



## **Express Maintenance - Installing and Managing Services**

12/10/2021

### **What are backend Server Services?**

It is a software program specially designed to work closely with the server operating system. It is like a custom extension to the server software. This allows the software to work as part of the server itself. There are some downsides to using services. They require more IT Administration, especially during install and update.

One of the reasons we use back-end services is to take some of the burden off the client-side of the program. We can normalize business logic and access that logic from different front ends too. As we continue the modernization of our core technologies, we will see opportunities to provide you data in different useful ways:

- Specialty thin web client for displaying updated summary information (Dashboards)
- Full feature web interfaces like our next service Express Request Online (ERO)
- Express Analytics with full ETL processing for multisite reporting and analytics
- And future API to make it easier to get to your data for custom integrations, reporting, and analysis

### **Overview**

Services are custom extensions that work directly with the operating system. EM currently has 3 services available for customers:

- Middle Tier Service - This primarily handles database access for EM Maintenance and other client products in our portfolio and database access for other services.
- Mobile Service - This provides the server-side of our mobile solutions (iOS and Android).
- Dashboards - This service facilitates the generation and displaying of dashboards
- ERO - Web-based client for entering new service requests

### **Other Related Products**

- uniGUI Web Server- This is an all-inclusive web server that we use in relation to our web-based products. This is required to be installed before you can use Dashboards and ERO.



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- EM Services Management Dashboard is a utility for installing, configuring, and maintaining EM server services. This utility is not for end-users but for IT support personnel.

## Server Security

There are only 3 different ways to configure the system:

- All on the same computer (DB, Services, and EM)
- Two of the programs are on one computer and then the other on another computer (DB and Services on one computer and EM on another)
- All three programs running on separate computers

It is important that if the programs are running on a different computer, you need to make sure they can gain access to those programs. When it comes to services, you will need to update your firewall rules to allow the service to communicate in and out on the port you configured it to use. If EM is on another computer(s), then you need to make sure the configuration in EM includes the IP address of the server that is running the service(s).

In addition to firewall security, depending on the version of Windows Server you are running, you will need to manually create the individual services directories so you can set additional security for those folders. You can find detailed directions on how to do this in the *Installing EM Services* section below.

## Some Important Items to Keep In Mind While Installing Services

- All files necessary to install any of our services can be found in the *EmServicesInstall.exe* installer. The *EmServicesInstall.exe* file can be found at the bottom of the Express Maintenance Download webpage at [EM Update Page | Express Maintenance CMMS](#)
- EmServicesInstall.exe just copies files to the hard drive. It doesn't actually install/register the services into the Windows operating system. When we use "install" in this document, please mind the context it is used in.
- For the installer to be able to put the new files in the proper place, all EM services must be stopped. You do **NOT** need to uninstall them.
- If you are going to use one of our web-based services (Dashboards or ERO) you need to install the uniGUI runtime (*FMSoft\_uniGUI\_Complete\_runtime.exe*) **BEFORE YOU INSTALL THE SERVICES**. This is placed in the root install directory. When you run it, just accept all the defaults. **IF YOU ARE DOING AN UPDATE**, you need to uninstall the uniGUI runtime and reinstall the latest version. The uniGUI web server is tied to the version used in the service and must match.



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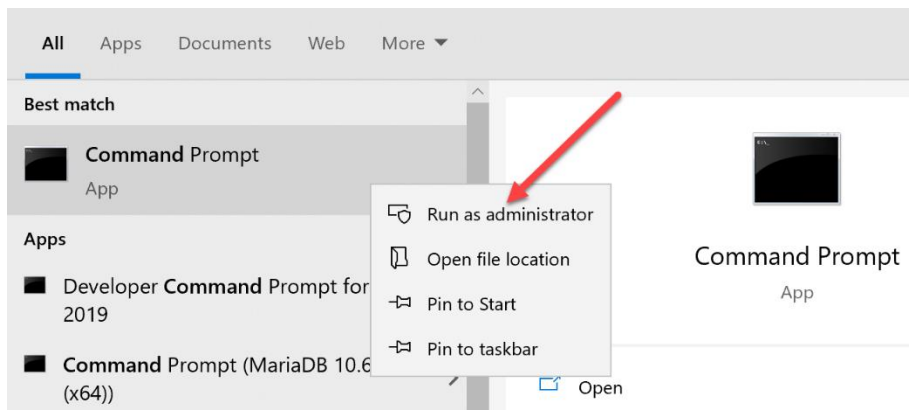
- There are many server ports that are dedicated to specific common technologies or specific 3rd party server products. You can find a list [here](#). 5750-5799, 5850-5899, and 5950-5999 are all good ranges to use for setting the port for EM Services.

## Registering and Managing Services

First, we want to cover two basic capabilities you will need to run and manage the services. There are other steps you will need to take to actually configure, register, and use the services. Those are documented below in the *Installing EM Services* section below.

### How to Register and Unregister Windows Services

To install the service, you will need administration rights on the server. Open a command-line prompt as administrator. On the menu system, type in “Command Prompt”. Once the menu item shows, right-click on the menu item and select “Run As Administrator”. In the “Command Prompt” windows, change to the install directory of the application. The default directory is “C:\ExpressTech”. Type “cd \ExpressTech\[service dir]”.



To install the middle tier, you want to change the directory to **EMMiddleTier** (cd \ExpressTech\EMMiddleTier).

To install or register the service, type the following: `EMMTService.exe /install`

To uninstall or unregister the service, type the following: `EMMTService.exe /uninstall`

You do not need to close the command window to manage other services. Just change the directory and find the exe name to also install or uninstall those services:

- EMMiddleTier - EMMTService.exe - *EM Middle Tier*
- Root Directory - EMMobileServerService.exe - *EM Mobile Service*



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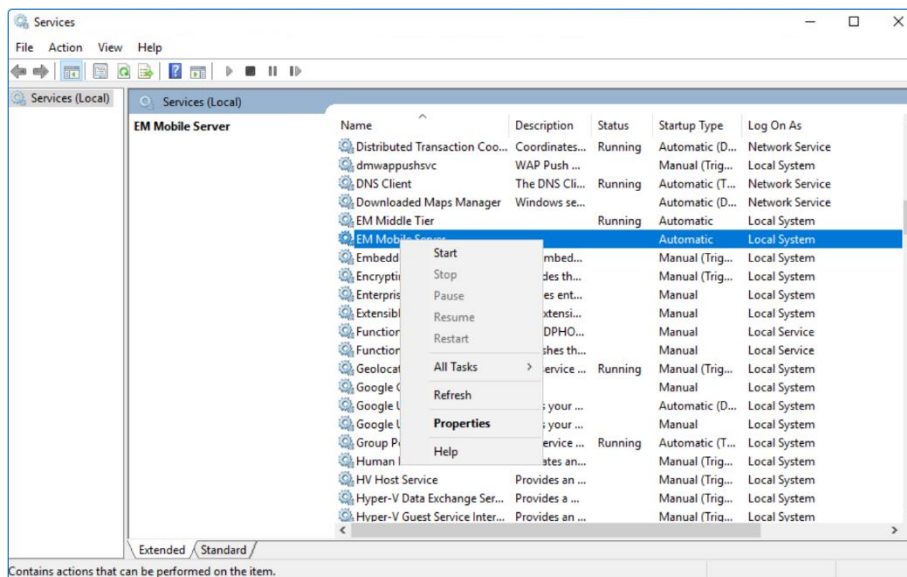
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- EMDashboard - EMDashboard.exe - *EM Dashboard*
- EMExpressRequestOnline - EMExpressRequestOnline.exe - *EM ERO*

## How To Stop, Start, and Restart a Service in Windows

Controlling the services is done in the Windows Services dashboard. To open the dashboard, type “View Local Service” in the menu. You can also use a Windows shortcut to open the dashboard: Hold down the Windows button and type “r”. This will open the run program. Type in “services.msc” and hit enter.

Once the services window is open, find the service: EM xxxxxxxx. Right-click on the service and select Start. A special note, you can only uninstall/unregister the service when it is stopped.



## Installing EM Services

MAS provides one installer for both new installs and updates. If you are doing an update, you must turn off the services before you run the installer. The install program (EmServicesInstall.exe) will install the new service over top of the existing service. If the service is running, the installer will be unable to update the [servicename].exe file.

## Setting up Server Folder Permissions for each Service

Depending on the version of Windows Server, you will have to set up additional security rights for the services to run and update control and write log files. If so, you may need to create the install directories manually on your initial installation and assign special security rights first



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before files are written to the directory. This is required as some of the files and directories resist having their security updated/changed after install. It is better to set the security level of the directories first and let the installed files inherit the security settings from the directory. This is only required on the initial install of the services.

Choose the root install directory. For this example, we will use “C:\ExpressTech” folder. Make the sub-directories *EMMiddleTier*, *EMDashboard*, and *EMExpressRequestOnline*. Your directory structure should look like this:

This PC > Windows (C:) > ExpressTech

Name	Date modified	Type
EMDashboard	9/11/2021 2:52 PM	File folder
EMExpressRequestOnline	9/11/2021 2:52 PM	File folder
EMMiddleTier	9/11/2021 2:52 PM	File folder

Once the services directories are created, set the appropriate security rights for each directory. We are going to set LOCAL SERVICE rights for each directory and give the “user” *Modify* level rights.

1. Right-click on the folder
2. Select Properties and then select the Security Tab.
3. Select Edit and a screen will pop up, select Add
4. A search screen will open, Type in “Local” and select Check Names
5. A selection screen will open and choose LOCAL SERVICE.
6. This will bring you back to the Permission for EMMiddleTier.
7. Select Modify in the lower half of the screen.
8. Select OK on the screen and then OK on the Properties screen.
9. Repeat for each service directory







## Running the EmServicesInstall Installer

1. If upgrading, go into the Windows Services dashboard and stop any “EM” services that are already running.
2. Run the installer and if updating, use the same root directory as before or the root directory you set up the services directory and applied the security settings.
3. If updating, open Setting and go to the Application subsystem and uninstall FMSoft uniGUI Runtime



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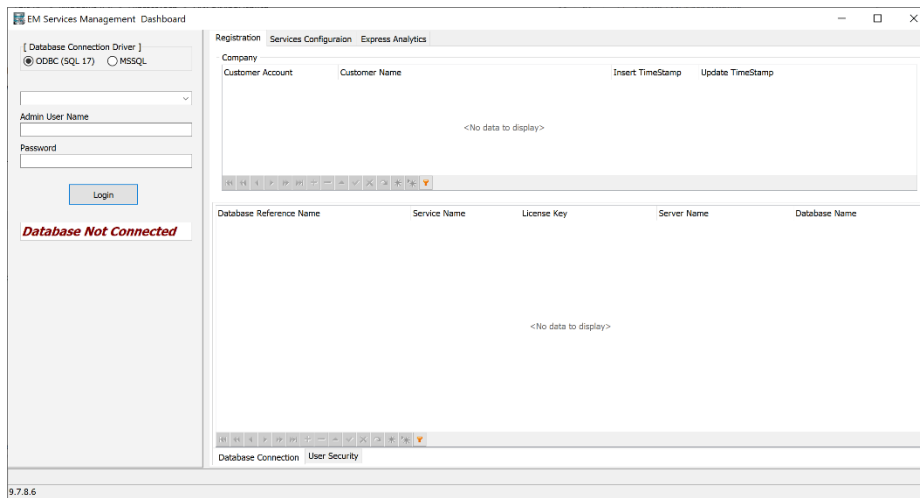
	Express Maintenance 9.7.7.55 Manufacturing Asset Solutions	1.01 GB 7/25/2021
	FMSoft uniGUI Runtime v1.90.0.1551 FMSoft Co. Ltd.	125 MB 9/11/2021
		
	Google Chrome Google LLC	493 MB 8/31/2021
	Microsoft Help Viewer 2.3	6.52 MB

4. Find the install program *FMSoft\_uniGUI\_Complete\_runtime.exe* in the root install directory and run the installer. This will install the most current version of uniGUI web server.
5. If this is a new install or a new service is being installed, configure the service first. Services read the configuration on startup. Go to the **Configuring Services** section and then return here to finish the installation and registration of the services.
6. Install each service as per the instructions in the How to **Register and Unregister Windows Services** section. If you have already installed the service, you don't need to reinstall it. The "file" installer has already updated the file and as it is the same name and in the same directory as before, Windows will recognize it as the installed service.
7. Go back to the Windows Services dashboard and start the services. We recommend that you always restart the EM Middle Tier service first.



## Configuring Services

All services are configured with the Services Management Dashboard. This is installed into the sub-directory EMSrvMngDshBrd. This program is a utility for IT personnel to manage EM services. You should always run **EM Services Management Dashboard** using the “*Run As Administrator*” option.



When you open the *EM Services Management Dashboard* (SrvMngDshbrd), you will be on the registration page. This page is displayed as it is the most likely page you will use over time. Once you configure a service, you are unlikely to revisit its configuration page.

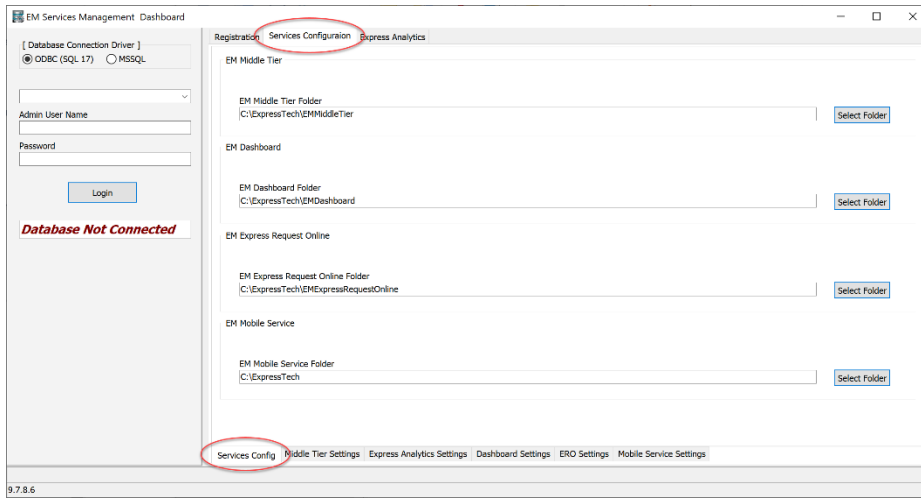
## General Setup

The first thing you need to do is let the SrvMngDshbrd know where the services are installed so it can properly set them up. Go to the Services Configuration page (tab at the top of the page) and the Service Config tab (tab at the bottom of the page). Select the correct folder for each service.



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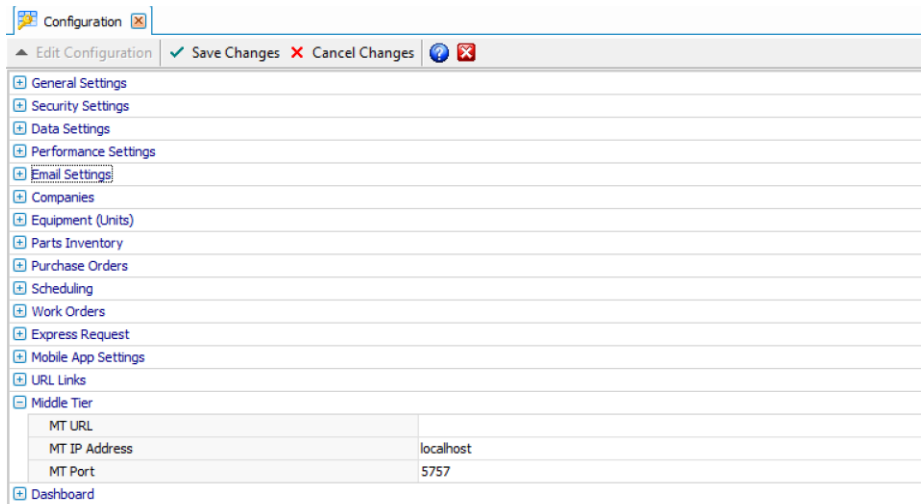
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## Middle Tier Service Setup

The Middle Tier is primarily responsible for data access. This is true for Express Analytics and other services.

Go to the Services Configuration page (tab at the top of the page) and the Middle Tier Settings tab (tab at the bottom of the page). Use Multicore should be checked. Set or use the default port. Make note of the port setting as you will also need to set this port in Express Maintenance.







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## Dashboard Service Setup

The Dashboard Service supports showing configurable web-based Dashboards. This includes generating the HTML, accessing the data through the Middle Tier service, and the uniGUI web server.

Go to the Services Configuration page (tab at the top of the page) and the Dashboard Settings tab (tab at the bottom of the page). Set the DB driver you want to use. The default is ODBC. Set or use the default port. Make note of the port setting as you will also need to set this port in Express Maintenance.

The screenshot shows the 'Configuration' page in the MAS system. The 'Dashboard' section is expanded, showing the following settings:

Dashboard URL	
Dashboard IP Address	192.168.0.53
Dashboard Port	5763



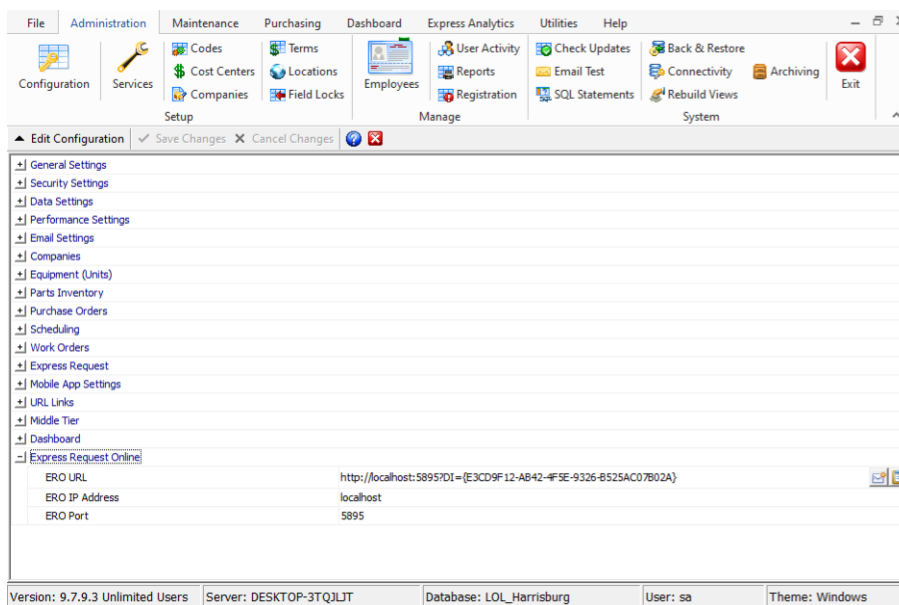
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## Express Request Online Service Setup

The ERO Service supports adding maintenance requests through a web-based interface.

Go to the Services Configuration page (tab at the top of the page) and the ERO Settings tab (tab at the bottom of the page). Set the DB driver you want to use. The default is ODBC. Set or use the default port. Make note of the port setting as you will also need to set this port in Express Maintenance.



## Mobile Service Settings

The mobile service is based on different technology and the configuration of the service is a bit different from some of our newer services. We will be updating it in the future so the configuration is more like our newer services.

Go to the Services Configuration page (tab at the top of the page) and the Mobile Service Settings tab (tab at the bottom of the page). Add new connection as needed with an appropriate access key.

## Express Analytics Service Setup

The Express Analytics Service supports the consolidation of multiple databases into one summary data as well as reorganizing data into warehouse-style data for analytics reporting.



Express Analytics is currently not Multi-Tenant (multiple companies can share the same server resources). Data warehouses are not normally set up as multitenant. With this in mind, it is better to setup the Express Database objects first.

## How To Install Express Analytics Database Portion

Go to the Express Analytics page (tab at the top of the page) and the Create Update DB Objects tab (tab at the bottom of the page). You will set the database driver and Express Analytics user's login after setting up the database objects.

The screenshot shows the 'Express Analytics' configuration page in the EM Services Management Dashboard. On the left, there's a sidebar with a 'Database Connection Driver' section where 'ODBC (SQL 17)' is selected, and a 'Login' button. Below it, a red error message reads 'Database Not Connected'. The main content area has tabs for 'Registration', 'Services Configuration', and 'Express Analytics'. Under 'Express Analytics', there are fields for 'DB Acronym', 'Initial Process Date' (set to 9/13/2020), 'EA DB User Name', and 'EA DB Password'. An 'Update Scripts' button is next to the date field. Below these are three status sections: '#1 Warehouse Database Status' (No Status), '#2 Warehouse DB Object Status' (with a note to run scripts), and '#3 Customer DB List'. At the bottom, there are buttons for 'Create Databases', '(Re)Create DB Objects', '(Re)Create Client DB Objects', and 'Process Initial Data Push'. The bottom of the window shows 'Create Update DB Objects' and 'Manage Configuration' tabs, and the version '9.7.8.6' in the bottom left corner.

You will have to log in to the database using an Admin level login that can create DB objects, create logins, create users, and set security rights. For MS SQL Server, the “sa” user has all the rights necessary to complete the setup.

DB Acronym is used mostly by hosted systems to differentiate between different companies. Most customers should leave it blank.

Initial Process Date allows the user to set how far back they would like the warehouse to hold data. Having several years of data will be beneficial in the future as we grow the analytics capabilities of the reports.

Set the EM DB user name (default is “EMMiddleTier”) and password. Make note of these as you will need the user name and password on the configuration page.

Update the scripts based on the DB Acronym and Initial Process Date settings by clicking the Update Scripts button.



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**Step #1** is to create the EMStaging database and ExpressAnalytics database.

**Step #2** is to create the database objects needed to populate and process data into the warehouse.

**Step #3** is to create the database objects for each individual client database object and the Express Analytics service user accounts. Select the databases you want to include in the warehouse process. Once processed, you need to also process the initial data push.

**Step #4** is to update the configuration information. Express Analytics requires you to use the native MS SQL Server driver for its ability to handle large parameters. You will also need to update the Server Name, Database, User Name, and Password from the information above.

## Final Step

If the services are already installed and running, you will need to restart the EMMTService service. There is no need to uninstall them but just cycle the services (stop/start or restart). The services read the configuration information on startup (like the database driver configuration and the login user for the service).