

Deltek PM Compass 8.5

Deploying PM Compass in a
Hosted Environment

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Overview

To deploy Deltek PM Compass Web Application (clickonce components) in a hosted environment or in a shared environment with multiple databases used by different business units or entities, complete all of the steps listed in this guide.

Note: In this document, **entity** or **entities** is the value that identifies each unique PM Compass database and URL set up. For example, if your organization has multiple departments that each have their own databases, and you don't want department A to see the databases in department B, you define a unique value (entity) for each department and you use that entity to configure PM Compass.

Prerequisites

Install PM Compass on all applicable tiers as documented in the *Deltek PM Compass Installation Guide*.

PM Compass Web/Application Server

The following steps are performed on the Web Server using the Computer Management application accessible from Administrative Tools:

1. Create a unique local Windows account for each client. This is used as the application pool identity. This account must be a member of the Local Administrators group on the PM Compass Web server.
2. Disable or delete the DelttekPM Compass local Windows account on the Web Server (this is created by the PM Compass installation).

The following steps are performed on the Web Server using the Internet Information Services application accessible from Administrative Tools:

1. Create a unique application pool for each client.
2. On the Add New Application Pool dialog box, complete the following actions:
 - a. Enter a unique **Name** for the application pool.
 - b. From the **.NET Framework version** drop-down list, select **.NET Framework v4.0.30319**.
 - c. From the **Managed pipeline mode** drop-down list, select **Integrated** (default).
3. Right-click the application pool and select **Advanced Settings**. On the Advanced Settings dialog box for the Application Pool properties, complete the following actions:
 - a. Set the **Enable 32-Bit Applications** value to **False** (default is false).
Assign the Local User account created for that client as the Application Pool Identity of that client's application pool.
 - b. In the **Identity** box, click the ellipses to change the Application Pool Identity.
 - c. On the Application Pool Identity dialog box, select the **Custom account** option and click **Set**.
 - d. On the Set Credentials dialog box, enter the credentials of the Windows account and click **OK** three times.
4. Create **two** unique PMCompass virtual directories for each client and add the client's virtual directories to the client's application pool that you created earlier:
 - **Application Virtual Directory:** The first virtual directory is for the application and points to <drive>\Program Files\Delttek\PMCompass\Web.
 - **ClickOnce Deployment Virtual Directory:** The second virtual directory is for the ClickOnce deployment and points to <drive>\Program Files\Delttek\PMCompass\WebClient.

You can name the application virtual directory whatever you want, but the deployment virtual directory must match the name of the application virtual directory with **Client** appended to it (for example, PMCompassEntity and PMCompassEntityclient).
5. Create **two** unique EPMSA virtual directories for each client and add the client's virtual directories to the client's application pool that you created earlier:
 - **Application Virtual Directory:** The first virtual directory is for the application and points to <drive>\Program Files\Delttek\EPMSA\Web.
 - **ClickOnce Deployment Virtual Directory:** The second virtual directory is for the ClickOnce deployment and points to <drive>\Program Files\Delttek\EPMSA\WebClient.

You can name the application virtual directory whatever you want, but the deployment virtual directory must match the name of the application virtual directory with **Client** appended to it (for example, **EPMSAEntity** and **EPMSAEntityclient**).

When you are finished, you should have one unique application pool for each client and four unique virtual directories that are part of that client's application pool.

Setting Default Document and IIS Redirects

IIS writes certain settings (default document, redirect, and so on) to the application Web.config file, which is associated with the **physical path** by default. Because PM Compass can support multiple virtual directories, each pointing to the same physical path (for example, C:\program files\deltek\pmcompass\web), it is not possible to have these settings written to the application web.config file.

This behavior causes the redirect for each virtual directory to point to the **same** deployment virtual directory for all clients, which is not the behavior that you want. The redirect must point to the specific deployment virtual directory for that client.

The following article explains this behavior: <http://learn.iis.net/page.aspx/127/deep-dive-into-iis-7-configuration/>

The next steps involve:

- Setting the default document for the Application virtual directory.
- Setting IIS redirects from the Application virtual directory to the Deployment virtual directory.
- Configuring the Application Pool.

Use the **appcmd.exe** commands below to set the default documents and redirects.

Configure the IIS PMCompass Virtual Directories using AppCmd

PMCompass Virtual Directory AppCmd

PMCOMPASS Virtual Directory (Application) Settings. Replace the text PMCompass**Entity** with the name of your Business Unit or Client; making sure to keep the **PMCompass** prefix to differentiate between the PMCompass virtual directory and the EPMSA virtual directory. Copy the commands in a text file (using notepad or other text editor) and make the edits before running them in an Administrator CMD prompt.before running them in an Administrator CMD prompt.

Set Default Documents	▪ "C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/PMCompassEntity" /section:system.webServer/defaultDocument /- "files.[value='index.htm']" -commitpath:apphost ▪ "C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/PMCompassEntity" /section:defaultDocument /enabled:true /+files.[@start,value='index.htm'] -commitpath:apphost
Set Redirects	▪ "C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/PMCompassEntity/index.htm" - section:system.webServer/httpRedirect -enabled:true - destination:"/PMCompassEntityClient/" -commitpath:apphost

Configure the IIS PMCompassClient Virtual Directories using AppCmd

PMCompassClient Virtual Directory AppCmd	
PMCompassClient Virtual Directory (Application) Settings. Replace the text PMCompassEntity in the commands below with the name of your Business Unit or Client; making sure to keep the PMCompass prefix and Client suffix to differentiate between the PMCompass virtual directory and the EPMSA virtual directory. Copy the commands in a text file (using notepad or other text editor) and make the edits before running them in an Administrator CMD prompt.	
Set Default Documents	"C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/PMCompassEntityClient" /section:system.webServer/defaultDocument /-files.[value='default.aspx'] -commitpath:apphost "C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/PMCompassEntityClient" /section:defaultDocument /enabled:true /+files.[@start,value='default.aspx'] -commitpath:apphost
Turn Off Windows and Basic Authentication The Client Virtual Directory MUST be anonymous	"C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/PMCompassEntityClient" /section:system.webServer/security/authentication/windowsAuthentication /enabled:false -commitpath:apphost "C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/PMCompassEntityClient" /section:system.webServer/security/authentication/basicAuthentication /enabled:false -commitpath:apphost
Enable Anonymous Authentication in IIS	"C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/PMCompassEntityClient" /section:system.webServer/security/authentication/anonymousAuthentication /enabled:true -commitpath:apphost

Configure the IIS EPMSA Virtual Directories using AppCmd

EPMSA Virtual Directory AppCmd	
EPMSA Virtual Directory (Application) Settings. Replace the text EPMSAEntity with the name of your Business Unit or Client; making sure to keep the EPMSA prefix to differentiate between the PMCompass virtual directory and the EPMSA virtual directory. Copy the commands in a text file (using notepad or other text editor) and make the edits before running them in an Administrator CMD prompt.	
Set Default Documents	"C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/EPMSAEntity" /section:system.webServer/defaultDocument /-files.[value='index.htm'] -commitpath:apphost "C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/EPMSAEntity" /section:defaultDocument /enabled:true /+files.[@start,value='index.htm'] -commitpath:apphost

EPMSA Virtual Directory AppCmd	
Set Redirects	"C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/EPMSAEntity/index.htm" -section:system.webServer/httpRedirect -enabled:true -destination:"/EPMSAEntityClient/" -commitpath:apphost "C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/EPMSAEntity/weblink.htm" -section:system.webServer/httpRedirect -enabled:true -destination:"/EPMSAEntityClient/weblink.htm" -commitpath:apphost

Configure the IIS EPMSAClient Virtual Directories using AppCmd

EPMSAClient Virtual Directory AppCmd	
EPMSAClient Virtual Directory (Application) Settings. Replace the text EPMSAEntity in the commands below with the name of your Business Unit or Client; making sure to keep the EPMSA prefix and Client suffix to differentiate between the PMCompass virtual directory and the EPMSA virtual directory. Copy the commands in a text file (using notepad or other text editor) and make the edits before running them in an Administrator CMD prompt.	
Set Default Documents	"C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/EPMSAEntityClient" /section:system.webServer/defaultDocument /- "files.[value='default.aspx']" -commitpath:apphost "C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/EPMSAEntityClient" /section:defaultDocument /enabled:true /+files.[@start,value='default.aspx'] -commitpath:apphost
Turn Off Windows and Basic Authentication The Client Virtual Directory MUST be anonymous	"C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/EPMSAEntityClient" /section:system.webserver/security/authentication/windowsAuthentication /enabled:false -commitpath:apphost "C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/EPMSAEntityClient" /section:system.webserver/security/authentication/basicAuthentication /enabled:false -commitpath:apphost
Enable Anonymous Authentication in IIS	"C:\Windows\system32\inetsrv\appcmd.exe" set config "Default Web Site/EPMSAEntityClient" /section:system.webserver/security/authentication/anonymousAuthentication /enabled:true -commitpath:apphost

Configure the IIS Application Pool Settings for each Business Unit/Client using AppCmd

Using AppCmd to configure the PMCompass Application Pool

Replace the text **PMCompassAppPoolEntity** with the name of your Business Unit or Client, making sure to keep the **PMCompassAppPool** prefix. Copy the commands in a text file (using notepad or other note editor) before running them in an Administrator CMD prompt.

Configure the Application Pool Timeout and Restart Settings.

- "C:\Windows\system32\inetsrv\appcmd.exe" set config - section:system.applicationHost/applicationPools /[name='PMCompassAppPoolEntity'].processModel.idleTimeout:"00:00:00" /commit:apphost
- "C:\Windows\system32\inetsrv\appcmd.exe" set config - section:system.applicationHost/applicationPools /[name='PMCompassAppPoolEntity'].recycling.periodicRestart.time:"00:00:00" /commit:apphost
- "C:\Windows\system32\inetsrv\appcmd.exe" set config - section:system.applicationHost/applicationPools /+ "[name='PMCompassAppPoolEntity'].recycling.periodicRestart.schedule.[value='00:15:00']" /commit:apphost

Disable Caching of Requests

- "C:\Windows\system32\inetsrv\appcmd.exe" set config /section:staticContent /clientCache.cacheControlMode:DisableCache

Create Separate Logins on the SQL Server Reporting Services (SSRS) Database Server

Reporting Services use URLs to access the Report Server Web service and Report Manager. It also uses a SQL Server database for internal storage. The database is a required component. It is used to store reports, session data, resources, and server metadata.

Follow the steps below that are applicable to your database platform.

SQL Server Database

Complete the following steps:

1. Connect to the SSRS Database Engine using SQL Server Management Studio.
2. Configure SQL Server for Mixed Mode security, or use Windows authentication as the database connection account for each client's IIS application pool identity.

If you use Mixed Mode security, you **must** secure the **sa** account with a unique password.

3. Create a unique SQL Server database for each client.
4. Create a unique SQL Server login ID and password for each client.

You can either use a SQL Login ID, or create a unique Windows account for each client's database connection and then create SQL Windows logins. Configure the default language setting for the Login ID to be English.

You must grant each login:

- dbo rights **only** to that client's PM Compass database.
- dbo rights to the ReportServer and ReportServerTempDB databases.

Oracle Database

Complete the following steps:

1. Connect to the SSRS Database Engine using SQL Server Management Studio.
2. Configure SQL Server for Mixed Mode security, or use Windows authentication as the database connection account for each client's IIS application pool identity.

If you use Mixed Mode security, you **must** secure the **sa** account with a unique password.

3. Create a unique SQL Server login ID and password for each client.

You can either use a SQL Login ID, or create a unique Windows account for each client's database connection and then create SQL Windows logins. Configure the default language setting for the Login ID to be English.

You must grant each login:

- dbo rights **only** to that client's PM Compass database.
- dbo rights to the ReportServer and ReportServerTempDB databases.

PM Compass Report Server – SQL Reporting Services

Deltek PM Compass uses Microsoft SQL Server Reporting Services as the report management and delivery platform.

Attention: For installation and configuration links for SQL Server Reporting Services, refer to the [Deltek PM Compass Installation Guide](#).

Perform the following steps on the Report Server using the Computer Management application accessible from Administrative Tools:

1. Log on to the SSRS Server and create a unique local Windows account for each client to use as the Report Server Web Service account.
 - This account only needs to be a User account. It does not need to be a local Administrator on the Report Server.
 - Disable or delete the DeltekPM Compass local Windows account on the Report Server (created by the PM Compass installation).
2. Launch SQL Server Management Studio and connect to Reporting Services.
3. Click **Security » System Roles**.
4. Right-click and select **New System Role**.
5. Enter **Deltek** as the new system role.
6. On the System Role Properties dialog box, select the **View Report Server Properties** and the **Manage Jobs** options and click **OK** to save the changes.
7. Connect to the Report Manager (Reporting Services Web application) before continuing. Launch your browser using the **Run as Administrator** context menu and enter the URL for the Report Manager application. The default URL will be `http://<reportserver>/reports`. You must use Report Manager to perform the steps below.
8. Connect to your server by completing the following actions:
 - a. On the Reporting Services home page, click **Site Settings**.
 - b. Under the Security section, click **New Role Assignment**.
 - c. Click **New Role Assignment**.
 - d. Add each client's user account to the new Deltek system role.
 - e. Select the **Deltek** role check box for each client's user account.
9. Grant **Publisher** role rights to each client's Windows account to the Reporting Service Home folder. This ensures that the data source can be created by Weblink. (See [Create Database Entries in Weblink](#)).
 - a. Click the **Home** link in the upper right corner.
 - b. Click the **Properties or (Folder Settings)** tab.
 - c. Under Security, click **New Role Assignment**.
 - d. Enter each client's local Windows account name, select the **Publisher** role, and click **OK**.

Before you can continue with the Report Server configuration, you must create the database and report server entries in Weblink for each client. This process ensures the database connection and also creates the default data source object for each client's root folder on the Report Server.

Secure Weblink

Even though Weblink is password protected, you do not want the Weblink application available to individual clients to access in a hosted environment.

Because the ClickOnce deployment folder must be configured for Anonymous access, to secure Weblink you must configure the Weblink.application file with NTFS permissions so that only local Administrators can access it.

Create Database Entries in Weblink

The PM Compass Weblink application allows you to configure how the PM Compass Web Server connects to the Database Server as well as to the Report Server.

When you have multiple database entries used by different/separate entities connecting to the PM Compass web server, you can configure Weblink so that the user only sees their database in the Log In screen Database dropdown list.

To create a new database entry for each client, complete the following steps on the PM Compass Web/Application server:

1. Access Weblink.
 - On the Start menu, click **Delttek PM Compass » Weblink** to launch Weblink from the Web/Application server
2. Add a new database entry.
3. On the General tab of the Weblink form, complete the fields. The database credentials and virtual directory must be unique for each client. The virtual directory is optional and is the client's application virtual directory name (for example, **PMCompassEntity1**, not **PMCompassEntity1client**).
4. Click **Test » Database Connection** to ensure that the information is correct and the proper rights have been granted.
5. On the Report Server tab, complete the fields, entering each client's unique:
 - Report Server Windows account information
 - Report Server database SQL Login ID
 - Report root folder, which will be the same as that client's virtual directory name (for example, **PMCompassEntity1**).
6. Click **Save**.

Import PM Compass Standard Reports into SQL Reporting Services

Complete the following steps for each client database.

To load PM Compass reports:

1. Log on to the entity database using the PM Compass application.
2. From the PM Compass Navigation menu, select **Administration » System Settings » Report Administration**.
3. On the Load Reports tab, confirm that the Report Server and the PMCompass root folder (for example, Root Folder: **PMCompassEntity**) are correct. This ensures that Weblink is configured to point to the proper location to store reports in Microsoft SQL Server Reporting Services.
4. Select **Standard** from the **Report Type** drop-down list.
5. Click **Load Report Files** to load the standard PM Compass reports. This can take several minutes to complete.

The Report Server root folder is created for this client. You can verify that the reports have loaded by launching the Report Manager application, where you will see a unique root folder for each client.

You can now continue with the Report Server configuration, which includes modifying permissions inherited from the Report Server Home folder. These steps are necessary to ensure that only the specified client has access to their reports.

To grant Content Manager rights to each client's root folder and remove inherited permissions from the Report Server root folder, complete the following steps while you are connected to Report Manager (Reporting Services Web application):

1. Click **Home** in the upper right corner.
2. Click **Show Details/Details View** on the right side of the toolbar.
3. Click **Edit/Manage** for each client's root folder.
4. Click the **Security** link.
5. Click **Edit Item Security**.

A message box displays: **Item security is inherited from a parent item. Do you want to apply security settings for this item that are different from those of the Home parent item?**

6. Click **OK** to apply security settings.
7. Check the boxes for each client Windows account that is **not** this client and click **Delete**.
8. Click **Edit** for this client's Windows account.
9. Clear the **Publisher** role option and select the **Content Manager** option for the selected client's user account. Click **Apply**.

Required Infrastructure Changes

The ReportViewer WinForms control which is used to preview reports in the PM Compass application requires direct access to the Report Server Web Service on the Report Server. For this reason, you must

open port 80 inbound (or 443 if using SSL) to both the PM Compass web/application and SQL Reporting Services servers.

An alternative is to use the Microsoft Application Request Routing (ARR) extension to deploy a reverse proxy.

Attention: See the *Deltek PM Compass Advanced Administration Guide* for detailed steps for deploying this solution.

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