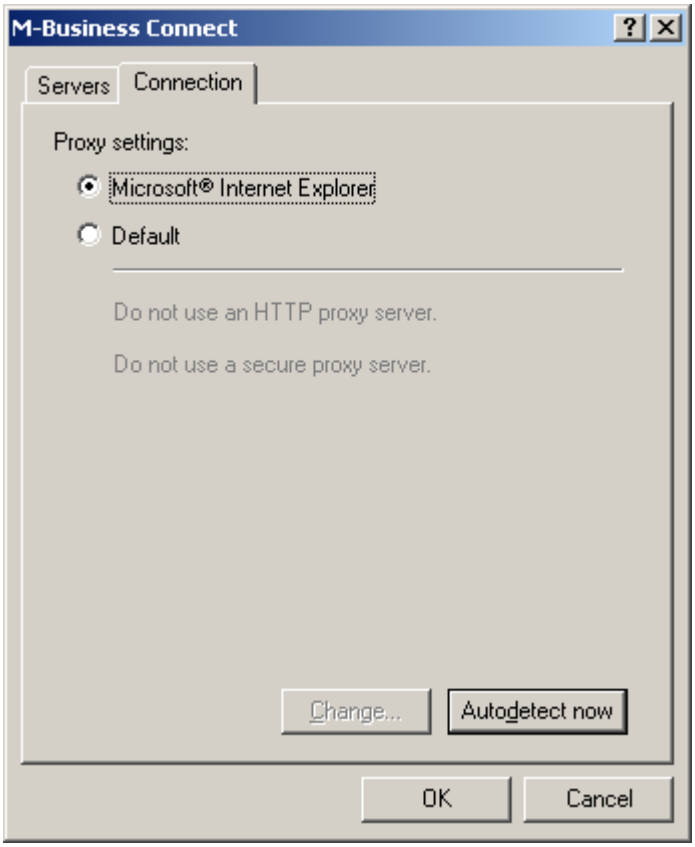

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Enabling password protection for content on M-Business Client

By default, all content downloaded from M-Business Server to M-Business Client can be freely accessed from the mobile device. To make downloaded content more secure, you can require your users to enter a password to access on-device content. When M-Business Client password protection is enabled, it works as follows:

- The M-Business Client password protection setting applies globally to all content downloaded from a particular installation of M-Business Server.
- Each user will be required to enter the password that is associated with the user ID in the M-Business Administrator Console each time that M-Business Client starts up on the mobile device.

  Because of platform differences, Palm OS users will have to enter a password more often than Microsoft OS users — Palm OS only allows one application to run at a time, so each time the user switches to another application, M-Business Client is restarted. Palm OS users will also have to re-enter the password after the device has been in sleep mode.
- Users are not required to re-enter a password after a period of inactivity — except after a Palm OS device has entered sleep mode.
- There is no way to require users to change the password periodically.

You enable password protection of on-device content in the *sync.conf* configuration file, by setting `PasswordProtectClient` to `TRUE`. For more information, see "Editing configuration files" on page 17 and "Settings in the sync.conf file" on page 209.

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Configuring M-Business Server to accept only secure connections

You can configure M-Business Server to accept only secure (https://) connections. If a user attempts to synchronize using an insecure connection, they will receive a message on the device and will not be able to synchronize until they attempt to do so securely.

♦ To configure M-Business Server to accept only secure connections

1. Open the <***M-Business_Home*>*/conf/sync.conf.default*** file in a text editor.
2. Locate the **`SSL:SyncPref AllowSecureClientConnect`** directive, then change its value to **`TRUE`**.

   Make sure the directive is uncommented.
3. Locate the **`ConnectSecureOnly`** directive, then change its value to **`TRUE`**.

   Make sure the directive is uncommented.
4. Save and close the file.
5. Run the ***defaults_setup*** script located in the <***M-Business_Home*>*/conf*** directory.

   Windows: Run ***defaults_setup.bat***

   Unix: Run ***defaults_setup***
6. Stop and restart M-Business Server.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

Set both directives to **`FALSE`** to configure M-Business Server to accept only insecure connections. Refer to the table below for additional explanation of expected behavior from setting the `AllowSecureClientConnect` and `ConnectSecureOnly` directives.

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Table 1. Setting security directives

Action	Behavior	Additional comments
Both `AllowSecureClientConnect` and `ConnectSecureOnly` set to `TRUE`	Users can synchronize securely. M-Business Server will accept only secure connections.	If a user attempts to synchronize non-securely an explanatory dialog appears. With M-Business Client, after the synchronization, the device is automatically reconfigured to synchronize securely and the security preference is locked down on M-Business Client's desktop and device. Also, a message appears in the synchronization error log on the server.
Both `AllowSecureClientConnect` and `ConnectSecureOnly` set to `FALSE`	Users cannot synchronize securely. M-Business Server will accept only non-secure connections.	If a user attempts to synchronize securely, the user is unable to synchronize. An explanatory dialog appears. With M-Business Client, after the synchronization, the device is automatically reconfigured to synchronize non-securely and the security preference is locked down on M-Business Client's desktop and device.
`AllowSecureClientConnect` set to `TRUE` and `ConnectSecureOnly` set to `FALSE`	Users can synchronize securely. M-Business Server will accept either secure or non-secure connections.	Users can change their security preferences at will.

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CHAPTER 6

Configuring M-Business Server

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Setting access preferences

After installing and setting up M-Business Server, you may want to customize some of the default configuration settings. This section provides instructions for changing these default settings.

Changing port numbers

You might need to change port number in these instances:

- If port 80 already is in use. By default, M-Business Sync Server uses port 80. However, this port already may be in use, particularly if you have installed another web server. For example, Windows installs the Internet Information Server (IIS) by default, and it uses port 80.
- If port 8091 is already in use. By default, M-Business Admin Server uses port 8091.

Changing the port number for M-Business Sync Server

♦ To change the port number for M-Business Sync Server

1. Open the <***M-Business_Home*>*/sync.conf.default*** file in a text editor.
2. Locate the variable **`@@SyncPort@@`**.
3. Edit the value for the port number.
4. Save the file.
5. Run the ***defaults_setup*** script located in the <***M-Business_Home*>*/conf*** directory.

   Windows: Run ***defaults_setup.bat***

   Unix: Run ***defaults_setup***

> **Note**
> If you have provided your users with a *.mal* file for configuring M-Business Connect settings automatically, you also will need to distribute an updated *.mal* file that contains your changes.

Changing the port number for M-Business Admin Server

♦ To change the port number for M-Business Admin Server

1. Open the <***M-Business_Home*>*/conf/defaults*** file in a text editor.
2. Locate the variable **`@@UIPort@@`**.
3. Edit the port number.

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4. Save the file.
5. Open a command line window.

   Windows: choose **Start»Programs»Command Prompt**

   Unix: open a Unix shell window
6. `cd` to the <***M-Business_Home>/conf*** directory.
7. Run the ***defaults_setup*** script located in the <***M-Business_Home>/conf*** directory.

   Windows: Run ***defaults_setup.bat***

   Unix: Run ***defaults_setup***
8. Stop and restart the **M-Business Sync Server** and **M-Business Admin Server** services.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

Changing database passwords

> **Caution**
> The M-Business Server database is installed using the standard default database account name of dba and the standard default password of sql. At a minimum, you should change the default database administrator password. Leaving the default setting poses a security risk.

Changing sync and admin database passwords

When you install M-Business Server, the following accounts are created for accessing the Adaptive Server Anywhere database, *agdb.db*:

- **ui** - M-Business Admin Server uses this account when the administration pages need to access information in the database.
- **sync** - M-Business Admin Server uses this account when it needs to access the database as part of a user synchronization process.
- **reports** - M-Business Server uses this account when it needs to generate reports. This user can only read data
- **agdb** - Use this account to create users, channels, and groups. This account should only be used exactly as directed in this documentation. For most database maintenance tasks, you should log in as the default database administrator, dba.

M-Business Server assigns a default password to each of these accounts upon creation. To ensure the security of your data, it is important to change the default passwords for the accounts listed above. The instructions below explain how to change the `dba`, `ui`, `sync`, `reports`, and `agdb` user passwords. Each password

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can be different. To change the M-Business Server admin user's password, see "Creating or changing the admin user's password" on page 117.

♦ To change passwords for database users

1. Make sure the Adaptive Server Anywhere software is running.

   Windows: Adaptive Server Anywhere - AGDB service

   Unix: asa server process

   See "Starting, stopping, and restarting M-Business Server" on page 42.

2. Open a command line window.

   Windows: choose **Start»Programs»Command Prompt**

   Unix: open a Unix shell window

3. `cd` to the <***M-Business_Home*>*/conf*** directory.

4. Edit the following directives in the ***<M-Business_Home>conf/defaults*** file:

   - To change the `ui` password, edit the **`@@StoreUIAuth@@`** variable.
   - To change the `sync` password, edit the **`@@StoreSyncAuth@@`** variable.
   - To change the `reports` password, edit the **`@@StoreReportsAuth@@`** variable.

5. Run the ***defaults_setup*** script located in the ***<M-Business_Home>/conf*** directory.

   Windows: Run ***defaults_setup.bat***

   Unix: Run ***defaults_setup***

6. Run the ***changePassword*** script located in the ***<M-Business_Home>/conf*** directory.

   Windows: Run ***changePassword.bat***

   Unix: Run ***changePassword***

7. Stop and restart M-Business Server services.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

Tip
For more information about changing database passwords, see the *Adaptive Server Anywhere Database Administration Guide*, referenced in "The M-Business Anywhere documentation set" on page xi.

Resetting lockout times

The lockout time is the period of time after a failed synchronization during which users are locked out of their accounts. The default lockout time is thirty seconds. To change the default setting, edit the

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`UserSyncResetSeconds` setting in the ***sync.conf.default*** file to an appropriate number of minutes for your environment.

Auto-creating user accounts from an integrated NT Domain

If the `ExternalAuthCreatesUsers` flag in the *sync.conf.default* file is missing or is set to `ON`/`TRUE`, valid NT Domain users can log in or synchronize and have their accounts automatically created.

If this flag is set to `OFF`/`FALSE`, user and group accounts will not be automatically created. In this case, you will need to run the `AGDomainSync` tool to import the users that you want to use M-Business Server.

For more information on Windows NT Domain integration, see "External user authentication" on page 47.

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Enabling recoverable wireless synchronization

When recoverable wireless synchronization is enabled, M-Business Server 6.7 supports automatic recovery of synchronizations that are interrupted when a user loses the wireless connection. M-Business Sync Server automatically tries to re-establish the connection and resume the synchronization from the point at which it was interrupted. No user action is required.

Recoverable synchronization is not automatically enabled during installation of M-Business Server.

♦ To enable recoverable synchronization

1. Open the *<M-Business_Home>/sync.conf.default* file in a text editor.
2. Locate the line containing **`WLRecoverySync`**.
3. Edit the line as necessary so that it is uncommented and **`WLRecoverySync`** is set to **`TRUE`**:

   ```
   SyncPref WLRecoverySync TRUE
   ```

4. Save the file.
5. Run the ***defaults_setup*** script located in the *<M-Business_Home>/conf* directory.

   Windows: Run ***defaults_setup.bat***

   Unix: Run ***defaults_setup***
6. Restart M-Business Server.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

The steps above enable recoverable wireless synchronization on your M-Business Server. In addition, you may wish to tune two additional settings in the *sync.conf.default* file:

- `DeviceReadTimeout`
- `DeviceWriteTimeout`

These two settings do not appear in the file by default, although they have default values that are defined internally. See "User addable settings" on page 225.

The synchronization recovery mechanism is triggered when one of these timeout values is reached. The default values for these timeouts are set relatively high, so that enterprise applications with intense back-end processing can complete that processing during a synchronization. The trade-off is that if end users encounter a network error and the timeout value is large, they may be more inclined to cancel the synchronization and thus lose the benefit of the automatic recovery. Thus you need to balance these two issues and set reasonable timeout values for your application and target network.

If you want to modify the timeouts, you can use the steps above as a guide to editing the *sync.conf.default* file.

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Caution
If the two timeout settings below have already been added to your *sync.conf.default* file, and the values are different from the default values listed for them in "User addable settings" on page 225, someone in your organization has probably optimized these settings for a particular application or user situation. In this case, you should not change these non-default settings without coordinating closely with the person who set them.

Add the following lines at the end of the file:

```
SyncPref DeviceReadTimeout <read_timeout_seconds>
SyncPref DeviceWriteTimeout <write_timeout_seconds>
```

Set **<*read_timeout_seconds*>** and **<*write_timeout_seconds*>** as necessary.

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Enabling the file protocol

You can enable the file protocol (file://), which allows files to serve as channels.

Caution
Enabling the file protocol is not recommended because it can allow users read access to system files.

By default, M-Business Server only allows the use of the HTTP protocol in channels. The HTTPS protocol also is allowed if you have enabled the security feature. See "Enabling secure sockets layer (SSL)" on page 58.

♦ To enable the file protocol

1. Open the file *<M-Business_Home>/conf/sync.conf.default*.
2. Uncomment the line **`SyncPref WebToGoAllowFileAccess`**.

Note
To access files on network drives, M-Business Server must log in as an account with proper network privileges:

- **Windows:** Modify the M-Business Server Startup options in the Windows Services Control Panel. For further details, refer to your Microsoft Windows documentation.
- **Unix:** Modify the **`@@User@@`** and **`@@Group@@`** defaults in the ***defaults*** file.

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Enabling product features by updating the license key string

M-Business Server includes the ability to enable or disable certain product functions by modifying variables in the configuration files. This section provides instructions for changing access to some product features by editing the license key string.

During install you are prompted for a license key. The license key controls the server functionality, the user limit, and the length of time the server is enabled. Generally, you should not need to change your license key. The situations that require you to change your license key include:

- Adding functionality to your server and clients.
- Increasing the total number of users allowed on your server.

  You can also increase the number of users allowed by simply adding a license in the Administrator Console. See "Adding a server license" on page 115.
- Extending the duration of the license.

To update your license key, you will need to edit the license string in both the *sync.conf.default* and *agsoap.conf.default* files.

♦ To manually edit the license string and activate a license

1. Open the <***M-Business_Home*>*/conf/sync.conf.default*** file in a text editor.
2. Locate the `ServerLicense` line and replace the `PLACE_LICENSE_HERE` string (or the prior license string) with the server license string you received via email.

   A valid license line looks like this in *sync.conf.default*:

   ```
   ServerLicense K8OhbcykViqiI1NnXlA/XywzFg+Fx6TZ=
   ```
3. Save the file.
4. Open the <***M-Business_Home*>*/conf/agsoap.conf.default*** file in a text editor.
5. Locate the **`ServerLicense`** line and replace the **`PLACE_LICENSE_HERE`** string (or the prior license string) with the server license string you received via email.

   A valid license line looks like this in *agsoap.conf.default*:

   ```
   SoapPref ServerLicense K8OhbcykViqiI1NnXlA/XywzFg+Fx6TZ=
   ```
6. Save the file.
7. Run the ***defaults_setup*** script located in the <***M-Business_Home*>*/conf*** directory.

   Windows: Run ***defaults_setup.bat***

   Unix: Run ***defaults_setup***

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8. Restart M-Business Sync Server.

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Configuring proxy server settings

A proxy enables access to the World Wide Web from within a firewall, a barrier between your company's internal network (intranet) and the web. Proxies apply only to computers connected to a network within a firewall.

If you are running M-Business Server on a machine that runs behind a firewall, you need to specify a proxy server machine and the port in the *sync.conf.default* file. The set of directives you will need to edit depends upon whether you need to set up proxy server access to HTTP or HTTPS pages, or if you are connecting through a SOCKS proxy server.

On client machines, Mobile Link automatically tries to connect to proxy servers using port 80. If you need to use a port other than 80, each one of your users will have to change the Mobile Link configuration on the desktop and/or on the mobile device to match.

Tip
The user name and password referred to in the directives below are the user name and password required to access the proxy server.

- To enable proxy access to HTTP pages, uncomment and set these directives:

```
#SyncPref WebToGoProxyServer @@WebToGoProxyServer@@

#SyncPref WebToGoProxyPort @@WebToGoProxyPort@@

#SyncPref WebToGoProxyExcludeDomains localhost

#SyncPref WebToGoProxyUserName @@WebToGoProxyUserName@@

#SyncPref WebToGoProxyPassword @@WebToGoProxyPassword@@
```

  Note
  `WebToGoProxyExcludeDomains` is a list of hosts or domains that M-Business Server can access directly without using the proxy server. It is always important that M-Business Server self-generated pages, at least, are not subject to being proxied.

- To enable proxy access to HTTPS pages, uncomment and set these directives if you have access control turned on for the SSL proxy server:

```
#SyncPref SecureProxyName @@SecureProxyName@@

#SyncPref SecureProxyPort @@SecureProxyPort@@

#SyncPref SecureProxyUserName @@SecureProxyUserName@@

#SyncPref SecureProxyPassword @@SecureProxyPassword@@
```

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- If your proxy server uses SOCKS instead of HTTP, edit the following lines instead:

  ```
  #SyncPref WebToGoSocksServer @@WebToGoSocksServer@@
  ```

  ```
  #SyncPref WebToGoSocksPort @@WebToGoSocksPort@@
  ```

- If your proxy server authenticates, uncomment and edit the following lines to access the proxy server:

  ```
  #SyncPref WebToGoProxyUserName @@WebToGoProxyUserName@@
  ```

  ```
  #SyncPref WebToGoProxyPassword @@WebToGoProxyPassword@@
  ```

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Setting cache preferences

In order to improve the user experience for online versus synchronization-based environments, M-Business Server provides configuration directives that allow you to modify the cache settings for both the client and the server. These configuration directives are stored in the *sync.conf* file.

Setting server-side cache directives

M-Business Server provides the following server-side cache settings, which you can modify to improve the way pages are cached on the server. Server-side cache directives are covered in detail in the table below.

Table 1. Server-side cache settings

Setting	Description
`MaxCacheSize`	Maximum document size to cache.
`SetDefaultFreshLife`	Set a default freshness lifetime for documents.
`DefaultFreshnessLifetime`	Period of time to cache documents if `SetDefault-FreshLife` is set to `CacheableDocs`.
`LimitFreshLifeOn`	Limits freshness lifetimes of documents.
`LimitFreshLifeSecs`	Maximum time for a document's freshness lifetime.
`NegativeCachingOn`	Caches negative messages from servers for time set by `NegativeCachingFreshnessLifetime`.
`NegativeCachingFreshnessLifetime`	Period of time negatives are cached.
`ServerSideCaching`	Determines whether documents are cached on server.
`CacheRoot`	Path to the directory where cached files are stored.
`CacheSize`	Size limit for cache directory.
`CacheGcInterval`	Server cache's garbage collection interval.

Clearing the server cache

♦ **To clear the M-Business Server cache**

1. Stop the server services.

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See “Starting, stopping, and restarting M-Business Server” on page 42.

2. Navigate to the <***M-Business_Home*>*/cache*** directory and delete the following files:

   - ***cur.dat***
   - ***cur.dir***
   - ***cur.pag***
   - ***lock***

3. Restart the server services.

   See “Starting, stopping, and restarting M-Business Server” on page 42.

Setting memory- and directory-based cache directives

M-Business Server provides the following server-side cache settings, which you can modify to improve the way pages are cached on the server. Memory- and directory-based cache directives are covered in detail in the table below.

Table 2. Memory- and directory-based cache directive summary

Setting	Description
`CacheInMemory`	Enables caching in memory.
`MaxMemCacheObjectSize`	Maximum size of object that can be cached in memory.
`MaxMemCacheSize`	Maximum size of memory cache.
`MaxMemCacheObjectCount`	Maximum number of documents that can be cached.
`CacheInDirectory`	Enables caching documents in directories in file system.

Setting on-device cache directives

If you create your own channels, you can control caching with the use of cache-control HTTP headers; see “Caching to improve channel performance” [*M-Business Anywhere Application Developer Guide*].

Note
Many pages marked handheld friendly do not include headers to control caching.

In environments where online browsing on mobile devices is common, a situation may occur where your users attempt to browse a cached page that has expired. To control how web pages are cached, M-Business Server provides on-device cache settings. On-device cache directives are covered in detail in the table below.

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Table 3. On-device cache directive summary

Setting	Description
`OnDeviceCachingOption`	Determines the mode of on-device caching. Options are: ♦ `EverythingAlways` ♦ `NothingEver` ♦ `EverythingDefault` ♦ `UseDefault` (default)
`DefaultOnDeviceExpiration`	Specifies default period of time documents will be cached on device.

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Forcing low resolution for backward compatibility

M-Business Anywhere by default supports the higher resolutions of newer devices on both Palm and Microsoft operating systems. If you have existing applications that are optimized for the lower resolution screens of older devices, you can preserve the look and feel of such applications on the older devices by changing the default settings of one or both of the following `SyncPref` settings in the *sync.conf* file:

- **`Quad_WinCELoRes`** - set this to **`TRUE`** to force channel content to be compatible with 240×320 QVGA Microsoft OS screens, instead of the 480×640 VGA format.
- **`Quad_PalmLoRes`** - set this to **`TRUE`** to force channel content to be compatible with 160×160 Palm OS screens, instead of the 320×320 format.

See "WebToGo conduit settings" on page 212 for more information.

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Enabling Forms, Servers, Add, and Remove links on M-Business Client home page

During installation, the Forms, Servers, Add, and Remove links on M-Business Client home page are turned off. If you wish, you can enable these links your users.

♦ To enable Forms, Servers, Add, and Remove links on the M-Business Client home page

1. Navigate to the directory for the device platform for which you wish to enable the M-Business Client home page links:

   <M-Business_Home>/tomcat/webapps/device/<platform>

   Where *<platform>* is as follows:

   - **MSSP** for Microsoft Smartphone
   - **PPC** for Windows Mobile Pocket PC and Windows Mobile 5
   - **Palm** for Palm OS

   Note
   These links can not be enabled for Windows XP devices.

2. Open the ***header.inc*** file in a text editor.
3. Locate the following line in the file:

   ```
   <% boolean showLinks = false; %>
   ```

4. Change **`false`** to **`true`** in this line:

   ```
   <% boolean showLinks = true; %>
   ```

5. Save and close the file.
6. Repeat these steps for any other device platforms for which you wish to enable these links on the M-Business Client home page.

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Monitoring M-Business Server

Confirming M-Business Server status

The Server Status page is the default page for M-Business Server when you log in as an administrator. This page provides all of the information that is available through the Administrator Console on the status of your M-Business Server. For instructions on accessing this page and interpreting the information displayed, see "Accessing the M-Business Server Administrator Console" on page 107.

Checking log files

M-Business Server saves administrative, server, and user operations in log files. These log files can help you to diagnose problems, determine the load on each server, and better manage the operation of your server. You can use any text editor to open the log files.

The following log files are available:

- ***agsoap_error.log*** - Records error messages logged by M-Business Anywhere SOAP server. The SOAP server is used by the Admin and Device UI servers, and by custom applications.
- ***sync_access.log*** - Records synchronization information as users synchronize their mobile devices with M-Business Server.
- ***sync_error.log*** - Records error messages logged as users synchronize their mobile devices with M-Business Server.
- ***tomcat_accessYYYY-MM-DD.txt*** - Records each page that is accessed on the Admin and Device UI, and any custom pages. A separate file is created for each YYYY-MM-DD.
- ***tomcat_output.txt*** - Records startup and error messages from the UI Servers for both the Admin and Device UI.

> **Note**
> Users can view their synchronization activity when they access M-Business Server in Personal Mode.

For more information about setting configuration directives for log files, please see the Apache documentation, referenced in "The M-Business Anywhere documentation set" on page xi.

Changing the retention period for log data

You may specify the number of days that data is retained in log files before it is purged. The default setting is 20 days. Log file data is automatically purged after it reaches this age.

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♦ To change the retention period for log data

1. Using a text editor, open the file *<M-Business_Home>/conf/sync.conf.default*.
2. Locate the following line:

   ```
   SyncPref DaysOfLogDataToKeep 20
   ```

   If you have previously changed the default setting, another number will appear in place of 20.
3. Change the number at the end of the above line to the number of days you want your log data to be retained.
4. Save the changes.
5. Run the ***defaults_setup*** script located in the *<M-Business_Home>/conf* directory.

   Windows: Run ***defaults_setup.bat***

   Unix: Run ***defaults_setup***
6. Stop and restart M-Business Server services.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

Windows only: Using event viewer

You can also view log messages using Windows Event Viewer. The Event Viewer lists three types of logs: Application, System, and Security. M-Business Server errors are recorded in the Application log.

M-Business Server log messages will be of one of the following types:

- Error
- Warning
- Information

♦ To use the Windows Event Viewer to view log messages

1. Choose **Start»Settings»Control Panel**.
2. Double-click the **Administrative Tools** icon, and then double-click the **Event Viewer** icon.
3. In the **Tree** pane, choose **Application**.
4. Double-click one of the messages to view its detail.

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Performing routine maintenance tasks

This section outlines the routine maintenance tasks you should perform regularly, to ensure that M-Business Server continues to run at its best.

"Clearing the server cache" on page 87 can also be considered to be a routine maintenance task.

Backing up the database

Back up your database at a time when you don not expect anyone to be synchronizing. There are several tools you can use to do this: a special script provided; the file system utilities in your operating system; or SQL Anywhere. Choose the tool you prefer. When you need to restore your database from backup, you should use the same tool you used to back it up.

Using the asa_export_data script

Note
Do not stop SQL Anywhere before running this script.

♦ **To back up user and group data using the asa_export_data script**

1. Open a command line window.

   Windows: choose **Start»Programs»Command Prompt**

   Unix: open a Unix shell window

2. `cd` to the <***M-Business_Home*>*/conf*** directory.

3. Enter:

   `asa_export_data`

   This command runs the asa_export_data script (*asa_export_data.bat* in Windows, *asa_export_data* in Unix), which calls the Adaptive Server Anywhere Unload Utility (`dbunload`). The database is backed up to <*M-Business_Home*>***/ASA/asa_export***.

Using the file system

Note
You must stop SQL Anywhere before manually copying database files to backup.

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♦ **To back up user and group data using the file system**

1. Stop SQL Anywhere.

   For instructions, see "Starting, stopping, and restarting M-Business Server" on page 42.

2. At the command line or in GUI window, navigate to the *<M-Business_Home>/**ASA/data*** directory.

3. Copy all files (***agdb.db*** and ***agdb.log***) in that directory to a backup location.

4. Restart SQL Anywhere.

Using SQL Anywhere utilities

If you are familiar with SQL Anywhere, you can use its built-in features to back up your database. One advantage SQL Anywhere offers is the ability to do incremental backups, which only have to back up the transactions that have occurred since the last backup. For more information, see the "Backup and Data Recovery" chapter in the *ASA Database Administration Guide*, referenced in "The M-Business Anywhere documentation set" on page xi.

Restoring the database from backup

Using the asa_import_data script

If you backed up your database using the *asa_export_data* script, then you should restore it using the companion ***asa_import_data*** script.

Note
Do not stop SQL Anywhere before running this script.

Using the file system

If you backed up your database by manually copying files through the file system, then you should restore them the same way, by reversing the direction of the copy.

Note
You must stop SQL Anywhere before manually copying database files to restore them.

♦ **To restore user and group data using the file system**

1. Stop SQL Anywhere.

   For instructions, see "Starting, stopping, and restarting M-Business Server" on page 42.

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2. At the command line or in GUI window, navigate to the <***M-Business_Home*>*/ASA/data*** directory.
3. Copy all files (***agdb.db*** and ***agdb.log***) from your backup location into that directory.
4. Restart SQL Anywhere.

Using SQL Anywhere utilities

If you backed up your database by using built-in features of SQL Anywhere, then you should use SQL Anywhere to restore the database. For more information, see the "Backup and Data Recovery" chapter in the *ASA Database Administration Guide*, referenced in "The M-Business Anywhere documentation set" on page xi.

Running a database cleaner script

The steps below provide instructions for running a database cleaner script. This should be run daily on M-Business Server.

While this script is running, the database tables will be locked and users will experience a delay in their synchronizations and wireless requests until the script completes. For this reason, you should run the script at a time of low utilization, such as 3:00 AM local time. If you are not familiar with the Windows Scheduled Task functionality, please refer to help provided by Microsoft in Scheduled Tasks.

♦ To run a database cleaner script

1. Open a command line window.

   Windows: choose **Start»Programs»Command Prompt**

   Unix: open a Unix shell window

2. cd to the <***M-Business_Home*>*/conf*** directory.
3. Enter:

   ```
   agdbDefrag
   ```

   This command runs the *agdbDefrag* script (*agdbDefrag.bat* in Windows, *agdbDefrag* in Unix), which cleans the SSLSESSION.

> **Tip**
> You can defragment the entire database, if it is feasible to have the M-Business Sync and Admin servers offline for a short time. For more information, see the *ASA SQL User's Guide*, referenced in "The M-Business Anywhere documentation set" on page xi.

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Resetting the log files

The steps for this task are different for Windows vs. Unix.

Resetting log files on Windows

Follow the steps below to reset the M-Business Server log files on Windows.

♦ **To reset log files on Windows**

1. From the Services Control Panel, stop **M-Business Admin Server** and **M-Business Sync Server** services.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

2. In Windows Explorer, navigate to the ***<M-Business_Home>/logs*** directory.
3. Move the ***sync_access.log***, ***sync_error.log***, and ***tomcat_output.txt*** files to a safe storage location.
4. Start **M-Business Admin Server** and **M-Business Sync Server** services in reverse from the order in which they were stopped.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

Resetting log files on Unix

♦ **To reset log files on Unix**

1. Open a Unix shell window.
2. Stop the **admin** and **sync** server processes.
3. Enter:

   ```
   cd <M-Business_Home>/logs
   ```

4. Move the log files listed in "Checking log files" on page 92 to a safe storage location.
5. Restart the **admin** and **sync** processes in reverse from the order in which they were stopped.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

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Optimizing performance

Assuming your hardware (RAM and CPU) is adequate, this section provides some options for improving the overall efficiency of M-Business Server.

M-Business Server performance

Top tips for boosting M-Business Server performance:

- Increase the amount of RAM on the machines that are running M-Business Server.
- Turn on **`GetHostByName`** (GHBN). In the ***sync.conf.default*** file, comment out the **`webtogonameserver`** and **`webtogoport`** lines, and restart the **`sync`** process.
- Adjust the directives that control the number of children each process spawns.

  The table below lists these performance tuning directives.

Table 4. Settings in sync.conf file that affect server performance

Setting	Description
`StartServers` (Unix only)	The number of children initially started for the server.
`MinSpareServers` (Unix only)	The minimum number of children that remain running even if idle. Apache periodically polls the servers. If there are not enough idle server processes, Apache starts new processes until this limit is reached.
`MaxSpareServers` (Unix only)	The maximum number of children that can remain idle. Apache periodically polls the servers. If there are more idle server processes than this setting allows, Apache kills them.
`ThreadsPerChild`	The number of concurrent threads, or requests, the server will allow. You should set this value according to the responsiveness of the server and the amount of system resources you will allow the server to consume. The more active requests running at once, the slower each request will be handled.

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Setting	Description
`MaxRequestsPerChild`	The maximum number of requests each child process handles before it dies. On Unix systems, a child handles one connection request at a time. After it has handled the number of requests specified by this setting, the child dies. Having children die periodically reduces the chance of memory leakage.
`MaxClients`	The maximum number of children allowed to be running (idle or not) at one time for this server.

You can find these settings in *sync.conf.default*. If synchronizations are slow, adjust the settings in *sync.conf.default*.

Unix-specific settings

When the servers start up, they start the number of processes specified by `StartServers`. If each of the processes is handling a request, incoming requests are queued. If the parent process detects that there are items in the queue, it starts a new child process after one second. After two seconds, if there are still requests in the queue, it starts two more child processes. After three seconds, it starts four more child processes. After 4 seconds, eight processes, and so on until the `MaxClients` limit is reached. It can take several seconds for the `MaxClients` limit to be reached.

Suppose you have 50 users who all synchronize their devices exactly once each day, when they start work at 8:00 AM. Your `sync` server process is idle throughout most of the day but has a huge spike of activity at 8:00 AM each morning. If the `StartServers` and `MinSpareServers` were set to 5 and `MaxClients` were 50, it would take about 5 seconds for the server to spawn enough children to handle all of the incoming requests each morning.

To accommodate large spikes in server access, you should set the `StartServers` and `MinSpareServers` values to high numbers. Doing so starts up a high number of processes and leaves them idle until they are needed, which saves several seconds of ramp-up time.

Modifying the ThreadsPerChild directive

When the M-Business Server service starts up, it launches two processes: a parent process and a child process. The child process handles all requests; the parent process simply forwards all requests to the child process and spawns new child processes as needed. Within the child process, each request is handled by a separate thread.

The `ThreadsPerChild` directive specifies the number of simultaneous requests the child process handles. If `ThreadsPerChild` is high, the requests are processed more slowly. If `ThreadsPerChild` is low, each request is handled more quickly, but individuals may wait longer because their requests are queued until those requests can be handled.

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Database performance

In general, a properly configured M-Business Server can run on a single machine supporting over 2,000 users who surf wirelessly and synchronize from their desktops.

To maintain optimum database performance, each day you should run the database cleaner script mentioned in "Running a database cleaner script" on page 96.

Restricting server access to selected users or groups with NT domain integration

When M-Business Server is installed with NT domain integration, it is possible to restrict the found set of users in the domain to those belonging to specific groups. This is done by using the AGDomainSync tool, which allows you to bulk import domain accounts by group. Before doing so, however, you must set the `ExternalAuthCreatesUsers` directive in the *sync.conf.default* file to `Off`/`False`.

Note
This does not affect user account validation — that is, the validation logic is not restricted by group, only domain. The tool also will delete users from the Adaptive Server Anywhere database if they are deleted from the domain.

If an administrator deletes or disables a user's domain account with the NT User Manager tool, that user will not be able to synchronize or log in to the M-Business Server UI. The user still is present in the Adaptive Server Anywhere database, but he or she is marked for deletion. You do not have to run the AGDomainSync tool for this to happen.

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Part III. Using the Administrator Console

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- “Managing users” on page 125
- “Managing groups” on page 151
- “Managing channels” on page 179

CHAPTER 7

Introducing the Administrator Console

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Web-based administration

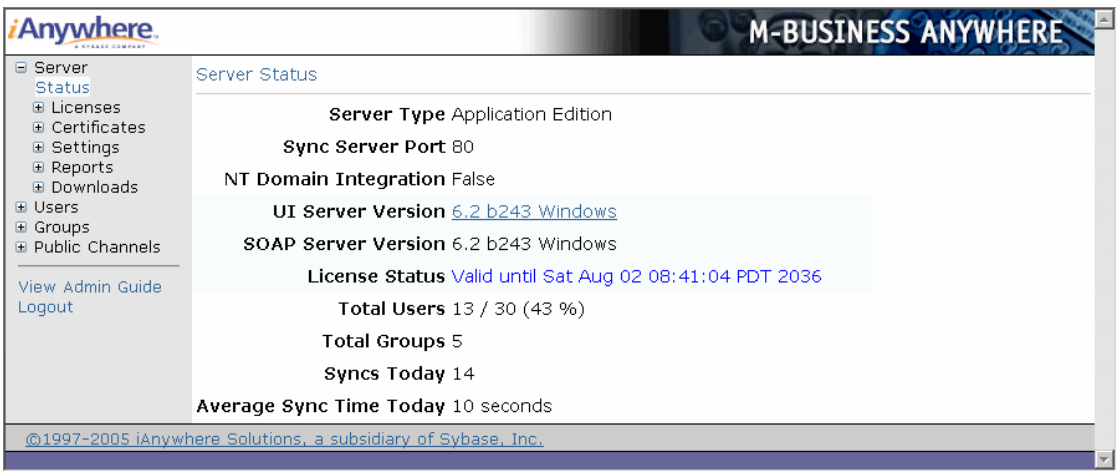
M-Business Server provides a web-based administration interface that enables the authorized admin user, group administrators, or users to access M-Business Server using a standard desktop web browser.

Using this web-based Administrator Console, administrators can control and monitor their users' channel subscriptions, group memberships, and access privileges. The admin user also can assign certain users to be group administrators, who then can help with certain group administration duties, such as managing group memberships and adding group channels. Users only can perform basic account and channel management for their personal accounts.

Depending on whether you log in as the admin user, a group administrator, or a user, there are three different modes to M-Business Server.

Administrator mode

When you log in to M-Business Server as the admin user, you see the Administrator Mode interface.



The Administrator Mode has a navigation panel that begins with Server options, and the only documentation link at the bottom is View Admin Guide.

This guide explains the role and associated tasks of the admin user. In Administrator Mode, the admin user accesses this guide by clicking **View Admin Guide**.

Group administrator mode

When the admin user assigns users to be group administrators, those users log in to M-Business Server; but instead of seeing the Personal Mode interface, they see the Group Administrator Mode interface.

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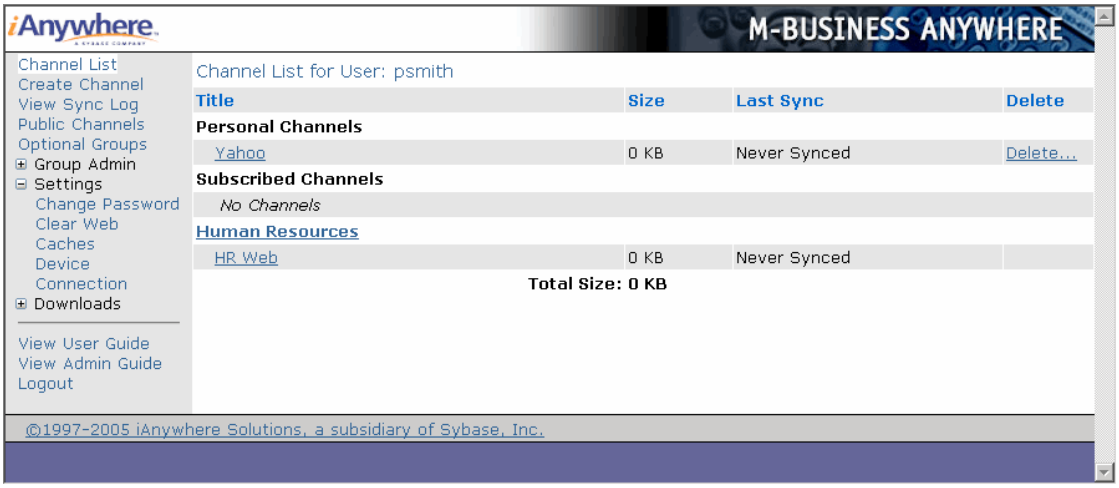


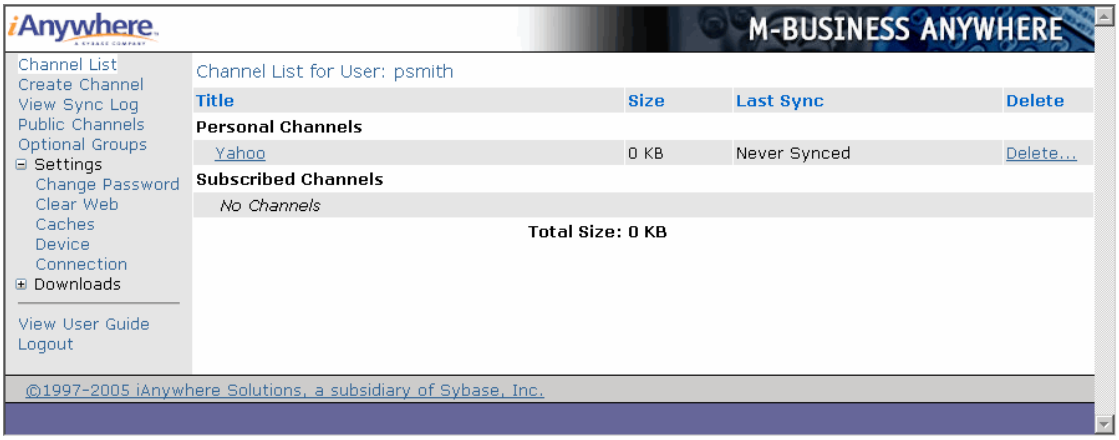
The Group Administrator Mode has a navigation panel that begins with a Channel List option, contains Group Admin options, and has two documentation links at the bottom: View User Guide and View Admin Guide.

In Group Administrator Mode, group administrators help ease the admin user's workload by performing such tasks as managing group memberships and adding group channels. They also monitor, administer, and activate conduit, channel, and account settings for their personal accounts.

This guide includes detailed information on how to be a group administrator. See "The role of a group administrator" on page 152. In Group Administrator Mode, group administrators access this guide by clicking **View Admin Guide**.

Personal mode

When users (or the admin user who is logged in under a user's name) log in to M-Business Server, they see the Personal Mode interface.



The Personal Mode has a navigation panel that begins with a "Channel List" option, but it contains no Group Admin options, and the only documentation link at the bottom is "View User Guide."

In Personal Mode, users perform basic account management. In Personal Mode, users manage their group memberships, add themselves to optional groups, and perform other tasks associated with using M-Business Server in conjunction with M-Business Client.

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Accessing the M-Business Server Administrator Console

Use your web browser to access the M-Business Server web-based administration interface — the Administrator Console. The login page is the first page that all users, including the admin user, personal users, and group administrators see.

♦ To access the M-Business Server Administrator Console

1. Display the M-Business Server login page.

   - From a Windows host machine, from the Windows Start menu, choose **Start»Programs»M-Business Anywhere»M-Business Server**.

     The M-Business Server login page appears.

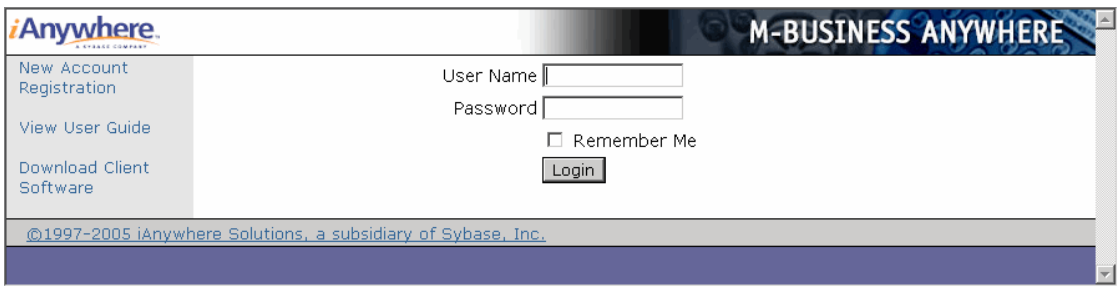
   - From another machine, open your web browser and go to **http://<servername>:8091** . If you are using a port other than 8091, go to **http://<servername>:<port number>**.

     In organizations where M-Business Server is installed on multiple machines, <servername> should be the name of the machine running the M-Business Admin Server service (Windows) or the admin server process (Unix).

   The M-Business Server login page appears, as shown in the figure below.

Tip
If you do not know the name assigned to the network computer on which M-Business Server is installed, contact either the admin user who installed M-Business Server or the network administrator.

Tip
If the M-Business Server login page does not load, try re-installing the server.



Note
If you are using NT domain integration, or if user self-registration is not enabled, the New Account Registration link shown in the login page above is not present. See "Setting user options" on page 119.

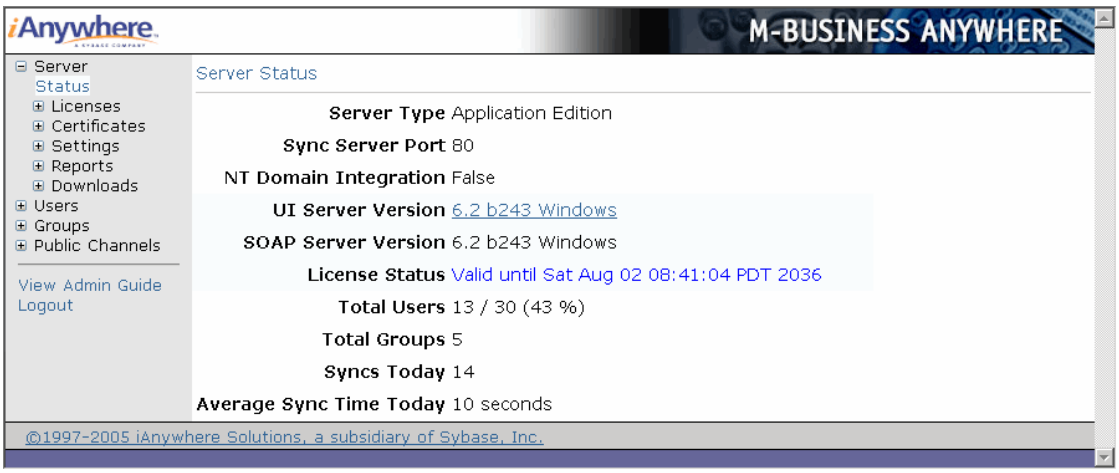
2. To log in as the admin user, in the **User Name** field type **admin**.

Note
There is only one M-Business Server administrator account, "admin." By default, this account does not have a password associated with it. Create a password after your first login. See "Creating or changing the admin user's password" on page 117.

3. To log in as a group administrator or as a user, type a valid user name in the **User Name** field and a password in the **Password** field.

4. Click the **Login** button.

   The Server Status page appears.



For a description of the fields displayed on the Server Status page, see "Checking M-Business Server status" on page 112.

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Navigating around and working in the Administrator Console

Using the Navigation Panel

The Navigation Panel, on the left side of the M-Business Anywhere Administrator Console, provides an expandable/collapsible menu hierarchy through which you can access all of the features that are available:

- Click the plus sign to expand an item that is collapsed.

- Click the minus sign to collapse an item that is expanded.

- You can Shift+click any link to open it in a new browser window.
- You can use Alt+<first letter> to expand a top-level branch of the Navigation Panel if it is collapsed, and to collapse it if it is expanded.

> **Tip**
> Keep top-level branches collapsed when you are working in other branches. This ensures that the portion of the Navigation Panel listing the options with which you are working stays available in your browser window without scrolling the window down.

- To edit an item, first use a List or Find option to display it in a list, then click the item's link in the left-most column.
- To delete an item, first use a List or Find option to display it in a list, then you have two options:
  - If you can be certain from the summary information presented in the list that you are about to delete the correct item, simply click the item's **Delete** link in the right-most column.
  - If you want to see more detailed information for the item before deleting it, click the item's edit link in the left-most column to display its Edit page, then you can use the **Delete** button on that page.

Organization of Navigation Panel and documentation

The Navigation Panel is organized so that features are listed in the order in which you are likely to need to use them on an ongoing basis. Thus Server options appear first, followed by User options, and then Group options. Within an option group, List and Find options appear first, followed by a Create option.

When you are first getting started, obviously you will need to use the Create options first, in order to have anything to List.

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As far as possible, this guide is organized so that its coverage of options follows closely the order in which they appear in the Navigation Panel. Thus, as you become more familiar with the Navigation Panel you are becoming more familiar with the structure of this guide; and as you become more familiar with this guide, you are becoming more familiar with the structure of the Navigation Panel.

Navigating long lists

Several options in the Navigation Panel display lists — of users, groups, channels, rules, and so on. If a list contains more than 25 items, the list is broken up into a series of pages, with 25 items per page.

Tip
Twenty-five is the default number for of items to display on a list page. Select a different number from the drop-down list at the top to see a different number of users displayed per page.

If the item you are trying to find is not listed on the first page, you can quickly navigate to other pages by using the navigation aids at the top of the list:

- << — displays the first page
- < — displays the previous page
- (number) — displays that page number
- > — displays the next page
- >> — displays the last page

Entering information

Review these guidelines before creating users, groups, or channels.

General guidelines

- User names cannot contain spaces unless they are read-only (as in NT domain integration), and are limited to 20 characters in length.
- Passwords can be neither blank, nor the number zero, and are limited to 14 characters in length. A minimum password length is set on the Settings for all Users page (Server»Settings»User). See "Setting user options" on page 119.
- Group names and group descriptions cannot begin with a space.

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- Channel locations (URLs) can contain only alphanumerics and characters used for their reserved purposes. Otherwise, they must be properly URL-encoded.

Note
URLs entered in any M-Business Anywhere component must contain only forward slashes (/). The backslash character (\) in place of a forward slash will cause an error.

Unsupported characters

The table below lists illegal characters for different fields in M-Business Server.

Table 1. Unsupported characters in field entries

This field...	cannot contain these characters...
User Name	& # ^ ` $!) ({ } ~ % \ " / : ' | < > + = ; , ? *] [
First Name/Last Name	& # @ ^ ` $!) ({ } ~ % \ " / : | < > + = ; , ? *] [
Group Name	< > " \
Group Description	< > " \
Channel Title	< > " \

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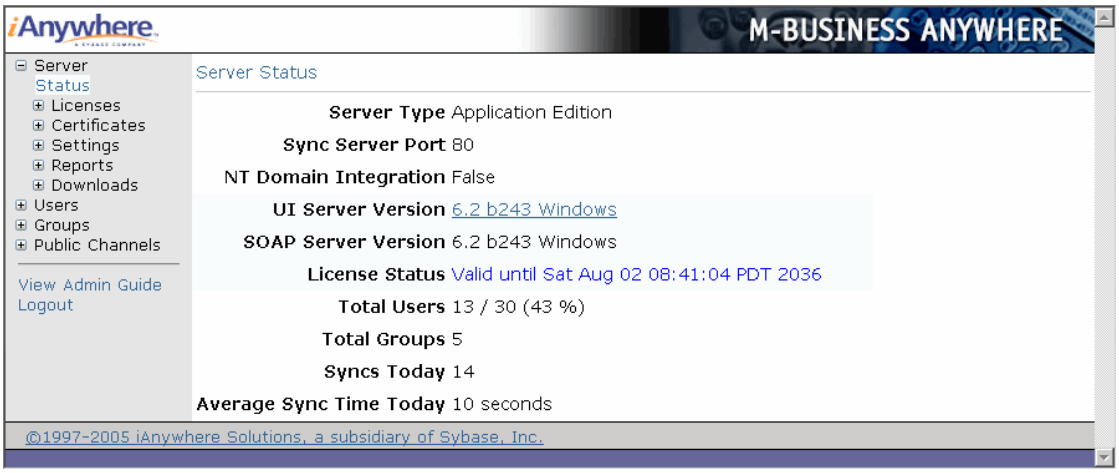
Checking M-Business Server status

The Server Status page is the default page for M-Business Server administration pages. From the Server Status page, use the information listed to confirm various pieces of M-Business Server status, such as the name of the machine hosting M-Business Server, the version of M-Business Server you are running, or the expiration date of your license.

♦ To check M-Business Server status

1. Log in to M-Business Server.
2. If you have displayed a different page after logging in, choose **Server»Status** in the left navigation panel.

   The Server Status page appears.



The Server Status page displays the following information:

- **Server Type**

  The type of M-Business Server — Web Edition simply delivers web content; Application Edition also supports implementation of custom web applications.

- **Sync Server Port**

  The port at which M-Business Server listens for updates.

- **NT Domain Integration** (Windows users only)

  Whether M-Business Server is integrated with a Windows Domain.

- **UI Server Version**

  The version of M-Business Server you are running.

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- **SOAP Server Version**

  The version of the supporting M-Business SOAP Server you are running.

- **License Status**

  The status of your M-Business Server license — if it is currently valid, this is followed by the date on which your license expires.

- **Total Users**

  The current number of users, followed by the total number of users supported by your M-Business Server license; in parentheses, the percentage of authorized users you have actually set up.

  > **Note**
  > Once the maximum number of users allowed by your license key has been reached, you will be unable to add new users through the Create User page. All previously created users will continue to be able to synchronize.

- **Total Groups**

  The total number of groups supported by M-Business Server

- **Syncs Today**

  The total number of user synchronizations performed today by M-Business Server

- **Average Sync Time Today**

  The average synchronization time for the total number of user synchronizations performed today by M-Business Server

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Managing M-Business Server licenses

Your M-Business Server must always have at least one valid license in order to operate. On completion of installation, your M-Business Server will have one license. Over time, you may want to add additional licenses to increase the total number of users that can be supported.

Listing server licenses

Even if you are just getting started — that is, you have just installed M-Business Server — you will have one license to list.

♦ To list server licenses

1. Log in to M-Business Server.
2. In the Navigation Panel, choose **Server»Licenses»List**.

   The List of Server Licenses page appears. For each license listed, the page displays:

   - **Server License** — the server license string itself. You could copy this text string and paste it into an email to help resolve a question about your license. See "Contacting iAnywhere Solutions" on page xiii
   - **Max Users** — the maximum number of users supported under this license. When this number of users is reached, you cannot add any more users under this license. You may purchase a separate license for the additional users that you need and add it to this page. See "Adding a server license" on page 115.
   - **Expiration Date** — the date on which this license expires.

     Caution
     Never let your license expire. You will be warned periodically as the expiration date approaches, but if you let it expire without replacing it with a new license, M-Business Server will stop functioning.

   - **Delete** link — which makes it possible to delete the license. See "Deleting a server license" on page 115.

     Caution
     Never delete an unexpired license. Doing so will cause M-Business Server will stop functioning, if you have not already added another license.

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Adding a server license

♦ To add a server license

1. Log in to M-Business Server.
2. In the Navigation Panel, choose **Server»Licenses»Add**.

   The Add a New Server License Key page appears.
3. In the **New Server License Key** field, enter the new license key string.
4. Click **Add**.

   The new license is added. To verify the license information, see "Listing server licenses" on page 114

Deleting a server license

> **Caution**
> Never delete an unexpired license. Doing so will cause M-Business Server will stop functioning, if you have not already added another license.

♦ To delete a server license

1. Log in to M-Business Server.
2. In the Navigation Panel, choose **Server»Licenses»List**.

   The List of Server Licenses page appears.
3. In the row for the license that you want to delete, click the **Delete** link.
4. When prompted to confirm the deletion, make sure you *really* want to delete this license before confirming.
5. Confirm additional prompts, until the license deletion is completed.

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Viewing M-Business Server certificate information

M-Business Server supports use of a certificate as an optional security feature. For instructions on using a certificate with M-Business Server, see "Security" on page 57.

Caution
Once you have your system set up to use a certificate, do not let that certificate expire. M-Business Server would be unable to download channel content to your users' devices until you either replaced the certificate or disabled use of this security feature. For more information, see "Security" on page 57.

Once you have your certificate set up, you can view information about it whenever you need to.

♦ To view M-Business Server certificate information

1. Log in to M-Business Server.
2. In the Navigation Panel, choose **Server»Certificates»List**.

   The Certificates page appears, displaying the following information for your certificate:

   - **Certificate File Name** — the full path to the file containing the certificate.
   - **Type** — the type of certificate, either ECC or RSA.
   - **Valid From** — the first date on which the certificate is valid.
   - **Valid To** — the last date on which the certificate is valid.

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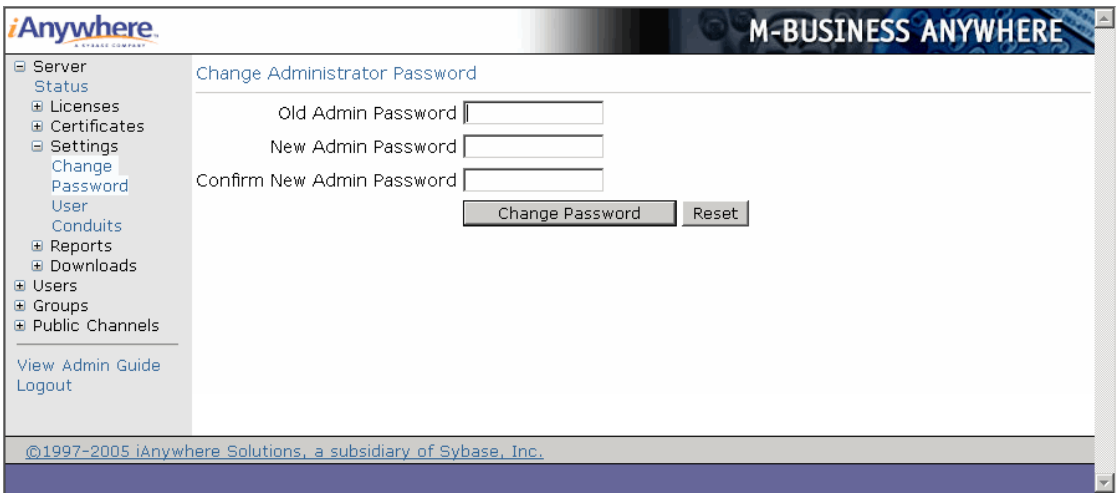
Creating or changing the admin user's password

By default, the M-Business Server administrator account, for User Name of admin, does not have a password associated with it. For security reasons, create a password for the admin user after logging in and before proceeding with adding users. You also can change the admin user's password at any time.

♦ To create or change the admin user's password

1. Log in to M-Business Server.
2. In the Navigation Panel, choose **Server»Settings»Change Password** .

   The Change Administrator Password page appears.



3. Type your old password in the **Old Admin Password** field.

   For restrictions on password entries, see "Entering information" on page 110.
4. Type your new password in the **New Admin Password** field.
5. Type the new password again in the **Confirm New Admin Password** field.
6. Click the **Change Password** button.

   Your password is changed.

> **Note**
> Remember to give the new password to any other administrators of M-Business Server who need to log in as the admin user.

Resetting the admin user's password

If you forget the admin user’s password, you can reconfigure the Adaptive Server Anywhere database in M-Business Server and clear the forgotten password information. For detailed instructions on how to do this, contact iAnywhere Technical Support — see “Contacting iAnywhere Solutions” on page xiii.

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Setting user options

Note
Most settings for M-Business Server are controlled through configuration files. See "Configuring M-Business Server" on page 75.

♦ To set user options for M-Business Server

1. Log in to M-Business Server.
2. In the Navigation Panel, choose **Server»Settings»User**.

   The Settings for all Users page appears.
3. Set user options:

   - **Allow Personal Channels**

     Selection of **Yes** or **No** determines whether users may set up personal channels.

   - **Allow Self Registration**

     Selection of **Yes** or **No** determines whether users may register themselves through the Administration Console.

   - **Minimum Password Length**

     Users will be required to enter a password with at least as many characters as you specify here.
4. Click **Save**.

   Your changes to user options are saved.

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Checking or changing the status of M-Business conduits

Log in to M-Business Server as the admin user and use the information on the Settings for Server Conduits page to confirm the status of, and turn on and off, M-Business conduits, such as M-Business web conduit or M-Business XML conduit.

♦ To check or confirm the status of M-Business conduits

1. Log in to M-Business Server.
2. In the Navigation Panel, choose **Server»Settings»Conduits**.

   The Settings for Server Conduits page appears.
3. Specify settings for server conduits:

   - **M-Business Database** (does not appear with M-Business Anywhere Web Edition)

     Under **Status**, **Yes** enables, **No** disables the M-Business on-device data capability.

     Note
     For information on setting up a database channel, see "Managing group database channels — M-Business XML conduits" on page 163.

   - **M-Business Web**

     Under **Status**, **Yes** enables, **No** disables the M-Business web server capability.

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Viewing reports

Log in to M-Business Server as the admin user and use the **Reports** options in the Navigation Panel to view M-Business Server reports.

♦ To view M-Business Server reports

1. Log in to M-Business Server.
2. Choose **Server»Reports**.

   The Server Reports options are displayed in the Navigation Panel.
3. Choose the report you want to view:

   - **Users who have not synced** — lists users who have not synchronized in the time period you select
   - **Browse Sync Log** — lists synchronization info and errors for next number of entries you select.
   - **Browse Webstats Log** — lists web log statistics for next number of entries you select. See the table below for field descriptions.
   - **Usage History** — lists number of synchronizations and average synchronization time for last number of days you select
4. If the default report setting is not what you want, select different setting, then click **Generate Report**.

Note
On multi-page reports, click **Generate Report** to see the next page.

Table 2. Sync Log fields

Field name	Description
User ID	M-Business user ID
Sync Start	Date and time when the synchronization started
Sync End	Date and time when the synchronization ended
Records Sent	Number of communication protocol records sent by the server.
Records Received	Number of communication protocol records received by the server.
Data Received	Total bytes of data in communication protocol records received by the server.
Data Sent	Total bytes of data in communication protocol records sent by the server.

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Field name	Description
Errors	List of errors logged

Table 3. Webstats Log fields

Field name	Description
Sequence Number	Sequence number sent by M-Business Client.
User ID	M-Business user ID.
Total Pages	Total number of pages downloaded in this synchronization.
Total Images	Total number of images downloaded in this synchronization.
Online Fetch	Was this an online synchronization? 0 = no/false; 1 = yes/true.
Handheld Friendly	Total number of pages with Handheld Friendly `meta` tag.
Cached Pages	Total number of pages cached.
Cached Images	Total number of images cached.
Error Pages	Total number of pages with errors.
Error Images	Total number of images with errors.
In Page Size	Total size of pages downloaded to device, in bytes.
Out Page Size	Total size of pages uploaded to server, in bytes.

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Downloading M-Business Client

The options for downloading M-Business Client to specific mobile device platforms are included primarily for use by individual users in Personal Mode, but are also available in Administrator and Group Administrator Modes.

Note
With wireless devices, it is still necessary to dock the device in a cradle that is physically connected to your computer in order to download M-Business Client.

♦ To download M-Business Client

1. Log in to M-Business Server.
2. In the Navigation Panel, choose **Server»Downloads»<language>**, where <language> is one of the supported languages.

   The options for the different M-Business Client platforms are displayed below Downloads in the Navigation Panel.
3. In the Navigation Panel, choose the platform to which you are downloading M-Business Client.

   The M-Business Client Download page appears, with specific instructions for the M-Business Client platform you selected.
4. Follow the instructions on the M-Business Client Download page to download M-Business Client to your device.

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Logging out of M-Business Server

The **Logout** link is always available from the bottom of the M-Business Server Navigation Panel. For security reasons, M-Business Server clears any saved user names or passwords enabled by the Remember Me option.

♦ To log out of M-Business Server

1. Make sure you have saved any changes you have made.
2. Click the **Logout** link at the bottom of the M-Business Server Navigation Panel.

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CHAPTER 8

Managing users

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Listing and finding users

There are two ways to list users in the M-Business Server database.

- "Listing all users" on page 126
- "Finding a list of users matching what you enter" on page 127

Listing all users

Just getting started? Obviously you have to create users before you can list them. See "Adding new users" on page 129.

♦ To list all users in the M-Business Server database

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Users»List Users**.

   The Listing Users page appears, with users listed in alphabetical order by User Name.

   For tips on moving through multi-page listings, see "Navigating long lists" on page 110.

3. From the Listing Users page you can do the following:

   - View the **User Name**, **Name**, and **Device OS** for listed users.
   - Edit a user, by clicking the link in the **User Name** column.

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See “Editing user information” on page 132.

- Delete a user, by clicking the **Delete** link at the right end.

  See “Deleting a user” on page 143 for additional information.

- Delete all selected users, by checking the box in the **Delete** column for each user to delete, then clicking the **Delete All Checked Users** button in the lower right corner. Note that you can use the Check All Users and Uncheck All Users buttons as a an aid in getting the right combination of users checked on a page.

  See “Deleting a user” on page 143 for additional information.

Finding a list of users matching what you enter

Just getting started? Obviously you have to create users before you can list them. See “Adding new users” on page 129.

♦ To quickly locate a single user, or all the users matching the information that you enter

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Users»Find User**.

   The Find User page appears.
3. Enter the information for the user(s) you want to find.

   - **User Name** — to match the login names of the user accounts from the first letter forward.
   - **First Name** — to match the first names of user accounts from the first letter forward.
   - **Last Name** — to match the last names of user accounts from the first letter forward.

     This search does not support wildcards or Boolean operators, and it is not case sensitive. If you type the first letter or the first few letters of a name, all names beginning with the letter(s) you typed are returned.

   Note
   If you have integrated M-Business Server with an NT domain, you must use both first and last names to search for a user.

   Tip
   Typing user information in more than one field acts as an AND statement. For example, if you type the letter **d** in the User Name field and the letter **k** in the Last Name field, the search engine will return only the users who have a user name that begins with d AND have a last name that begins with k.
4. Click the **Search** button.

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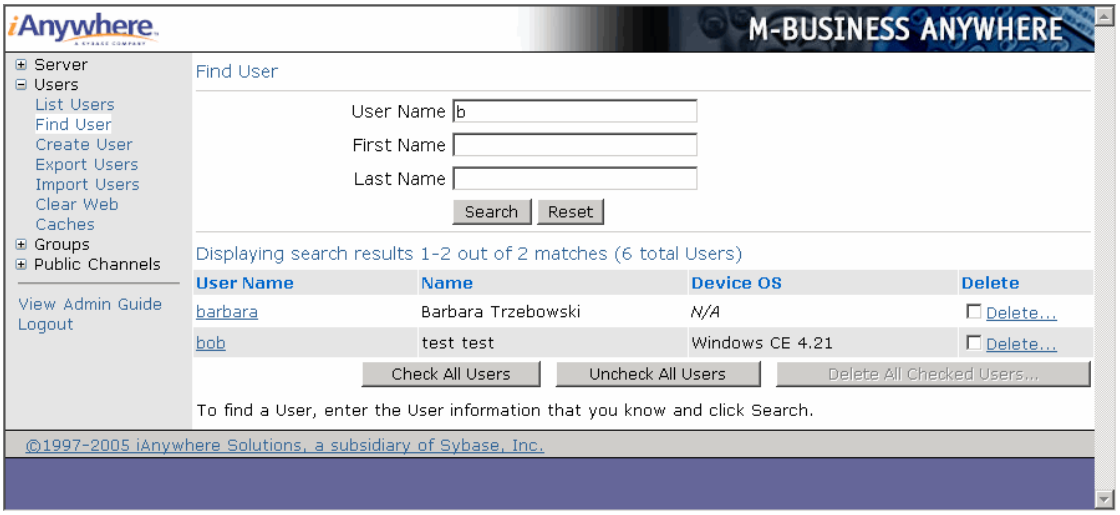
The list of matching users appears below the search fields, with users listed in alphabetical order by User Name.



If your search returns a large number of matching users, only the first 25 are listed.

If the user you are trying to find is not listed on this page, you can quickly navigate to other pages of users by using the navigation aids at the top of the list. See "Navigating long lists" on page 110.

5. From the list of matching users that were found, you can do the following:

   - View the **User Name**, **Name**, and **Device OS** for listed users.
   - Edit a user, by clicking the link in the **User Name** column.

     See "Editing user information" on page 132 for additional information.
   - Delete a user, by clicking the **Delete** link at the right end.

     See "Deleting a user" on page 143 for additional information.
   - Delete all selected users user, by checking the box in the **Delete** column for each user to delete, then clicking the **Delete All Checked Users** button in the lower right corner. Note that you can use the Check All Users and Uncheck All Users buttons as a an aid in getting the right combination of users checked on a page.

     See "Deleting a user" on page 143 for additional information.

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Adding new users

Note
If you are using NT domain integration, you cannot add new users through the M-Business Server Administrator Console. New users can only be added through the NT domains you have specified. For more information, see “Implementing NT domain integration (Windows only)” on page 50.

There are three ways to add new users to the M-Business Server database from the M-Business Server Administrator Console, in administrator mode. Review the three ways, considering how you plan to use M-Business Server, then decide which is the most appropriate option, or combination of options, for your organization.

- “Creating individual users” on page 129
- “Allowing users to self-register” on page 131
- “Importing information on multiple users from a CSV file” on page 131

Note
A fourth way, using NT domain integration, is done at the time of installation. See “External user authentication” on page 47. If you are using M-Business Server with NT domain integration, this is the only way you can add new users.

Creating individual users

The admin user adds users to the M-Business Anywhere database one at a time from the M-Business Server Administrator Mode interface. If you add users by NT domain integration, this feature is not available.

Tip
Before creating new users, institute a user name policy to help organize your user base. See the table below for examples.

Table 1. Sample user name policies

First Name, Last Name	User Name	Policy
Tim Smith	tsmith	first initial, last name
Jane Doe	doej	last name, first initial
Susan Jackson	suja	first two letters of first and last name

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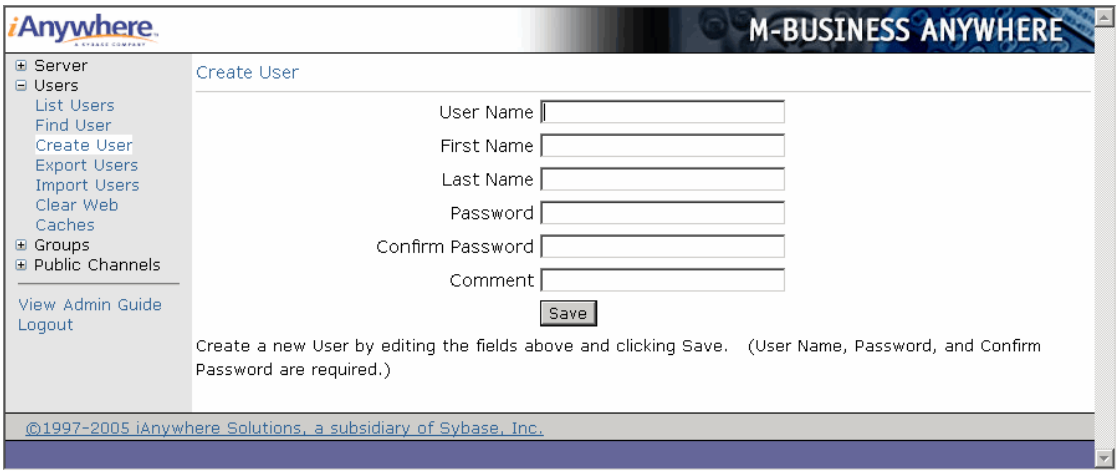
♦ To create a new user

1. Log in to M-Business Server as admin.
2. Choose **Users»Create User**.

   The Create User page appears.



3. Type a unique user name in the **User Name** field.
4. Type the user's first name in the **First Name** field.
5. Type the user's last name in the **Last Name** field.
6. Type the same password in the **Password** and the **Confirm Password** fields.

   Without a password, the attempt to create a user will fail. For restrictions on password entries, see "Entering information" on page 110.
7. Optionally, type a comment in the **Comment** field.
8. Click **Save** to add the user.

> **Note**
> If the maximum number of users allowed by your license key has already been reached, you will be unable to add a user through the Create User page. See "Checking M-Business Server status" on page 112.

If there are any problems with your entries, a message is displayed at the bottom of the Create User page. Make the specified correction and click **Save** again.

If your entries for the new user are accepted:

- The Edit User page for the user you just created is displayed.

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- The Navigation Panel now lists the **Users»Edit User** submenu and shows that you are in **Users»Edit User»Identity**.

From the Edit User page you can do the following:

- Edit the user's Identity information — **User Name**, **First** and **Last Name**, **Password**, and **Comment**. For details on these fields, see the steps under Create User page.
- Configure the rest of the user's profile, assigning the user to groups and/or creating personal channels.

  See:

  - "Managing personal channels for a user" on page 133
  - "Clearing web caches for a single user" on page 136
  - "Managing a user's group memberships and group administrator roles" on page 138
  - "Viewing a user's synchronization history" on page 140
- Delete the user, by clicking the **Delete** button.

  See "Deleting a user" on page 143 for additional information.

Allowing users to self-register

Self-registration allows users to create new accounts for themselves from the **New Account Registration** link on the M-Business Server login page. If you add users by NT domain integration, this feature is not available. If you are not using NT domain integration, this feature is enabled by default.

If you decide to add users through self-registration, consider creating groups before allowing users to self-register. For example, if you create optional groups before allowing users to self-register, users will be able to add themselves to the optional group during the self-registration process. If you create required groups before allowing users to self-register, users automatically will be added to all required groups when they self-register. See "Understanding group types" on page 153.

For instructions on enabling or disabling user self-registration, see "Setting user options" on page 119.

Importing information on multiple users from a CSV file

If your users are already defined in another database, you can import the user Identity information into your M-Business Server user database by exporting a comma-separated value (CSV) file from the other database. For example, you could import existing accounts on an email server as users in M-Business Anywhere.

For instructions on importing users from a CSV file, see "Importing user information" on page 146.

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Editing user information

♦ **To edit a user's information**

1. Log in to M-Business Server as admin.
2. Locate the user.

   For instructions on using **Users»Find User**, see "Finding a list of users matching what you enter" on page 127.

   For instructions on using **Users»List Users**, see "Listing all users" on page 126.
3. Click the link in the **User Name** column for the user.

   The Edit User page appears.

   Note
   If you just created the user, the Edit User page is displayed automatically.

   Note
   If you are using NT domain integration, you cannot edit user names or passwords from the M-Business Server interface. NT domain user management administers user authentication. The only field you can modify on the Edit User page is the Comment.
4. Use the Edit User page to change the user Identity information.

   See "Creating individual users" on page 129 for details on the fields.

   Click **Save** when you are ready to save your changes.

   A message appears at the bottom of the page indicating that the group was successfully updated.
5. Use the **Users»Edit User** submenu to configure or change the user information — see the following:

   - "Managing personal channels for a user" on page 133
   - "Clearing web caches for a single user" on page 136
   - "Managing a user's group memberships and group administrator roles" on page 138
   - "Viewing a user's synchronization history" on page 140
   - "Disabling a user" on page 142
   - "Deleting a user" on page 143

Note
You can also specify that all users must supply a password in order to view content from this server. See "M-Business Client password settings" on page 223. This is a global setting that applies to all users.

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Managing personal channels for a user

If you have a channel that you want a limited number of users to have, you can add the channel to select users' accounts as an alternative to creating a group, adding those users to the group, and creating a group channel. If you want several users to have the same personal channel, you will have to create it independently for each user.

Note
Before attempting to create personal channels for users, make sure that personal channels are enabled. See "Setting user options" on page 119.

For an explanation of the three types of channels that M-Business Server supports, see "About channels" on page 180.

Listing a user's personal channels

Just getting started? Obviously you have to create personal channels for a user before you can list them. See "Creating a personal channel for a user" on page 133.

♦ To list a user's personal channels

1. Edit the user's information.

   For instructions, see "Editing user information" on page 132.

2. In the Navigation Panel, choose **Users»Edit User»Channels»List**.

   The Channel List for User page appears.

   From the Channel List for User page you can do the following:

   - Determine the channel's **Size** and **Last Sync** date
   - Edit the channel's configuration, by clicking the link in the **Channel Title** column.
   - Delete the channel, by clicking the **Delete** link.

     See "Deleting a personal channel for a user" on page 135.

Creating a personal channel for a user

♦ To create a personal channel for a user

1. Edit the user's information.

   For instructions, see "Editing user information" on page 132.

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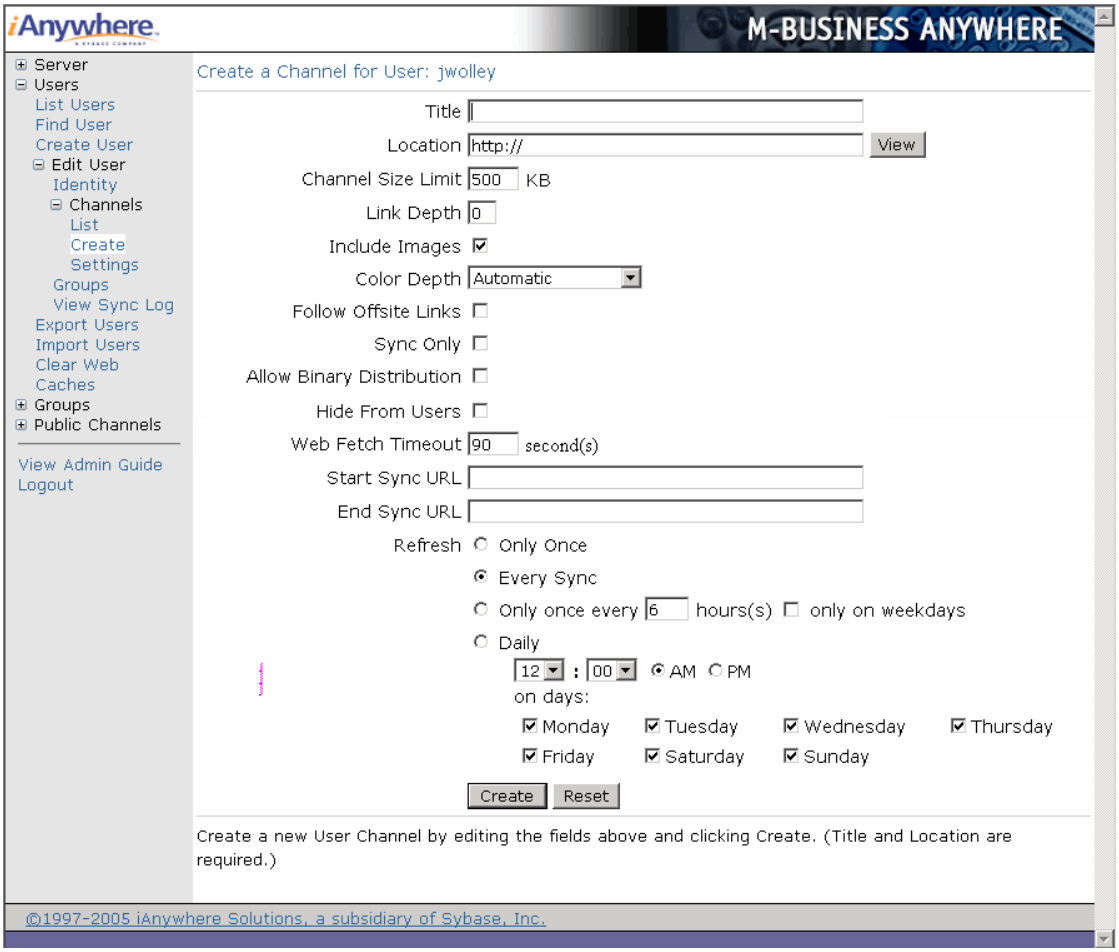
2. In the Navigation Panel, choose **Users»Edit User»Channels»Create**.

   The Create a Channel for User page appears.



3. Complete the channel setting fields.

   For a review of channel settings, see "Understanding channel settings" on page 183.

4. Click **Create**.

   You return to the Channel List for User page, where the channel you just created appears in the Personal Channels section.

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Editing a personal channel for a user

♦ To edit a personal channel for a user

1. Edit the user's information.

   For instructions, see “Editing user information” on page 132.

2. List the user’s personal channels.

   For instructions, see “Listing a user's personal channels” on page 133.

3. Click the link in the **Title** column for the channel you want to edit.

   The Edit a Channel for User page appears.

4. Make changes in the channel setting fields.

   For a review of channel settings, see “Understanding channel settings” on page 183.

5. Click **Save**.

   A message is displayed at the bottom of the Edit a Channel for User page indicating that the channel was successfully updated.

Deleting a personal channel for a user

♦ To delete a personal channel for a user

1. Edit the user's information.

   For instructions, see “Editing user information” on page 132.

2. List the user’s personal channels.

   For instructions, see “Listing a user's personal channels” on page 133.

3. Click the **Delete** link for the channel you want to edit, then click **OK** to confirm the deletion.

   OR, to see the channel details before deleting, click the link in the **Title** column for the channel you want to delete, verify the channel details, then click the **Delete** button and **OK** the delete confirmation.

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Clearing web caches for a single user

Clear web caches when you perform routine user account maintenance or when you troubleshoot synchronization issues.

For an explanation of the different types of web caches that M-Business Server maintains, see "Understanding web caches" on page 148.

For instruction on clearing web caches for multiple users, see:

- "Clearing web caches for multiple users" on page 148, using Users»List Users or Users»Find Users.
- "Clearing web caches for a group" on page 160, using Groups»Edit Group»Channels»Settings

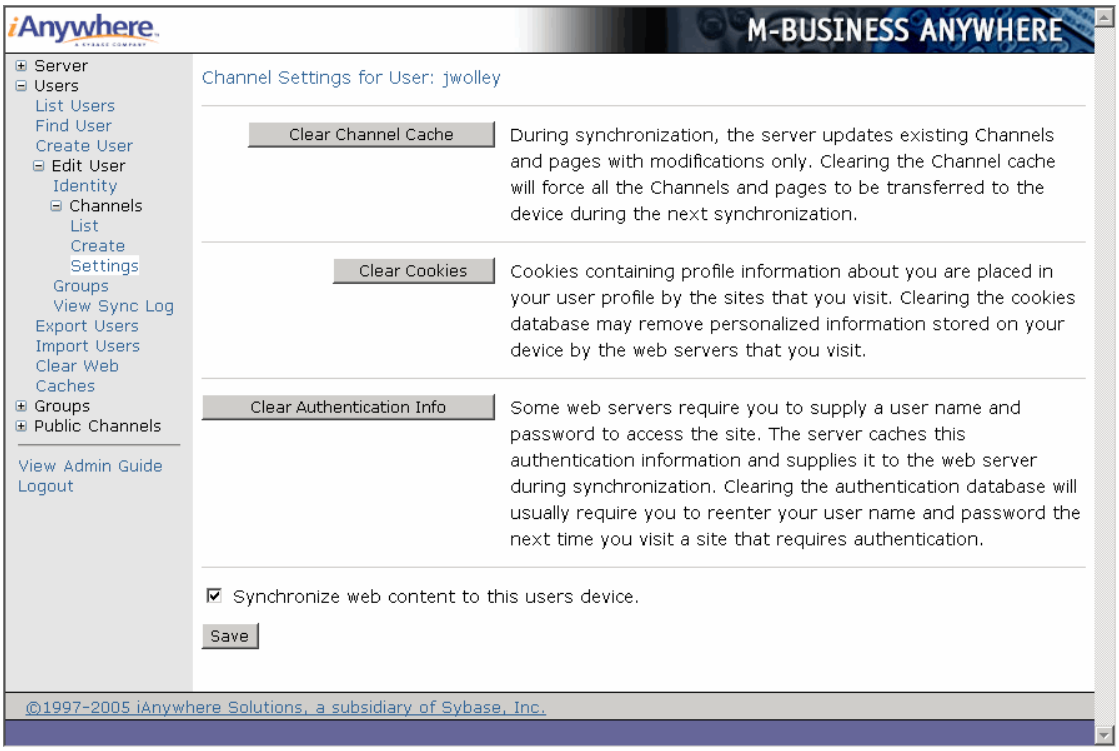
♦ To clear a user's web cache

1. Edit the user's information.

   For instructions, see "Editing user information" on page 132.

2. In the Navigation Panel, choose **Users»Edit User»Channels»Settings** .

   The Channel Settings for User page appears.



3. Click **Clear Channel Cache**.

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M-Business Server prompts you to confirm the clearing of the user's channel cache.

4. Click **Clear Cookies**.

   M-Business Server prompts you to confirm the clearing of the user's cookies.

5. Click **Clear Authentication Info**.

   M-Business Server prompts you to confirm the clearing of the user's authentication information.

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Managing a user's group memberships and group administrator roles

Just getting started? Obviously you have to create groups before you can assign users to them. See "Creating a group" on page 155.

You can set up a user's membership in groups, and designate a user as a group administrator, through either the Users or Groups menu options in the Navigation Panel. If you are already working with user information, it is more convenient to configure the group information for the user here.

To manage a group's membership and administrators from the group's end, see:

- "Managing users for a group" on page 172.
- "Managing group administrators" on page 175.

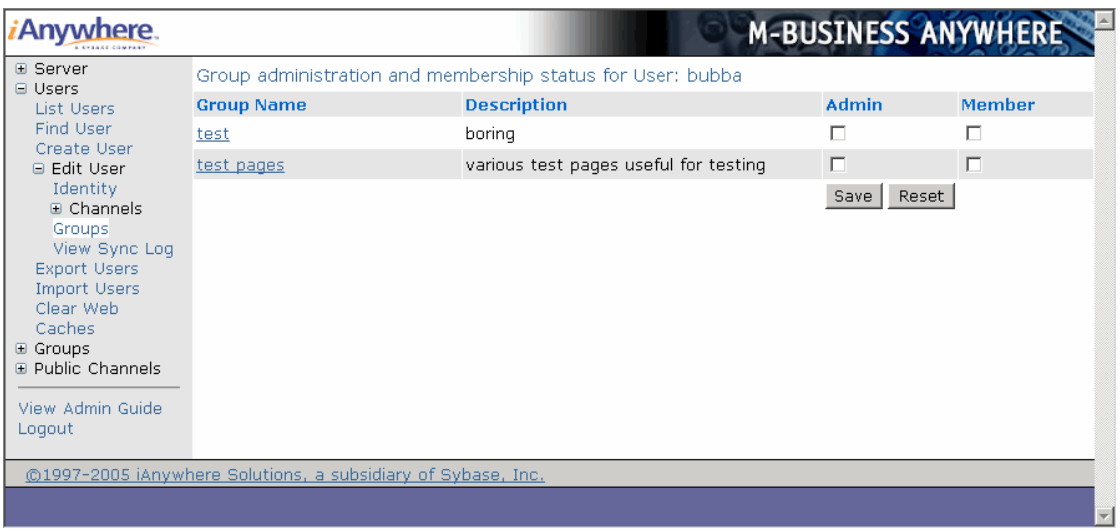
♦ To manage an individual user's group memberships and group administrator roles

1. Edit the user's information.

   For instructions, see "Editing user information" on page 132.

2. In the Navigation Panel, choose **Users»Edit User»Groups**.

   The Group administration and membership status for User page appears, displaying a list of existing groups.



3. Check the boxes in the **Member** column to make the user a member of those groups.

4. Check the boxes in the **Admin** column to make the user a group administrator of those groups.

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> **Note**
> A user does not have to be a member of a group in order to be a group administrator for that group.

5. Click **Save**, then click **OK** to confirm that you want to make these change.

   A message appears at the bottom of the page, indicating that the changes were successfully saved.

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Viewing a user's synchronization history

View a user’s recent or complete synchronization history to monitor user synchronizations or troubleshoot synchronization problems.

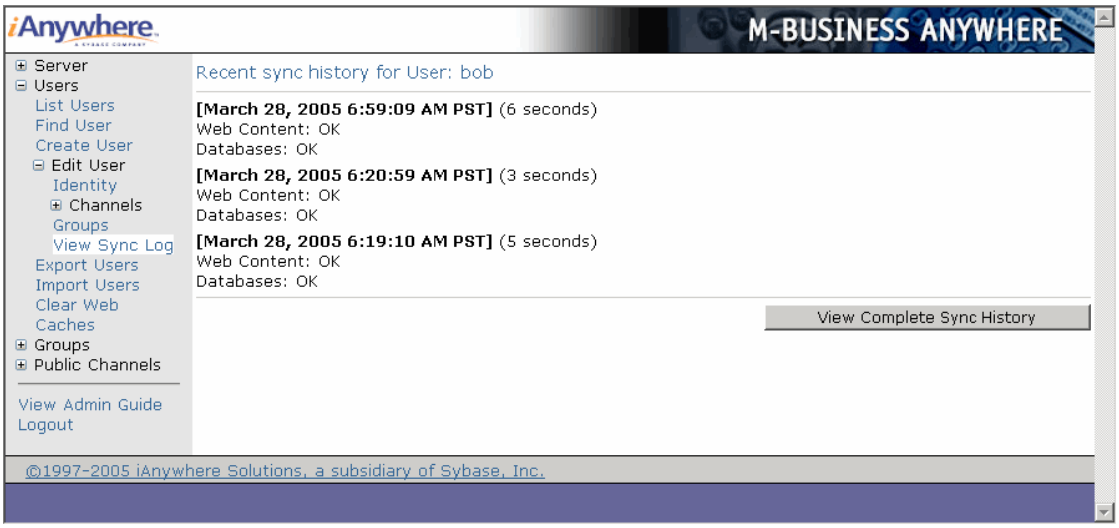
♦ To view a user’s synchronization history

1. Edit the user's information.

   For instructions, see “Editing user information” on page 132.

2. In the Navigation Panel, choose **Users»Edit User»View Sync Log**.

   The Recent Sync History for User page appears with the three most recent user synchronizations.



3. Click **View Complete Sync History** to see all available details.

   The Complete Sync History for User page appears with the user’s entire synchronization history.

Use the table below to interpret the synchronization history details.

Table 2. Interpreting synchronization history information

Information type...	What the information means...
Example: [Fri Jan 9, 2004 18:31:34]:	Timestamp Date and time of the last synchronization
Example: (550 seconds)	Duration The duration of the synchronization in seconds

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Information type...	What the information means...
Example: Completely out of sync, resequencing... Example: ERROR: File size limit exceeded(400)	Comment Information about the synchronization, including any explanation for a failed channel synchronization
Example: Web Content: OK	Status Whether or not there was a successful synchronization

Disabling a user

These instructions explain how to disable the M-Business web conduit of for a single user without deleting the user. You also can temporarily disable all users. See “Checking or changing the status of M-Business conduits” on page 120.

♦ To disable a user

1. Edit the user's information.

   For instructions, see “Editing user information” on page 132.

2. In the Navigation Panel, choose **Users»Edit User»Channels»Settings** .

   The Channel Settings for User page appears — see figure in “Clearing web caches for a single user” on page 136.

3. At the bottom of the page, clear the checkbox for **Synchronize web content to this user’s device**.

4. Click **Save**.

   A message is displayed at the bottom of the page confirming that the synchronization setting was saved.

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Deleting a user

It is good practice to remove users who are no longer using M-Business Client from your user base.

If you just want to disable a user account temporarily, without deleting it, see "Disabling a user" on page 142.

You delete a user by first locating the user through either the List Users or Find User option under Users in the Navigation Panel. There are then two ways to perform the deletion:

- If you can be sure from viewing the summary information for the user that this is the user you want to delete, you can delete the user directly from the list page.
- If you need to see more detail to be sure, you can go to the Edit page for the user to see more detailed information, and delete from there.

♦ To delete a user

1. Locate the user.

   For instructions on using **Users»Find User**, see "Finding a list of users matching what you enter" on page 127.

   For instructions on using **Users»List Users**, see "Listing all users" on page 126.

2. If you can tell from the summary information displayed that you have located the correct user(s) you want to delete:

   - To delete a single user, click the **Delete** link for a user on the right end.
   - To delete multiple users, check the box in the **Delete** column for each user you want to delete, then click the **Delete All Checked Users** button.

   M-Business Server prompts you to confirm the deletion — click **OK** if you are sure about it.

3. If you need more information on a user before deleting, click the link in the **User Name** column for the user.

   The Edit User page appears.

4. After verifying the user details, click the **Delete** button.

   M-Business Server prompts to confirm the deletion — click **OK** if you are sure about it.

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Exporting user information

Note
If you are using NT domain integration, you cannot import or export user information through the M-Business Server Administrator Console.

You can export a list of M-Business Server users and their profile information to a comma-delimited or tab-delimited text file.

♦ To export a list of users to a text file

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Users»Export Users**.

   The Export Users to a text file page appears.
3. Use the drop-down lists to select the user information you wish to export, in the order that you want it to appear.

   You can export any of the following fields:

   - User ID
   - User Name
   - Fist Name
   - Last Name
   - Device OS
   - Comment

   Select **NONE** to fill any of the fields to the right that you do not need.
4. Select the way you want the information formatted:

   - **Comma-Delimited** (*.csv* file)
   - **Tab-Delimited** (*.tab* file)
   - **XML** (*.xml* file)
5. Click **Export**.

   M-Business Server confirms successful export of the information and displays a link to download the file.
6. Use the **Click here to download the file** link to download the user text file.

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Right-click the link and choose **Save Target As** to download the data directly onto your disk. The default file name is *agusers.csv* or *agusers.tab*, or *agusers.xml*, depending on the file format you selected. Rename the file as you like.

Note
If you simply click the **Click here to download the file** link, the file contents will be displayed in your web browser. Click the browser's Back button and right-click the link to correct this problem.

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Importing user information

Note
If you are using NT domain integration, you cannot import or export user information through the M-Business Server Administrator Console.

You can add an existing database of users (for example, accounts on an email server) to your M-Business Server user database.

In order to import user data from another database, you must first output the user information in your existing database to a comma separated values (CSV) file. When you specify the data elements to export, include the following three elements in this order:

- **User Name**

  A single-field identifier for the user, usually the one that is entered together with a password when the user is prompted for a user name and password when logging in. This often is referred to as a user ID.

- **First Name**

  The user's first name, if first name and last name are stored in separate fields; the full user name field if there is only one user name field.

- **Last Name**

  The user's last name, if first name and last name are stored in separate fields; nothing if there is only one user name field. (In the resulting CSV file, the first name entry should be followed by a comma and a linefeed/carriage return.)

Note
If both first name and last name entries are left blank, the data for that user will not import to the M-Business Server user database.

♦ To add users by importing a CSV file

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Users»Export Users**.

   The Import Users page appears.

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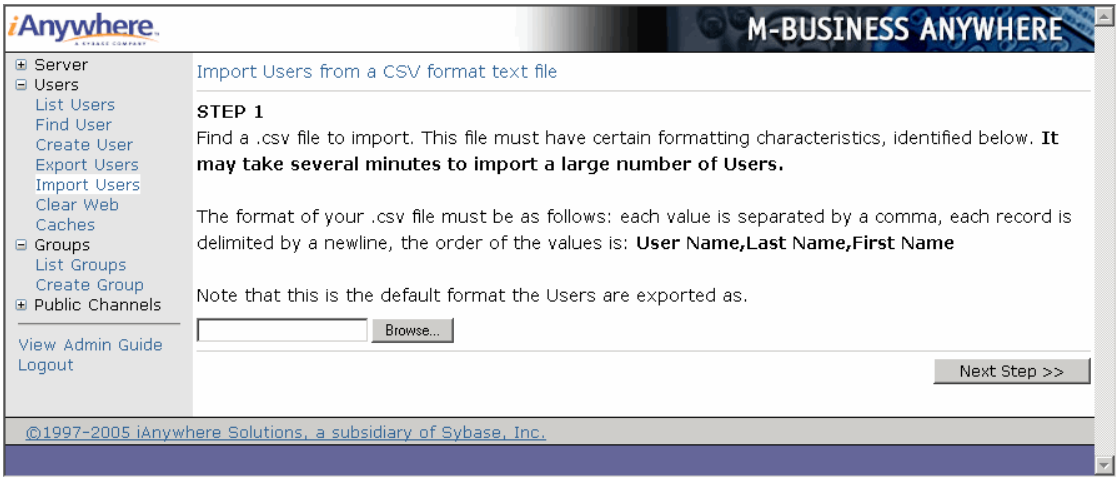

3. Use the **Browse** button to locate your formatted CSV file.
4. Click **Next Step**.

   Up to 10 lines from your CSV file are displayed below the three headings, User Name, First Name, and Last Name.
5. Examine the data shown to be sure that it is being interpreted correctly.

   If the data looks correct, but the first line contains column headings for the data below, check **Ignore the first line of the file**.
6. When you are ready to import your CSV file, click **Add**.

   A message is displayed confirming the successful addition of the users or, if an error occurs during the import process, advises where it occurred.
7. Check for failed imports.

   Any user records that failed to import are displayed. The most common cause of entries failing to import are:

   - The number of licensed users is exceeded.
   - The user name already exists in the M-Business Server Adaptive Server Anywhere database.
   - There is an illegal character somewhere in the information for the user.

   Add these users to the M-Business Server database by importing another, corrected CSV file or by adding them manually.

The imported users now exist in the M-Business Server database, but they have null passwords. Users logging in for the first time will not be required to enter a password and will have to use **Settings»Change Password** in the Navigation Panel to set up their own passwords. Advise your users of this requirement.

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Clearing web caches for multiple users

Clear web caches when you perform routine user account maintenance or when you troubleshoot synchronization issues.

Understanding web caches

There are three types of web-based information that is stored on M-Business Server. You can clear the web cache for an individual user or for a group of users.

To find out how to configure M-Business Server to set on-device or server-side cache directives, see "Setting cache preferences" on page 87.

Channel cache

During synchronizations, M-Business Server updates existing channels and pages with modifications only. Clearing a user's channel cache will force all of the channels and pages to be transferred to the device during the next synchronization.

Clear a user's channel cache if the user is having a problem loading a certain page or channel.

Cookies

Cookies are placed in a user's information by sites the user visits. Clearing the cookies database may remove personalized information stored on a device by a server.

Clear cookies for privacy and security reasons. Cookies contain personal information, such as passwords and other confidential data that users may not want cached.

Authentication information

Some web servers require that users supply a user name and password to access the site. M-Business Server caches this authentication information and supplies it to the web server during synchronizations.

Clear authentication information to clear an incorrect user name or password on the server, or to clear user authentication information on a shared device.

Note
After you clear their authentication information, users will need to re-enter their user names and passwords the next time they visit a site that requires authentication.

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Clearing multiple users' web caches

These instructions tell you how to clear web caches for users you select. You can select users from the entire list of users, or from a list of users matching your search criteria.

You also can clear the web caches for all users in a group, or for an individual user. See:

- "Clearing web caches for a group" on page 160, using Groups»Edit Group»Channels»Settings.
- "Clearing web caches for a single user" on page 136, using Users»Edit User»Channels»Settings.

♦ To clear multiple users' web caches

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Users»Clear Web Caches**.

   The Clear Web Caches page appears.
3. Find your user(s) by scrolling or using the search feature.
4. Select the users whose cache you want to clear.
5. At the bottom of the page, click **Cache**, **Authorization**, **Cookies**, **XML°DB**, or **All**.

   For an explanation of these different types of web caches, see "Understanding web caches" on page 148.
6. Click **Clear**.

   A message at the bottom of the page is displayed, indicating that the information has been cleared.

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CHAPTER 9

Managing groups

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Working with groups

Create groups to better manage how you assign channels to your users. If you add users to a group you automatically give them all of the channels assigned to the group account; this is a time saving method of distributing channels.

You also can help ease your administrative duties by assigning one or more users to be group administrators. Group administrators can perform some of the administrative duties associated with managing groups and creating group channels.

The role of a group administrator

Group administrators help the admin user by taking over a limited set of group management tasks.

Group administrators cannot create new groups or delete existing ones, but once the admin user creates a group and assigns a group administrator, group administrators can help the admin user with:

- "Managing users for a group" on page 172
- "Managing channels for a group" on page 158
- "Editing a group channel" on page 160
- "Removing users from a group" on page 174

These tasks are explained in the following sections, with tasks noted that can be shared by the admin user and a group administrator.

Note
New group administrators should review "Group administrator mode" on page 104 to familiarize themselves with the Group Administrator Mode interface of M-Business Server.

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Understanding group types

There are three types of groups that the admin user can create: optional, managed, and required. Depending on the group type, membership in the group is either elective or mandatory for users.

Optional groups

Membership in optional groups is available to all users. Users have the ability to add themselves to or to remove themselves from optional groups. The admin user and group administrators also can add or remove users from optional groups.

M-Business Server gives users the option to join optional groups during the self-registration process. If you allow users to self-register, consider creating optional groups before allowing self-registration.

Users join optional groups while logged in to M-Business Server as users or as group administrators. M-Business Server gives users the option to **Manage Groups**. After choosing this option, users review a list of all optional groups, then can add or remove themselves from the groups.

Managed groups

Membership in managed groups is not optional, so users can neither add nor remove themselves from managed groups. Only the admin user and group administrators can add users to or remove users from managed groups.

Required groups

Membership in required groups is not optional. Required groups differ from managed groups in that all users become members of a required group. If you create a required group before you add users, all users automatically will be added to the group as they are added to the Adaptive Server Anywhere database. If you create a required group after you add users, you have the option of having M-Business Server populate the group with all existing users.

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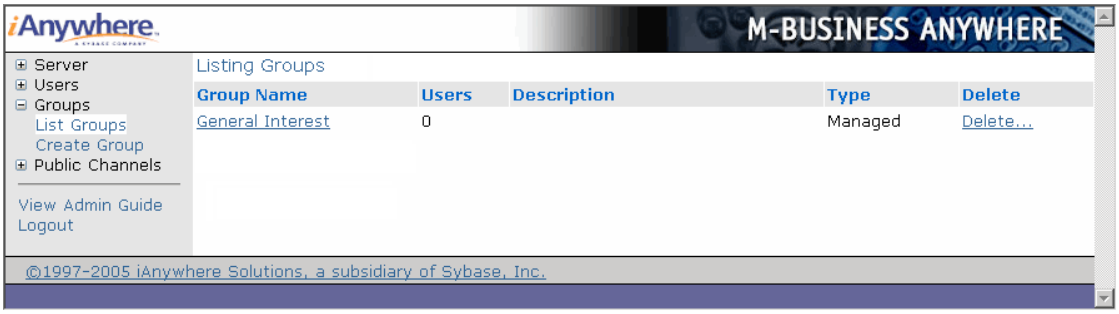
Listing groups

Just getting started? Obviously you have to create groups before you can list them. See "Creating a group" on page 155.

♦ To list existing groups

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Groups»List Groups**.

   The Listing Groups page appears.



   If you have a large number of groups, only the first 25 are listed.

   If the group you are trying to find is not listed on this page, you can quickly navigate to other pages of groups by using the navigation aids at the top of the list. See "Navigating long lists" on page 110.

3. From the Listing Groups page you can do the following:

   - ♦ View summary data for a group: **Group Name**, number of **Users**, group **Description**, and group **Type**.

     For information on group types, see "Understanding group types" on page 153.

   - ♦ Edit a group, by clicking the link in the **Group Name** column.

     See "Editing group information" on page 157.

   - ♦ Delete a group, by clicking the **Delete** link at the right end, or by displaying group details on the Edit Group page and deleting from there.

     See "Deleting a group" on page 178.

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Creating a group

Create groups to help organize related sets of users and channels. When creating a group, give it a name that indicates the type of applications, type of channel content, or type of user in the group.

A common group naming convention is to use the departments of an organization, such as Sales or Marketing.

Table 1. Sample group names

Group name	Type of user	Sample channels
Field Service	Technicians	Work Order Applications Mapping Reference Guides
Sales	Sales professionals	Federal Express Inventory Order Forms
Our Company	All employees	Monthly HR newsletter Company directory Expense report forms

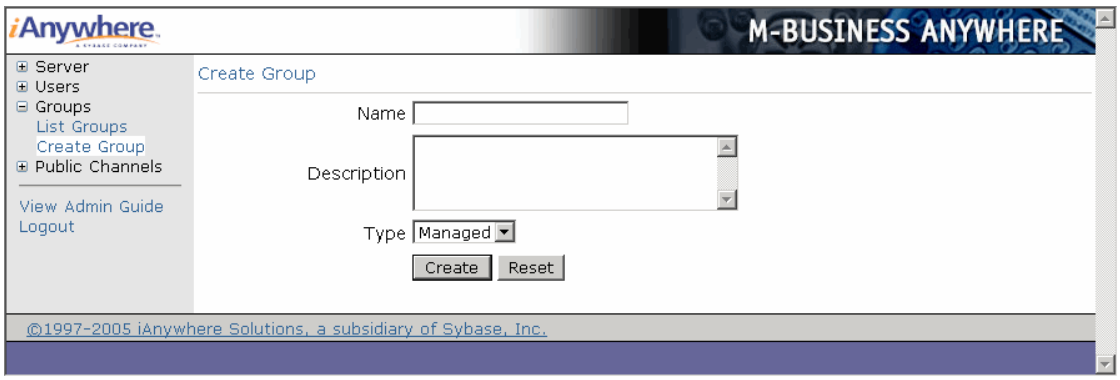
Tip
Before creating and naming groups, review "Entering information" on page 110.

Note
Your license may limit the total number of groups that you can create.

♦ To create a group

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Groups»Create Group**.

   The Create Group page appears.



3. In the **Name** field, type a group name.

   Refer to the naming suggestions in "Creating a group" on page 155.

4. In the **Description** field, type a short description of the group.

5. From the group **Type** drop-down list, select **Managed**, **Optional**, or **Required**.

   For information on group types, see "Understanding group types" on page 153.

6. Click **Create**.

   If there are any problems with your entries, a message is displayed at the bottom of the Create Group page. Make the specified correction and click **Create** again.

   If your entries for the new group are accepted:

   - The Edit Group page for the group you just created is displayed.
   - The Navigation Panel now lists the **Groups»Edit Group** submenu and shows that you are in **Groups»Edit Group»Identity**.

   From the Edit Group page you can do the following:

   - Edit the group's Identity information — **Name**, **Description** and **Type**.
   - Configure the rest of the group's information, creating web and database channels, and assigning users and group administrators.
   - Delete the group.

   For instructions, see "Editing group information" on page 157.

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Editing group information

Only the admin user can change the name, description, or type of a group. Group administrators can add and remove users from a group, and create and edit group channels. Any changes made to a group's profile will be reflected in M-Business Client on users' mobile devices the next time they synchronize.

♦ To edit a group's profile

1. Log in to M-Business Server as admin or as a group administrator.
2. Locate the group.

   For instructions, see "Listing groups" on page 154.
3. Click the group name.

   The Edit Group page appears.

   > **Note**
   > If you just created the group, the Group User page is displayed automatically.
4. Use the Edit Group page to change the group Identity information.

   See "Creating a group" on page 155 for details on the fields.

   Click **Save** when you are ready to save your changes.

   A message appears at the bottom of the page indicating that the group was successfully updated.
5. Use the Groups»Edit Group submenu to configure or change the group information.

   For instructions, see:

   - "Managing channels for a group" on page 158
   - "Managing group database channels — M-Business XML conduits" on page 163
   - "Listing users in a group" on page 170
   - "Managing users for a group" on page 172
   - "Managing group administrators" on page 175
   - "Deleting a group" on page 178

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Managing channels for a group

Both the admin user and group administrators can manage group channels. The instructions are the same for both.

For an explanation of the three types of channels that M-Business Server supports, see "About channels" on page 180.

Listing a group's channels

Just getting started? Obviously you have to create group channels before you can list them. See "Creating a group channel" on page 158.

♦ To list a group's channels

1. Log in to M-Business Server as admin or, if you are a group admin, with your user name and password.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. In the Navigation Panel, choose **Groups»Edit Group»Channels»List** .

   The Channel List for Group page appears.

   If you have a large number of group channels, only the first 25 are listed.

   If the group channel you are trying to find is not listed on this page, you can quickly navigate to other pages of group channels by using the navigation aids at the top of the list. See "Navigating long lists" on page 110.

   From the Channel List for Group page you can do the following:

   - Determine the channel's key settings: **Channel Size Limit**, **Link** and **Color Depth**, **Allow Binary Distribution** and **Hide from Users** settings.
   - Edit the channel's configuration, by clicking the link in the **Channel Title** column.
   - Delete the channel.

     See "Deleting a group channel" on page 160.

Creating a group channel

> **Note**
> Your license may limit the total number of group channels that you can create.

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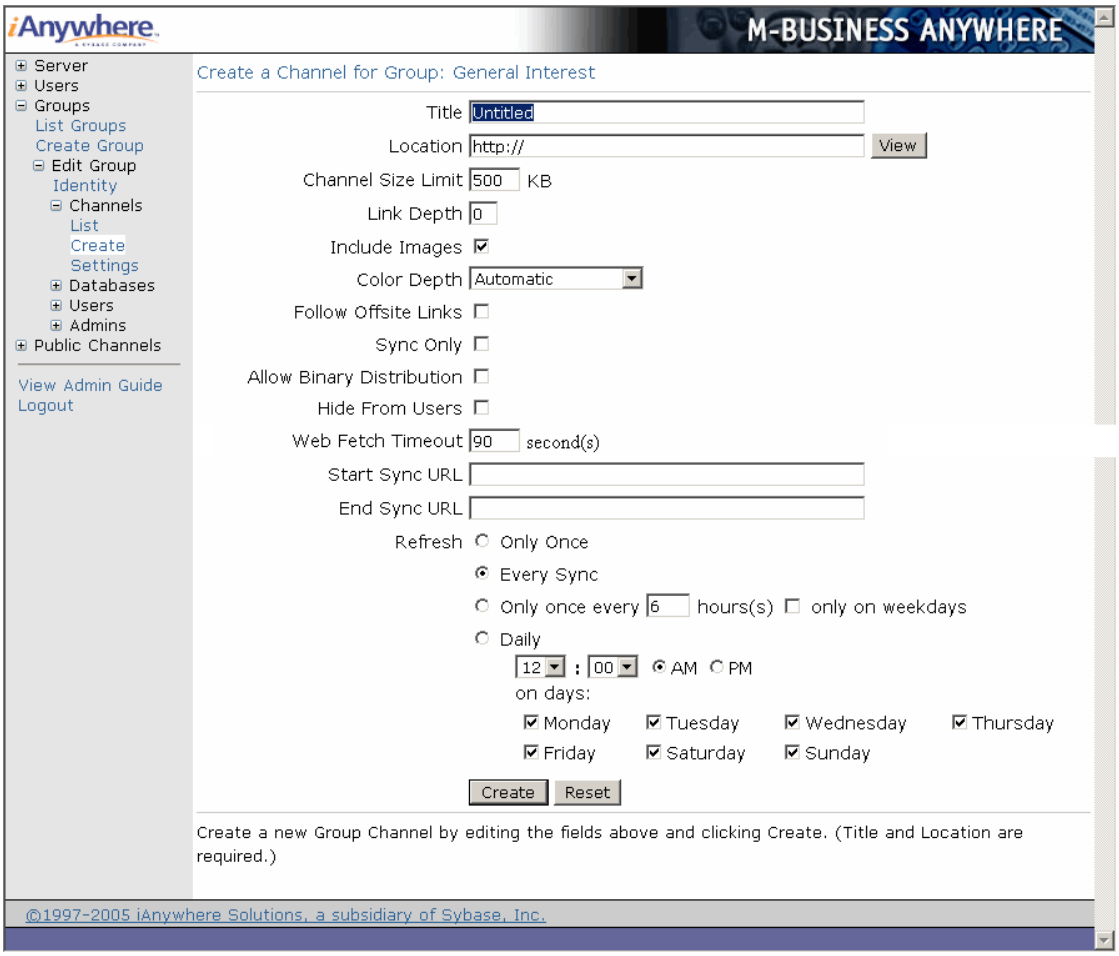
♦ To create a group channel

1. Edit the group information.

   For instructions, see "Editing group information" on page 157.

2. In the Navigation Panel, choose **Groups»Edit Group»Channels»Create** .

   The Create a Channel for Group page appears.



3. Complete the channel property fields.

   For a review of channel properties, see "Understanding channel settings" on page 183.

4. Click **Create**.

   M-Business Server returns you to the Channel List for Group page.

Editing a group channel

This task can be shared by the admin user and a group administrator, and the instructions are the same for both.

♦ To edit a group channel

1. Log in to M-Business Server as admin or, if you are a group admin, with your user name and password.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. List the group's channels.

   For instructions, see "Listing a user's personal channels" on page 133.
4. Click the link in the **Title** column for the channel you want to edit.

   The Edit a Channel for Group page appears.
5. Make changes in the channel property fields.

   For a review of channel properties, see "Understanding channel settings" on page 183.
6. Click **Save**.

   A message is displayed at the bottom of the Edit a Channel for Group page indicating that the channel was successfully updated.

Deleting a group channel

♦ To delete a group channel

1. Log in to M-Business Server as admin or, if you are a group admin, with your user name and password.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. List the group's channels.

   For instructions, see "Listing a user's personal channels" on page 133.
4. Click the **Delete** link for the channel you want to delete, then click **OK** to confirm the deletion.

   OR, to see the channel details before deleting, click the link in the **Title** column for the channel you want to delete, verify the channel details, then click the **Delete** button and **OK** the delete confirmation.

Clearing web caches for a group

Only the admin user can clear the web caches for users who are members of a group.

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For an explanation of the different types of web caches that M-Business Server maintains, see "Understanding web caches" on page 148.

For instruction on clearing web caches for single or multiple users other ways, see:

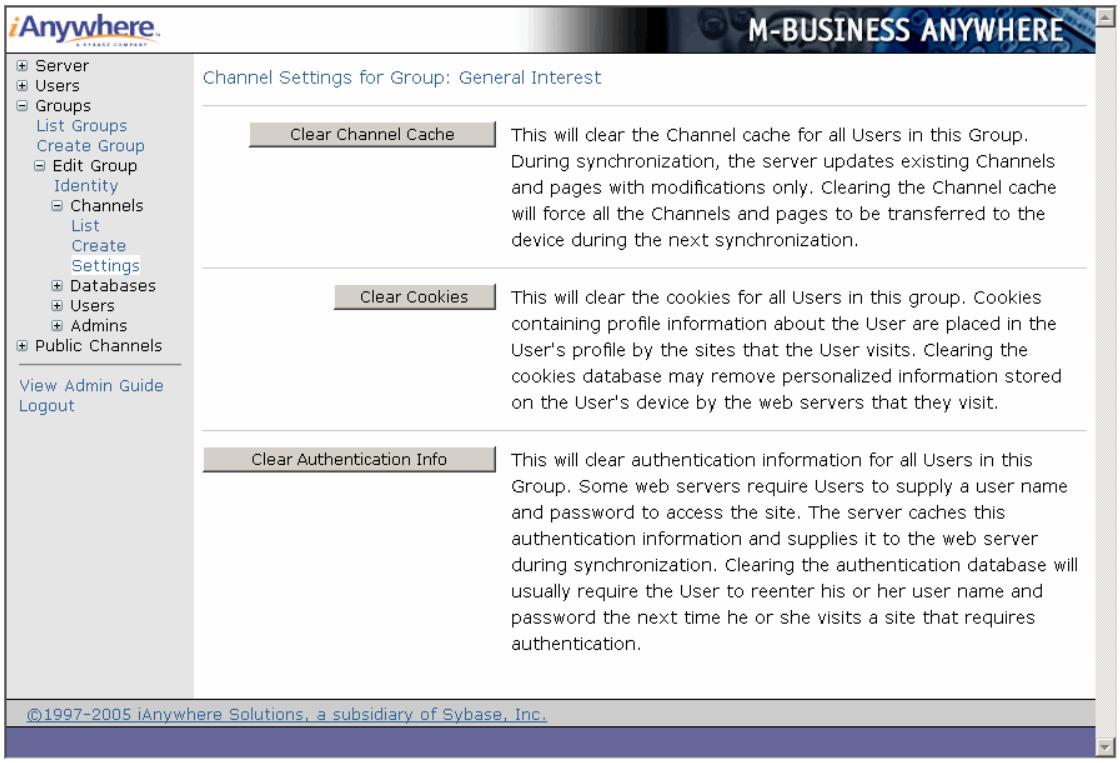
- "Clearing web caches for multiple users" on page 148, using Users»List Users or Users»Find Users.
- "Clearing web caches for a single user" on page 136, using Users»Edit User»Channels»Settings

♦ To clear web caches for all members of a group

1. Log in to M-Business Server as admin.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. In the Navigation Panel, choose **Groups»Edit Group»Channels»Settings** .

   The Channel Settings for Group page appears.



4. Click **Clear Channel Cache** to clear the channel cache for all users in the group.

   M-Business Server prompts you to confirm the clearing of the group's channel cache.
5. Click **Clear Cookies** to clear the cookies for all users in the group.

M-Business Server prompts you to confirm the clearing of the group's cookies.

6. Click **Clear Authentication Info** to clear the authentication information for all users in the group.

   M-Business Server prompts you to confirm the clearing of the group's authentication information.

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Managing group database channels — M-Business XML conduits

Group database channels are a special case of group channels that are necessary to support the M-Business XML conduit for on-device data. Both the admin user and group administrators can manage group database channels.

For an explanation of the different types of web channels that M-Business Server supports, see "About channels" on page 180.

For instructions on managing other types of channels, see:

- "Managing channels for a group" on page 158, using Groups»Edit Group»Channels.
- "Managing personal channels for a user" on page 133, using Users»Edit User»Channels.
- "Managing public channels" on page 190, using the Public Channels options in the Navigation Panel.

Setting up the sample database channel

M-Business XML conduit contains a sample database test channel that you can use to get users up and running. Once users are successfully synchronizing the test channel, add additional channels created specifically for your organization by an application developer.

Overview and task checklist

Setting up users to synchronize M-Business XML conduit is much like setting up users to synchronize channels, but also involves distributing a separate PODS file to users. The PODS file is the M-Business XML API.

Use the following checklist to begin using M-Business XML conduit.

- Add users to M-Business Server. See "Adding new users" on page 129.
- Make sure users are able to successfully synchronize M-Business Client with M-Business Server. If necessary, see "Deploying M-Business Client " on page 8 or "Installing M-Business Client" [*M-Business Anywhere Client User Guide*].
- Create a Managed group. See "Creating a group" on page 155.
- Add users to your group who will synchronize the M-Business XML conduit test channel. See "Managing users for a group" on page 172.
- Assign the test channel to this group. "Adding the test channel" on page 164.
- Install the PODS file onto users' mobile devices. See "Installing the sample database PODS file on mobile devices" on page 165.

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- Add additional channels as they are created by an application developer. See "Creating custom database channels" on page 166.

Adding the test channel

Once you have created a group of users who will be using M-Business XML conduit, add the sample database test channel.

♦ To add the test channel

1. Log in to M-Business Server as admin.
2. Edit the group information for the group you created for the M-Business XML conduit test channel.

   For instructions, see "Editing group information" on page 157.
3. In the Navigation Panel, choose **Groups»Edit Group»Databases»Create** .

   The Create a Database Channel for Group page appears, as shown in "Creating a database channel for a group" on page 167.
4. In the **Name** field, type **TestDB**.
5. In the **Data URL** field, type:

   ```
   http://www.ianywhere.com/downloads/developer/code_samples/mbus_xml_dbdemo/test.xml
   ```

   Note
   URLs entered in any M-Business Anywhere component must contain only forward slashes (/). The backslash character (\) in place of a forward slash will cause an error.
6. In the **Schema URL** field, type:

   ```
   http://www.ianywhere.com/downloads/developer/code_samples/mbus_xml_dbdemo/test.xsd
   ```
7. For **Format**, select **Attribute-based**.
8. Leave the default settings for the rest of the fields: **Delete Type**, **Fetch Only Modifications**, and **Delete URL**.
9. Click **Save**.

   The Listing Database Channels in Group page appears, with the sample database channel you just created displayed.

   Note
   A database channel just downloads data to a device. To display the data, you need an HTML page in a regular channel.

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10. In the Navigation Panel, choose **Groups»Edit Group»Channels»Create** .

    The Create a Channel for Group page appears.

11. In the **Name** field, type **ShowTestData**.

    For a review of channel properties, see "Understanding channel settings" on page 183.

12. In the **Location** field, type:

    `http://www.ianywhere.com/downloads/developer/code_samples/mbus_xml_dbdemo/test.html`

    The test.html file displays data from the TestDB database channel.

13. Click **Create**.

    M-Business Server returns you to the Channel List for Group page.

14. Synchronize a device for a user who is a member of the group for which you have set up the TestDB and ShowTestData channels.

15. Open the ShowTestData channel on the device

    The *test.html* page should now display the data from the TestDB database channel.

Installing the sample database PODS file on mobile devices

Once you have added the sample database test channel, create a binary channel that will install the PODS file on users' mobile devices when they synchronize.

♦ To install the sample database PODS file on mobile devices

1. Log in to M-Business Server as admin.
2. Create a new user or locate an existing user.

   See "Creating individual users" on page 129 or "Editing user information" on page 132.

3. In the Navigation Panel, choose **Users»Edit User»Channels»Create**.

   The Create Channel for User page appears.

4. In the **Title** field, type:

   `M-Business Conduit application`

5. In the **Location** field, type:

   `http://<servername>:8091/admin/install/AG_DEVICEOS/dbpod_quad.prc` (Palm OS devices)

   OR

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`http://<servername>:8091/admin/install/AG_DEVICEOS/AG_DEVICEPROCESSOR/dbpod_quad.dll` (Pocket PC OS, Windows Mobile 5, and Microsoft Smartphone devices)

> **Note**
> URLs entered in any M-Business Anywhere component must contain only forward slashes (/). The backslash character (\) in place of a forward slash will cause an error.

6. Check **Allow Binary Distribution** and **Hide from Users**.
7. Leave everything else with the default settings.
8. Click **Create**.

   The Channel List for User page appears, with the personal channel you just created displayed.
9. To complete the installation process, the user must perform a synchronization with M-Business Server.

   After the performs a synchronization, the sample database test channel will be available on the mobile device.

Creating custom database channels

Add additional database channels the same way you added the sample database test channel.

For information on how to create your own database channels to move structured data to mobile devices, see the following:

- "Using UltraLite for M-Business Anywhere for on-device data" [*M-Business Anywhere Application Developer Guide*]
- "Building applications with M-Business XML conduit" [*M-Business Anywhere Application Developer Guide*]
- "Using M-Business XML conduit and API" [*M-Business Anywhere Application Developer Guide*]

Listing a group's database channels

- **To list database channels for a group**

1. Log in to M-Business Server as admin or, if you are a group admin, with your user name and password.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. In the Navigation Panel, choose **Groups»Edit Group»Databases»List** .

   The Listing Databases for Group page appears.

   If you have a large number of group database channels, only the first 25 are listed.

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If the group database channel you are trying to find is not listed on this page, you can quickly navigate to other pages of group database channels by using the navigation aids at the top of the list. See "Navigating long lists" on page 110.

From the Listing Databases for Group page you can do the following:

- Determine the database channel's **Last Modified** date.
- Edit the database channel's configuration, by clicking the link in the **Name** column.
- Delete the database channel

  See "Deleting a group database channel" on page 169.

Creating a database channel for a group

These instructions cover creating a database channel through the Administrator Console, after the major part of the work of setting up the database(s) for the channel is complete. For instructions on setting up the database(s) themselves, see "Using M-Business XML conduit and API" [*M-Business Anywhere Application Developer Guide*].

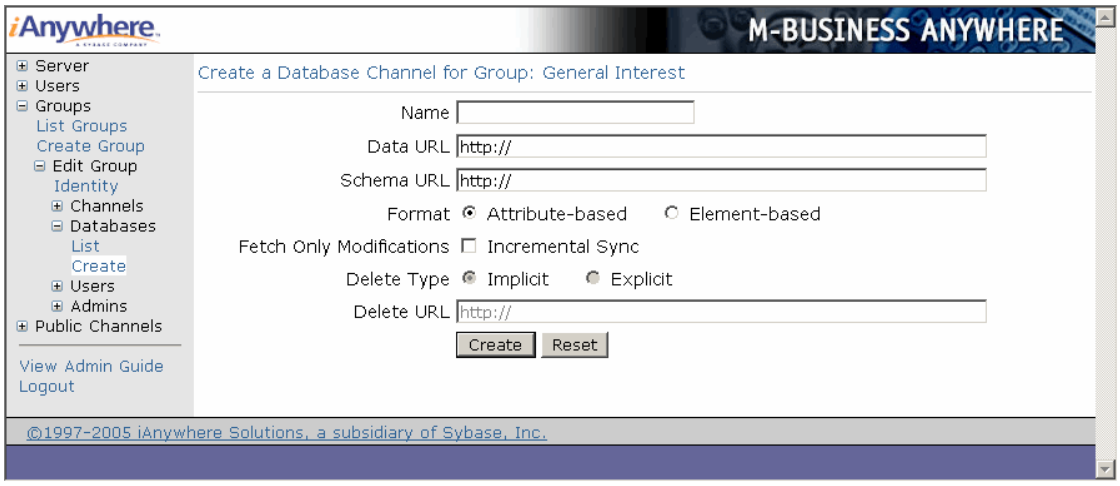
♦ To create a database channel for a group

1. Edit the group information.

   For instructions, see "Editing group information" on page 157.

2. In the Navigation Panel, choose **Groups»Edit Group»Databases»Create** .

   The Create a Database Channel for Group page appears.



3. Complete the database channel property fields.

   - **Name**

Enter a descriptive name for the database channel.

- **Data URL**

  Enter the URL for the database channel's XML data stream.

  > **Note**
  > URLs entered in any M-Business Anywhere component must contain only forward slashes (/). The backslash character (\) in place of a forward slash will cause an error.

- **Schema URL**

  Enter the URL for the database channel's schema (*.xsd*) file.

- **Format**

  Select **Attribute-based** or **Element-based**, matching your schema.

- **Fetch Only Modifications - Incremental Sync**

  Select this checkbox if you want to download only the incremental changes in the data in synchronizations. If this box is cleared, the entire database is downloaded in each synchronization.

- **Delete Type**

  If you have selected Incremental Sync, select **Implicit** if your Delete URL specifies records to be kept, or **Explicit** if your Delete URL specifies records to be deleted.

- **Delete URL**

  Enter the URL through which records to be kept, or records to be deleted, will be specified.

4. Click **Create**.

   M-Business Server returns you to the Listing Database Channels for Group page.

Editing a group database channel

This task can be shared by the admin user and a group administrator, and the instructions are the same for both.

♦ To edit a group database channel

1. Log in to M-Business Server as admin or, if you are a group admin, with your user name and password.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. List the group's database channels.

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For instructions, see “Listing a group's database channels” on page 166.

4. Click the link in the **Name** column for the database channel you want to edit.

   The Edit a Database Channel for Group page appears.

5. Make changes in the channel property fields.

   For a review of channel properties, see “Understanding channel settings” on page 183.

6. Click **Save**.

   A message is displayed at the bottom of the Edit a Database Channel for Group page indicating that the database channel was successfully updated.

Deleting a group database channel

♦ To delete a group database channel

1. Log in to M-Business Server as admin or, if you are a group admin, with your user name and password.
2. Edit the group information.

   For instructions, see “Editing group information” on page 157.

3. List the group’s database channels.

   For instructions, see “Listing a group's database channels” on page 166.

4. Click the **Delete** link for the database channel you want to delete, then click **OK** to confirm the deletion.

   OR, to see the database channel details before deleting, click the link in the **Name** column for the database channel you want to delete, verify the database channel details, then click the **Delete** button and **OK** the delete confirmation.

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Listing users in a group

Just getting started? Obviously you have to add users to a group before you can list them. See "Adding users to a group" on page 173.

♦ To list users in a group

1. Log in to M-Business Server as admin or, if you are a group admin, with your user name and password.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. In the Navigation Panel, choose **Groups»Edit Group»Users»List**.

   The Listing Users in Group page appears.

   For tips on moving through multi-page listings, see "Navigating long lists" on page 110.
4. From the Listing Users in Group page you can do the following:

   - ♦ View the **User Name**, **Name**, and **Device OS** for listed users.
   - ♦ Edit a user, by clicking the link in the **User Name** column.

     See "Editing user information" on page 132.
   - ♦ Remove a user, by clicking the **Remove** link at the right end.

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See “Removing users from a group” on page 174 for additional information.

- Remove all selected users user, by checking the box in the **Remove** column for each user to delete, then clicking the **Remove All Checked Users from this Group** button in the lower right corner. Note that you can use the Check All Users and Uncheck All Users buttons as a an aid in getting the right combination of users checked on a page.

  See “Removing users from a group” on page 174 for additional information.

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Managing users for a group

Both the admin user and group administrators can add and remove users from a group.

For instructions on managing group membership and administrators from the user end, see:

- "Managing group administrators" on page 175.
- "Managing a user's group memberships and group administrator roles" on page 138, using Users»Edit User»Groups.

Listing users for a group

Just getting started? Obviously you have to add users to a group before you can list them. See "Adding users to a group" on page 173.

♦ To list users for a group

1. Log in to M-Business Server as admin or as a group administrator.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. In the Navigation Panel:

   - *Admin* — choose **Groups»Edit Group»Users»List** .
   - *Group Admin* — choose **Group Admin»Edit Group»Users»List** .

   The Listing Users in Group page is displayed. For tips on moving through multi-page listings, see "Navigating long lists" on page 110.
4. From the Listing Users in Group page you can do the following:

   - View the **User Name**, **Name**, and **Device OS** for listed users.
   - Edit a user, by clicking the link in the **User Name** column.

     See "Editing user information" on page 132.
   - Remove a user from the group, by clicking the **Remove** link at the right end.

     See "Removing users from a group" on page 174 for additional information.
   - Remove all selected users from a group, by checking the box in the **Remove** column for each user to remove, then clicking the **Removee All Checked Users** button in the lower right corner. Note that you can use the Check All Users and Uncheck All Users buttons as a an aid in getting the right combination of users checked on a page.

     See "Removing users from a group" on page 174 for additional information.

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Adding users to a group

♦ To add users to a group

1. Log in to M-Business Server as admin or as a group administrator.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. In the Navigation Panel...

   - To add users from a list of only those users matching your search criteria, via the Find User(s) to Add to Group page:
     - *Admin* — choose **Groups»Edit Group»Users»Add by Search**
     - *Group Admin* — choose **Group Admin»Edit Group»Users»Add by Search**

     Searching on this page works the same as searching on the main Find Users page. For tips on searching, see "Finding a list of users matching what you enter" on page 127. For tips on moving through multi-page search results, see "Navigating long lists" on page 110.
   - To add users from a list of all users via the Listing Users available to be added to Group page:
     - *Admin* — choose **Groups»Edit Group»Users»Add by List**
     - *Group Admin* — choose **Group Admin»Edit Group»Users»Add by List**

   For tips on moving through multi-page listings, see "Navigating long lists" on page 110.
4. Locate users you want to add to the group.

   Note
   Users who are available to be added to the group display a checkbox and an Add link in the Add column. Users who already belong to the group display in Group in the Add column.
5. Once you have located users to add to the group, via either Add by option:

   - To add a single user, in the **Add** column, click the **Add** link for the user.
   - To add multiple users, in the **Add** column, check the box for the users, then click the **Add All Checked Users to this Group** button.

   The Add by page you are working on is updated, with the user(s) you just added showing as in Group in the Add column, and the first page of the list is displayed.

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Removing users from a group

This task can be shared by an the admin user and a group administrator, and the instructions are the same for each.

♦ To remove users from a group

1. Log in to M-Business Server as admin or as a group administrator.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. In the Navigation Panel:

   - *Admin* — choose **Groups»Edit Group»Users»List** .
   - *Group Admin* — choose **Group Admin»Edit Group»Users»List** .

   The Listing Users in Group page is displayed. For tips on moving through multi-page listings, see "Navigating long lists" on page 110.
4. Locate users you want to delete from the group.
5. Once you have located users to delete from the group:

   - To delete a single user, in the **Remove** column, click the **Remove** link for the user.
   - To delete multiple users, in the **Remove** column, check the box for the users, then click the **Remove All Checked Users from this Group** button.

   The Listing Users in Group page is updated, with the user(s) you just remove no longer appearing, and the first page of the list is displayed.

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Managing group administrators

Only the admin user can manage group administrators.

Note
A user does not have to be a member of a group in order to be assigned as a group administrator.

For other ways to manage a group's membership and administrators from the group's end, see:

- "Managing users for a group" on page 172, using Groups»Edit Group»Users.
- "Managing a user's group memberships and group administrator roles" on page 138, using Users»Edit User»Groups.

Listing group administrators

♦ To list group administrators for a group

1. Log in to M-Business Server as admin.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. In the Navigation Panel:

   - *Admin* — choose **Groups»Edit Group»Admins»List**.
   - *Group Admin* — choose **Group Admin»Edit Group»Admins»List**.

   The Listing Admins in Group page is displayed. For tips on moving through multi-page listings, see "Navigating long lists" on page 110.
4. From the Listing Admins in Group page you can do the following:

   - View the **User Name**, **Name**, and **Device OS** for listed admins.
   - Edit a group admin's user profile, by clicking the link in the **User Name** column.

     See "Editing user information" on page 132.
   - Remove a group administrator, by clicking the **Remove** link at the right end.

     See "Removing group administrators" on page 177 for additional information.
   - Remove multiple administrators from a group, by checking the box in the **Remove** column for each user to remove, then clicking the **Remove All Checked Admins from this Group** button in the lower right corner. Note that you can use the Check All Admins and Uncheck All Admins buttons as a an aid in getting the right combination of users checked on a page.

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See "Removing group administrators" on page 177 for additional information.

Assigning group administrators

♦ To assign group administrators

1. Log in to M-Business Server as admin.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. In the Navigation Panel:

   - To add group administrators from a list of only those users matching your search criteria, via the Find User(s) to Make Administrators of Group page:
     - *Admin* — choose **Groups»Edit Group»Admins»Add by Search**
     - *Group Admin* — choose **Group Admin»Edit Group»Admins»Add by Search**

     Searching on this page works the same as searching on the main Find Users page. For tips on searching, see "Finding a list of users matching what you enter" on page 127. For tips on moving through multi-page search results, see "Navigating long lists" on page 110.
   - To add users from a list of all users via the Listing Users available for addition as Admins of Group page:
     - *Admin* — choose **Groups»Edit Group»Admins»Add by List**
     - *Group Admin* — choose **Group Admin»Edit Group»Admins»Add by List**

     For tips on moving through multi-page listings, see "Navigating long lists" on page 110.
4. Locate users you want to assign as group administrators for the group.

   Note
   Users who are available to be added to the group display a checkbox and an Add link in the Add column. Users who are already assigned as group administrators for the group display admin in the Add column.
5. Once you have located users to add to the group, via either Add by option:

   - To add a single user as a group administrator, in the **Add** column, click the **Add** link for the user.
   - To add multiple users as group administrators, in the **Add** column, check the box for the users, then click the **Add All Checked Users as Admins of this Group** button.

   The Add by page you are working on is updated, with the user(s) you just added showing as in Group in the Add column, and the first page of the list is displayed.

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Removing group administrators

Note
Removing a group administrator from a group does not delete the user, from either the M-Business Server database. If a group administrator is also a member of the group, after removal as a group administrator the user remains as a group member.

♦ To remove group administrators

1. Log in to M-Business Server as admin.
2. Edit the group information.

   For instructions, see "Editing group information" on page 157.
3. In the Navigation Panel, choose **Groups»Edit Group»Admins»List**.

   The Listing Admins in Group page is displayed. For tips on moving through multi-page search results, see "Navigating long lists" on page 110.
4. Locate group administrators you want to remove.
5. Once you have located group administrators to remove:

   - To remove a single user as a group administrator, in the **Remove** column, click the **Remove** link for the user.
   - To remove multiple users as group administrators, in the **Remove** column, check the box for the users, then click the **Remove All Checked Admins from this Group** button.

   You are prompted to confirm the removal of the administrator(s) from this group. Click **OK** to complete the process.

   The Listing Admins in Group page is updated, with the user(s) you just removed no longer appearing, and the first page of the list is displayed.

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Deleting a group

Only the admin user can delete a group and all of the group channels associated with that group. Members of a deleted group no longer will see the group in their M-Business Server Personal Mode interfaces. M-Business Server will remove deleted groups from their mobile devices the next time they synchronize.

♦ To delete a group

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Groups»List Groups** .

   The Listing Groups page appears.
3. If you can tell from the summary information displayed that you have located the correct group you want to delete:

   - Click the **Delete** link for a user on the right end.

     M-Business Server prompts you to confirm the deletion.
   - Click **OK** to complete the process.
4. If you need more information on a group before deleting, click the link in the **Group Name** column for the group.

   The Edit Group page appears.
5. After verifying the group details, click the **Delete** button.

   M-Business Server prompts to confirm the deletion — click **OK** to complete the process.

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CHAPTER 10

Managing channels

Contents

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Understanding channel settings 183
Enabling and disabling personal channels 189
Managing public channels 190
Organizing public channels in categories 194

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About channels

Channels are web content, optimized for use on mobile devices, that M-Business Server delivers to mobile devices. Channels are defined by a base URL and by other parameters such as channel size, link depth, image preferences, and refresh frequency. The specified URL may be HTML content with *.htm* or *.html* extensions, databases, or executables with *.prc*, *.pdb*, *.dll*, or *.exe* file extensions. With each synchronization, M-Business Server automatically delivers any new information at the specified URL to M-Business Client on the connecting mobile device.

Create handheld-friendly content yourself or use iAnywhere Solutions Professional Services — see "Contacting iAnywhere Solutions" on page xiii.

If you are creating the content yourself, see "Creating and testing a channel" [*M-Business Anywhere Application Developer Guide*].

Create custom applications yourself or use iAnywhere Solutions Professional Services — see "Contacting iAnywhere Solutions" on page xiii. If your organization is creating its own applications, use the information contained in "Introduction to application development" [*M-Business Anywhere Application Developer Guide*] and "Basic application creation" [*M-Business Anywhere Application Developer Guide*].

Using M-Business Server, you can create channels to distribute content to the mobile devices of your users. There are three categories of channels. Each type serves to distribute content in specific ways. The different types of channels are described in the following sections.

- "Personal channels" on page 180
- "Group channels" on page 181
- "Public channels" on page 181

.

Personal channels

A personal channel is one that the admin user creates for users on a per-user basis. The specified URL of a personal channel can reference *.htm*, *.html*, *.prc*, *.pdb*, *.dll*, or *.exe* file extensions. Create a personal channel to distribute HTML content or a binary file to a user. See "Managing personal channels for a user" on page 133.

Users also can use M-Business Server to create personal channels.

For instructions on enabling/disabling and managing personal channels, see:

- "Enabling and disabling personal channels" on page 189, using Server»Settings.
- "Managing personal channels for a user" on page 133, using Users»Edit User»Channels.

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Group channels

A group channel is similar to a personal channel except that the admin user creates a group channel for a group of users rather than for a single user.

Like a personal channel, the specified URL of a group channel can reference *.htm*, *.html*, *.prc*, *.pdb*, *.dll*, or *.exe* file extensions. Create a group channel to distribute HTML content or a binary file to all users in a group.

> **Note**
> Group database channels are a special case of group channels that are necessary to support the M-Business XML conduit for on-device data. For instructions on setting up the sample database channel that M-Business Server installs, see "Setting up the sample database channel" on page 163.

Both the admin user and group administrators can create group web and database channels; users cannot. See:

- "Managing channels for a group" on page 158, using Groups»Edit Group»Channels.
- "Managing group database channels — M-Business XML conduits" on page 163, using Groups»Edit Group»Databases.

Public channels

Like a personal or group channel, a public channel is a means to distribute web-based content and applications to your users. Public channels are available to all users. From the Personal Mode interface of M-Business Server, users can browse and select public channels to add to their devices.

Public channels allow organizations to take full advantage of what M-Business Server has to offer. By creating public channels, organizations easily can take content off the company intranet and put it into the hands of their mobile employees. Some examples of intranet content are departmental newsletters, departmental reports, cafeteria schedules, local restaurant listings, training schedules, training materials, company phone books, and so on.

A public channel is unlike either a personal or group channel in the following ways:

- Subscribing to public channels is optional for the user.
- Neither the admin user nor group administrators can subscribe a user to a public channel.
- Users without access to M-Business Server Personal Mode interface cannot subscribe to public channels.
- Users cannot create public channels themselves.
- The admin user cannot specify refresh property options when creating public channels. Users specify refresh property options.
- Public channels cannot be disabled, like personal channels can — if the admin user does not create public channels, users cannot subscribe to them.

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For instructions on using public channels, see “Managing public channels” on page 190.

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Understanding channel settings

When creating or managing either a personal, a group, or a public channel, the admin user has channel property options to consider. Most channel property options are the same whether you are creating a personal, a group, or a public channel. Options not available for a certain type of channel are noted.

Note
When setting up a channel, keep in mind the memory limitations of mobile devices. Include in the channel only the pages and images that are important for users to see; omit everything else.

Title

Identifies the channel. When creating a title, keep in mind the valid characters supported by M-Business Server. See "Entering information" on page 110.

Location

The Location field is where you specify the URL of the channel content. The field already includes the requisite HTTP:// prefix. You provide the Internet or intranet address.

M-Business Server supports the following protocols for channels:

- HTTP

  The default protocol.

- HTTPS

  Supported if you use M-Business Server with the security feature. See "Enabling secure sockets layer (SSL)" on page 58.

  Note
  To access HTTPS URLs, users must enable a secure connection to M-Business Server either from their desktops or from their devices. See "Enabling a secure connection to a server" [*M-Business Anywhere Client User Guide*].

- FILE

  You can enable the file protocol (file://) so that a file can serve as a channel. See "Enabling the file protocol" on page 82.

Note
URLs entered in any M-Business Anywhere component must contain only forward slashes (/). The backslash character (\) in place of a forward slash will cause an error. When you are setting up directories in a Windows file system, where backslashes separate levels, be sure to change these characters to forward slashes if you copy parts of the file system path into a URL.

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Category (public channels only)

The Category setting is available only for public channels. The admin user creates public channel categories and subcategories. A list of all categories and subcategories is available in the Category property's drop-down menu. This setting allows M-Business Server to organize public channels by the categories that the admin user creates.

For a test channel, you can leave this as **None (Miscellaneous).** If you wish to create a special category, such as test, click the **Create Category** link on the left.

For more information on categories, see "Organizing public channels in categories" on page 194.

Description (public channels only)

The Description setting only is available for public channels. The admin user types a short channel description in this field. Users browsing for a public channel see this description and it helps them to understand what kind of information is contained in the public channel.

Channel Size Limit

The maximum size in kilobytes (KB) that the entire channel can consume on a device. M-Business Server compresses web pages for efficiency: The size limit reflects the compressed size, not the original size.

Some channels are very large and consume a large portion of the available memory on a mobile device. By entering a size limit, you prevent the channel from growing beyond that limit.

If a channel's pages total up more than the size you specify here, some pages will not be downloaded in a synchronization. 100KB should be a large enough size limit for getting started with your first channel.

> **Note**
> The Channel Size Limit setting works together with the Link Depth setting. If Channel Size Limit is reached first, it supersedes Link Depth. If Link Depth is reached first, it supersedes Channel Size Limit.

Link Depth

Specifies the number of levels of links to follow from the channel's main page. If you set this to 0, for example, M-Business Sync Server returns only the page for the main location of the channel. If you set this to 1, it follows the links on the main page and downloads all of those pages as well. The greater the link depth, the more pages your channel downloads, which consumes more memory. It is rarely a good idea to set the link depth to greater than 1 or 2.

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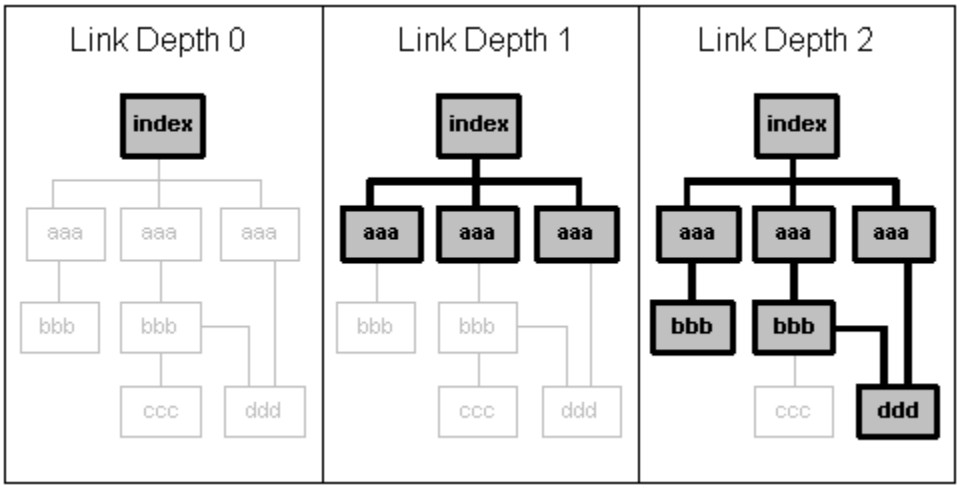

Set the Link Depth to the level beyond the channel's home page that should be downloaded in a synchronization.

Note
The Channel Size Limit setting works together with the Link Depth setting. If Channel Size Limit is reached first, it supersedes Link Depth. If Link Depth is reached first, it supersedes Channel Size Limit.

Include Images

Check or uncheck **Include Images** to include or omit all images from a channel. Unnecessary images waste on-device memory.

Even if you include images, mobile device users still have the option of not displaying them. See one of these topics for a specific device type: "Setting preferences" [*M-Business Anywhere Client User Guide*] (Palm°OS), "Setting preferences" [*M-Business Anywhere Client User Guide*] (Windows Mobile Pocket °PC), "Setting preferences" [*M-Business Anywhere Client User Guide*] (Windows°XP), "Setting preferences" [*M-Business Anywhere Client User Guide*] (Windows Mobile°5 or Microsoft Smartphone).

Color Depth (group and personal channels only)

Sets the allowed color depth for a channel's images. The default selection is **Automatic**, which downloads color images to the device with the highest color depth that the device can support. Select a different setting to cap the color depth at a lower level and prevent images from exceeding channel capacity on devices that support greater color depth.

The following Color Depth options are available:

- **Black & White** (1-bit)
- **Greyscale** (2-bit)
- **16 Colors** (4-bit)

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- **256 Colors** (8-bit)
- **High Color** (16-bit)

Lowering the number of bits allowed reduces synchronization time and saves memory on your device.

Follow Offsite Links

If your **Link Depth** is set to 1 or higher, indicates whether your channel should include pages from a server other than the one on which the main page of your channel resides. An offsite link is:

- any URL outside of the original HTTP site's domain
- a different machine name, even if the machine is in the same domain
- any link that is a re-direct

Sync Only

Check the **Sync Only** box if you want the channel content never to expire on the device. You would only do this with a channel that you expect have unchanging content over an extended period of time. Checking Sync Only for such a channel eliminates most of the communication with the web server that is required to determine if the web pages on the device need to be updated.

With connected users, this decreases the time it takes to synchronize the device. With wireless users, it decreases the time it takes to display the page every time the user accesses it — wireless users are more likely to notice the difference.

Allow Binary Distribution

Check **Allow Binary Distribution** only if the channel is a binary file, for example, an *.exe* or *.dll* file. Because most binary files are applications, which do not require frequent updating, also set the refresh rate to **Only once**. It is also useful to check the **Hide from User** option.

Hide From Users (group and personal channels only)

Check **Hide From Users** to hide the channel subscription from a user. A user will not see this channel listed either in the M-Business Server Personal Mode interface or in M-Business Client on the device. Hiding a channel is useful when synchronizing binary files.

Web Fetch Timeout

The number of seconds that M-Business Server should wait for the web server hosting the channel's content to respond when a user is synchronizing. If that web server does not respond within this period of time, the channel's content will not be updated in the current synchronization. The default is 90 seconds.

Start Sync URL (group channels only)

The **Start Sync URL** field is available only for group channels. Enter a URL in this field only if the channel is delivering a custom application that requires some type of backend processing to be performed *before* the channel’s web content is downloaded. For more information on using Start Sync and End Sync URLs, see

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"Using Start Sync and End Sync URLs to perform processing before and after channel synchronization" [*M-Business Anywhere Application Developer Guide*].

Note
The `SendSyncStartAndEndEvents` in the *sync.conf* file must be enabled in order for the specified Start Sync URL to be delivered to a custom application. See "Sync event settings" on page 223.

Note
URLs entered in any M-Business Anywhere component must contain only forward slashes (/). The backslash character (\) in place of a forward slash will cause an error.

End Sync URL (group channels only)

The **End Sync URL** field is available only for group channels. Enter a URL in this field only if the channel is delivering a custom application that requires some type of backend processing to be performed *after* the channel's web content is downloaded. For more information on using Start Sync and End Sync URLs, see "Using Start Sync and End Sync URLs to perform processing before and after channel synchronization" [*M-Business Anywhere Application Developer Guide*].

Note
The `SendSyncStartAndEndEvents` in the *sync.conf* file must be enabled in order for the specified Start Sync URL to be delivered to your custom application. See "Sync event settings" on page 223.

Note
URLs entered in any M-Business Anywhere component must contain only forward slashes (/). The backslash character (\) in place of a forward slash will cause an error.

Refresh (group and personal channels only)

Check the **Refresh** setting to specify the frequency of on-device channel updates.

Remember the following when considering Refresh options.

- Refresh options do not affect online or connected browsing. The content from a site visited while browsing wirelessly is as current as the site itself. This is true no matter how or where a user is browsing.
- Refresh setting options only affect the synchronization of a device on a per user, per channel basis.
- Refresh setting options are set by the admin user or group administrator for group channels and by the admin user or the user for personal channels.

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Table 1. Refresh options

Refresh option	Behavior	Reasons users might prefer this option
Only once	Synchronize one time, but never again.	Synchronizing a binary program file, reference guide, or template.
Every sync	Update sets of pages that change more than once a day by enabling a synchronization of the channel during every device synchronization.	Checking on the latest press release, stock price, or news articles.
Only once every <x> hours	Update once every <x> hours daily, or **only on weekdays**. The **Only once every <x> hours** option synchronizes and then disappears until the next synchronization time period starts. After a synchronization, this method does not synchronize again until the specified hourly period has passed.	Keeping track of stock quotes that change regularly.
Daily at <time>	Update at specific times during the day. The daily refresh option synchronizes and then disappears until the next daily time period starts. After synchronizing using this method, the channel will not synchronize again until the next day and time.	Viewing a daily newsletter posted at a particular time.
Days of the week	Checking only those days of the week on which the **Daily at <time>** synchronization should occur restricts synchronizations to those days.	Viewing pages that change once a week or even less frequently, such as particular websites or reference materials.

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Enabling and disabling personal channels

Personal channels are enabled by default when M-Business Server is installed. The admin user can enable or disable personal channels at any time.

If you do not allow personal channels, neither the admin user nor users are able to create them. In these cases, the admin user must create group or public channels to distribute content to their user base.

♦ To disable or enable personal channels

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Server»Settings»User**.

   The Settings for All Users page appears.
3. For **Allow Personal Channels**:
   - Click **No** to disable personal channels.
   - Click **Yes** to enable personal channels.
4. Click **Save**.

   Personal channels are now enabled or disabled, as you specified.

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Managing public channels

Users subscribe themselves to, and remove themselves from public channels. Using public channels in conjunction with personal or group channels allows you to take full advantage of the capabilities of M-Business Server and M-Business Client. Use public channels to provide optional web content for your user base.

Beginning with the 5.0 version of M-Business Server, a demonstration public channel is included. The AvantGo Sample Channel is regularly updated and illustrates the versatility and convenience of using public channels.

For an explanation of the three types of channels that M-Business Server supports, see "About channels" on page 180.

For instructions on managing other types of channels, see:

- "Managing personal channels for a user" on page 133.
- "Managing channels for a group" on page 158, using Groups»Edit Group»Channels.
- "Managing group database channels — M-Business XML conduits" on page 163, using Groups»Edit Group»Databases.

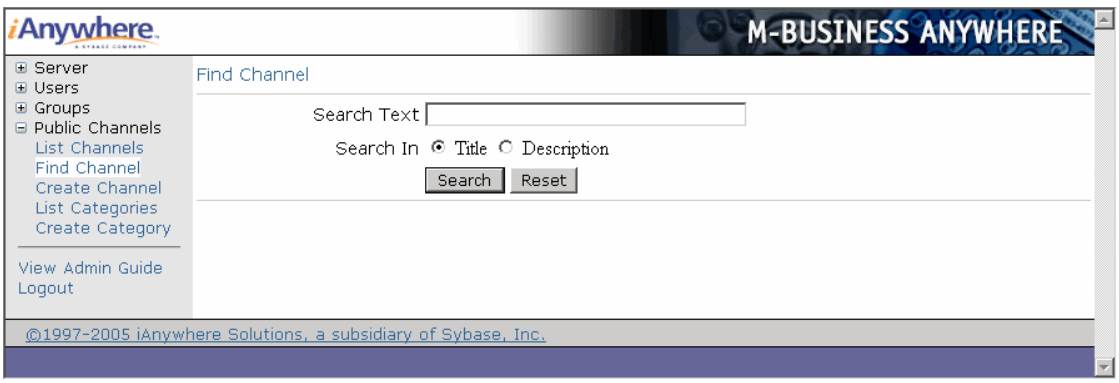
Finding public channels

Just getting started? Obviously you have to create public channels before you can list them. See "Creating a new public channel" on page 192.

♦ To find existing public channels matching your search criteria

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Public Channels»Find Channel**.

   The Find Channel page appears.



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3. In the **Search Text** field, enter the first few characters of the channel **Title** or **Description**.

   Capitalization does not matter. If the text you type occurs in any position within the field you select in the next step, it will count as a match.

4. For **Search In** select the public channel field to search: **Title** or **Description**.

5. Click **Search**.

   M-Business Server returns a list of all matching public channels.

6. From the search results returned on the Find Channel page, you can do the following:

   - View the **Title**, **Category**, number of **Users** subscribed, and **Description** for each of the public channels listed.
   - Edit a public channel, by clicking the link in the **Title** column.

     See "Editing a public channel" on page 193.
   - Delete a public channel.

     See "Deleting a public channel" on page 193.

Listing all public channels

Just getting started? Obviously you have to create public channels before you can list them. See "Creating a new public channel" on page 192.

♦ To list all existing public channels

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Public Channels»List Channels** .

   The List of All Public Channels page appears.

   For tips on moving through multi-page listings, see "Navigating long lists" on page 110.

3. From the List of All Public Channels page, you can do the following:

   - View the **Title**, **Category**, number of **Users** subscribed, and **Description** for each of the public channels listed.
   - Edit a public channel, by clicking the link in the **Title** column.

     See "Editing a public channel" on page 193.
   - Delete a public channel.

     See "Deleting a public channel" on page 193.

Creating a new public channel

- **To create a new public channel**

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Public Channels»List Channels**.

   The List of All Public Channels page appears.

3. Type or select the public channel property information.

   See "Understanding channel settings" on page 183.

> **Note**
> You cannot control the Refresh properties for a public channel from the Create or Edit page. Each user sets Refresh properties for a public channel independently.

4. Click **Create**.

   M-Business Server returns you to the List of All Public Channels page, where the channel you just created is now listed. If you have enough public channels, this list will span multiple pages — the first page is displayed.

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Editing a public channel

You can edit the channel properties of any existing public channel. If you no longer need the channel, you can delete it from the edit page.

♦ To edit a public channel

1. Log in to M-Business Server as admin.
2. Locate the public channel you want to edit.

   For instructions on using **Public Channels»Find Channel**, see "Finding public channels" on page 190.

   For instructions on using **Public Channels»List Channels**, see "Listing all public channels" on page 191.
3. Click the link in the **Title** column for the channel.

   The Edit a Public Channel page appears, displaying the same fields as on the Create a Public Channel page — see "Creating a new public channel" on page 192.
4. Edit the channel properties.

   For information on the fields, see "Understanding channel settings" on page 183.
5. Click **Save**.

   A message is displayed at the bottom of the page indicating that the channel was successfully updated.

Deleting a public channel

♦ To delete a public channel

1. Log in to M-Business Server as admin.
2. Locate the public channel you want to delete.

   For instructions on using **Public Channels»Find Channel**, see "Finding public channels" on page 190.

   For instructions on using **Public Channels»List Channels**, see "Listing all public channels" on page 191.
3. Click the **Delete** link for the channel you want to delete, then click **OK** to confirm the deletion.

   OR, to see the channel details before deleting, click the link in the **Title** column for the channel you want to delete, verify the channel details, then click the **Delete** button and **OK** the delete confirmation.

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Organizing public channels in categories

If you have more than five or ten public channels, you can use categories and subcategories to organize your public channels and make it easier for your users to find and subscribe to them.

You can decide what kind of information you are distributing with your public channels, then create categories and subcategories before you create channels. Or you can create categories after the number of public channels grows to the point where such organization is needed.

Table 2. Sample public channel category and subcategory names

Category	Subcategories
Newsletters	HR Newsletters Outside Sales Newsletters Marketing Newsletters
Schedules	Train Schedules Bus Schedules Airport Shuttle Schedules
Company Fun	Holidays Company Picnic Information

Listing all public channel categories and subcategories

Just getting started? Obviously you have to create categories before you can list them. See "Creating a public channel category or subcategory" on page 195.

♦ To list all public channel categories and subcategories

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Public Channels»List Categories**.

   The List Categories page appears, with subcategories shown indented below each main category.

> **Note**
> The top-level categories are listed in alphabetic order. Any subcategories of a top-level category also appear alphabetic order, indented below each top-level category.

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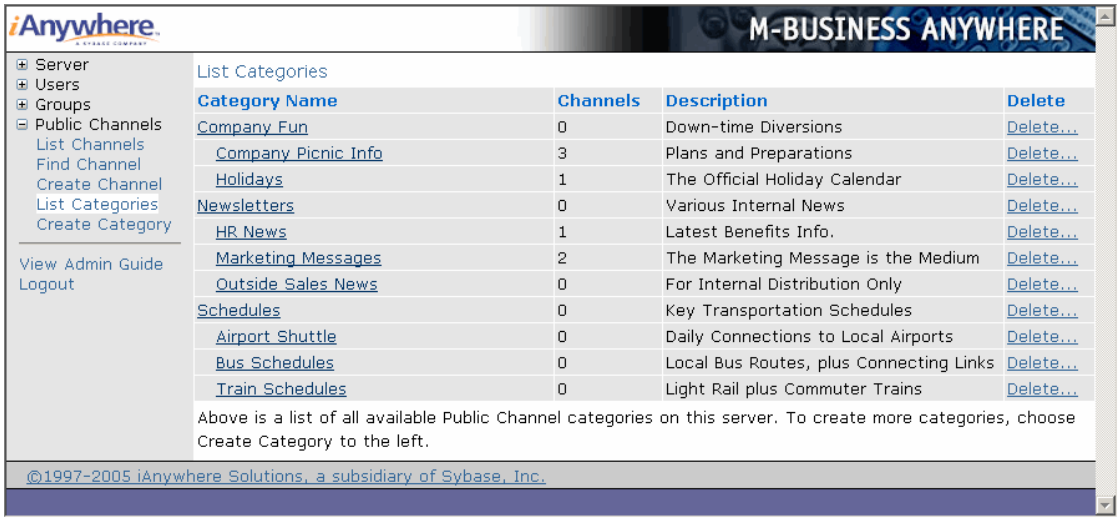


If you have a large number of categories, only the first 25 are listed.

If the category you are trying to find is not listed on this page, you can quickly navigate to other pages of categories by using the navigation aids at the top of the list. See "Navigating long lists" on page 110.

3. From the List Categories page, you can do the following:

   - View the **Category Name**, number of **Channels**, and **Description** for each of the public channel categories listed.
   - Edit a public channel category, by clicking the link in the **Category Name** column.

     See "Editing an existing public channel category or subcategory" on page 196.
   - Delete a public channel category, by clicking the **Delete** link at the right end.

     See "Deleting a public channel category or subcategory" on page 198.

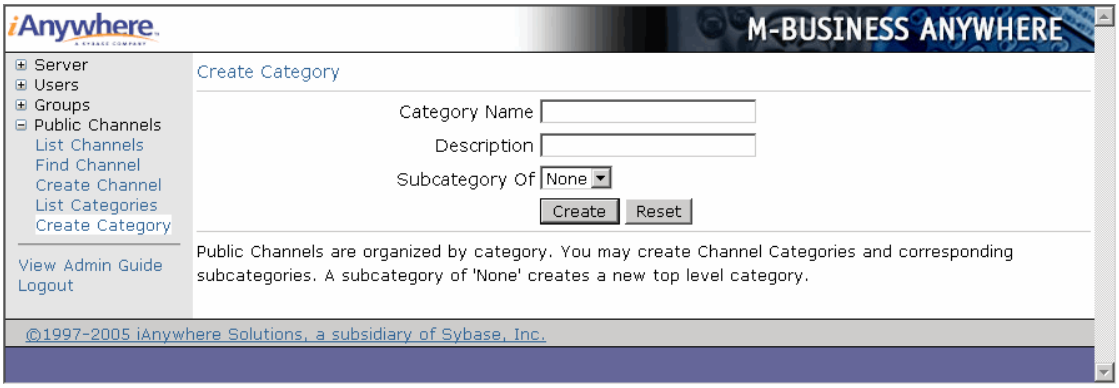
Creating a public channel category or subcategory

You create categories and subcategories on the same page. Specifying that the category you are creating is a Subcategory Of another category makes it a subcategory. Only one level of subcategories below the top-level categories is supported.

♦ To create a public channel category or subcategory

1. Log in to M-Business Server as admin.
2. In the Navigation Panel, choose **Public Channels»Create Category**.

   The Create Category page appears.



3. Type the **Category Name**.
4. Type the **Description**.
5. For **Subcategory Of**:
   - Select **None** to create a top-level category.
   - Select an existing top-level category to create a subcategory.
6. Click **Create**.

   The List Categories page appears, showing the category or subcategory you just created. For more information about this page, see "Listing all public channel categories and subcategories" on page 194.

Editing an existing public channel category or subcategory

You can edit the name, description, or subcategory status of an existing public channel category or subcategory at any time.

> **Note**
> To assign an existing public channel to a category, edit the channel and select the category from the **Category** drop-down list. See "Editing a public channel" on page 193.

♦ To edit an existing public channel category or subcategory

1. Log in to M-Business Server as admin.
2. List existing public channel categories.

   See "Listing all public channel categories and subcategories" on page 194.
3. On the List Categories page, locate the category you want to edit.
4. Click the link in the **Category Name** column for the category.

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The Edit Category page appears.

In addition to the fields that are present on the Create Category page, the Edit Category page adds:

- A list of **Channels in this Category**.
- For top-level categories, a list of **Subcategories of this Category**.

5. From the Edit Category page you can do the following:

   - Edit the **Category Name**, **Description**, or **Subcategory Of** fields, then click **Update** to save your changes.
   - Delete the category, by clicking the **Delete** button.

     For more information, see “Deleting a public channel” on page 193.
   - Create a new channel for the category, by clicking the **Add Channel** button.

     See “Creating a new public channel” on page 192.
   - Edit an existing channel for the category, by clicking the **link** in the **Title** column.

     See “Editing a public channel” on page 193.

   For top-level categories, you can also:

   - Create a new subcategory for the category, by clicking the **Add Subcategory** button.

     See “Creating a public channel category or subcategory” on page 195.

- Edit a subcategory of the category, by clicking the link under **Category Name**.

  See "Editing an existing public channel category or subcategory" on page 196.

Deleting a public channel category or subcategory

- **To delete a public channel category or subcategory**

1. Log in to M-Business Server as admin.
2. List existing public channel categories.

   See "Listing all public channel categories and subcategories" on page 194.
3. On the List Categories page, locate the category you want to delete.
4. Begin the deletion process:

   - If you can tell from the summary information displayed that you have located the correct category(s) you want to delete, click the **Delete** link on the right end.
   - If you want to see a list of the category's channels before you delete the category, click the link in the Category Name column to edit the category, then click the **Delete** button on the Edit Category page.
5. To complete the deletion process:

   - Click **OK** when prompted to confirm the deletion.

     If the category contains no subcategories and/or public channels, this completes the deletion.
   - If the category contains subcategories and/or public channels, the Delete Public Category page appears.

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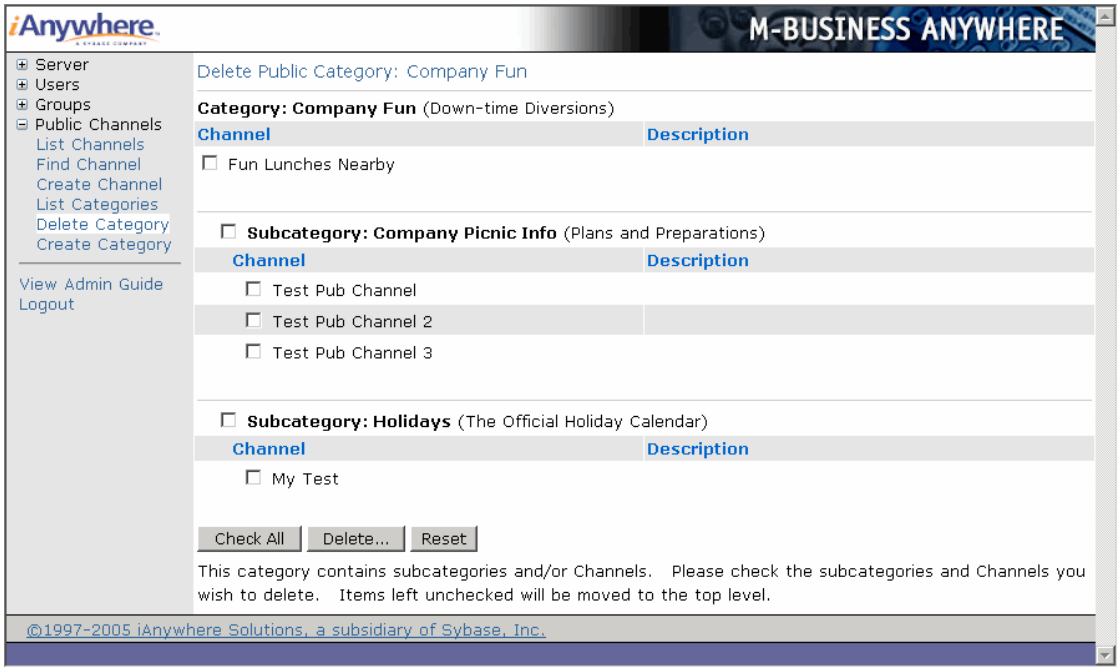

- Check any channels and/or subcategories that you also want to delete when this category is deleted.
- Click the **Delete** button to complete the deletion of the category and any selected channels and/or subcategories.
- Click **OK** when prompted one last time to confirm the deletion of the category and any selected channels and/or subcategories.

  If you click **Cancel** at this point, the category and all its channels and/or subcategories remain as they were.

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Part IV. Appendices

- Appendix “Configuration settings” on page 203
- Appendix “M-Business Connect .mal file specification” on page 237
- Appendix “Using log files” on page 241
- Appendix “Troubleshooting” on page 249

Appendix A

Configuration settings

Contents

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Settings in the server.xml file 233

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Overview

M-Business Server uses several default and configuration files to control how it operates. The majority of the directives in the defaults file are defined by the Apache server. For more information, see:

http://www.apache.org/docs

However, many of the directives in the *sync.conf.default* file are M-Business Server-specific. "Settings in the defaults file" on page 205 lists and describes the M-Business Server-specific directives and is provided to give you an idea of the types of things you can configure using these files.

Note
URLs entered in any M-Business Anywhere component must contain only forward slashes (/). The backslash character (\) in place of a forward slash will cause an error.

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Settings in the defaults file

"Settings in the defaults file" on page 205, lists the directives in the *defaults* file. The *defaults* file is located in the *<M-Business_Home>/conf* directory, where *<M-Business_Home>* is the M-Business Server install directory, or Destination Location, which you specified during installation.

Note
You edit the *defaults* file directly. There is no associated *.default* file. See "Editing configuration files" on page 17.

Table 1. defaults file settings

Setting	Description
Directory default settings	
`@@ASAServerRoot@@`	Location of the Adaptive Server Anywhere install directory.
`@@ASADatabaseDir@@`	Location of the Adaptive Server Anywhere database.
UI server default settings	
`@@UIHost@@`	The full name of the machine running the UI server. On Unix, the UI server is the `admin` process.
`@@UIPort@@`	The port at which to access the UI server.
`@@UISSLPort@@`	For debugging purposes (not running the server as root) you may need to change the value to a higher port number.
`@@UIShutdownPort@@`	Internal Tomcat server shutdown port. Default is `8005`.
`@@UILogDir@@`	The path to the UI server log files, relative to the *tomcat* directory. Default is `../logs`.
`@@UIAdminLog@@`	The name of the UI administration log file, located in `@@UILogDir@@`. Default is `admin_log`, plus the `@@UILogSuffix@@` extension.
`@@UIDuiLog@@`	The name of the device log file, located in `@@UILogDir@@`. Default is `device_log`, plus the `@@UILogSuffix@@` extension.
`@@UILogSuffix@@`	The extension to be used with log file names in the `@@UILogDir@@` directory.

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Setting	Description
@@MALUserUri@@	URI of the home page for the server. If a user launches the Mobile Link desktop application and clicks the Contents button, Mobile Link accesses the server using the URI given here. Specify a URI relative to **UIHost** .
@@Language@@	Sets the language of the UI. Choices are: `en_US` (default), `de_DE`, `fr_FR`, `it_IT`, `es_ES` .
@@UIDebug@@	Uncommented, enables debug logging for the Admin Server. Default is commented, disabling debug logging. To debug the Admin Server, uncomment this variable.
Sync server default settings	
@@SyncHost@@	The name of the machine running M-Business Sync Server.
@@SyncPort@@	The port at which to access M-Business Sync Server.
@@SyncSSLPort@@	The port at which to access the Sync Server.
@@UserFriendlyServerName@@	This is the server name that appears in M-Business Connect on the desktop and on the device.
@@DeviceUIHost@@	The machine where device-side home pages are built. The device-side home pages list the channels to which a user is subscribed.
@@SyncErrorLog@@	Log file where the Sync Server records error messages. On Windows, all error information is recorded to *sync_error.log*, therefore this setting is not used.
@@SyncAccessLog@@	Log file where the Sync Server records user accesses. On Windows, all access information is recorded to *sync_access.log*, therefore this setting is not used.
Database access default settings	
@@StoreHost@@	NOT used for ASA. Only used when migrating from MySQL (pre 5.3 release). Default is `localhost`.
@@StorePort@@	NOT used for ASA. Only used when migrating from MySQL (pre 5.3 release). Default is `8099`.
@@StoreDB@@	The name of the M-Business Anywhere database. **Default:** `AGDB`

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Setting	Description
@@StoreUIUser@@	The user ID the admin (UI) server used to log in to the database.
@@StoreUIAuth@@	The password the admin (UI) server uses to log in to the database.
@@StoreSyncUser@@	The user ID that the Sync Server uses to log in to the database.
@@StoreSyncAuth@@	Password that the Sync Server uses to log in to the database.
@@StoreReportsUser@@	The user ID to use to run database reports.
@@StoreReportsAuth@@	The password to use to run database reports.
@@EntProviderDatabaseClassId@@	The datastore with which the provider talks to the database. M-Business Anywhere supports `mysqldatastore` or `asadatastore`.
@@EntProviderDatabaseClassPath@@	The datastore with which the provider talks to the database. M-Business Anywhere supports `mysqldatastore` or `asadatastore`.
@@StoreBackLog@@	The maximum number of pending connections for the Adaptive Server Anywhere server. Connection requests are queued as they are received and removed from the queue as the connection is granted. When the maximum number of connections has been reached, all further connection requests remain in the queue. `StoreBackLog` specifies the size of the queue. If the queue limit is reached, all further connection requests are refused.
General default settings	
@@User@@	The user ID of the user that runs the server daemons `admin`, `sync`, `ghbn`, and `asa` on Unix systems. This default does not apply on Windows systems.
@@Group@@	The group ID of the user that runs the server daemons `admin`, `sync`, `ghbn`, and `asa` on Unix systems. This default does not apply on Windows systems.
@@MaxTotalChannelsSize@@	The maximum total size (in kilobytes) a user can allocate for all of their channels.

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Setting	Description
@@DBRetries@@	Number of retries for logging into the database should database access fail.
@@Brand@@	Do not change the default for this setting (avantgo).
NT domain default settings	
@@yourdomainlist@@	List of the NT domains with which M-Business Server is integrated.
Exchange default settings	
@@yourexchangeserver@@	The name of your Microsoft Exchange server.
@@off@@	The on/off status of your Microsoft Exchange server.
SOAP server settings	
@@AuthKey@@	Used to blowfish-encrypt the user's password during authentication. Enter the authorization key that you use with the SOAP server. Length is limited to 128 bytes.
@@SOAPPort@@	The port on which the SOAP server listens. **Default:** 8093
@@WSDLPort@@	The port on which WSDL xml files are served. **Default:** 8094

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Settings in the sync.conf file

This section lists the M-Business Anywhere-specific configuration directives in the *sync.conf* file. This file is located in the *<M-Business_Home>/conf* directory, where *<M-Business_Home>* is the M-Business Server install directory, or Destination Location, which you specified during installation.

Caution
Do not edit the *sync.conf* file directly. Instead, edit your changes into the *sync.conf.default* file, then run the *defaults_setup.bat* script (Windows) or *defaults_setup* script (Unix). See "Editing configuration files" on page 17.

Caution
The `@@...@@` variables *sync.conf.default* file must not be modified. Values for these variables are set globally in the *defaults* file; change the value of `@@...@@` variables in the *defaults* file and run the *defaults_setup.bat* script (Windows) or *defaults_setup* script (Unix) to update the values in *sync.conf*.

General server settings

Setting	Description
`ServerName`	The DNS name or IP address of your host. Set by `@@SyncHost@@` variable in *defaults* file.
`PidFile`	The file in which the server should record its process identification number when it starts. Do not change `@@ServerRoot@@` portion.
`ScoreBoardFile`	The file used to store internal server process information. Do not change `@@ServerRoot@@` portion.
`Timeout`	The number of seconds before receives and sends expire.
`KeepAlive`	This setting determines whether to allow more than one request per connection. The default setting is `Off`.
`MinSpareServers`	(Unix only) The minimum number of children that remain running even if idle. Apache periodically polls the servers. If there are not enough idle server processes, Apache starts new processes until this limit is reached.
`MaxSpareServers`	(Unix only) The maximum number of children that can remain idle. Apache periodically polls the servers. If there are more idle server processes than this setting allows, Apache kills them.
`StartServers`	(Unix only) The number of children initially started for the server.

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Setting	Description
ThreadsPerChild	The number of concurrent threads, or requests, the server will allow. You should set this value according to the responsiveness of the server and the amount of system resources you will allow the server to consume. The more active requests running at once, the slower each request will be handled.
MaxRequestsPerChild	The number of requests each child process is allowed to process before the child dies. The default is 20000. The child will exit so as to avoid problems after prolonged use.
MaxClients	The maximum number of clients that can simultaneously connect to the server. If this limit is ever reached, clients will be locked out, so it should not be set too low.
ListenBacklog	**Default:** 1024
Port	The port at which the standalone server listens. Set by @@SyncPort@@ variable in *defaults* file.
Listen	Similar to Port, but allows the server to listen to multiple ports in the same instance. Set by @@SyncPort@@ and @@SyncSSLPort@@ variables in *defaults* file.
HostnameLookups	Log the names of clients or just their IP addresses. Valid values: ♦ On to log the names of clients (e.g., www.apache.org ♦ Off (default) to log just their IP addresses (e.g., 204.62.129.132)

Log settings

Setting	Description
ErrorLog	The location of the error log file. If you do not specify an ErrorLog directive within a <VirtualHost> container, error messages relating to that virtual host will be logged here. If you do define an ErrorLog file for a <VirtualHost> container, that host's errors will be logged there and not here. Do not change @@ServerRoot@@ portion.
LogLevel	This setting controls the number of messages logged in the error log by specifying the level of errors to record. Possible values include: debug, info, notice, warn, error, crit, alert, emerg . The default is warn.

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Setting	Description
LogFormat	Specifies nicknames to be used with the CustomLog directive.
CustomLog	Specifies the location and format of the access log file. Do not change @@ServerRoot@@ portion.
TypesConfig	Specifies the location of the *MIME.types* file (or its equivalent). Do not change @@ServerRoot@@ portion.
LimitRequestLine	Consists of the HTTP method, URI, and protocol version. For the Sync Server, it should always be POST /sync HTTP/1.0

sync_module settings

Setting	Description
LoadFile LoadModule SyncLoadFile	Directives that load required libraries. Do not modify. Do not change @@ServerRoot@@ or @@ASAServer-Root@@ portions.

Server settings

Setting	Description
ServerRoot	The server's home. Set by @@ServerRoot@@ variable in *defaults* file.
MaintainHeadroom	Setting this greater than zero causes the server to reserve connection slots in order to send sync users bounce messages. For example, if you set this value to six, users one through five can synchronize concurrently without problems. The sixth user will be unable to synchronize and will see the message specified in the MaintainHeadroomMessage setting below. The MaxClients setting indicates the maximum number of connection slots available.
MaintainHeadroomMessage	Specify the message that users will see when the server is overloaded.
ExtensionManagerClassId	Specifies which IAGExtensionManager class to use. Do not change.
Extensions	A comma-separated list of extensions to be loaded into the server at launch.

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Setting	Description
ConduitRoot	The root or home directory for conduits.
Conduits	This setting specifies which conduits are run during a session and in which order they are to run. By default, only the web and database conduit are set up. Do not change @@ServerRoot@@ portion.
ConduitLibraries	This setting specifies the conduit libraries that support the conduits listed in Conduits . By default, only the web and database conduit libraries are set up. Do not change @@ServerRoot@@ portion.

WebToGo conduit settings

The M-Business Sync Server uses the M-Business web conduit to download channel content from Web servers to the user devices.

Note
Outside of configuration files, the WebToGo conduit is referred to as M-Business web conduit.

Setting	Description
WebToGoNetTimeout	The maximum number of seconds the server will wait between packets before timing out. The default is 45.
WebToGoDocTimeout	The maximum number of seconds to wait for a single document to be fetched from a remote host before timing out.
WebToGoProxyServer	Proxy server hostname. Set by @@WebToGoProxyServer@@ variable in *defaults* file.
WebToGoProxyPort	Proxy server port. Set by @@WebToGoProxyPort@@ variable in *defaults* file.
WebToGoProxyExcludeDomains	Exclude these domains.
WebToGoProxyUserName	User Name for proxy server. Set by @@WebToGoProxyUserName @@ variable in *defaults* file.
WebToGoProxyPassword	Password for proxy server. Set by @@WebToGoProxyPassword@@ variable in *defaults* file.
WebToGoSocksServer	Hostname if proxy server uses SOCKS instead of HTTP. Set by @@WebToGoSocksServer@@ variable in *defaults* file.

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Setting	Description
WebToGoSocksPort	Socks server port. Set by @@WebToGoSocksPort@@ variable in *defaults* file.
SecureProxyName	SSL proxy server hostname. Set this directive if you need a proxy server to access HTTPS pages. Set by @@SecureProxyName@@ variable in *defaults* file.
SecureProxyPort	SSL proxy server port. Set this directive if you need a proxy server to access HTTPS pages. Set by @@SecureProxyPort@@ variable in *defaults* file.
SecureProxyUserName	SSL proxy server user name. Set by @@SecureProxyUserName@@ variable in *defaults* file.
SecureProxyPassword	SSL proxy server password. Set by @@SecureProxyPassword@@ variable in *defaults* file.
WebToGoMaxTextSize	Maximum size, in kilobytes, of any HTML and text files that the server attempts to deliver to devices.
WebToGoMaxImageSize	Maximum size, in kilobytes, of images that the server attempts to deliver to devices.
WebToGoMaxRedirect	Maximum number of redirects per page. The default is 5.
WebToGoMaxRedirectChain	Maximum length of continuous redirect chain that will be followed. The default is 20.
WebToGoDefaultOnlineRequestSize	Maximum default online request size, in kilobytes, for responses to requests sent up by devices. The default is 100.
WebToGoMaxNetConPerChild	Maximum number of simultaneous outbound connections the server initiates per user connection.
WebToGoMaxSingleHostConPerChild	Maximum number of simultaneous outbound connections to a single host the server initiates per user connection.
WebToGoAllowFileAccess	Controls whether the server can fetch URLs that use the file:// protocol.
WebToGoIgnoredExtensions	File extensions that the server should ignore when retrieving content. **Default:** pdf, fdf, psd, au, z, xlc, fon, hlp, ico, jar, xls, xlt, xlw, mov, pic, ra, rm, ram, pfm, avi, wav, bmp, rtf, doc, arc, taz, tgz, wri, zip, gz, tar, ppt, mdb, class, subs, ps, xbm, conf, default, xml, xsd
WinCEDownloadTypes	Allows binary file types specified in a quoted and comma-separated list of file name extension to be downloaded to Pocket PC clients.

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Setting	Description
WinCEDownloadExts	Allows binary file types specified in a quoted and comma-separated list of mime types to be downloaded to Pocket PC clients.
UserSyncResetSeconds	The number of seconds to wait before a user can synchronize again if the server has erroneously stopped during that user's previous synchronization.
MALUserAdminUrl	URL that the Mobile Link application on the desktop should use when the Content button is clicked. Set by @@UIHost@@, @@UIPort@@, and @@MALUserUri@@ variables in *defaults* file.
SoftwareUpgradeUrl	URL that devices with out-of-date Mobile Link code should be pointed to in order to upgrade to the latest software. Set by @@UIHost@@ and @@UIPort@@ variables in *defaults* file.
UserFriendlyServerName	This is the server name that appears in M-Business Connect on the desktop and on the device. This setting also appears in the defaults file. Set by @@UserFriendlyServerName@@ variable in *defaults* file.
DaysToRemoveUnusedCookies	Number of days cookies can remain unused without being removed from the cookie list. If set to zero, the server will keep all cookies forever. The default is 30.
DaysToExpireCookies	Number of days after which to expire cookies. The default is 7.
SendRefererField	This setting specifies whether the server should send the HTTP referrer field as part of the request.
ServerSupportsFTP	When set to TRUE, this setting allows the server to fetch FTP documents.
WebtogoMetaRefreshTime	This setting determines if the server should follow redirects specified through Meta Refresh tags. Set this to minus one if you do not want the Sync Server to follow such HTML Meta Refresh redirects. For example, setting this to 10 would force the Sync Server to follow redirects for only those documents that have a refresh value less than or equal to 10 seconds.
MaxTotalChannelsSize	The maximum size (in kilobytes) that a user can allocate for all of their channels. This setting is turned off by default. This setting also appears in the defaults file. Set by @@MaxTotalChannelsSize@@ variable in *defaults* file.
DailyMaxSyncAmount	The maximum number of bytes the server will write to a user's device in a 24 hour period. This is turned off by default.

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Setting	Description
Quad_PalmLoRes	By default, the server will adapt to high resolution (320x320) Palm devices running Palm OS 5.x clients by delivering page layouts that take advantage of the resolution and by delivering Palm OS V3 format images. To force backward compatible 160x160 treatment instead, set Quad_PalmLoRes to TRUE .
Quad_WinCELoRes	By default, the server will adapt to high resolution (480X640) Pocket PC and Windows Mobile 5 VGA devices running the 6.2 or greater client by delivering page layouts that take advantage of the increased resolution. To force backward compatible 240X320 QVGA treatment instead, set Quad_WinCELoRes to TRUE .
QuadCompressJS	Controls the compression of JavaScript sent to the client. For the enterprise server it is TRUE (on) by default. For the apps server, it is FALSE (off) for faster page load times.
AllowAGUrlVariableSubst	By default, the server will perform substitution of the variables AG_USER, AG_DEVICEOS, and AG_DEVICEPROCESSOR only within URL strings of channels that are enabled for binary download. To allow this substitution for all URLs set AllowAGUrlVariableSubst to TRUE .

NT domain integration settings

Setting	Description
ExternalAuthLibrary	Loads the NT domain external authorization library. Set by @@ServerRoot@@ and @@NTDomainProviderClassPath@@ variables in *defaults* file.
UseSSPIForNTAuth	By default, the server will use SSPI for NT domain authentication. To disable SSPI, set UseSSPIForNTAuth to FALSE .
NTDomainValidation	Specifies the order in which domain validation occurs. Set by @@yourdomainlist@@ variable in *defaults* file.
NTDomainCache	Use to cache the username and domain of a user for faster authentication if multiple domains. Do not change @@ServerRoot@@ portion.
ExternalAuthCreatesUsers	If set to TRUE, an M-Business Server user account automatically will be created if the given credentials are validated on the domain(s).

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LDAP adaptor configuration settings

Setting	Description
LDAPServers	Holds the name of your LDAP server(s). It is recommended that you use only one to avoid user name conflicts. Additional hostnames should be separated by a space. If you are using a non-standard port for your normal or SSL connection, you can add it to the end of the server name. Set by @@LdapServer@@ variable in *defaults* file. **Note** With M-Business Server version 6.5, enter your LDAP server(s) here directly, replacing the @@LdapServer@@ variable. Specify your server(s) as <*server_name*>.<*domain_name*>: <*port_number*>. Separate multiple servers with commas.
LDAPSearchBase	The distinguished name of the entry at which to start the search. Example: "ou=People,dc=sybase,dc=com"
LDAPSearchFilter	Sets the user ID field that the M-Business user ID will be compared against in the LDAP directory for user authentication. The %s is replaced with the M-Business user ID during authentication.
LDAPFullName	Controls which fields are used to return the Full Name. If LDAPFullName is populated, M-Business Server uses this value for the Last Name and leaves the First Name blank. To force separate First Name and Last Name to be sent, comment out the LDAPFullName parameter by placing a "#" in front of it.
LDAPFirstName	If LDAPFullName is commented out, M-Business Server sends LDAPFirstName as the First Name. If LDAPFullName is populated, LDAPFirstName is ignored.
LDAPLastName	If LDAPFullName is commented out, M-Business Server sends LDAPLastName as the Last Name. If LDAPFullName is populated, LDAPLastName is ignored.
LDAPUseSSL	This setting (currently unavailable) allows M-Business Server to connect via a SSL connection to your LDAP server. Your LDAP server must be SSL enabled and you must set the port number in the LDAPServers setting if it is a non-standard SSL port. This must be set to TRUE to enable SSL.

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Setting	Description
LDAPDefaultUser	If user account on M-Business Server's machine does not have access to the LDAP server, here you can specify the user ID of an LDAP account to use for retrieval of LDAP information. This setting may also be necessary for the LDAP provider to query information about a user when an account is created from your LDAP directory. If the M-Business Server's machine does not have correct priviliges, an account will be created without populating the user's first and last name. **Note** The LDAPDefaultUser is not the login ID of the user, but the user's DN in the LDAP directory.
LDAPDefaultPassword	See description above for LDAPDefaultUser. If you specify a value for LDAPDefaultUser, you must also specify the password for that user here.

Provider Manager settings

Setting	Description
ProviderClassId EntProviderClassId EntProviderDatabaseClassId	Settings used by datastore enterprise provider to communicate with datastore. Do not modify.

Provider settings for M-Business Server database access

Setting	Description
StoreUser	User ID that the Sync Server uses to login to the database. Set by @@StoreSyncUser@@ variable in *defaults* file.
StorePassword	Password that the Sync Server uses to login to the database. Set by @@StoreSyncAuth@@ variable in *defaults* file.
StoreDB	User ID used for the database's reports user. Set by @@ StoreDB@@ variable in *defaults* file.
StoreHost	The host name for the database. (Not used with asadatastore.) Set by @@StoreHost@@ variable in *defaults* file.

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Setting	Description
StorePort	The port number for the database. (Not used with asadatastore.) Set by @@StorePort@@ variable in *defaults* file.
DaysOfLogDataToKeep	The number of days to keep data in the log tables in the database before clearing it out (SYNCLOG, WEBSTATS, SSLSESSIONS). Log data exceeding this age is automatically purged from log files. If set to 0 or commented out, the tables are never cleaned. **Default:** 20

Exchange settings

Setting	Description
ExchangeServer	Set by @@yourexchangeserver@@ variable in *defaults* file. Do not change.
Exchange2000	Set by @@off@@ variable in *defaults* file. This variable is set to on or "true" when the PIM product is deployed in an Exchange2000 or Hybrid (mix of Exchange5.5 and Exchange 2000) environment. In that case the ExchangeServer variable should point to a domain controller of the root level domain in a Windows 2000 or Windows 2003 organization.
Exchange2000Query	Set by @@...@@ expression. Do not change.
Exchange55Query	Set by @@...@@ expression. Do not change.

Server-side cache settings

Setting	Description
MaxCacheSize	This is the maximum size of a document M-Business Server will try to cache, in bytes. If you synchronize large documents, increasing this value to a value larger than your largest document will improve performance. The default is 262144 (256KB) Along with setting this preference, you also should turn on the WebToGoMaxTextSize setting.
SetDefaultFreshLife	Determines whether to set a default freshness lifetime for documents that is longer or shorter than originally specified.

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Setting	Description
DefaultFreshnessLifetime	The period of time (in seconds) that M-Business Server caches documents if the SetDefaultFreshLife directive is set to CacheableDocs . The default is the number of seconds in a day (86400).
LimitFreshLifeOn	When set to a non-zero value, this directive turns on limiting of freshness lifetimes of documents.
LimitFreshLifeSecs	The maximum value of time (in seconds) for a document's freshness lifetime. The default is the number of seconds in a year (31536000).
NegativeCachingOn	Caches negatives from servers, such as timeouts, for the period of time (in seconds) specified by the NegativeCachingFreshnessLifetime directive.
NegativeCachingFreshnessLifetime	The period of time (in seconds) that negatives are cached on the server.
ServerSideCaching	Determines whether documents are cached on the server. The default setting is On . This directive does not affect on-device caching.
CacheInMemory	Enables caching in memory.

File-based caching settings

Setting	Description
CacheRoot	The absolute path to the directory where cached files should be stored. Do not change @@ServerRoot@@ portion.
CacheSize	The approximate size limit for the cache directory.
CacheGcInterval	The cache's garbage collection interval in hours. During garbage collection, the server attempts to trim the cache directory to the CacheSize parameter.

Memory- and directory-based cache settings

Setting	Description
MaxMemCacheObjectSize	Maximum size of object that can be cached in memory (in kilobytes).
MaxMemCacheSize	Maximum size of memory cache (in megabytes).

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Setting	Description
MaxMemCacheObjectCount	Maximum number of documents that can be cached.
CacheInDirectory	Enables caching of documents in multiple directories in the file system.

On-device cache settings

Setting	Description
OnDeviceCachingOption	Determines the mode of on-device caching. Options are: ♦ EverythingAlways causes all documents to remain cached on the device indefinitely, regardless of any caching directives in the HTTP headers for those documents. ♦ NothingEver means no documents are cacheable on the device. Every time a page is accessed, a new copy of the page is fetched from M-Business Server. ♦ EverythingDefault sets all non-error documents to expire on the device after the number of seconds specified in the DefaultOnDeviceExpiration directive. Any HTTP header information is ignored; instead, the default value is used at all times. Error documents will not be cached on the device. ♦ UseDefault (default) causes documents to be cached on the device for the correct amount of time as specified by the HTTP headers for that document. If the DefaultOnDeviceExpiration flag is set to a positive number, then all cacheable documents will stay on the device for at least that number of seconds. If the document's HTTP header information allows it to be cached for longer than the DefaultOnDeviceExpiration flag, then it will be cached for that longer period of time.
DefaultOnDeviceExpiration	Specifies the default number of seconds that documents will be cached on the user's device. **Default:** 1200

M-Business XML conduit settings

Setting	Description
MammutMaxFetch	Maximum number of bytes of data that database conduit will download in a synchronization. **Default:** 2000000

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Setting	Description
MammutFetchTimeout	Database conduit timeout on fetches, in seconds. **Default:** 180 (three minutes)

Security settings

Setting	Description
LoadFile SyncLoadFile	Common Security Library: Load this library if either sagd (inbound) or sslrover (outbound) need to be turned on. Both sagd and sslrover depend on sslcommon. Do not change @@ServerRoot@@ portions.
LoadModule	Security Library. Loads the inbound SSL security library. Do not change @@ServerRoot@@ portion.
AllowSecureClientConnect	Allow clients to connect to server securely (using https://). This parameter affects incoming clients only. You must have sagd.so or sagd.dll installed for this setting to have any effect.
ConnectSecureOnly	Set this directive to true to force all inbound client-to-server connections to be secure.
Sagd_CertFileName	The location of your ECC server certificate. Do not change @@ServerRoot@@ portion.
Sagd_KeyPassword	Password that protects your ECC private key.
Sagd_RSACertFileName	The location of your RSA server certificate. Do not change @@ServerRoot@@ portion.
Sagd_RSAKeyPassword	Password that protects your RSA private key.
Sagd_RandomPoolFilename	Location of random pool file used by the security software for incoming (client) secure connections. This file is created by the server, if necessary. Do not change @@Server-Root@@ portion.
AllowHTTPSAlways	If True, allows client to get SSL pages without having a secure client to server inbound connection. You should have this set to True only if the people connecting to your server are protected by a firewall.
ServerSecuritySharedLibrary	Location of the security library used by the WebToGo conduit to talk SSL to the web for outbound secure connections. Do not change @@ServerRoot@@ portion.

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Setting	Description
ServerCertFile	File that contains the root certificates for those Certificate Authorities that the Sync Server honors. Only used for outbound SSL connections. Do not change @@ServerRoot@@ portion.
ServerRandFile	Location of random file that is used by the security software for outbound secure connections. This file is created by the server if necessary. Choose a directory where the server has read and write permissions. Do not change @@ServerRoot@@ portion.

JavaScript engine settings

Setting	Description
JavaScriptCompiler	Location of JavaScript compiler *dll*. Do not change @@ServerRoot@@ portion.
AlwaysSendUrls	This setting is set to TRUE by default.

Localization settings

Setting	Description
Locales	The list of locales that will be supported by the server.
DefaultLocale	If a device is configured with an unsupported locale, the server will use the locale listed in this setting. Set by @@Language@@ variable in *defaults* file.
StringTables	The string tables that will load at startup.
ResourceRoot	Where to find string tables and other resources. Do not change @@ServerRoot@@ portion.

NT Event Log settings

Setting	Description
NTEventLog	If TRUE/ON, M-Business Server will log messages into the NT Event log.

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Setting	Description
LoggingLevel	Indicates the severity of messages to be logged into the NT Event log. If set to WARNING, will log both errors and warnings. If set to ERROR, will log only errors.
DevuiHosts	Where to find the device UI. First host is set by @@DeviceUIHost@@ and @@UIPort@@ variables in *defaults* file. You may add additional hosts by appending host names plus port numbers to the end of this line (no spaces) as shown below in bold: SyncPref DevuiHosts @@DeviceUIHost@@:@@UIPort@@,**<myhost2>:<port2>,<myhost3>:<port3>** **Note** Users gain access to *all* of the hosts that you list here via a single sign-on.

Sync event settings

Setting	Description
SendSyncStartAndEndEvents	Enables the WebToGo conduit to send start- and end- of-sync events to the application. The start- of-sync and end-of-sync URLs must be set when creating the channel. **Default:** TRUE

M-Business Client password settings

Setting	Description
PasswordProtectClient	Requires users to enter their password before viewing content from this server. **Default:** FALSE

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Setting	Description
`XMLDbDefragInterval`	XML datastore defragment interval. The number of synchronizations before the server will tell the device to defragment the XML datastore. The default of `500` should be fine for most cases. If you have a lot of databases (more than 10) where the data is changing a lot (more than 25% of records change each synchronization), you should set a lower number. **Caution** You should not this below `50`. **Note** Setting this to `0` tells the device to *never* defragment the XML datastore.

Email based trickle sync settings

Note
The settings in this section of the *sync.conf* file have no effect on M-Business Server.

Recoverable synchronization settings

Setting	Description
`WLRecoverySync`	Determines whether to enable recoverable synchronization is enabled for wireless synchronizations. **Default:** FALSE

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User addable settings

Setting	Description
FetchLog	Full path to fetch log file, which logs a line for every rover fetch, in the format: `"fetched_url" "channel_root_url" "referring_url` **Default:** none — to enable, enter this line into end of *sync.conf.defaults* file: **`FetchLog @@ServerRoot@@/ logs/fetch.log`**
ReverseAccessLog	Full path to reverse access log file, which logs a line for every reverse access, in the format: `"host_address" userid [date_in_apache_format] "GET_url_HTTP/1.0" statuscode/ cacheresult_requesttime_size"` **Default:** none — to enable, enter this line into end of *sync.conf.defaults* file: **`ReverseAccessLog @@ServerRoot@@/ logs/reverse.log`**
DeviceReadTimeout	Number of seconds to allow a device read to proceed before timing out. **Default:** `240`.
DeviceWriteTimeout	Number of seconds to allow a device write to proceed before timing out. **Default:** `30`

Settings in the agsoap.conf file

"Settings in the agsoap.conf file" on page 226 lists the M-Business Anywhere-specific configuration directives in the *agsoap.conf* file. This file is located in the *<M-Business_Home>/conf* directory, where *<M-Business_Home>* is the M-Business Server install directory, or Destination Location, which you specified during installation.

Caution
Do not edit the *agsoap.conf* file directly. Instead, edit your changes into the *agsoap.conf.default* file, then run the *defaults_setup.bat* script (Windows) or *defaults_setup* script (Unix). See "Editing configuration files" on page 17.

Caution
The `@@...@@` variables *agsoap.conf.default* file must not be modified. Values for these variables are set globally in the *defaults* file; change the value of `@@...@@` variables in the *defaults* file and run the *defaults_setup.bat* script (Windows) or *defaults_setup* script (Unix) to update the values in *agsoap.conf*.

Table 2. agsoap.conf file settings

Setting	Description
Server configuration settings	
`ServerName`	The name you define here must be a valid DNS name for your host. Your administrator should be able to tell you the valid DNS name. If your host does not have a registered DNS name, enter its IP address here. You will have to access it by its address (e.g., http://123.45.67.89/), and this will make re-directions work in a sensible way.
`PidFile`	The file in which the server should record its process identification number when it starts.
`ScoreBoardFile`	File used to store internal server process information. Not all architectures require this. But if yours does (you'll know because this file will be created when you run Apache) then you *must* ensure that no two invocations of Apache share the same scoreboard file.
`Timeout`	The number of seconds before receives and sends expire.
`KeepAlive`	This setting determines whether to allow more than one request per connection. **Default:** `Off`

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Setting	Description
ThreadsPerChild	Number of concurrent threads, or requests, the server will allow. You should set this value according to the responsiveness of the server and the amount of system resources you will allow the server to consume. The more active requests running at once, the slower each request will be handled. For more information on using this directive to improve performance, see "Modifying the ThreadsPerChild directive" on page 99. **Default:** 50
MaxRequestsPerChild	The number of requests each child process is allowed to process before the child dies. The child will exit in order to avoid problems after prolonged use when Apache (and maybe the libraries it uses) leak memory or other resources. On most systems, this is not really needed, but a few (such as Solaris) do have notable leaks in the libraries. **Default:** 20000
MaxClients	A limit on total number of servers running, i.e., a limit on the number of clients that can simultaneously connect. If this limit is ever reached, clients will be *locked out*, so it should not be set too low. MaxClients is intended mainly as a brake to keep a runaway server from taking the system with it as it spirals down. See "Optimizing performance" on page 98 for further discussion of how to improve performance by changing this value. **Default:** 50
ListenBacklog	**Default:** 1024
HostnameLookups	Log the names of clients or just their IP addresses? Valid values: ♦ On to log the names of clients (e.g., www.apache.org) ♦ Off to log just their IP addresses (e.g., 204.62.129.132) **Default:** Off, because it is better overall for the net if people have to intentionally turn this feature on, since enabling it means that each client request will result in *at least* one lookup request to the nameserver.

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Setting	Description

`Listen @@SOAPPort@@`	The port number on which the SOAP server listens for HTTP messages from clients.
	
	Do not change the `@@SOAPPort@@` portion. If you wish to change the SOAP server port number, you must change the value assigned to `@@SOAPPort@@` in the defaults file. See "Settings in the defaults file" on page 205.
	
	Note that the full parameter definition allows for setting a log level specific for this port:
	
	`Listen @@SOAPPort@@`
	`<VirtualHost _default_:@@SOAPPort@@>`
	`  LogLevel level`
	`</VirtualHost>`
	
	For valid values of *level*, see main `LogLevel` entry below.

`Listen @@WSDLPort@@`	The port number on which WSDL is vended.
	
	Do not change the `@@WSDLPort@@` portion. If you wish to change the port number on which WSDL is vended, you must change the value assigned to `@@WSDLPort@` in the defaults file. See "Settings in the defaults file" on page 205.
	
	Note that the full parameter definition allows for setting a log level specific for this port:
	
	`Listen @@WSDLPort@`
	`<VirtualHost _default_:@@WSDLPort@>`
	`  LogLevel level`
	`</VirtualHost>`
	
	For valid values of *level*, see main `LogLevel` entry below.

Event logging settings	
`LogLevel`	Control the level of detail (and number) of messages logged to the error log. Valid values: ♦ `emerg` logs only emergencies ♦ `alert` adds alerts ♦ `crit` adds critical messages ♦ `error` adds all error messages ♦ `warn` adds warning messages ♦ `notice` adds notices ♦ `info` adds informational messages ♦ `debug` includes routine messages

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Setting	Description
ErrorLog	The location of the error log file. If you do not specify an ErrorLog directive within a <VirtualHost> container, error messages relating to that virtual host will be logged here. If you *do* define an error log file for a <VirtualHost> container, that host's errors will be logged there and not here.
LogFormat	Directives defining format nicknames for use with the CustomLog directive below.
CustomLog	The location of the custom log file.
TypesConfig	Location of the *mime.types* file (or its equivalent).
Supporting libraries and modules settings	
LoadFile	List of libraries required at runtime.

LoadModule	Loads the SOAP Apache module.
	Note that the full parameter definition allows for setting a handler for the SOAP Apache module:
	`LoadModule agsoap_module ...`
	`<Location /agsoap>`
	`  SetHandler agsoap-handler`
	`</Location>`

NT domain integration settings	
ExternalAuthLibrary	Loads the NT domain (or LDAP) external auth library.
UseSSPIForNTAuth	Use SSPI for NT authorization? Valid values: ♦ TRUE (default) ♦ FALSE
NTDomainValidation	A comma separated list of domain names and/or a period (" . ") to use local accounts on this host. **Default:** " . "
NTDomainCache	If multiple domains are included in the validation list, authentication can take a long time for users who aren't found until late in the list. NTDomainCache can be used to cache the username->domain mappings so that future lookups are faster.

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Setting	Description
ExternalAuthCreatesUsers	Create M-Business users automatically for valid NT domain users? Valid values: ♦ TRUE (default) ♦ FALSE
LDAP adaptor configuration settings	
LDAPServers	Holds the name of your LDAP server(s). It is recommended that you use only one to avoid user name conflicts. Additional hostnames should be separated by a space. If you are using a non-standard port for your normal or SSL connection, you can add it to the end of the server name. Set by @@LdapServer@@ variable in *defaults* file.
LDAPSearchBase	The distinguished name of the entry at which to start the search.
LDAPSearchFilter	Sets the user ID field that the avantgo user ID will be compared against in the LDAP directory for user authentication. The %s is replaced with the M-Business user ID during authentication.
LDAPFullName	Controls which fields are used to return the Full Name. If LDAPFullName is populated, M-Business Server uses this value for the Last Name and leaves the First Name blank. To force separate First Name and Last Name to be sent, comment out the LDAPFullName parameter by placing a "#" in front of it.
LDAPFirstName	If LDAPFullName is commented out, M-Business Server sends LDAPFirstName as the First Name. If LDAPFullName is populated, LDAPFirstName is ignored.
LDAPLastName	If LDAPFullName is commented out, M-Business Server sends LDAPLastName as the Last Name. If LDAPFullName is populated, LDAPLastName is ignored.
LDAPUseSSL	This setting (currently unavailable) allows M-Business Server to connect via a SSL connection to your LDAP server. Your LDAP server must be SSL enabled and you must set the port number in the LDAPServers setting if it is a non-standard SSL port. This must be set to TRUE to enable SSL.

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Setting	Description
LDAPDefaultUser	If user account on M-Business Server's machine does not have access to the LDAP server, here you can specify the user ID of an LDAP account to use for retrieval of LDAP information. This setting may also be necessary for the LDAP provider to query information about a user when an account is created from your LDAP directory. If the M-Business Server's machine does not have correct priviliges, an account will be created without populating the user's first and last name. **Note** The LDAPDefaultUser is not the login ID of the user, but the user's DN in the LDAP directory.
LDAPDefaultPassword	See description above for LDAPDefaultUser. If you specify a value for LDAPDefaultUser, you must also specify the password for that user here.
Security module settings	
LoadFile	Common security library. Load this library if sagd needs to be turned on (depends on sslcommon).
SyncLoadFile	Common security library. Load this library if sagd needs to be turned on (depends on sslcommon).
LoadModule sagd_module	Location of security library.
Sagd_RSACertFileName	Location of the RSA certificate issued to you.
Sagd_RSAKeyPassword	Password that protects your RSA private key. **Default:** password
Sagd_RandomPoolFilename	Location of random pool file used by the security software for incoming (client) secure connections. This file is created by the server if necessary. Choose a directory where the server has read and write permissions.
Miscellaneous server configuration settings	
AuthKey	Used as the shared secret between the SOAP server and client to blowfish encrypt the session ID and user's password during authentication. Only the first 40 characters are used, so make sure they are unique.

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Setting	Description
WSDLPort	The port on which we vend the WSDL file. Used mainly by C# clients. **Default:** 8094 Access via http://local-host:*wsdl_port*
EntProviderDatabaseClassId	The datastore with which the provider talks to the database. M-Business Anywhere supports mysqldatastore or asadatastore.
EntProviderClassId	The datastore with which the provider talks to the database. M-Business Anywhere supports mysqldatastore or asadatastore.
ProviderClassId	The datastore with which the provider talks to the database. M-Business Anywhere supports mysqldatastore or asadatastore.
StoreUser	The user name under which the SOAP server runs.
StorePassword	The password for the user name under which the SOAP server runs.
StoreDB	The name of the M-Business Anywhere database. **Default:** AGDB
StoreHost	The host name for the database. (Not used with asadatastore.) **Default:** localhost
StorePort	The port number for the database. (Not used with asadatastore.) **Default:** 8099
ServerVersion	The server version, written by the installer. Do not change.
SyncServerPort	The Sync Server port number. Needed to send to the Admin UI via the SOAP API.
Debugging log files	
DebugSentLog	Location of debug sent log.
DebugRecvLog	Location of debug received log.
DebugTestLog	Location of debug test log.

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Settings in the server.xml file

Most of the settings in the *server.xml* file should not be modified and are not documented here. If you want information on *server.xml* settings not covered here, see the Tomcat 4 Servlet/JSP Container documentation, referenced in "The M-Business Anywhere documentation set" on page xi.

The following abstraction from the XML for the *server.xml* file locates, in bold, the two `<Context>` elements that contain the parameters you may need to change.

```
<Server ...>
    <Listener ...>

        ...

    <Listener ...>

    <GlobalNamingResources ...>
        <Service name="Tomcat-Standalone">
        <Connector ...>

            ...

        <Connector ...>
        <Engine name="Standalone" ...>
            <Logger .../>
            <Host name="localhost" ...>
                <Valve .../>

                    ...

                <Valve .../>
                <Logger .../>
                <Context path=/admin ...>

                    ...

                </Context>
                <Context path=/device ...>

                    ...

                </Context>
            </Host>
        </Engine>
    </Service>
</Server>
```

Note

The two `<Context>` elements have exactly the same parameters. The parameters in `<Context path=/admin ...>` control the `/admin` context; those in `<Context path=/device ...>` control the `/device` context. All parameters are specified in the form, `<Parameter name=` *param_name* `value=` *param_value* `/>`.

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Caution
Do not edit the *server.xml* file directly. Instead, edit your changes into the *server.xml.default* file, then run the *defaults_setup.bat* script (Windows) or *defaults_setup* script (Unix). See "Editing configuration files" on page 17.

Caution
The `@@...@@` variables *server.xml.default* file must not be modified. Values for these variables are set globally in the *defaults* file; change the value of `@@...@@` variables in the *defaults* file and run the *defaults_setup.bat* script (Windows) or *defaults_setup* script (Unix) to update the values in *server.xml*.

Table 3. server.xml file settings

Parameter name	Description
`JSoapConfig`	Location of *jsoapconfig.xml* file.
`SoapServer`	URL for SOAP server.
`AuthKey`	Used as the shared secret between the SOAP server and client to blowfish encrypt the session ID and user's password during authentication. Only the first 40 characters are used, so make sure they are unique and random. **Note** You must set the same `AuthKey` in both the `/admin` and `/device` contexts.
`UpgradeBaseUrl`	The base URL used in upgrades.
`AllowSecureClientConnect`	Allow clients to connect to server securely (using https://). This parameter affects incoming clients only. You must have *sagd.so* or *sagd.dll* installed for this setting to have any effect. **Note** You must uncomment this setting if SSL is enabled in *sync.conf*, and the setting for this parameter must match that in *sync.conf*.

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Parameter name	Description
ConnectSecureOnly	Set this directive to true to force all inbound client-to-server connections to be secure. **Note** You must uncomment this setting if SSL is enabled in *sync.conf*, and the setting for this parameter must match that in *sync.conf*.
SyncHost	The name of the machine running M-Business Sync Server.
SyncPort	The port at which to access M-Business Sync Server.
UIHost	The full name of the machine running the UI server. On Unix, the UI server is the `admin` process.
MALUserURL	URL of the home page for the server. If a user launches the M-Business Connect desktop application and clicks the Contents button, M-Business Connect accesses the server using the URL given here. Specify a URL relative to `UIHost`.
UserFriendlyServerName	The server name that appears in M-Business Connect on the desktop and on the device. This setting also appears in the *defaults* file.
DebugToTomcatOutput	Set to `TRUE` to show debugging output from the admin web application.

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Appendix B

M-Business Connect .mal file specification

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Overview

When your users install M-Business Client software, they need to configure M-Business Connect so that it can access your server. For more information on M-Business Connect, see "Installing M-Business Client with self-registration" [*M-Business Anywhere Client User Guide*].

Provide your users with the necessary configuration settings by creating and distributing a *.mal* file. A *.mal* file specifies a configuration for an M-Business Connect-compliant server. When you double-click a *.mal* file, M-Business Connect starts up in the background and adds the configuration that is specified in the file. If you provide your users with a *.mal* file, they simply double-click the file, then Mobile Link adds the configuration.

For example, when users click the **Configure Connection** link in their M-Business Server personal pages, the server creates a *.mal* file, downloads it to the user's desktop, and runs it. This way, your users rarely have to access M-Business Connect.

Note that a server configuration in M-Business Connect contains a username and password specific to each user. Thus, you cannot create one *.mal* file for all users. Instead, M-Business Server takes the username and password that the user logged into the server with, then uses those values to create the *.mal* file that M-Business Connect downloads to the user's desktop.

A *.mal* file contains an XML 1.0 format specification with a single element named `MALServer`. The following is an example `MALServer` element:

```
<?xml version="1.0"?>
    <MALServer hostname="sync.mycompany.com"
        port="80"
        username="janed"
        password="1234"
        passwordIsHashed="FALSE"
        passwordIsEncoded="FALSE"
        disabled="FALSE"
        friendlyName="M-Business Server"
        serverType="AvantGo"
        userUrl="http://www.avantgo.com/"
        serverUri="/sync"
        sendDeviceInfo="TRUE"
        hashPassword="TRUE"
        confirmation="Hooray! janed is now ready to connect!"
        confirmationcaption="Successfully added">
    </MALServer>
```

Note
URLs entered in any M-Business Anywhere component must contain only forward slashes (/). The backslash character (\) in place of a forward slash will cause an error.

The following section describes the `MALServer` element's attributes.

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.mal file element attributes

The table below describes the MALServer element's attributes.

Table 1. .mal file attributes

Attribute	Type	Description
hostname	String	The server's hostname or IP address.
port	Integer	Port at which to access the server.
username	String	The user's username.
password	String	The user's password.
passwordIsHashed	Boolean	If TRUE, the password has had the MD5 hash algorithm applied to it.
passwordIsEncoded	Boolean	If TRUE, the password is Base-64 encoded. **Note:** A password that has been MD5 hashed *must* also be Base-64 encoded after the hash.
disabled	Boolean	If TRUE, this server is initially disabled. (Disabled servers are not accessed during a synchronization.)
friendlyName	String	The name used to identify this server in Mobile Link's user interface. This is the name your users see if they open Mobile Link.
serverType	String	An identifier of the class or type of this Mobile Link server. This should be AvantGo .
userUrl	String	The URL to open when the user clicks the Content button for this server in the Mobile Link desktop application.
description	String	Reserved for future use.
serverUri	String	A URI specifying the requested resource from the synchronization server. This always should be set to /sync, which is the default.
sendDeviceInfo	Boolean	If TRUE, Mobile Link should send information about the mobile device to the server during a synchronization. This always should be TRUE .

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Attribute	Type	Description
hashPassword	Boolean	If TRUE, the server expects to receive an MD5-encoded password from the client during a synchronization. If hashPassword is TRUE, and the passwordIsHashed attribute is FALSE, Mobile Link encodes the password when it parses the file.
confirmation	String	The message that Mobile Link should display to the user after it has added the server configuration specified in this file to the device profile.
confirmationcaption	String	A title that Mobile Link should display directly above the confirmation message.
allowSecureConnection	String	Indicates that the given server accepts secure connections if the client is able to connect securely.
connectSecurely	String	Indicates that the client should be configured to connect securely if it is able.

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Appendix C

Using log files

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Overview

This appendix summarizes information about using M-Business Server log files and provides a sample log file for your reference.

The *sync_access.log* file stores M-Business Server administration activity. It logs activity such as users synchronizing their devices, users accessing administration pages, the admin user accessing administration pages, and so on.

For a list of the main log files used by M-Business Server, see "Checking log files" on page 92. Additional log files are automatically maintained in the *<M-Business_Home>/logs* directory.

You may change the level of detail that is written to different log files, write information to log additional log files, or change the name or location of some of the log files. You can do all this by modifying settings in M-Business Server configuration files. For more information, see "Configuration file settings affecting log files" on page 244.

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Log file attributes

The M-Business Server log files all come from an Apache server, or a Tomcat server that is closely related. Each line in any of these log files typically has the following format:

```
host pid time\request\ status responseTime responseSize
```

You may use any text editor, such as Notepad or emacs, to view the log files. The table below describes the log attributes and their definitions.

The following sample messages might be logged in the *sync_access.log* file when a user synchronizes with M-Business Server.

```
10.0.128.3 81271 [21/Oct/2005:13:55:30 -0700] "POST /sync HTTP/1.0" 200 0 57

10.0.128.3 81280 [21/Oct/2005:13:55:31 -0700] "POST /sync HTTP/1.0" 200 0 734

10.0.128.3 81276 [21/Oct/2005:13:56:31 -0700] "POST /sync/mikeg HTTP/1.0" 200
57 327322

10.0.128.3 81275 [21/Oct/2005:13:57:25 -0700] "POST /sync/mikeg HTTP/1.0" 200
30 151289
```

Table 1. Log attribute legend

Log attribute	Definition
`host`	The name or IP address of the computer from which the request was received. If a user is synchronizing a device, this is the IP address of the desktop computer to which the device is attached, or it is the IP address of the device itself, if the device is performing a modem synchronization.
`id`	Process ID of the server handling the request. On Unix systems, multiple instances of each server run simultaneously, and this entry identifies which instance served the request. (On Windows, the same process serves every request.)
`time`	Date and time at which the request was received.
`request`	The first line of the request header.
`status`	The status of the request.
`responseTime`	Number of seconds it took to handle the request.
`responseSize`	The length in bytes of the response that was sent.

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Configuration file settings affecting log files

The table below summarizes the settings in the different configuration files that affect what information is collected in which log files. For more detailed information on each setting, see the entry for it in the configuration file cross-referenced below.

Table 2. Configuration file settings affecting log files

Setting	Description
Settings in *defaults* file	For details, see "Settings in the defaults file" on page 205.
`@@SyncErrorLog@@`	Log file where the Sync Server records error messages (ignored on Windows).
`@@SyncAccessLog@@`	Log file where the Sync Server records user accesses (ignored on Windows).
`@@GHBNErrorLog@@`	Log file where the `gethostbyname` server (GHBN) records error messages.
Settings in *sync.conf* file	For details, see "Settings in the sync.conf file" on page 209
`HostnameLookups`	Log names of clients or just their IP addresses?
`ErrorLog`	Location of error log file.
`LogLevel`	Specifies level of errors to record.
`LogFormat`	Specifies nicknames to be used with `CustomLog` directive.
`CustomLog`	Specifies location and format of access log file.
`DaysOfLogDataToKeep`	Number of days to keep data in log tables in database before clearing it out.
`NTEventLog`	Log messages into the NT Event log?
`LoggingLevel`	Specifies level of errors to record in NT Event log.
`FetchLog`	Full path to fetch log file.
`ReverseAccessLog`	Full path to reverse log file.
Settings in *agsoap.conf* file	For details, see "Settings in the agsoap.conf file" on page 226
`HostnameLookups`	Log names of clients or just IP addresses?

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Setting	Description
`Listen SOAP_port`	Port number on which the SOAP server listens for HTTP messages from clients. Full parameter definition allows for setting a log level specific for this port.
`Listen WSDL_port`	Port number on which WSDL is vended. Full parameter definition allows for setting a log level specific for this port.
`LogLevel`	Controls level of detail of messages logged to the error log.
`ErrorLog`	Location of error log file.
`LogFormat`	Defines format nicknames for use with the `CustomLog` directive.
`CustomLog`	Location of custom log file.
`DebugSentLog`	Location of debug sent log.
`DebugRecvLog`	Location of debug received log.
`DebugTestLog`	Location of debug test log.

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Enabling debug level logging

By default, M-Business Server uses **warn** as the default logging level. In some cases, it may be useful to set the logging level to **debug** to get the most information about a problem.

♦ To enable debug level logging

1. In the ***sync.conf.default*** file, locate **LogLevel**.
2. Change the level to debug:

   ```
   LogLevel debug
   ```

3. At the bottom (end) of the ***sync.conf.default*** file, add a new line as shown below.

   ```
   SyncPref EnableLog <debug commands>
   ```

   Where *<debug commands>* is a comma-separated list of values that specifies which components should be logged. Example:

   ```
   SyncPref EnableLog mammutparser, mammutdebug
   ```

   The possible choices for debug commands for specific issues are shown below.

> **Caution**
> The list of debug commands following `SyncPref EnableLog` may not contain any hard line breaks.

> **Note**
> This logging generates a tremendous amount of data!

To debug everything:

```
agsync, interactive, webtogo, maldebug, webtogo_trace, rover0, rover1,
rover2, rover3, cache, mammutparser, mammutdebug, provider, ASA,
ConduitTrace, ExtensionTrace
```

To debug form submissions, page fetches, etc.:

```
agsync, interactive, webtogo, maldebug, webtogo_trace, rover0, rover1,
rover2, rover3, cache
```

To debug caching issues

```
cache, memcache
```

To debug on-device-database/xml conduit issues:

```
mammutparser, mammutdebug
```

To debug the UI server:

```
provider,ASA
```


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To debug NT domain integration issues:

```
domain, ExternalAuthenticator
```

To debug issues with cookies:

```
webtogo, webtogo_trace, rover0, rover1, rover2, rover3
```

4. After setting the `SyncPref EnableLog` values, run the ***defaults_setup*** script located in the <***M-Business_Home>/conf*** directory.

   - Windows — ***defaults_setup.bat***
   - Unix — ***defaults_setup***

5. Restart the **M-Business Sync Server** service.

   See "Starting, stopping, and restarting M-Business Server" on page 42.

   Now the logging information will be written to the *sync_error.log* file located in the <*M-Business_Home>/logs* directory.

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Setting up fetch and reverse access log files

If you need additional information to debug or troubleshoot a problem, you can set up two more log files:

- **Fetch log** — logs a line for every rover fetch, in the format "*fetched_url*" "*channel_root_url*" "*referring_url*"
- **Reverse access log** — logs a line for every rover fetch, in the format "*host_address*" *userid*[*date_in_apache_format*] "*GET_url_HTTP/1.0*" "*statuscode/cacheresult_requesttime_size*"

> **Note**
> The reverse access log output is compatible with Apache log standards, and so can be parsed by many log analyzer programs.

♦ To set up fetch and reverse access log files for M-Business Server

1. Using a text editor, open the file *<M-Business_Home>/conf/sync.conf.default*.
2. Scroll to the bottom of the file.
3. To enable a fetch log, enter the following on a new line:

   ```
   FetchLog @@ServerRoot@@/logs/fetch.log
   ```

4. To enable a reverse access log, enter the following on a new line:

   ```
   ReverseAccessLog @@ServerRoot@@/logs/reverse.log
   ```

5. Save the changes.
6. Run the ***defaults_setup*** script located in the *<M-Business_Home>/conf* directory.

   Windows: Run ***defaults_setup.bat***

   Unix: Run ***defaults_setup***

7. Stop and restart M-Business Server services.

   See “Starting, stopping, and restarting M-Business Server” on page 42.

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Appendix D

Troubleshooting

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Overview

If you encounter problems when installing or configuring M-Business Server, you can refer to the table of troubleshooting tips in “Troubleshooting tips” on page 251.

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Troubleshooting tips

The table below lists troubleshooting tips for installing and configuring M-Business Server.

Table 1. Troubleshooting tips

Problem	Solution/Explanation
Subsequent installs fail after successful install/ uninstall on Windows.	InstallShield must have corrupted one of the installs. To fix the problem, delete the<***M-Business_Home***> directory from the registry and delete the two InstallShield directories. The steps below assume that you do not have the **Show hidden files and folders** option enabled. If this option is enabled already, begin with step number 5 below: 1. In Windows Explorer, choose **Tools** »**Folder Options** . 2. Select the **View** tab. 3. Select the **Show hidden files and folders** radio button. 4. Click **OK**. 5. Click **Start»Run**. 6. Enter **regedit**. 7. Choose **HKEY_LOCAL_MACHINE»SOFTWARE»AvantGo** . 8. Right-click the <*M-Business_Home*> directory, then select **Delete**. 9. In **C:/Program Files/Common Files** delete the **InstallShield** directory. 10. In **C:/Program Files**, delete the **InstallShield Installation Information** directory. **Caution** Deleting the InstallShield directories could prevent you from being able to uninstall other programs that were installed with InstallShield.
Error message, "Setup failed to launch installation engine" when attempting to uninstall M-Business Server.	Run the installer again (this will overinstall M-Business Server) then you will be able to uninstall. To avoid this problem, reboot your machine between uninstalling and installing M-Business Server.

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Problem	Solution/Explanation
Write Timeout message is received on device OR syncing large data set fails repeatedly	Sometimes this problem does not generate a Write Timeout message — the only symptom is that syncing repeatedly fails on a large data set. To be sure that timing out is the problem, check the M-Business Server sync error log (*<M-Business_Home>/ logs/sync_error.log*) for the following pattern of errors associated with the series of failed synchronizations — the important part is bolded: `[Mon Sep 22 19:01:23 2003]` **`[warn] (1496) Sync ending with error message: code==1, message==Account locked. Please try again later. user=fun`** `[Mon Sep 22 19:03:43 2003]` **`[error] (2312) Error fetching schemaset(saletask): httpStatus==404, error==23/File Not Found.`** `[Mon Sep 22 19:03:45 2003]` **`[warn] (2312) TIMED: fetching: never finished`** If you see this sequence, the problem is most likely that the synchronization is timing out before the download of the large data set can be completed. Increase the `DeviceReadTimeout SyncPref`, and maybe the `DeviceWrite-Timeout SyncPref` as well. For more information on these settings, see "User addable settings" on page 225.
Error 1069: "The service did not start due to a logon failure"	You may have entered an incorrect domain account password during installation. In the Services dialog, double-click on M-Business Sync Server service and modify the domain account information as necessary. Also, make certain the account has administrator privileges. See "Getting started task checklist" on page 8.
The shortcut to the M-Business Server Manager in the Start Menu does not work.	In order for this shortcut to function, you must have the Microsoft Management Console (MMC) installed when you install M-Business Server.
Unable to view the M-Business Server administration pages.	M-Business Server runs on port 80. If you want to install on a machine with another web server you will have to change the port number to something other than port 80. For more information, please refer to Changing the Port Number in the section for your operating system.
A Domain Name Server (DNS) is not available on my network.	You will need to set the `ServerName` directive in the *sync.conf.default* and the *gethostbyname.conf.default* (Unix only) files. See "Customizing M-Business Server " on page 17.

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Problem	Solution/Explanation
Admin Server service does not start with NT Domain integration.	Try manually starting the Admin Server service in the Services control panel. If this fails and you get an Error 1069: The service did not start due to a logon failure, you probably entered an incorrect domain account password during the installation. If you double-click on M-Business Admin Server service in the Services control panel, you can re-enter any part of the domain, account name, and password information.
Error occurs when syncing large binary applications.	If you try to synchronize a binary application, such as a *.prc*, that is higher than the default 256K maximum, you will receive a file size limit error. To enable downloads of binaries that exceed the default channel properties maximum, change the `WebToGoMaxTextSize` directive in the *sync.conf.default* file to a size larger than the binary application to be downloaded.
M-Business Server drops connection when syncing large channels using WinInet and proxy server.	This could occur if the proxy server's timeout value is reached before the entire channel's contents are fetched. To avoid this issue, increase the proxy server's timeout value.
Users see Version Mismatch dialog when attempting to synchronize to M-Business Server.	A 6.0 or later M-Business Client will not work with M-Business Server versions earlier than 5.3. The laptop version of the 6.0 or later M-Business Client will not work with M-Business Server versions earlier than 5.5.
Users cannot synchronize to sites that require login cookies.	If your M-Business Server accesses the web through a proxy server, your users may experience difficulties with sites requiring login cookies. To prevent this, we suggest turning off the proxy server's caching ability.

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