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Costpoint Configuration Utility

Costpoint Configuration Utility Guide

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Contents

Costpoint Configuration Utility Guide

Overview

The Costpoint Configuration Utility is a tool created to help Costpoint Administrators simplify most commonly used configuration tasks for Costpoint. Please note that the Costpoint Configuration Utility works with all supported deployment scenarios, addresses comprehensive changes made to all impacted configuration files, and greatly simplifies changes, reducing the chance of errors.

The utility has seven main tabs, each addressing a different tier or different area of Costpoint configuration.

The Costpoint Configuration Utility is a client/server program. It uses the standard Java Swing interface and requires the Java Runtime Engine (JRE).

Note: Some fields in the Configuration Utility are case-sensitive. To avoid potential errors, please consider the letter case when entering values in the fields.

Prepare to Run the Utility

Before starting the utility, make sure that the Oracle® Administrative WebLogic™ server is running. Otherwise, you will be unable to perform any WebLogic-related configuration tasks.

After you update the configuration files and exit the utility, you may need to restart the Oracle WebLogic application server(s), Database server(s), and IIS server(s).

Warning: Deltek highly recommends that you create a backup of the \deltek\costpoint\82 folder before making any changes so that you can always safely return to a previous configuration of Costpoint.

Start the Costpoint Configuration Utility

Start the Costpoint Configuration Utility using the CPWebConfigUtility.cmd batch file. It should be located with all other Costpoint command files in the \deltek\costpoint\82\bin folder. You will see the following screen.
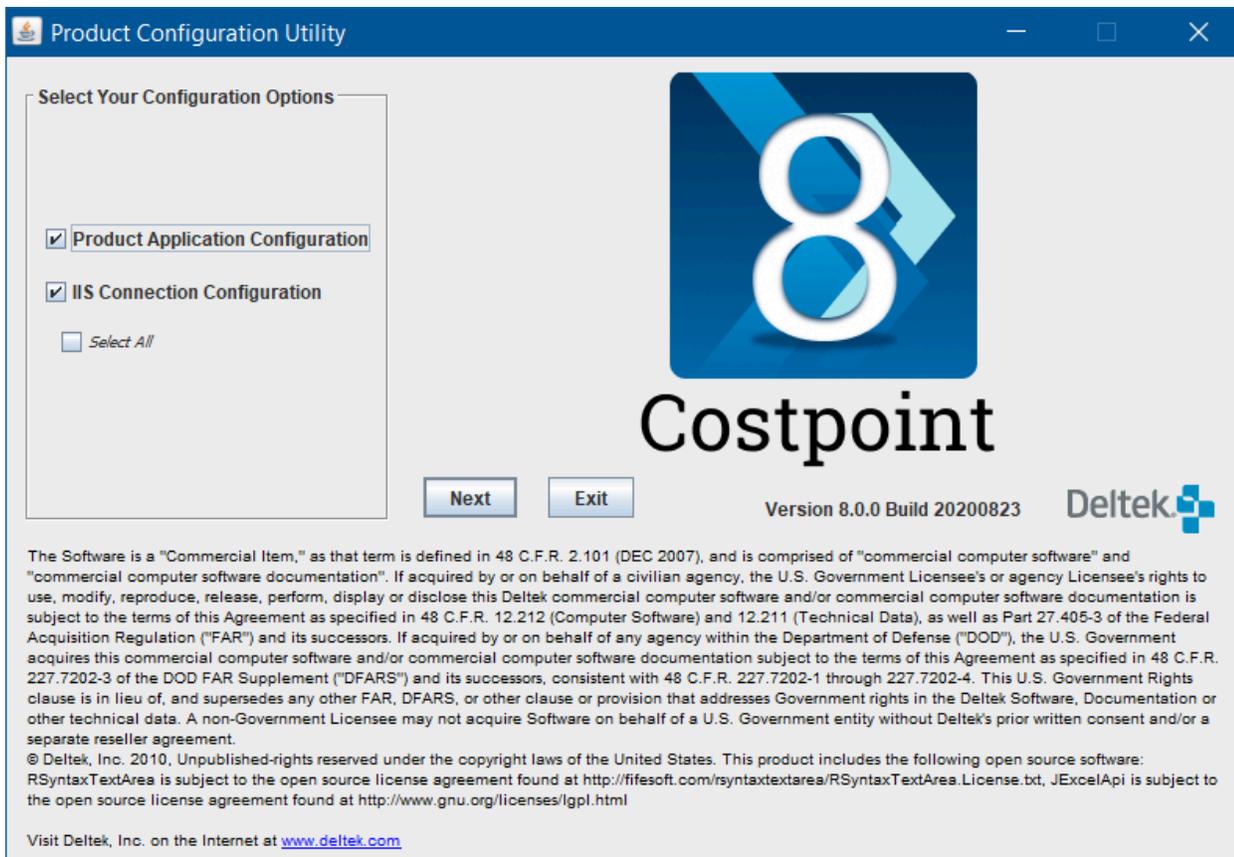
1. Depending on the configuration tasks you are planning to perform, select the appropriate options on this screen:

   - **Product Application Configuration**: Select this option if you plan to:
     - Create or delete a system, or review or update system general information and database connection information.
     - Review or update any WebLogic-related information.
     - Review or update WebLogic-dedicated server configuration.
     - Review or update log settings. (Deltek Customer Care may ask you to change the logging level before sending log files to them.)
     - Update Product Integration Information.
   - **IIS Connection Configuration**: Select this option only if you plan to review or update how IIS server(s) connect to WebLogic server(s).
     Note: This utility cannot configure IIS server(s). Use the Internet Information Services console to configure IIS server(s).

2. Click **Next** to start the utility.

Configuration Utility Options

When the utility starts, you see a list of tabs at the top of the screen, with each tab contains its own area configuration options. If you did not select both options on the startup screen, the corresponding tab(s) will be disabled.
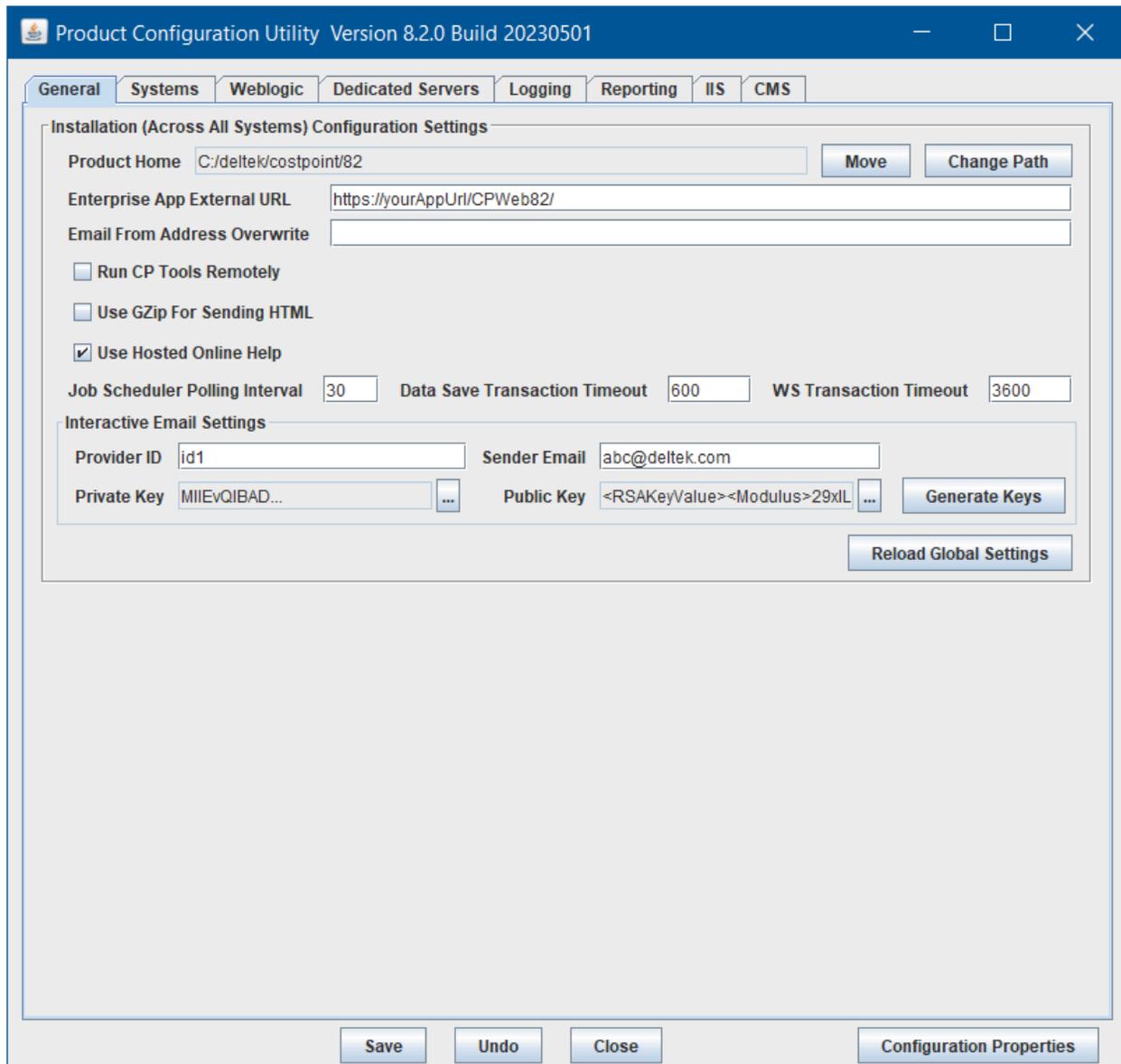
Four buttons at the bottom of the screen control the utility:

- **Save:** Click this button to save the changes you make. After saving, you might see a message stating that your changes will not take effect until you restart the WebLogic server. In this case, close the utility and restart all

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WebLogic servers before making additional changes to the Costpoint configuration.

- **Undo**: Click this button to discard all changes you made since the last save and reload the content of all tabs from the configuration files.
- **Close**: Click this button to exit the utility.
- **Configuration Properties**: Click this button to launch the Product Configuration Properties screen. This screen displays the contents of the toolconnections.properties configuration file. Do not edit this data manually unless you receive an error that prevents you from running this or other Costpoint utilities.

General Tab

Use the General tab to review or update general installation information related to all systems.

Note: The utility must be connected to the WebLogic Administrative Server if you want to update any information on this tab. You must select the Product Application Configuration option on the start-up screen.
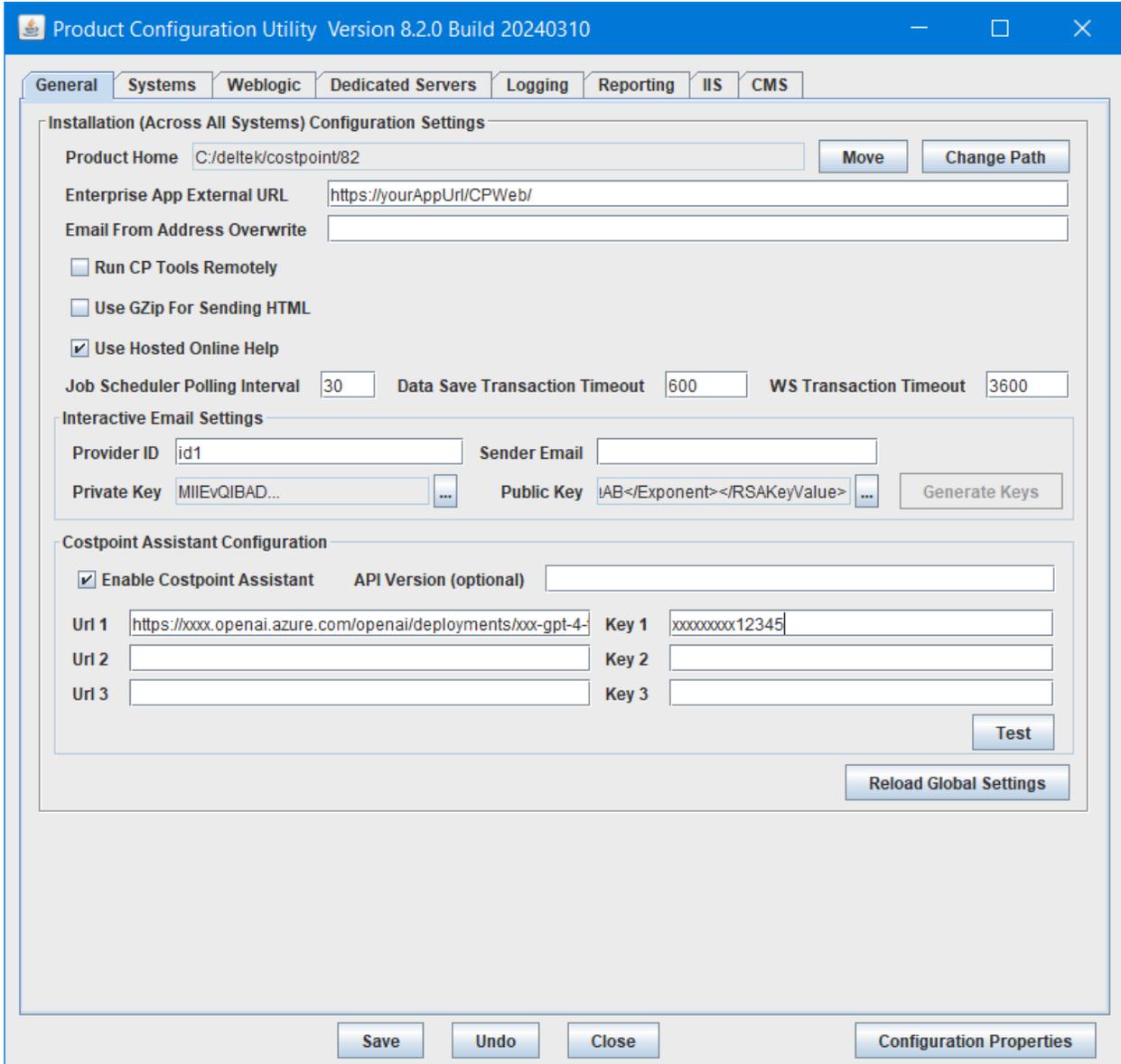
Installation (Across All Systems) Configuration Settings

This group box contains the following options:

- **Product Home**: This field displays a folder where Costpoint (and all Costpoint files) are installed.
  Note: If you are planning to use WebLogic clustering or dedicated servers, you should install Product to a shared location on the network. In addition, all physical servers that will be hosting WebLogic servers should have full access to this shared location.
  This shared folder should be on Tier 1 high performance storage for your production system. Running Weblogic instances requires fast and reliable input/output access to this shared folder location. Inadequate I/O performance can jeopardize the health of the product during peak load times. If the I/O access is inadequate and Weblogic server suffers I/O errors, a restart is required to restore system functionality.
  Enter the **Product Home** location in UNC format instead of as a standard file path. For example, enter the

location in this format:
\CPFileServer\shared_volume\

- **Move**: Click this button if you need to move Product to a new physical location. You will need to do so if you initially installed Product locally (for example to C:\deltek\costpoint\82), but later decide to move Product to a shared location on a different file server. The utility will guide you through the series of steps needed to change Product Home.
  If you are planning to use a Product cluster, you will need to share the folder where you installed Product. Therefore, Deltek recommends that you install it to a network location such as \fileserver\shared_folder1\ deltek\costpoint\82. In this example, you need to create a network share on \fileserver\shared_folder1\deltek folder.
  Note: The Move process copies all files from the old to the new location, but it does not remove files from the previous location in case you need to return the location to its previous state. The process does change the extension of the original file CPWebSetEnv.cmd to CPWebSetEnv.old so that you don't accidentally start command files from the old location.
  Attention: Please see Appendix D for instructions on how to move Product.

- **Change Path**: Click this button if you need to just change Product's path without physically moving any files. You will need to do so if you initially installed Product locally (for example to C:\deltek\costpoint\82), but later decide to share current file location to use Weblogic's cluster. The utility will guide you through the series of steps needed to change Product Path.

- **Enterprise App External URL**: This field contains a URL to Product that your end users should be using to access the Product application. Typically, it is either a URL to your IIS server or a URL to the hardware/ software load balancer that is in front of your IIS servers (if you have several IIS servers). This field can be overwritten for each system on the Systems tab. Keep in mind that this URL must be public if you want to use integration with MS Teams as Azure servers (where Office 365 is running) should be able to talk to Costpoint.

- **Email From Address Overwrite**: This field contains an email address from which all product-generated emails will be sent. You can leave it blank to preserve default product behavior where Costpoint generated emails may come from different users depending on the particular use case. But if you want all Costpoint generated emails to come from a single email address (that may have special properties or permissions on your SMTP server), then enter this overwrite value. This field can be overwritten for each system on the Systems tab.

- **Run CP Tools Remotely**: Selecting this check box will allow you to run Product tools using command files from any remote computer that can access Product and Weblogic installation files without the need to open a Remote Desktop session to Weblogic Administrative server. By default this check box is cleared and disabled. It becomes enabled when you move Product files to a shared location. If you select this option, you will be prompted to enter the shared location to Oracle's Weblogic folder that should be accessible to the remote machines from which you are planning to run the Product tools.
  Note: Keep in mind that running tools from remote machines can the degrade performance of the tools, especially the utilities' load times since in that case all files will be loaded over the network. Also keep in mind that using the utilities (Integration, DB Wizard, and Configuration) in parallel to changing the Product configuration can lead to a corrupted configuration since the utilities are not aware of the changes done by each other.

- **Use GZip for sending HTML**: Select this option if the browser should use the GZipping feature when communicating with the Web server. All the data passed between server and browser will be compressed (zipped), which will allow bandwidth saving, it but will take additional processing time on both server and browser sides.

- **Use Online Help**: Select this to designate if hosted help should be used or not. Hosted help is accessed

through the Web, so users will need access to the Internet to use hosted help.

Note: To ensure that you always have the most current version of the help, Deltek strongly recommends using hosted help. Otherwise, you will only receive help updates as you upgrade.

- **Job Scheduler Polling Interval**: This field displays a time interval (in seconds) used to periodically invoke Job Scheduler.

- **WS Transaction Timeout**: This field displays the time interval (in seconds) that Web Service call should take before it reaches timeout and the Web Service transaction rolls back. If you are planning to load a lot of data through a single Web Service call, you may need to increase this timeout to allow Web Service more time to process the data.

- **Interactive Email Provider ID**: This field displays an Interactive Email Provider Id.
  Attention: For detailed setup of Interactive Email values, refer to Appendix H.

- **Interactive Email Sender Email**: This field displays the email address from which product will be sending all interactive emails.

- **Interactive Email Private Key**: This field displays the first 10 characters of the Interactive Email Private Key value. You can click the ... button next to the field to enter a new value manually if desired, or you can click **Generate Keys** button to generate a new pair of Private/Public keys used to send all interactive emails. Deltek highly recommend using the **Generate Keys** button to generate proper Keys for Interactive Email Setup.

- **Interactive Email Public Key**: This field displays the Interactive Email Public Key value. You can click the ... button next to the field to view key in its entirety; you can enter a new value manually if desired; or you can click the **Generate Keys** button to generate a new pair of Private/Public keys used to send all interactive emails.

- **Costpoint Assistant Configuration**: To enable the Costpoint Assistant functionality, which powers numerous AI-driven features in Costpoint, select **Enable Costpoint Assistant** and enter up to three pairs of URLs to the AI instance and License keys. If you enter more that one pair of URLs and keys, your AI-related requests will be load balanced between the entered URLs.
  Attention: For more information on the Costpoint Assistant Configuration, the providers supported, and the specific versions required for this functionality to work, please refer to KB 115661.

- **Reload Global Settings**: If you have made changes in this utility or other utilities, click this button to put the changes into effect. This button is the equivalent to running the Reload Global Settings application in Costpoint. Please note that some changes do require Weblogic nodes restart to become effective. These types of changes are mostly related to Weblogic and marked as such in this guide.

Systems Tab

Use the Systems tab to create or delete a system or to review or update each system information, including database connection information, Extensibility information, or System Integrations with Project Manufacturing, SilkRoad, MS Exchange, Deltek Cobra, Talent Management and Deltek GovWin CM products.

Note: The utility must be connected to the WebLogic Administrative Server if you want to update any information on this tab (including database connection information). You must select the Product Application Configuration option on the start-up screen.
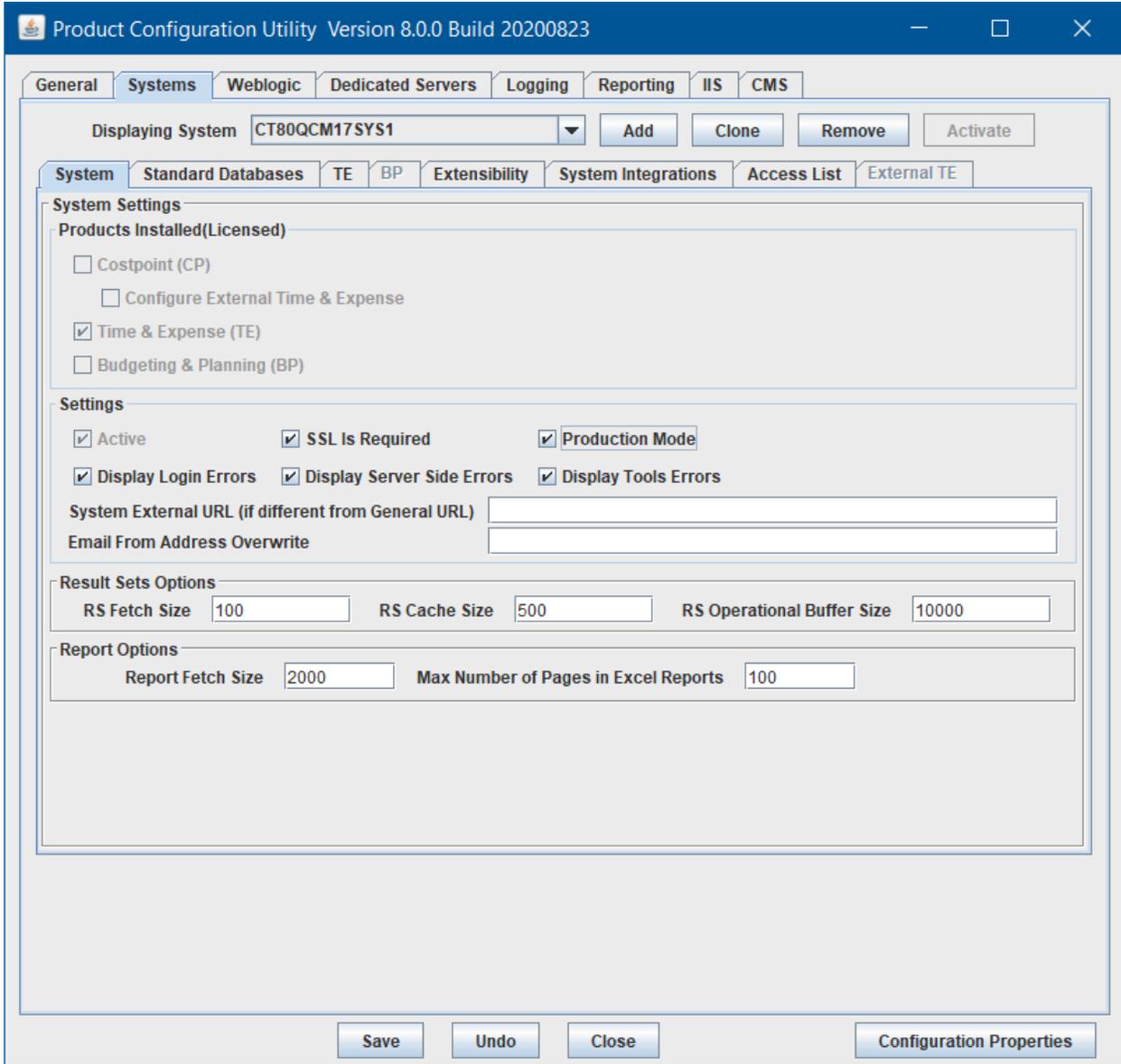
Select System

The **Displaying System** drop-down list in the Systems tab contains the names of systems configured for this Product installation. System is a collection of three standard DB schemas that are needed to run Product. Out of the box Product installation contains only one system. But you can add more systems if needed. You will need to select the system you would like to review or you can configure system information on the tabs below **Displaying System** drop-down.

- To create a new system, click **Add**. You will be prompted for a new system name:
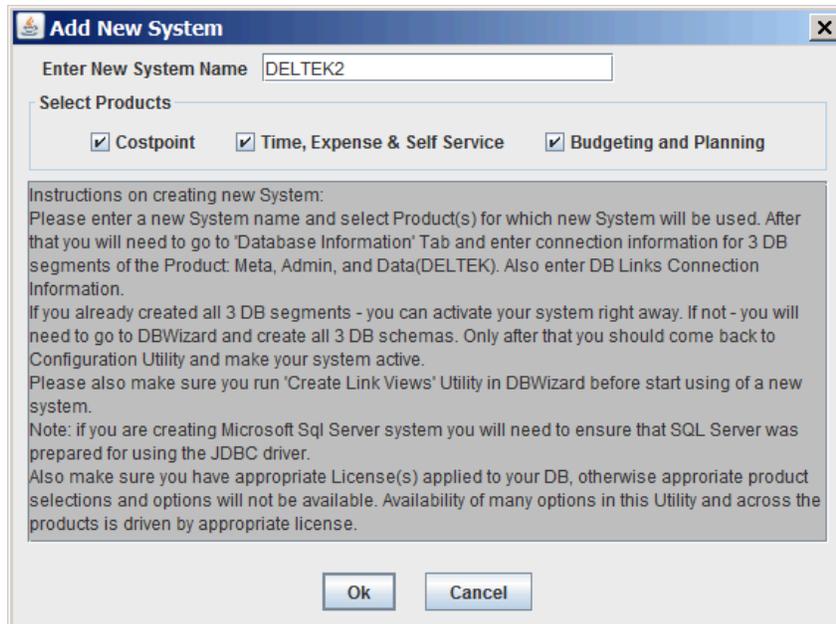
Provide a new system name, select products that will be available in this system. Please note that the decision of which products will be available is driven by your license that is applied to your database. So, make sure that you have appropriate licenses before creating a new system. After clicking OK, you will need to enter all required system and database information. System names cannot contain spaces or special characters. Use only upper case letters and digits. Deltek recommends that you use a shared deployment where all products that you have (Costpoint, Time & Expense, and Budgeting & Planning) are deployed into the same system.
Attention: If you are using Oracle DB and creating a brand new system that will have TE or BP, please refer to Appendix E for additional steps you will need to perform.
Attention: For more information on deployment options available for your products, refer to the *Deltek Costpoint 8.2 Deployment Options Technical Overview* guide.

▪ To delete an existing system, click **Delete**, and then confirm your choice. Note that corresponding JDBC pools will also be deleted from the WebLogic domain. After saving changes in Configuration Utility, you will need to physically delete three Database schemas associated with the deleted system (if you no longer need them) and corresponding Database users (including Link users) associated with the system.

▪ To activate a system, click **Activate**. If you already created all three (or four or five) DB segments, you can activate your system right away after its creation. If not, you will need to use the Product database install to create all three DB schemas, and then come back to the Configuration Utility and make your system active. Also make sure that you run the Create Link Views utility in the DBWizard before you start using a new system.
Note: You will not be able to log in or use a new system until it is activated. The activation process will create JDBC connection pools on all your WebLogic servers. It is important that if you use MS SQL Server as your database server. You will need to enable JDBC distributed transactions and XA transactions on the database side before activating the system.
Attention: For more information, refer to the Product installation guides.

System Information Tab

This tab of the Select System group box contains the following options:

- **Products Installed (Licensed)**: This group displays a list of Products that are installed and licensed with the current system. Depending on these flags, you will need to enter appropriate product database connection information. Note that Time, Expense & Self Service and Budgeting and Planning will be selected only after you applied the appropriate product licenses to your system. License files should be applied using DBWizard tool » Apply License. If you no longer want to have one of the previously used products in a given system, you will need to delete corresponding product license by using DBWizard tool » Remove License. If you are using the Import Work Schedules from Deltek Time and Expense Costpoint application and no co-deploying Costpoint and Time & Expense, you will need to select the **Configure External Time & Expense** flag and enter database connection information for external Time and Expense database on **External TE** tab. Note that this option is available only when the Time and Expense product is not deployed and licensed in a given system. In this case, the Import Work Schedules from Deltek Time and Expense application will connect to this external Time & Expense database to import data.

- **Active**: This flag is a read only and it displays if the system is already activated.

- **SSL is required**: If you select this option, attempts to log in through non-SSL URLs will be rejected.
  Warning: Deltek highly recommends disabling this option in the production system.

- **Production Mode**: Select this option if a given system is a production system. If this is a test or development system, clear the check box and Costpoint will not use caching of metadata information which is helpful for developing activities such as Extensibility or Web Services, but the system will perform slower than in production mode.

- **Display Server Side Errors**: When technical errors occur on the server and you enabled this option, a full stack trace of the error displays in the browser. This option is convenient when troubleshooting problems and working with technical support. By default, this option is disabled because providing end users with the ability to see a server stack trace is considered a security vulnerability.
  Warning: Deltek highly recommends disabling this option in the production system.

- **Display Login Errors**: With this option disabled (which is the default setting), a standard login error displays to the end user when an unsuccessful authentication occurs. The standard message displays regardless of the reason why the login failed. For example, the message will not specify whether the user ID or the password was incorrect. This is a secure behavior, designed so that an attacker cannot use the system response to fine-tune an attack. If you enable this option, the end user sees more detailed information about the reason why the login failed. This is useful when troubleshooting login problems.
  Warning: Deltek highly recommends disabling this option in the production system.

- **Display Tools Errors**: When technical errors occur in Integration Console or Extensibility Console and you enabled this option, a full stack trace of the error will be displayed in the command line window. This option is convenient when troubleshooting problems and working with technical support.
  Warning: Deltek highly recommends disabling this option in the production system.

- **System External URL** (if different from General URL): The value in this field represents the system-level overwrite for the System External URL. If all the systems in your Costpoint installation use the same url, leave this field blank and just enter a value for the System External URL on the General tab. But if each system uses its own URL, you will need to enter a value for each system on this tab.

- **Email From Address Overwrite**: The value in this field represents the system-level overwrite for the Email From Address Overwrite that can be entered on the General tab. If all the systems in your Costpoint installation use the same Email From Address Overwrite, leave this field blank and just enter a value for the Email From Address Overwrite on the General tab. But if each system uses its own Email From Address, you will need to enter a value for each system on this tab. Then Costpoint generated emails for the selected system will always come from the entered email address.

- **RS Fetch Size**: The value in this field represents the number of rows to be fetched from the database into the result set (RS) cache each time additional rows from the database are needed. A default value displays automatically, but you can change it.

- **RS Cache Size**: The value in this field represents the number of unedited rows per result set (RS) to be cached on the Application server. A default value appears automatically, but you can change it.

- **RS Operational Buffer Size**: The value in this field represents the maximum number of rows in RS for in-memory operations on the Weblogic server, such as Find/Replace, copy to Excel. A default value appears automatically, but you can change it.

- **Report Fetch Size**: The value in this field represents the number of rows to be fetched from the database for a report per round trip. A default value displays automatically, but you can change it.

- **Max Number of Pages in Excel Reports**: The value in this field represents the maximum number of pages the system will allow to download in native Excel format. Enter 0 if Excel reports are not allowed.

Standard Databases Information Tab

Use this tab of the **Select System** group box to enter database connection information for the selected system.

Each system is composed of at least three database schemas: Meta (sometimes referred to as Sys), Admin, and Data (also referred to as the transactional schema). You would also need to configure the TE database schema (on the TE tab) if you are using the Time & Expense and the BP database schema (on the BP tab) if you are using Budgeting & Planning. The Data/DELTEK schema is the same schema used by the client/server version of Costpoint in previous versions of Costpoint. You need to enter database connection information for each schema on this tab.

- **Database Vendor**: Select Oracle® or Microsoft® SQL Server®, depending on the database vendor you are using. All three schemas should use the same database vendor.
- **Host**: Enter the host name or IP address for the database server.

Note: If you are using Named Instances in SQL Server, enter the host and instance name in the format: server1\instance1

Attention: To learn more about the host format, refer to the WebLogic documentation at the following site: http://docs.oracle.com/cd/E21764_01/web.1111/e13753/mssqlserver.htm#i1074582.

- **Port**: Enter the port number where the database server is listening.

- **Use SSL**: Select this option to encrypt all communication with the database.
  Note: In order to use SSL encryption with database servers, the database needs to be configured to support SSL encryption, and the certificate needs to be imported as trusted in JVMs used by the application tier. This should be done prior to enabling this option in Configuration utility.
  All communication with the database server, including login request and data requests, are encrypted. SQL Server's **request**SSL and **login**SSL options are not supported.
  Given that Weblogic and database servers are typically deployed behind a firewall within your IT infrastructure, the need for enabling SSL between the application and database tiers and the resulting overhead (performance hit) need to be carefully evaluated and tested by a client before enabling this feature in a production environment.
  Attention: For more Information on Oracle database configuration, refer to http://www.oracle.com/technetwork/topics/wp-oracle-jdbc-thin-ssl-130128.pdf.
  For more information on SQL Server configuration, refer to https://docs.oracle.com/cd/E13157_01/wlevs/docs30/jdbc_drivers/mssqlserver.html#wp1098977.

- **DB Name**: Enter the database name.

- **User**: Enter the database user name.

- **Password** and **Confirm Password**: Enter and confirm the database password of the user entered above.

- **URL**: This field displays the resulting JDBC URL that will be used to connect to the database server.

- **Use Oracle RAC**: Select this check box if you are using Oracle RAC database servers. Click the **Nodes** button to enter connection information for each of the Oracle nodes. Separate connection pools will be created for each of the RAC nodes; multi-pool will be configured to provide load balancing and failover features of Oracle RAC.
  Attention: For more on Oracle RAC, please refer to the *Deltek Costpoint 8.0 Deployment Options Technical Overview* guide and the Oracle database documentation.

- **Nodes**: Click this button to display the Manage Oracle RAC Nodes dialog box, which you can use to manage Oracle RAC connections. Use this dialog box to add nodes, remove nodes, and enter connection information for each RAC node.
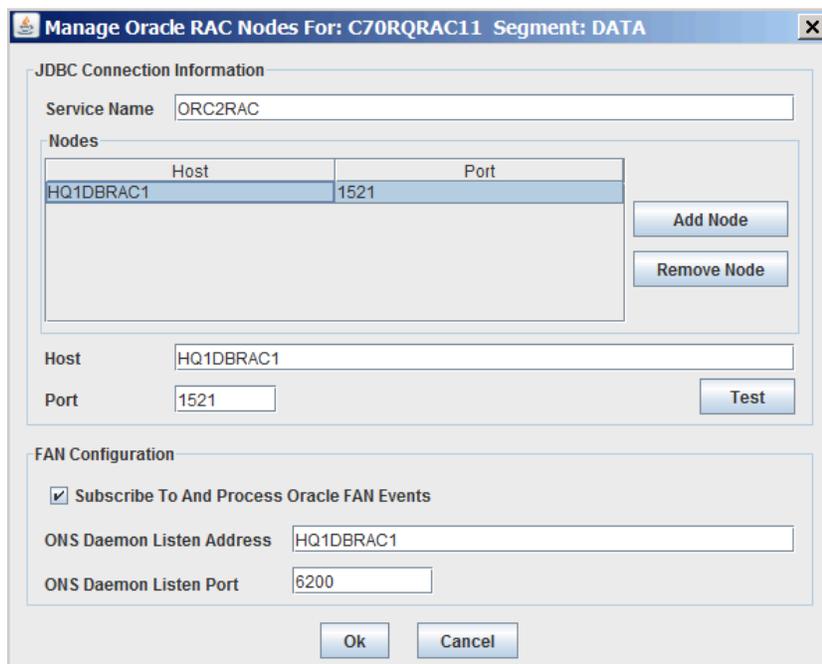
In this dialog box, you need to enter the **Service Name**, **Host**, and **Port** for each Oracle Node. If Oracle RAC is configured with the SCAN option, there is only one host name (that is registered with DNS) and one port number. For a RAC that is configured with no SCAN (as in Oracle 11gR1 and 10g), you need to enter multiple hosts and ports. If your RAC uses Oracle Notification Service (ONS), you can subscribe to ONS-based FAN events by selecting the **Subscribe To And Process Oracle FAN Events** check box. If you select this option, you need to enter ONS daemon listen addresses and ports for receiving ONS-based FAN events.
Note: Note that this tool is not used to actually create/delete/manage RAC nodes. It is used to configure the connection information to the nodes.

- **Test**: Click this button to perform a simple test connection to the database to verify the validity of the information you entered.
Note: If you change any of the database connection properties described above for the existing DB JDBC connection pool on the WebLogic server(s), you must restart the WebLogic servers or redeploy the JDBC connection pool for this change to take effect.

DB Links Information

The Link-View database utility is used with Product to allow the Data user (usually Deltek) to view certain database objects owned by the Product schemas (Meta and Admin). The DB Links Information group box contains the following options:

- **Link User**: Enter this value for all Product client machines. The Link User is the database user used when the Link-View database utility is executed. Link User is a database user created for security purposes to filter the scope of the Web objects accessible to the Data user (usually Deltek). It is responsible for facilitating the Data user's access to Web objects (objects owned by Admin and Meta). Without a Link User, the Data user will have no access to any Web objects.
Note: If a Link User database user does not exist when you execute the Link-View utility, the user gets

created at runtime using the User and Password values.

▪ **Link User Password** and **Confirm Password**: Enter and confirm the database password of the user entered above.

▪ **Data to Admin Link**: Enter the value used when you execute the Link-View utility. The value differs depending on whether you use an Oracle or Microsoft SQL Server database.

  ▪ **For Oracle users**: This is a required value if the Data and Admin schemas reside on separate physical servers; otherwise, this value is ignored. This is the Oracle net service name used when creating the Oracle database link between the Data and Admin schemas. If the Data and Admin schemas reside on different physical servers, an Oracle net service name must be established on the Oracle server hosting the Data schema that references the instance containing the Admin schema. The database link will be used by the Link User to grant the Data schema (usually Deltek) access to certain objects owned by Admin.

  ▪ **For SQL Server users**: This is a required value if the Data and Admin schemas exist in different databases; otherwise, this value is ignored. This is the name of the Linked Server object created if the Data and Admin schemas are in different databases (regardless of whether or not Data and Admin are on the same physical server). The Linked Server is used by the Link User to grant the Data user (usually Deltek) access to certain objects owned by Admin. Note that the value given to this field must be unique to this SQL Server database, but is otherwise arbitrary. A unique default value displays automatically for the Data to Admin Link, but you can change it. The Linked Server is owned by the **sa** user.

▪ **Admin to Meta Link**: Enter the value used when you execute the Link-View utility. The value differs depending on whether you use an Oracle or Microsoft SQL Server database.

  ▪ **For Oracle users**: This is a required value if the Admin and Meta schemas reside on separate physical servers; otherwise, this value is ignored. This is the Oracle net service name used when creating the Oracle database link between the Admin and Meta schemas. If the Admin and Meta schemas reside on different physical servers, an Oracle net service name must be established on the Oracle server hosting the Admin schema that references the instance containing the Meta schema. This net service name should be provided as the value for the **Admin to Meta Link** field. The database link will be used by the Link User to grant the Admin schema access to certain objects owned by Meta.

  ▪ **For SQL Server users**: This is a required value if the Data and Meta schemas exist in different databases; otherwise, this value is ignored. This is the name of the Linked Server object created if the Admin and Meta schemas are in different databases (regardless of whether or not Admin and Meta are on the same physical server). The Linked Server is used by the Link User to grant the Admin user access to certain objects owned by Meta. Note that the value entered in this field must be unique to this SQL Server database, but is otherwise arbitrary. Product provides a default value for this field, but if you choose to change it, be sure to enter a value that is unique for the given server. The Linked Server is owned by the **sa** user.

If you change any of the information in the DB Links Information, you will need to run the **Create Link-View** process in the DBWizard.

TE Tab

If you are using the Time and Expense (10 and above) product in a given system (as a part of a co-deployment with Costpoint or as a stand-alone Time and Expense system) and have applied the Time and Expense license to the system, this tab will become available to you. You will need to enter the configuration information for the Time and Expense DB schema. After all the fields are entered, you can click **Test** to test the ability to connect to

the DB with the entered credentials.

Alternatively, if you are not using a co-deployment model, but you are using the Import Work Schedules from the Deltek Time and Expense Costpoint application, you will need to select the **Configure External Time & Expense** flag under the **Products Installed** group and enter the database connection information for the external Time and Expense database on the **External TE** tab.

BP Tab

This tab is for entering Deltek's Budgeting and Planning database connection information. If you are using the Budgeting and Planning product in a given system (as a part of a co-deployment with Costpoint) and have applied the Budgeting and Planning license to the system, this tab will become available to you.

You will need to enter the configuration information for the Budgeting and Planning DB schema. Keep in mind that stand alone Budgeting and Planning is no longer supported with Costpoint 8 and above.

Extensibility Tab

If you are planning to use the Extensibility functionality with Product, you must enable Extensibility on this tab by setting the **Extensibility for All Applications** field to **Enabled**.

Warning: If you do not enable Extensibility here, your extensibility project will not load during run-time.

You can also enable or disable the Extensibility functionality for specific Product applications by establishing **Application Level Overwrites**, which are used mostly for troubleshooting purposes. Keep in mind that you can enable/disable particular Extensibility Units in the Manage Extensibility Units (SYMXTAU) application.

Note: If you change Extensibility information on this tab, you will need to restart all WebLogic servers or run the Rebuild Global Settings (SYPSTNG) application for those changes to take effect.
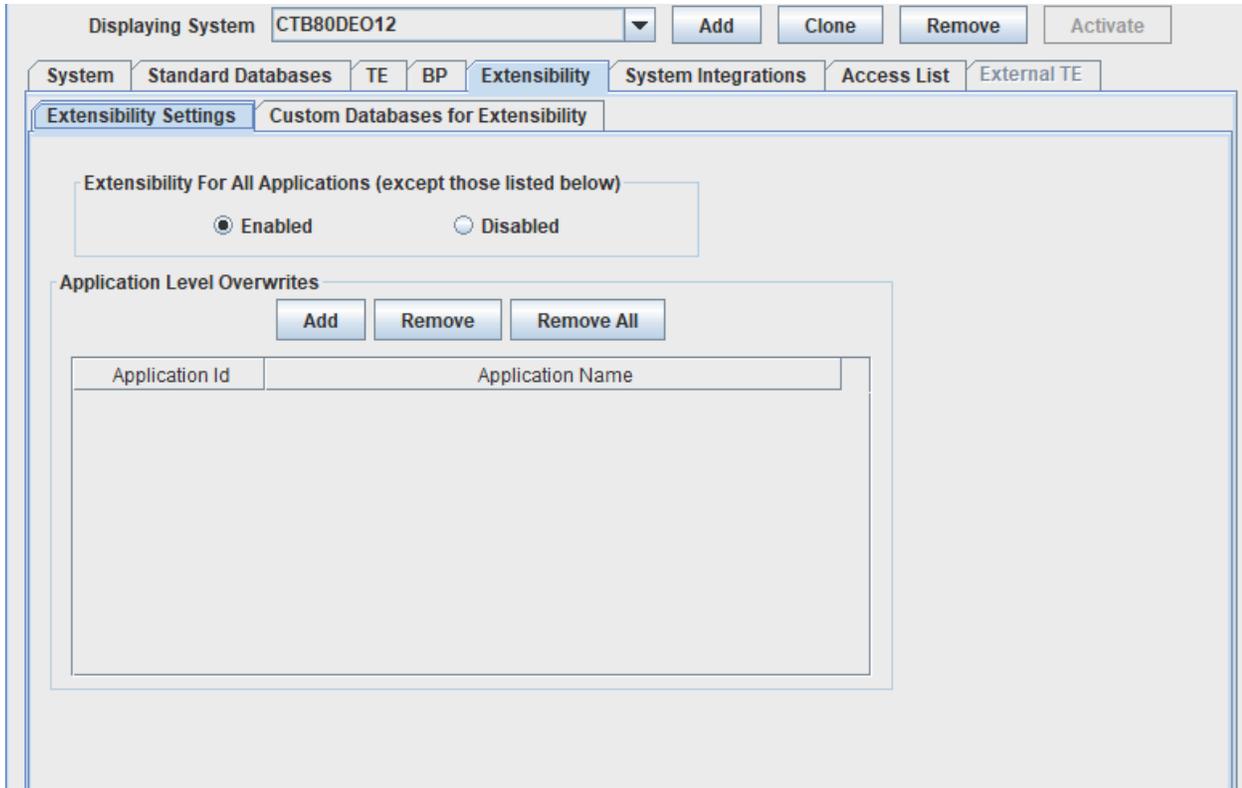
Custom Databases for Extensibility Tab

If you use any custom databases for your Extensibility projects to connect to third-party products, use this tab to enter custom database connection information for each system.
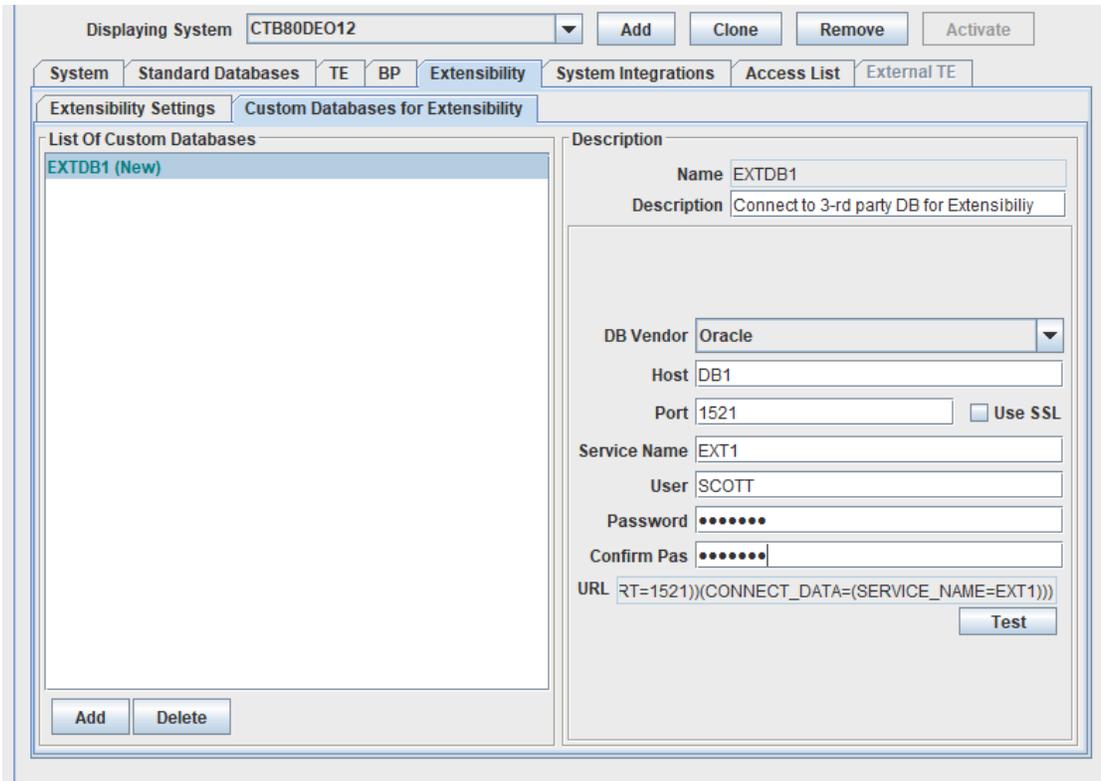
You can use the **Add** button to add as many custom database connections as needed. For each custom database, you need to enter a **Name**, **Description**, and the connection information.

Attention: For more connection information, see the Database Information Tab section.ab

Note: For integration with Deltek External Time & Expense and with Deltek Cobra, use their own predefined tabs.

For each custom database, the utility creates two JDBC Connection pools that display on the WebLogic tab. Make sure that you have successfully tested each new custom DB connection before saving.

If you no longer need a custom database connection, select the custom database and click **Delete**.

System Integrations Tab

Use this tab to configure Product System integration with the following products:

- MS Teams Bot
- Project Manufacturing
- SilkRoad
- Cobra
- GovWin IQ

- Talent Management
- Resource Planning
- Reports & Analytics
- CMS
- SMS
- Bank FTP
- DGPT
- Azure Apps
- Exchange Email
- Punchout Vendor

Each integration has its own tab where you enter connection information for the Integration between products.
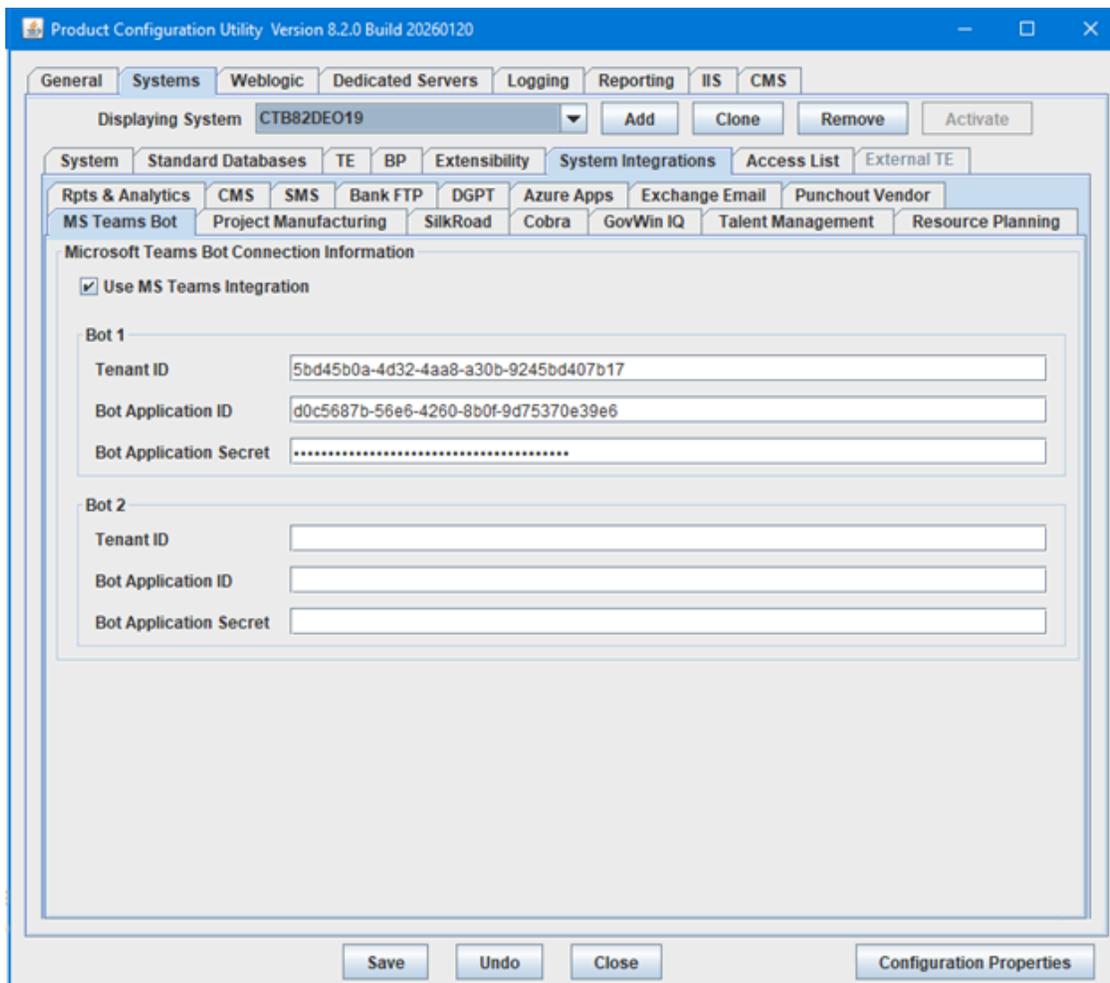
MS Teams Bot Tab

Use this tab to configure the integration with Microsoft Teams Bot. The product can interface with its own Bot

instance for each system.

Note: This is a new integration that was added in MR 8.2.11. Please refer to Appendix H for more information on how to install and configure the MS Teams side and how to obtain values to enter on this configuration screen.

To use MS Teams Bot integration with the selected system:

1. Select the **Use MS Teams Integration** checkbox.

2. Enter the following:

   ▪ Tenant IDs.
   ▪ Bot Application IDs
   ▪ Bot Application Secrets

Typically, you need to enter just one or two sets of parameters. And as it is displayed on the screen, the Configuration Utility supports up to two sets. But if you deploy the bot to more than two tenants, you can review and enter multiple bots information in the SYMINTGR application .

If you no longer need the integration, clear the **Use MS Teams Integration** checkbox.

Note: If you change the MS Teams connection information on this tab, you will need to restart all WebLogic servers or run the Rebuild Global Settings (SYPSTNG) application for those changes to take effect.

Project Manufacturing Tab

Use this page to configure integration with Shop Floor Time (SFT) and Manufacturing Execution (ME) systems available from DELTEK as separate add ones. Product can interface with a single or multiple instances of either or

both products for each system.

For each instance you want to integrate, you need to enter **Location ID, Connection URL, User, Password**, and **Confirm Password**. Click **Add** to add new integration point. Or you can clone an existing one by clicking the **Clone** button. If you no longer need an integration, select it and click the **Delete** button.

Note: If you change Project Manufacturing Connection information on this tab, you will need to restart all WebLogic servers or run the Rebuild Global Settings (SYPSTNG) application for those changes to take effect.

SilkRoad Tab

Use this page to configure two-way integration with SilkRoad solution. SilkRoad family of products (OpenHire, RedCarpet, etc) is a separately sold offering available from DELTEK.

For integration with SilkRoad, you will need to check **Enable SilkRoad Integration** box and enter all the parameters on this tab.

Export of data from Product to SilkRoad is done using SilkRoad Connect FTP interface controlled by the parameters in **Secure FTP Interface Configuration** section as well as using web services interfaces with RedCarpet solution controlled by parameters in **Web Service Interface Configuration** section. Both need to be properly configured and tested using **Test** button for the overall integration to work.

Do not change default values for Buffer Size and SFTP folders unless you have specific reason to do it. Consult with SilkRoad Support on proper connection URLs, user Id and password for your company as SilkRoad is a hosted solution not managed by Deltek.

Note: If you change SilkRoad Connection information on this tab, you will need to restart all WebLogic servers or run the Rebuild Global Settings (SYPSTNG) application for those changes to take effect.

Cobra Tab

Use this tab to configure Web Service integration with the Deltek Cobra product. Product can interface with its own Cobra instance for each system.

To start using Cobra Web Service Integration:

1. On the Cobra tab, select the **Use Cobra Integration** checkbox.

2. Enter the following information:

   - Cobra Web Service URL
   - User
   - Password
   - Confirm Password
   - Data Source Key
   - Configuration Name
   - Integration Owner

When you no longer need the integration, clear the **Use Cobra Integration** check box.

Note: If you change Cobra Integration Connection information on this tab, you will need to restart all WebLogic servers or run the Rebuild Global Settings (SYPSTNG) application for those changes to take effect.

GovWin IQ Tab

Use this tab to configure the integration with the Deltek GovWin IQ product. The product can interface with its own GovWin IQ instance for each system.

To start using GovWin IQ Integration for the selected system:

1. On the GovWin IQ tab, select the **Use GovWin IQ Integration** checkbox.

2. Enter the following information:

   - Client ID
   - Client Secret
   - **Connection Timeout** (in seconds)
   - **Request Timeout** (in seconds)

3. Enter at least one (or more) tenants by clicking **Add** and entering:

   - Tenant ID
   - User
   - Password

You can test each Tenant's connection information by clicking **Test**. When you no longer need the integration, clear the **Use GovWin IQ Integration** check box.

Note: If you change the GovWin IQ Integration Connection information on this tab, you will need to restart all WebLogic servers or run the Rebuild Global Settings (SYPSTNG) application for those changes to take effect.

Talent Management Tab

Use this tab to configure the integration with the Deltek Talent Management product. Product can interface with its own Talent Management instance for each system.

To start using Talent Management Integration:

1. On the Talent Management tab, select the **Use Talent Management Integration** checkbox.

2. Enter the following information:

   ▪ **Select Web Service URL**: You can use a standard production or development URL, or enter a custom URL.
   ▪ **Password (Auth Token)**
   ▪ **Confirm Password**
   ▪ **Number of Rows** (per each invocation of Web Service)
   ▪ **Connection Timeout** (in seconds)
   ▪ **Request Timeout** (in seconds)

When you no longer need the integration, clear the **Use Talent Management Integration** checkbox.

Note: If you change the Talent Management Integration Connection information on this tab, you will need to restart all WebLogic servers or run the Rebuild Global Settings (SYPSTNG) application for those changes to take effect.

Resource Planning Tab

Use this tab to configure the integration with the Deltek Resource Planning product. Product can interface with its own Resource Planning instance for each system.

To start using Resource Planning Integration:

1. On the Talent Management tab, select the **Use Resource Planning Integration** check box

2. Enter the following information:

   - **Resource Planning Web Service URL**
   - **User**
   - **Password**
   - **Confirm Password**
   - **Database Name**
   - **Client ID**
   - **Secret Word**
   - **Number of Rows** (per each invocation of Web Service)
   - **Connection Timeout** (in seconds)

- **Request Timeout** (in seconds)

When you no longer need the integration, clear the **Use Resource Planning Integration** check box.

Note: If you change **Resource Planning** Integration Connection information on this tab, you will need to restart all WebLogic servers or run the Rebuild Global Settings (SYPSTNG) application for those changes to take effect.

Rpts & Analytics Tab

Use this tab to configure the integration with the Deltek Costpoint Enterprise Reporting (CER) product and Costpoint Analytics (CpA) product. Product can interface with its own Costpoint Enterprise Reporting instance and Costpoint Analytics instance for each system.
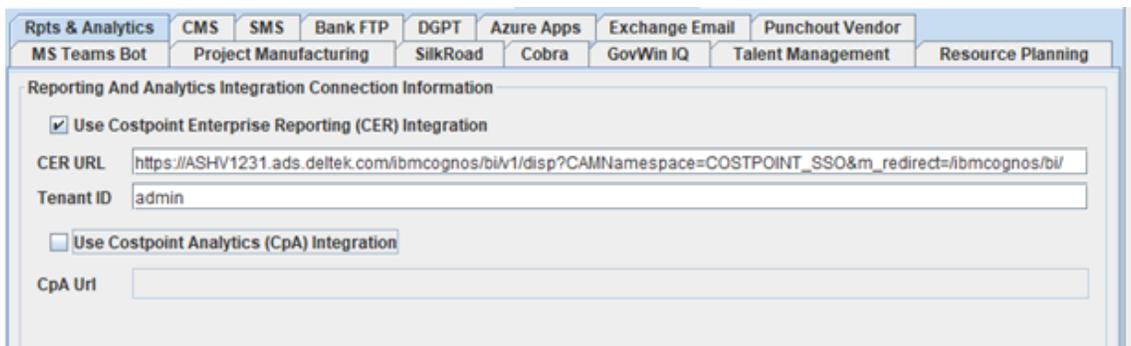
To start using Costpoint Enterprise Reporting Integration:

1. On the Rpts & Analytics tab, select the **Use Costpoint Enterprise Reporting (CER) Integration** checkbox.

2. Enter the following information:

   - **Enterprise Reporting instance URL**
   - **Tenant ID**

   For example, you have the following values:

   - Server Name = ashdbp41vs
   - Tenant ID in Cognos = cloud_com_4

   The **CER URL** will be: http://**ashdbp41vs**/ibmcognos/bi/v1/disp?CAMNamespace=CAP_SSO&m_redirect=/ibmcognos/bi/

   The **Tenant ID** will be: **cloud_com_4**
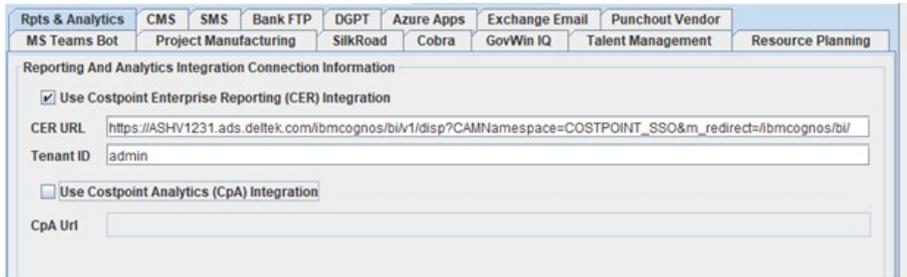
When you no longer need the integration, clear the **Use Costpoint Enterprise Reporting (CER) Integration** checkbox.

To start using Costpoint Analytics Integration:

1. On the Rpts & Analytics tab, select the **Use Costpoint Analytics (CpA) Integration** checkbox.

2. Enter the following information:

   ▪ Costpoint Analytics instance URL

When you no longer need the integration, clear the **Use Costpoint Analytics (CpA) Integration** check box.

Note: If you change Costpoint Enterprise Reporting or Costpoint Analytics Integrations Connection information on this tab, you will need to restart all WebLogic servers or run the Rebuild Global Settings (SYPSTNG) application for those changes to take effect.

CMS Tab (displayed by system)

Use this tab to review the integration with the Content Management systems. This tab is a read-only representation of all Content Management systems that are assigned to the selected Costpoint system.
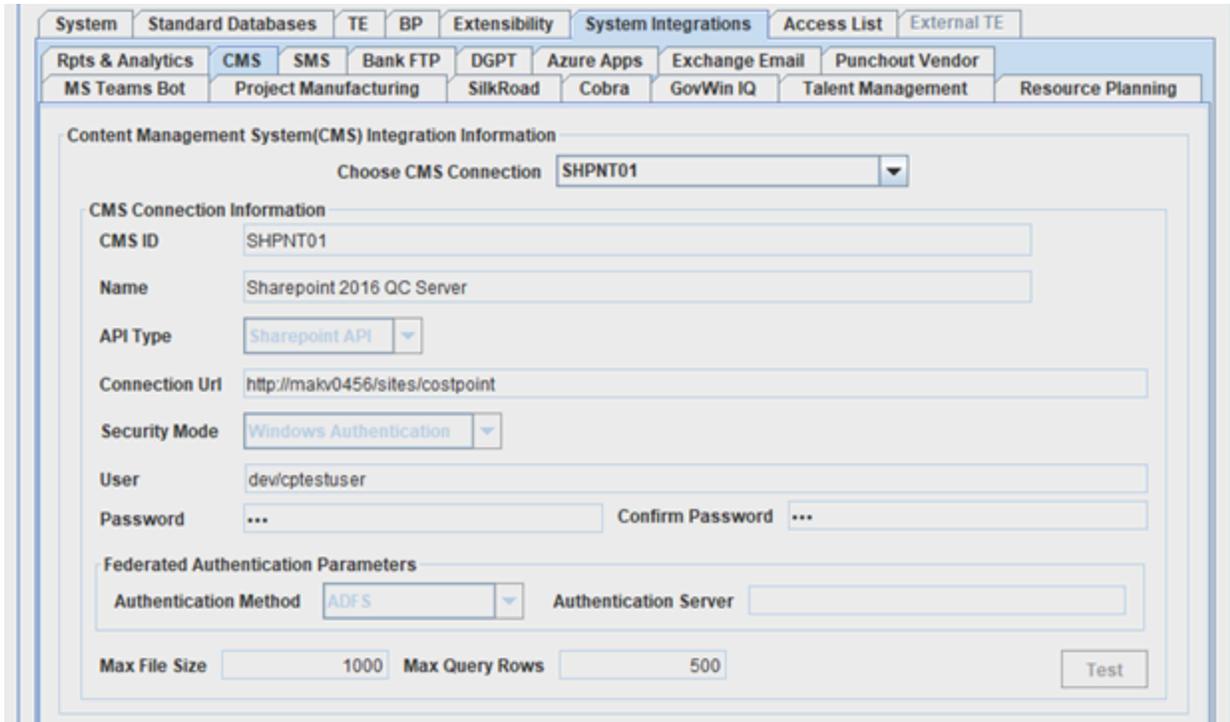
This tab shows the same information that is available on main CMS Tab for the whole product installation, just the list of CMS systems is filtered to display only CMSs that are assigned to a given system. This tab can be helpful if you have many CMSs configured and you want to review only those that are assigned to select Costpoint system. For more on CMS integrations please see below section CMS Tab.

SMS Tab

Use this tab to review and edit integration with the SMS functionality provider for the selected system. SMS is one of the possible communication options that Costpoint provides to notify end users about events happening in the system; others communication options are email, ims, and native device notifications. Examples of such notifications include:

▪ Job Server notifications (Job completed successfully or failed)

▪ Timesheet floor check failed

▪ Approval workflow started or requires user input

If your product end users want to receive SMS messages from the system, they need to enter their own cell phone number and select their cell phone service provider in user preferences. Currently, Costpoint supports two types of SMS providers for SMS messages sent by the product:

▪ Free email to SMS relay that each cell phone service provider provides and supports for their customers. Since it is a free service, your experience and reliability with it depend on your provider.

You can read more about this option by googling email to SMS gateway: https://www.google.com/search?q=email+to+sms+gateway.

- Twilio (https://www.twilio.com/) SMS provider which is one of the leading providers of SMS notifications for business in the world. It is a paid service, and you need to create an account with Twilio if you want a guaranteed way to deliver your SMS messages.

By default, Costpoint uses the first (free) option. But if you want to use the Twilio option, you need to open the SMS tab and select the **Use Twilio SMS Integration** checkbox.

Then, enter the following account properties from your Twilio account:

- Account SID
- API Key
- Secret
- From Phone Number

After entering these four, click the **Test** button to send a test SMS to any cell phone number of your choice. In case you have the enterprise version of the Twilio account, please make sure the **Public key client validation** checkbox is cleared before you generate API Key as this feature is not supported.

If you no longer want to use Twilio SMS Integration, clear the checkbox, and save your configuration. Costpoint will revert to using the free option.

All this information can be also entered in the SYMINTGR app in Costpoint.

Bank FTP Tab

Use this tab in the Product Configuration Utility to set up and store the bank FTP server connections needed to generate and directly upload EFT files to bank websites for each system.
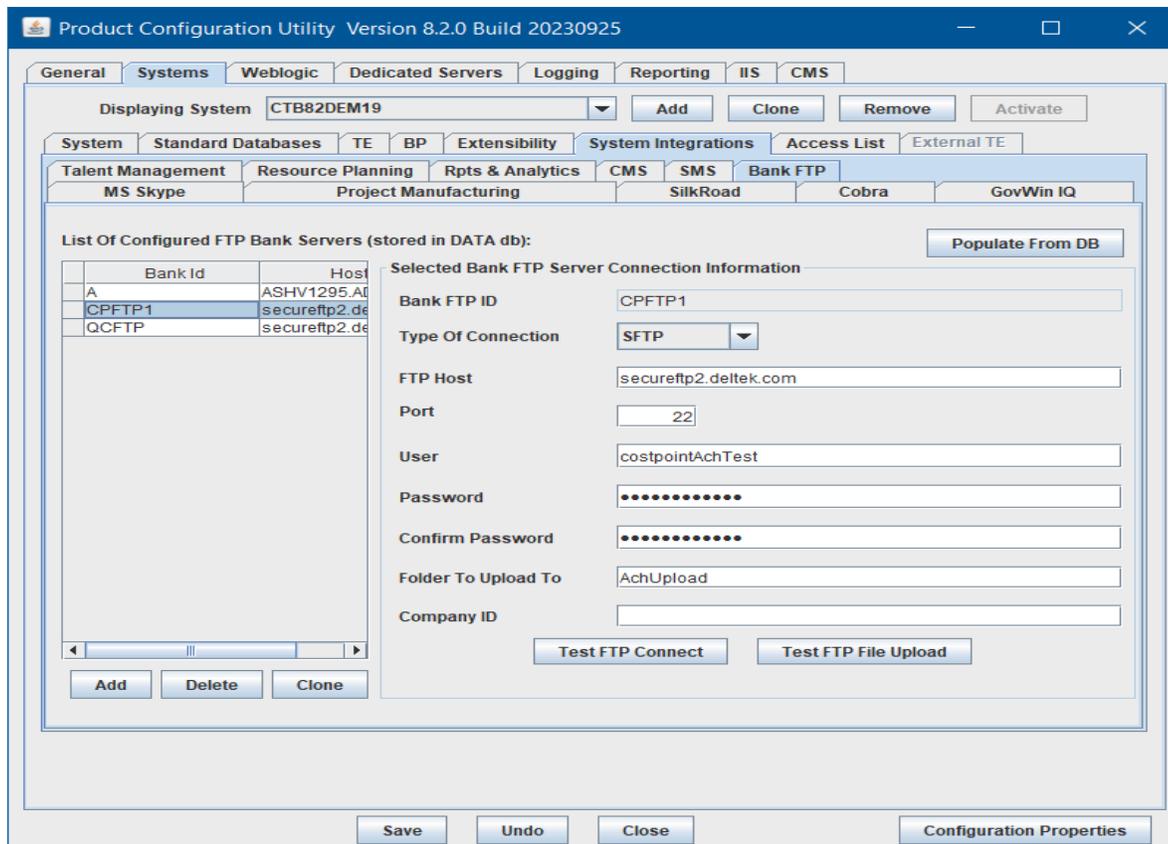
Unlike the majority of the configuration information presented in the Configuration Utility, Bank FTP connection information is stored in the Database in each system. In order to save time, existing Bank FTP information is not retrieved from the database when the Configuration Utility opens or another system selected.

To see the latest information from the database, click the **Populate From DB** button. When clicked, the Configuration Utility connects to the Database, reads all existing Bank FTP data, and displays it in the table on the left side of the tab. To see the information for a specific FTP Bank connection, select it in the table at the left.

For each Bank ID, you can enter the following information:

- **Bank FTP ID**: The name of the selected Bank FTP ID automatically displays in this field.
- Type of Connection: Select either FTP, SFTP, or FTPS.
- **FTP Host**: Enter the host address for the Bank FTP.
- **Port**: Enter the port number for the Bank FTP.
- **User**, **Password**, and **Confirm Password**: Enter the credentials needed to connect to the bank's FTP site.
- **Folder To Upload Files To**: Enter the name of the folder for the uploaded files.
- **Company ID**: If you have multiple Companies in Costpoint, enter the specific company ID you want to associate with this BANK FTP.

Enter at least one (or more) **BANK FTP IDs** by clicking **Add** and entering all the required information. Keep in mind that you can also enter and update user and password information in the SYMINTGR application in the **Bank Integration** Subtask.

You can select a Bank ID and click the **Clone** button to create a duplicate of the entry.

When you no longer need a particular Bank FTP ID, select it from table and click **Delete**.

To test each bank's connection information, ensure that all the fields are filled out, and then click each of the following buttons:

- **Test FTP Connect**: Click this button to test the connection to the bank's server.
- **Test FTP File Uplod**: Click this button to test if you can successfully upload a file to the bank's FTP site. An empty file is uploaded as part fo the test.

DGPT Tab

Starting from MR 8.2.15, Deltek is providing all customers access to Deltek's GPT (DGPT) services free of charge and access to Open AI LLM deployed in Azure Cloud. You do not need to do any additional configuration if you want to use those Deltek-provided services. But if you want to use your own instances of OpenAI LLMs, you will need to provide connection information and keys to access those instances on the DGPT tab for a selected system.

After entering the URLs and keys, you can test the information by clicking the Test button. A small test request will be sent to each model you entered to verify connectivity. You do not have to enter all fields, but Deltek recommends that you enter at least one or two pairs for Default Models. The more models you have access to, the better it will be. It is better and sometimes more economical for different queries to use different model

types.

As information and available models and APIs are involved very quickly, Deltek recommends going to KB 123036 for details on models and QRs. The screenshot above is a good starting point if you are on QR 2025.3 or above.

Azure Apps Tab

Starting with QR 2025.2, you can register Costpoint or a specific Costpoint feature as an Azure application. This registration enables Costpoint to access different Azure and Office 365 resources, including Exchange Email, SharePoint Online, and possibly others in the future.

After one or more applications are registered in Azure, you can update the Costpoint configuration with the application details. That is done on the Azure Apps tab for the selected system in the configuration utility.

Update Costpoint

To update Costpoint with the registered Azure Application information:

1. On the Azure Apps tab, click the Add button.

2. Enter the following information:

- **Alias ID**: Unique identifier used in other screens to refer to this Azure App
- **Name**: A description of your App in plain English to help your Administrators to identify your App
- **Directory(tenant) ID**: Copied from app registration in the Azure portal
- **Application(client) ID**: Copied from app registration in Azure portal
- **Azure Cloud Type**: Select either Commercial or GCC High

3. Click the **Generate New Certificate** button to generate a new pair of certificates/keys and prompt you to a path where to save the public certificate.

   Costpoint uses the OAUTH2 authentication method to authenticate to Azure. For that authentication method, Costpoint and Azure require a pair of private and public certificates/keys. The private key is stored encrypted in the Costpoint configuration. You will need the upload the public certificate to the application

security section in the Azure portal app registration.

Register Multiple Azure Apps with Costpoint

You can register more than one Azure application for any Costpoint system. You can see and change attributes for each registered application by selecting the corresponding line in the left-side table.

Delete an Existing Azure App from Costpoint

Existing application entries can be deleted if you no longer needed by selecting the app and clicking **Delete**.

Azure Side Setup

To set up on Azure side:

1. Open the Azure portal (https://portal.azure.com).

2. In the **Microsoft Entra ID** section, select the **App registrations** option.

   The App registrations tab contains the list of Azure AD applications registered in your tenant.

3. Click **All Applications**.

4. Verify if Costpoint is already registered as an Enterprise Application and click it.

5. If the Costpoint application is not already registered, click the **New Registration** button.

6. Provide a name for your application (for example, "Costpoint"), and click **Register** at the bottom.

Register an application

* Name

The user-facing display name for this application (this can be changed later).

Costpoint ✓

Supported account types

Who can use this application or access this API?

◉ Accounts in this organizational directory only (Contoso only - Single tenant)

○ Accounts in any organizational directory (Any Azure AD directory - Multitenant)

○ Accounts in any organizational directory (Any Azure AD directory - Multitenant) and personal Microsoft accounts (e.g. Skype, Xbox)

○ Personal Microsoft accounts only

Help me choose...

Redirect URI (optional)

We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional and it can be changed later, but a value is required for most authentication scenarios.

Web ∨ | e.g. https://myapp.com/auth

By proceeding, you agree to the Microsoft Platform Policies ⧉

Register

Note: Save the values for the Application (client) ID and Directory (tenant) ID for the Costpoint app registration. They are needed to enter into the Configuration Utility.

7. Click **API permissions** in the left menu bar and click the **Add a permission** button.

8. On the new page that displays, select the following permissions for this application:

   Microsoft Graph » Application permissions » Mail » Mail.Send

9. Click the blue **Add permissions** button at the bottom to add the permissions to your application.

   The **Mail.Send** application permission requires admin consent in a tenant before it can be used.

10. Click **API permissions** again.

11. In the **Grant consent** section, click the **Grant admin consent for** button, and click **Yes** at the top to confirm

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the action.

> **Note:** If the application is used for access to other resources (like SharePoint), then follow the instructions in the other documentation (for SharePoint in the CMI guide document).

Upload the Certificate

The final step is uploading the certificate created with the Config Utility to the application registration in the Azure portal.

To upload the certificate:

1. Click **Certificates & secrets** in the left menu bar.

2. Click on the **Upload certificate** button, select the CER file from your local drive, and click Add to upload it.
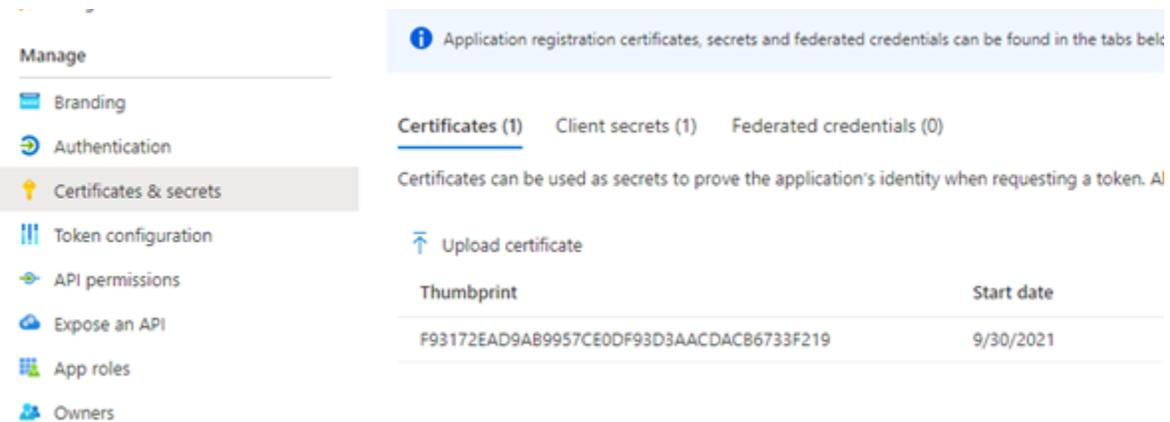
Exchange Email Tab

Starting with QR 2025.2, you can use the Costpoint Azure application registration to access the Microsoft Office 365 Exchange server for sending emails generated by Costpoint. This includes TE floor check email notifications, Job Server success/failure emails, Workflow approval emails, and so on.

As Microsoft is switching from regular user/password SMTP server authentication for their MS Office 365 Exchange services, you will need to use the app registration from the Azure Apps tab. After the app registration is complete, you can use this tab to assign that app to a company (for example company 1). It is possible to use the value ALL if you use multiple companies and want them all to use the same app registration. When done, Costpoint will start using the provided app registration for Exchange server access instead of SMTP server information entered in the System Settings App for the selected company and system.
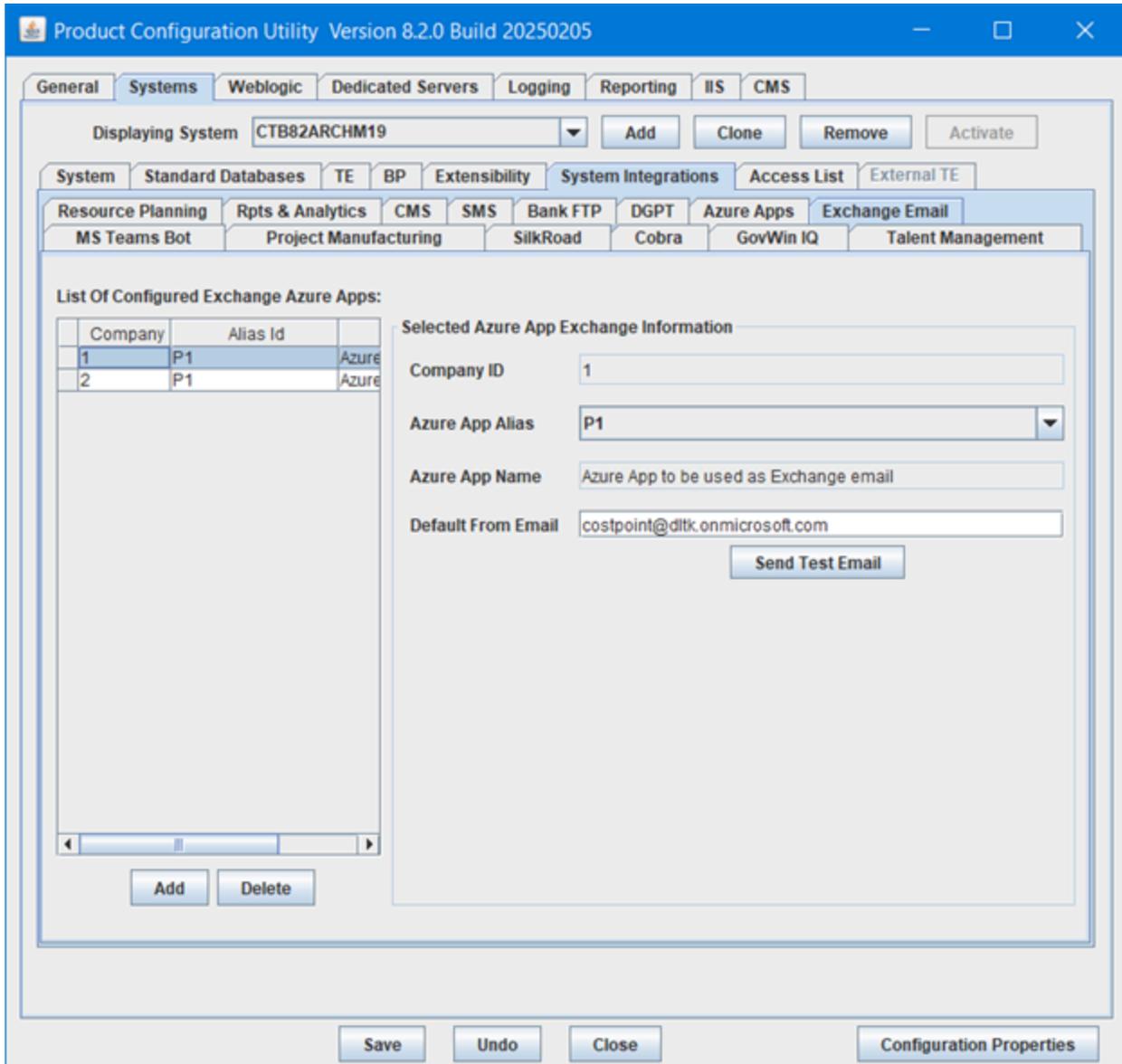
To enter a new link between Azure App and the company:

1. On the Exchange Email tab, click the **Add** button.

2. Enter the following information:

   - **Company Id.**: Enter specific company ID (1, 2, 3, 3tcc.), or you can use value **ALL** for all companies
   - **Azure App Alias**: Select the alias to use for this app. The drop-down field lists all of the registered Azure Apps for a given system

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- **Default From Email**: Enter the email address to use as the default address in the **From** field in the system-generated Emails when the system can't determine a corresponding User ID as a source for the email notification.

3. Click **Send Test Email** to try sending a test email using provided Azure App Registration.

If you no longer want to use the app for sending emails for a given company, select the row and click the **Delete** button.

Create a Shared Mailbox for Default Emails

As a good practice, Deltek recommends creating a shared mailbox in Exchange to use for **Default From Email** address.

To create a shared mailbox:

1. Open the Office 365 admin portal at https://admin.microsoft.com.

2. Click **Show All** on the left of the screen.

3. In the **Admin center** section, click **Exchange**.

4. If you are not already on the Mailboxes page, click the **Mailboxes**.

5. Click **+ Add a shared mailbox** option.

6. Enter a name (for example, **Costpoint**) and an email address (for example, **costpoint@yourdomain.com**) and click **Create**.

After you have created the shared mailbox, you can enter this address on the Exchange tab in the Configuration Utility.

Punchout Vendor Tab

Use this tab in the Product Configuration Utility to set up and store the e-commerce punchout vendor connections from Costpoint procurement system to a supplier's e-commerce site using cXML (Commerce XML) standards.
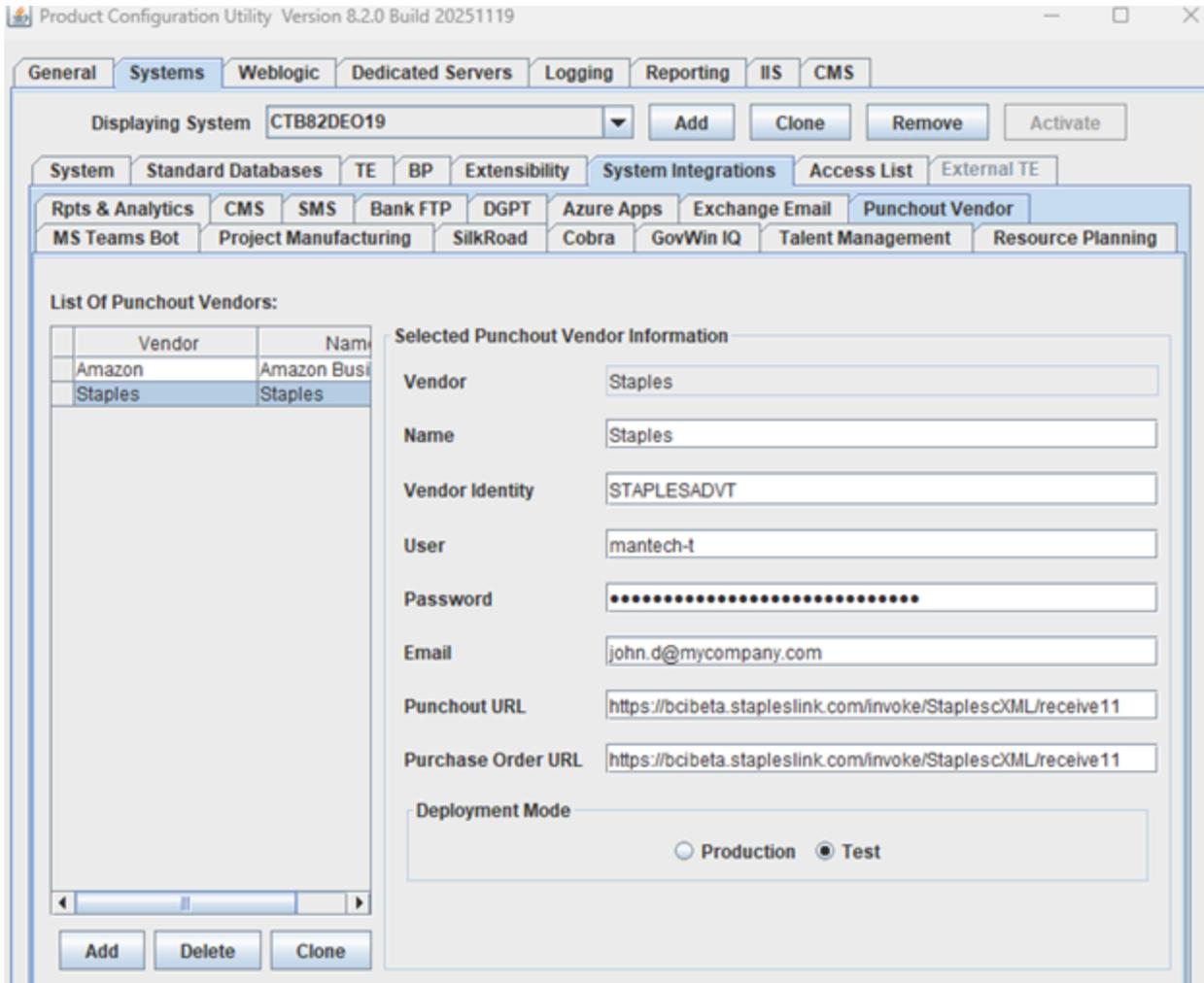
For each **Vendor**, you can enter the following information:

- **Vendor**: The identifier of the Vendor
- **Name**: The name of the Vendor
- **Vendor Identity**: The cXML identity of the Vendor
- **User** and **Password**: The cXML credentials for the Vendor such as username and password
- **Email**: The default email address to receive order confirmations, shipment notices, and other notifications from the Vendor
- **Punchout URL**: The cXML URL to start the Punchout Vendor initial session and handshake
- **Purchase Order URL**: The cXML URL to submit purchase orders (could be different from the main Punchout URL)
- **Deployment Mode**: Use Test for sandbox or QA environment, where no real orders are created and no financial transactions occur
  Switch to **Production** only when the integration is ready to go live where actual buyers log in, real pricing and

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real data are used, and shopping carts become real purchase requisitions resulting in real purchase orders, vendor invoices and financial transactions.

When you no longer need a Punchout Vendor integration, select it from table and click **Delete**.

Access List Tab

Use this tab to configure Access Block and Allow IP Addresses Lists for a given system. Each IP address can be entered for a specific product (Costpoint, Time & Expense, Budgeting & Planning, Employee Self Service and Supplier Portal) or for ALL deployed products.

Suppose you have two products deployed and want to expose and enforce Time & Expense access to the Internet but Costpoint access should be only Intranet. You will need to set up two IIS servers:

- First server exposed to the Internet and targeted for Time & Expense access.
- Second server exposed to the Intranet and targeted for Costpoint access.

In this scenario, you will add a second IIS IP Address to the Costpoint Allowlist ensuring that all Costpoint traffic must go through it. If an end user tries to open Costpoint application through the first IIS server (internet exposed IIS), their request to open Costpoint application will produce an error. But, the Time & Expense application can be opened through any IIS when no rules for it were entered.

As mentioned above, Access Restrictions can be defined for a specific product (Costpoint, Time & Expense, Budgeting & Planning, Employee Self Service and Supplier Portal) or for ALL deployed products. Restrictions defined at the product level override the restrictions defined at higher level (ALL).

To add new address to the access list:

1. Click the **Add** button.

2. For **List Type**, select **Blocklist** or **Allowlist**.

3. For **Product**, select a specific product or select **ALL** for all products

4. Enter the **IP Address**.

When you no longer need particular entry, select corresponding row in the table and click the **Remove** button. To remove all restrictions, click the **Remove All** button.

Additionally, keep in mind that lists for ALL and specific products are not complimentary. This means that if you added an allowlist for Costpoint product and another allowlist of IPs for ALL products, only the allowlist entered for Costpoint will be in effect when opening the Costpoint application.

Note: If you change the Access List information on this tab, you will need to restart all WebLogic servers or run the Rebuild Global Settings (SYPSTNG) application for those changes to take effect.

External TE Tab

If you are using the Time and Expense as a stand-alone Time and Expense system (that is different from this Costpoint system or even in different deployment of the product), you can configure External Time and Expense as a source for data for Import Work Schedules from Deltek Time and Expense application. To do it you will need to select the **Configure External Time & Expense** flag under **Products Installed** group and enter database connection information for external Time and Expense database on this External TE tab pictured below. You will need to enter the configuration information for the External Time and Expense DB schema. Once all fields are entered, you can press **Test** to test ability to connect to the DB with entered credentials.

But if you are using co-deployment model where Costpoint and Time and Expense are deployed to a single system, please do not use this tab and enter TE connection information on TE tab.

WebLogic Tab: Main

Use the Main tab of the WebLogic tab to review and update the content of the WebLogic domain configuration associated with the current Product installation. The J2EE application server(s) use this configuration information to run the Product application. This tab has a limited number of configuration properties, only those that are updated most frequently.

Warning: Deltek strongly recommends that you modify these properties only through the Configuration Utility because of the major impact they have on the Product application. You can configure other WebLogic properties through the WebLogic Console.

Additionally, most changes on this tab, as well as changes related to product deployment (or when Configuration Utility detected incorrect configuration), should be performed when only the Weblogic Admin Server is up. All other nodes (like Weblogic Cluster nodes or dedicated nodes) should be brought down. Many support cases demonstrate that Weblogic does not correctly propagate such changes in the running cluster, resulting in multiple requests to correct deployment. So, it is better to have all nodes except the Admin Server down. This allows whole domain-related changes to be done more smoothly. When all changes are fully done and saved, those changes will be propagated to all the nodes when the nodes start.

Note: For complete information about the configuration options of WebLogic server, refer to the WebLogic documentation for Weblogic 14.1.1 at:

https://docs.oracle.com/en/middleware/standalone/weblogic-server/14.1.1.0/index.html
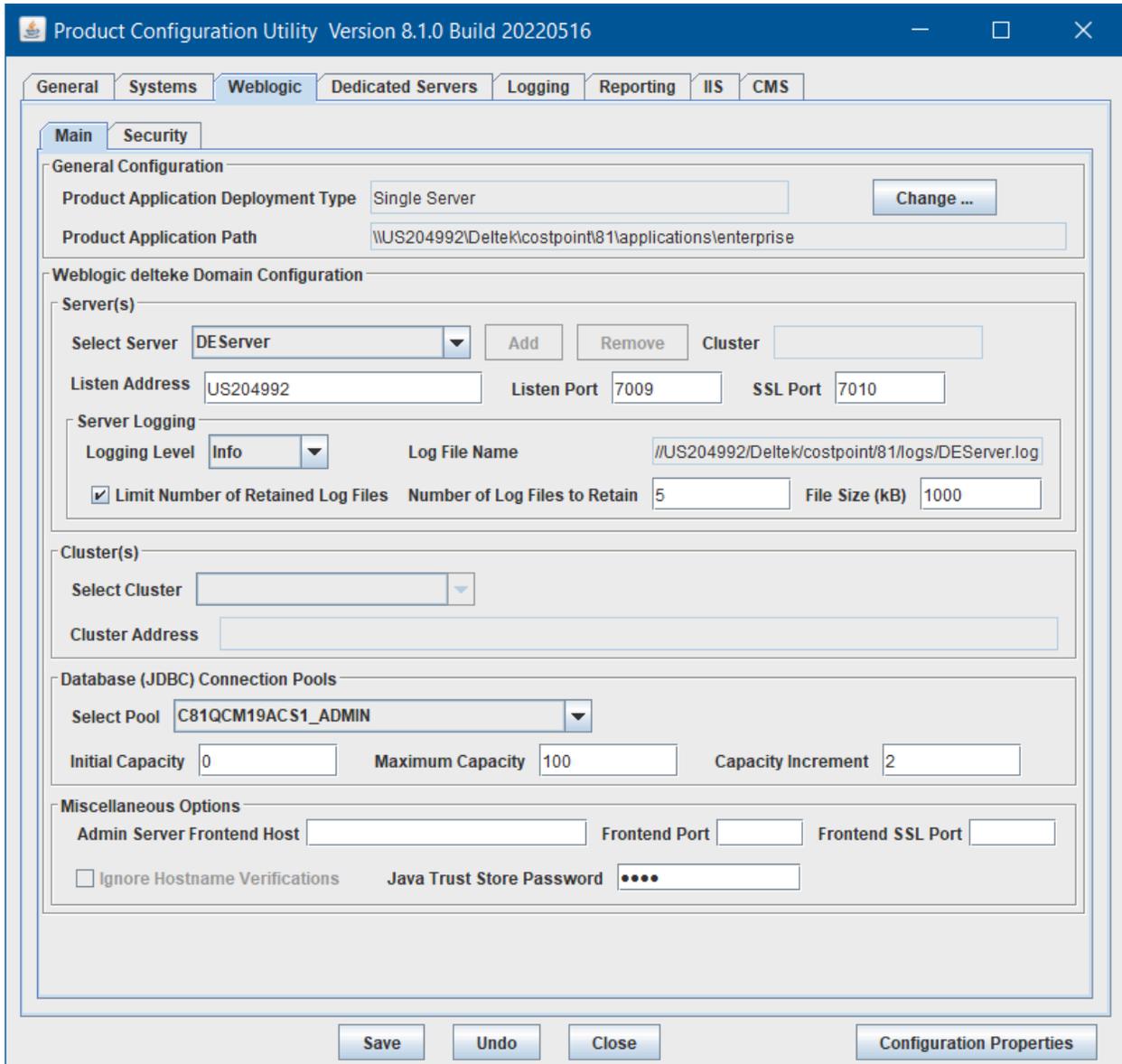
General Configuration

Use the options in this group box to define the **Product Application Deployment Type** for the system: either **Single Server** or **Homogeneous Cluster**.

- **Single Server**: This is the default deployment type, intended for small- to medium-sized deployments and for test environments. The Product application is deployed on a single WebLogic server (which also serves as an Administrative server in the domain). This is the simplest deployment option.

- **Homogeneous Cluster**: With this deployment type, the Product application is deployed to a homogeneous cluster of identical WebLogic servers. This deployment is recommended for large companies that want to take advantage of the load-balancing and failover capabilities provided by WebLogic clusters.
  Attention: For more information, see Appendix A: WebLogic Clustering with Product.

You can use dedicated servers to do batch processing, report processing, and serve Web Services requests with either of the two deployment types.

Attention: For more on dedicated servers, see the *Deltek Costpoint 8.0 Deployment Options Technical Overview* guide.

It is also possible to front either of the deployment types with IIS Web Server(s). For more information, see the *Deltek Costpoint 8.0 Deployment Options Technical Overview* guide.

Note: The Multi-Tier deployment type is no longer supported. If you used this deployment type with previous versions of Product, Deltek recommends that you switch to the Homogeneous Cluster type.

Changing Deployment Types

Before you change the deployment type, be sure to create backup copies of your Product application files and all configuration files, including WebLogic domain files. During the process, you must restart all your WebLogic servers and your IIS server(s).

To change the deployment type:

1. If you plan to run WebLogic servers on different physical machines, you should first move Product to a common shared file location. It will be shared between all Weblogic nodes and all nodes will read and write to this location during node startup and normal operation.

   Attention: See the General Tab section for more details.

2. Click **Change** to the right of the current **Product Application Deployment Type** field.

3. When prompted, choose to save changes before continuing and to select a new deployment type.

4. Select a new deployment type, and click **Change**.

   Confirm your selection at the prompt, and choose to shut down all WebLogic servers except the Administrative server before proceeding.
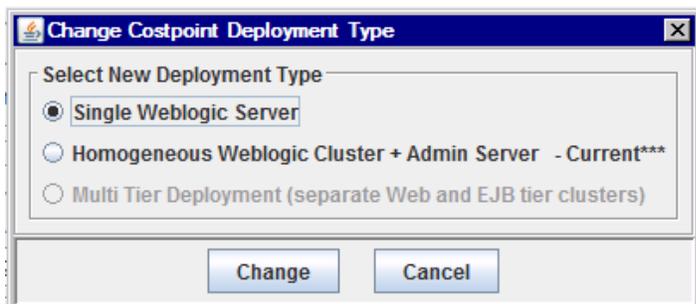
5. Shut down all WebLogic servers before continuing.

   The WebLogic Administrative server is also brought down by the process; you will be asked to restart it to finish.

   ```
   Restart Administrative Weblogic Server                          [x]

    (i)   Your Administrative Weblogic Server was brought down. Please restart it before continuing.
          Click Ok when the server is started.

                              [ OK ]
   ```
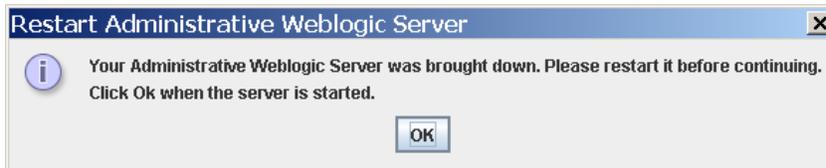
6. Wait until the WebLogic Administrative server is completely booted before proceeding.

   A reminder displays, listing further recommended actions.

7. Review and follow these recommendations.

8. If a WebLogic cluster was created during the change process, one server was automatically added to the cluster.

   You must set up a listen address, port(s), and logging options for the server, as described under "Server(s)" below. You will probably need to add additional servers to the cluster as well.

   If a WebLogic cluster was removed from the domain during the change process, all WebLogic server instances were removed from the domain.

9. After you have finished adding (or removing) WebLogic servers, check that all server/cluster URLs/ addresses are correct on the Product, Weblogic, Dedicated Servers, and IIS tabs of the Configuration Utility (depending on your configuration).

   Deltek strongly recommends using DNS names for your WebLogic clusters to simplify your URL maintenance.

10. If WebLogic server(s) were added during the process, command files were created to start up those newly created WebLogic servers.

    Attention: See the Startup Files for WebLogic Servers section for more details on startup files and how to register new WebLogic servers as a Windows Service.

Product Application Path

The Product Application Path is the Product J2EE application root folder. This is a read-only field. If you use more than one WebLogic server instance, this folder should be on a network shared location to which all WebLogic server instances have full access. Additionally, running most of the Product utilities (including the Configuration Utility) requires full access rights to this folder by the user who is operating the given Utilities.

Server(s)

Use these options to configure WebLogic server instances.

- **Select Server**: Select the Weblogic Server instance that you want to configure.
- **Cluster**: This read-only field displays the cluster name if the server belongs to a cluster.
- **Listen Address**: Enter the physical server name or IP address for the server. If you change this field, you must restart the WebLogic server whose address you've changed. If you use SSL (which is a requirement when using a WebLogic cluster), make sure that the server **Listen Address** matches exactly the server name on the SSL certificate that you deploy to this server, or disable hostname verification by selecting **Ignore Hostname Verifications** under **Miscellaneous Options**.
  Examples of valid entries for **Listen Address** are:
    - Short form: **hq1srvqc23**
    - Full server names (including domain): **hq1srvqc23.ads.deltek.com**
    - IP address: **10.4.34.17**
  Deltek recommends using the short form because it matches the server names in the Demo SSL certificates that are installed during the WebLogic server installation.
- **Listen Port**: Enter the plain-text (non-SSL) listen port for this server.
- **SSL Port**: Enter the SSL listen port for this server. If you leave this field empty, the default SSL port (7002) will be used. Even if you are not planning to use SSL port, it still needs to be configured for internal Weblogic communication.
  Attention: For more information on managing SSL certificates, refer to the *Deltek Costpoint 8.0 Post Installation Hardening Guide*.
- **Add**: Click this button to add additional WebLogic servers to clusters. Clicking this button displays the server dialog box that prompts you to enter the new WebLogic host and port information. When you add the server, two new command files are created:
    - StartCPWebNodeDEServerXX.cmd

- InstallCPWebNodeAsServiceDEServerXX.cmd

Where:

XX is a number (1, 2, 3, and so on).

Attention: For more information on how to use command files, refer to Appendix A: WebLogic Clustering with Product.

Note: Keep in mind that you will need to specify the SSL Port if you plan to use WebLogic clustering.

If you change the WebLogic server **Listen Address** or **Listen Port** (or **SSL Port**), you may need to update the corresponding connection information in the Cluster Address group, Dedicated Servers tab, and the IIS tab. Then restart all WebLogic and IIS servers.

If you change the WebLogic Admin server **Listen Address** or **Listen Port**, you may need to update the ADMIN_SERVER_URL in your \bin\ CPWebSetEnv.cmd file and recreate Windows Services for all WebLogic servers by using the InstallCPWebNodeAsServiceDEServerXX.cmd command file.

- **Server Logging**

  - **Log File**: This is the name of the file that stores current log messages for the server. Use the Logging tab to change this value, but keep in mind that all WebLogic server instances must have write access to this folder. If you change this field (on the Logging tab), you must restart the WebLogic server.

  - **Limit Number of Retained Log Files**: Select this option to indicate that the number of log files should be limited and that files should be rotated.

  - **Number of Log Files to Retain**: Enter the number of log files to retain if you selected the **Limit Number of Retained Log Files** option.

  - **File Size (KB)**: Enter the minimum file size in kilobytes of the log file. The valid range is from 1 to 65535.

Cluster(s)

Note: Costpoint 8.2 uses SSL ports for inner cluster communications between nodes in the Weblogic cluster. Make sure all SSL ports are entered correctly for all Weblogic nodes and those ports are not blocked by firewalls

Use these options to configure WebLogic server clusters if you are using them. If you are using the Single Server deployment type, these options are disabled.

- **Select Cluster**: Select the cluster that you want to configure.

- **Cluster Address**: Enter the DNS host name used by the cluster clients to connect to the cluster. Deltek strongly recommends using DNS names for your clusters to simplify URL maintenance. Please use regular (non-SSL) ports. If you change this field, you must restart all WebLogic servers in the cluster.
  A cluster URL is a network URL in the following form:

  - protocol + DNS name of the cluster
  or

- protocol + comma-separated host names and port numbers for all WebLogic server instances in the cluster. For example, if you have two nodes in your cluster, it may look like this: **http:\\hq1wlnode1:7009,hq1wlnode2:7009**.

Note: Note that on this tab and on the IIS tab (if used), you need to enter only that portion of the URL that contains addresses. Omit the protocol (http:\\ or t3:\\) portion in the beginning. For example, enter **hq1wlnode1:7009,hq1wlnode2:7009**.

However, on the Dedicated Servers tab (if used), you need to enter the full URL, including the protocol name.

Note: If you change the WebLogic Cluster DNS host name, you may need to update the corresponding connection information on the IIS tab, and then restart all WebLogic and IIS servers for the change to take effect.

Database (JDBC) Connection Pools

- **Select Pool**: Select the JDBC connection pool that you want to configure. The drop-down list contains a complete list of the JDBC Connection Pools set up on the WebLogic application server.
- **Initial Capacity**: This is the number of physical database connections that should be created when creating the JDBC connection pool during WebLogic server startup. A default value displays automatically, but you can change it.
- **Maximum Capacity**: This is the maximum number of physical database connections for the connection pool. **Note:** Initially, **Maximum Capacity** for each JDBC pool is set to 100. Depending on the size of your company and the intensity of use of Product, you may need to increase this number, especially if you see that real-time pool capacity is getting close to maximum size.
  Deltek recommends that you monitor the current, average, and maximum number of connections for your JDBC pools during the first weeks of initial product deployment and every time you add a significant number of end users. This information is available in the WebLogic Console on the Data Sources » Monitoring tab. It also makes sense to review this information periodically (for example, every three or six months) to make sure your JDBC pools are sized correctly. If you are using Time and Expense modules, it makes sense to review this information during the periods of maximum usage (typically at the end of periods or sub periods) when end users enter/approve timesheets or expenses.
- **Capacity Increment**: This is the increment by which the connection pool capacity is expanded when the WebLogic server determines that it should be expanded. A value displays automatically, but you can change it.

Miscellaneous Options

Miscellaneous Options

Admin Server Frontend Host		Frontend Port		Frontend SSL Port	

☐ Ignore Hostname Verifications   Java Trust Store Password [   ]

- **Cluster Frontend Host**, **Port**, and **SSL Port**: If you are using frontend load balancer in front of the Weblogic Cluster (or Administrative server in a single Weblogic server configuration) and you want to invoke Web Services through frontend load balancer, you will need to enter the address/port/ssl port for this front-end load balancer in these the fields. It will insure that the URL coming in the Web Service wsdl file contains the correct information for Web Services deployed in Product. Otherwise, you can leave these three fields blank. Don't enter anything in these **Front End Host/Port** fields in a simple configuration when a single IIS server is used to front Weblogic nodes.

- **Ignore Hostname Verifications**: Select this check box if you have not set up the appropriate SSL certificates to authenticate the different WebLogic nodes with the administration server. If you have not configured the SSL server certificates, you will receive errors when managing the different WebLogic servers. To avoid these errors, disable host name verification while setting up and validating the topology, and enable them again after the high availability topology configuration is complete and you have installed correct SSL certificates. By default, Demo SSL certificates installed during the WebLogic installation use short server names (for example, hq1srvqc23) and not full server names (hq1srvqc23.ads.deltek.com) or IP addresses (10.4.34.17). These short server names should match the names entered for each WebLogic node in the **Listen Address** field in the **Server(s)** group box. This option is enabled when you have multiple WebLogic nodes in your Product installation (either with a WebLogic cluster or one or several dedicated WebLogic servers).

- **Java Trust Store Password**: Costpoint uses Java Trust store when validating certificates related to authentication, fido, web services, and digital signatures. If you changed the standard Java Trust Store password using keytool or other jvm special tool commands, you will need to enter it here.
  Please refer to the standard JDK documentation on how to change the Trust Store password. After you change the password, you need to update the **Java Trust Store Password** field in the Configuration Utility with the correct value.

WebLogic Tab: Security

Use the Security tab of the WebLogic tab to review and update the content of the WebLogic domain configuration associated with security configuration options.

If you make any changes on this tab, you must restart the WebLogic server(s) for the changes to take effect.

User Lockout Options

Use these options to maintain user lockouts for your WebLogic domain. User lockouts allow servers to lock out users when invalid login attempts are made to their accounts.

If you make any changes to these options, you must restart the WebLogic server.

- **Lockout Enabled**: Select this option to enable lockout functionality.
- **Lockout Threshold**: Enter the maximum number of consecutive invalid login attempts that can occur before a user's account is locked out.
- **Lockout Duration**: Enter the amount of time (in minutes) that a user's account is locked out.
- **Lockout Reset Duration**: Enter the amount of time (in minutes) within which consecutive invalid login attempts cause a user's account to be locked out.

Authentication Providers

Costpoint security module allows you to configure various authentication providers responsible for authenticating users of different types and different authentication methods (for example, user/password authentication with Windows Active Directory or SSO through SAML IdP such as AD FS, AZURE, PING, Okta or other).

Providers can be configured system-wide (for all systems) or per each individual system. At each level (per system or for all systems), you can have multiple providers added. During the login process, user credentials will be verified against each provider until authentication succeeds for any single one in a chain or is rejected by all providers.

Attention: For more on using Authentication providers with Costpoint Family products, refer to *Deltek Costpoint 8.0 Security* guide.

You can configure each Authentication provider to apply to one system or all systems. When creating an Authentication provider, select a **Specific** system name or select **All Systems**.
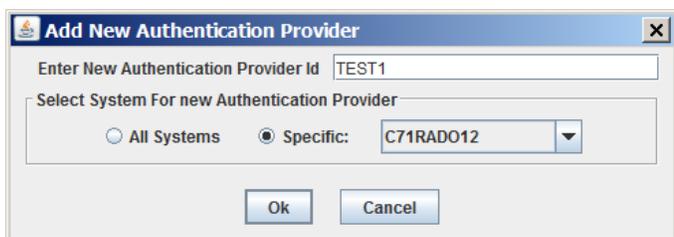
- **Provider Type**: Select Active Directory (AD), SAML (ADFS), SAML (AZURE), or SAML (Other).
- **AD Domain**: This is your company's Windows AD domain. During AD authentication or SAML SSO verification, the system concatenates the AD Domain value with the Active Directory ID entered in the Manage Users application.
  For example, if the Active Directory ID from the Manage Users application is **john.smith** and the AD Domain is **us.mycompany.com**, the system will use **john.smith@us.mycompany.com** and will:
  - For Active Directory (AD) authentication, log in to Windows AD domain controller under this id and password provided on the login page
  - For SAML SSO, match the id to the user principal name found in the Security Subject of SAML assertion. If the AD credentials verification succeeds for AD authentication or the user principal name from SAML assertion matches (case-insensitive) the id for SAML SSO, the authentication request will be successful and the user will be allowed to log in. Otherwise, the authentication request will be rejected.
- **Host Address/IP**: Applicable for Active Directory (AD) only. This is your company's Windows AD domain controller host name or IP address. This value can also be a space-delimited list of hostnames or hostnames and port numbers (using the syntax hostname:portnumber). For example, you can specify the following values for the host argument:
  - myhost
  - myhost hishost:389 herhost:5000 whathost
  - myhost:686 myhost:389 hishost:5000 whathost:1024

- **Port**: Applicable for Active Directory (AD) only. This is your company's Windows AD domain controller port number.

- **Use SSL**: Applicable for Active Directory (AD) only. Specify if SSL is required to communicate to your company's Windows AD domain controller.

- **Test**: Applicable for Active Directory (AD) only. Allows you to test the configuration and login to your company Windows AD domain controller.

- **SP Entity ID (URL)**: SP Entity ID for SAML IdP. Applicable for AD FS, Azure, and SAML (Other) providers only. The value is defaulted by Enterprise App External URL (**Product » Enterprise App External URL**). You can also use a value other than Enterprise App External URL as **SP Entity ID (URL)**. The value must conform to URL syntax and start with either http or https protocol. This is just an identifier and should not necessarily be a resolvable URL. For example:

  - https://costpoint-host/CPWeb

  - https://adfs-test-system1

  - https://costpoint-system-prod

  - https://costpoint-system-dev

  The value is case-sensitive. It must match exactly (including the case) with the SP Entity ID value in your SAML IdP (also known as the Identifier (Entity ID) in Azure, the Entity ID in Ping-Federate, the Audience URI (SP Entity ID) in Okta, and the Relying party trust identifier in AD FS).

- **SP Federation Metadata XML**: Applicable for AD FS, Azure, and SAML (Other) providers only. Click this button to generate Costpoint SP FederationMetadata.xml. Use the generated file to set up Costpoint application within SAML IdP.

- **IdP Federation Metadata XML**: Applicable for AD FS, Azure, and SAML (Other) providers only. This is your SAML IdP FederationMetadata XML.
  The best option is to use public URL to IdP FederationMetadata XML (not all SAML IdPs support that). When you use URL, you do not have to store SAML certificates in Costpoint configuration; the certificates are loaded dynamically from the URL at runtime when users log in to Costpoint.
  Alternatively, when your SAML IdP does not support public URL to FederationMetadata XML, you can enter the local path to the file. The file must first be downloaded from your SAML IdP and then copied locally so that it can be accessed by the Configuration Utility. In this case, SAML certificates will be extracted from the file and stored in the Costpoint configuration. If the certificate expires or becomes invalid on the SAML IdP side, you will have to use the Configuration Utility to process the IdP FederationMetadata XML file again to update Costpoint configuration and replace the certificate.
  Finally, you can leave this field blank. Such setup will be incomplete with no SAML certificates provided via public URL or stored within the Costpoint configuration. You will have to come back to Configuration Utility and complete the SAML setup later.

- **Load/Default All Parameters**: Applicable for AD FS, Azure, and SAML (Other) providers only. Click this button to process and load SAML certificates. You can always change the parameter values manually.

- **Load Certificates Only**: Applicable for AD FS, Azure, and SAML (Other) providers only. If **IdP Federation Metadata XML** is the URL, then this action is not allowed. In case of the URL, the certificates will be loaded dynamically at runtime. In case of the local file, SAML certificates will be processed and stored in Costpoint configuration.

- **SP Initiated Sign-in (use Costpoint login page)**: Applicable for AD FS, Azure and SAML (Other) providers only. Select either **WS-FED** or **SAML** protocol if you want to enable Costpoint Initiated Sign-in (that is, the ability to sign-in to your SAML IdP from Costpoint login page). If selected, you will be required to enter the **WS-FED**

Endpoint URL for the **WS-FED** method or enter the **SAML Sign-in/sign-out URLs** for the **SAML** method. You can always disable SP Initiated Sign-in.

Attention: For additional information, refer to *Deltek Costpoint 8.0 Security* guide.

Note: If you change the LDAP provider's connection information, you will need to restart all WebLogic servers or run the Rebuild Global Settings (SYPSTNG) application for those changes to go into effect.

Windows AD/Kerboros Single Sign On (SSO)

The **Windows AD/Kerboros Single Sign On** section lets you enable Windows AD/Kerboros Single Sign On for your product installation. To enable, select the **Enable SSO** check box, enter a folder name in which you will copy the KeyTab files, and copy all needed KeyTab files in that folder.
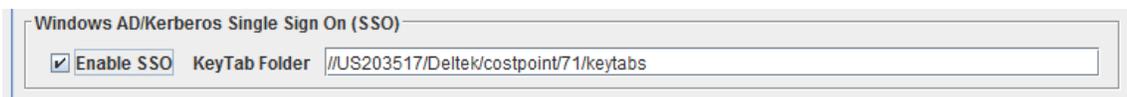
Attention: For more details on Single Sign On, refer to *Deltek Costpoint 8.0 Security* guide.

Note that changes to the settings in this group will require a restart of all WebLogic servers in your domain.

Authentication Troubleshooting

The **Log Authentication Debugging Details** option lets you configure WebLogic servers to log authentication debugging details to security logs. This setting is **not** recommended for production mode. It should be used to troubleshoot authentication issues during the initial configuration of the system.

The **Log Kerboros Login Details** option lets you configure WebLogic servers to log authentication debugging details to each server console and domain log for all Kerboros calls WebLogic is doing. This setting is **not** recommended for production mode. It should be used to troubleshoot only Windows AD/Kerboros Single Sign On authentication during the initial configuration of the system.

Dedicated Servers Tab

Use the Dedicated Servers tab to review and configure dedicated servers.

Note: Updating this information requires a connection to the WebLogic administrative server. To establish this connection, select **Product Configuration** on the Configuration Utility Startup screen.

Product includes a job server component that allows a user to schedule and execute processes and reports at specified times, in background mode, without using an end user's workstation. Functionally, the job server in Product 7 is similar to the job server in the previous client/server versions of Product.

In a Single Server or Cluster deployment, the job server automatically deploys on the same WebLogic instances used to service browser sessions. Setting up dedicated servers lets you have application servers that are used solely to process tasks scheduled through the job server.

Each dedicated server requires a separate WebLogic server instance.

Attention: For more information about configuring dedicated job servers, see Appendix B: Dedicated Processing Job/Web Service Servers.

The second use of dedicated servers is to respond to Web Services requests if you choose to use Web Services.

Product supports up to 10 Dedicated Servers (Weblogic instances). You can use each dedicated server to process jobs or process Web Service requests or both, or you can use nodes in your WebLogic cluster to process both.

Attention: For more information about Web Services, refer to the *Deltek Costpoint 8.0 Integration Console* guide.
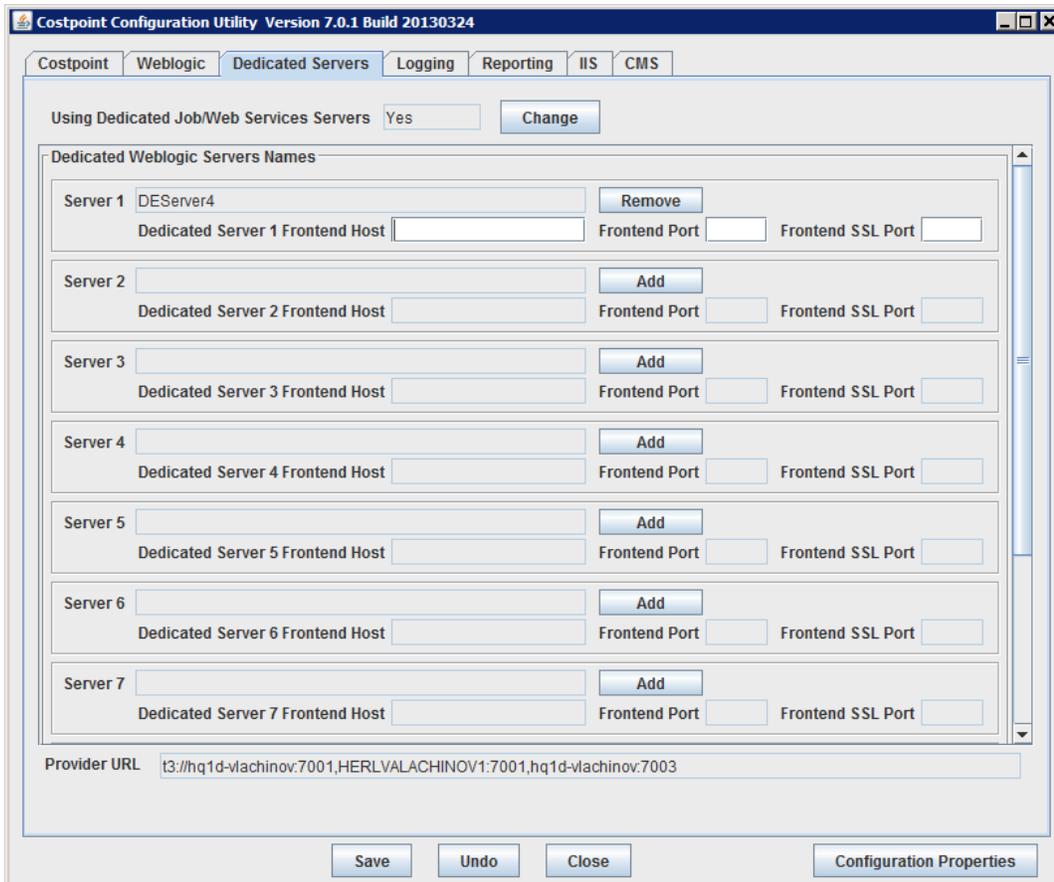
Changing the Using Dedicated Servers Option

The **Using Dedicated Job/Web Services Servers** field controls whether or not you use the dedicated job server feature.

Warning: Before you change this field, be sure to create a backup copy of the Product application files and all configuration files, including WebLogic domain files. During this process, you must restart all your WebLogic servers.

To change the Using Dedicated Servers option:

1. If you plan to run WebLogic servers on different physical machines, move Product to a shared network location if it is installed locally (that is, on the C:\ or D:\ drive).

    Attention: For more information, see the General Tab section.

2. Click **Change** to select a different option.

3. Save your changes, and confirm your selection.

4. Shut down all WebLogic servers except the administrative server, which is also brought down by the process.

    A prompt displays asking for you to restart it in order to finish.

5. Wait until the WebLogic administrative server is completely booted before proceeding.

    A reminder displays listing further recommended actions.

6. Review and follow these recommendations.

    This process adds one dedicated server and prompts you to set up the appropriate address, port, and log options for the new server on the WebLogic tab for a new Weblogic server instance.

7. Click **Add** next to empty server slots to add up to 10 dedicated servers.

    Enter server address and port information for each of these servers. Adding the server creates two new command files:

    ▪ StartCPWebNodeDEServerXX.cmd
    ▪ InstallCPWebNodeAsServiceDEServerXX.cmd

    Where **XX** is a number (1, 2, 3, and so on).

    Attention: For more information on how to use command files, refer to [Appendix A(#startup-files-for-weblogic-servers), "WebLogic Clustering with Product."

8. Click **Remove** next to a server name to remove an unneeded dedicated server.

9. For each configured dedicated WebLogic server, you can enter the **Dedicated Server X Front End Host /Port / SSL Port** if you are using frontend load balancer in front of a Dedicated Weblogic server instance and want to invoke Web Services through this frontend load balancer.

    It will ensure that the URL coming in the Web Service wsdl file contains the correct information for Web Services deployed on this Dedicated Weblogic server. Otherwise, you can leave these three fields blank. Don't enter anything in these **Front End Host/Port** fields in a simple configuration when a single IIS server is used to front Weblogic nodes. Verify that the Provider URL at the bottom of the Dedicated Servers tab contains the correct provider URL for JMS services for dedicated job server message queues. This URL should be the:

    ▪ Admin server URL if you are using a Single Server deployment
    ▪ DECluster cluster URL if you are using a Homogeneous Cluster deployment

    You must redeploy the Product application if you change this URL.

    Note: After configuring dedicated server(s), you need to go to the Start/Stop Job Server application in Product and configure appropriate job queues to run on the dedicated server if you want to use the dedicated server as a dedicated job server.

Logging Tab

Use the Logging tab to review and update logging configuration options.

To make logging changes take effect, you must run the Rebuild Global Settings (SYPSTNG) application, select Log Files, and run the Rebuild Global Settings process.

- **Logging Level For Enterprise Logger**: Select the level that meets your logging needs. The higher the level, the more information is logged into the log files. The recommended setting for production environments is ERROR.
  Note: If you have application problems, Deltek Customer Care may ask you to change your logging level and send your log files to them.
- **Log Folder**: Enter, or click the ellipsis to select, the name of the folder where log files will be placed. All WebLogic server instances should have write access to this folder.
- **File Size**: Enter the maximum file size for each log file.
- **Number Of Log Files**: Enter the maximum number of previous log files to be kept at one time.
- **Log Debug Information For WS Calls**: Select this check box to log additional debugging information for Web Service calls. This setting is not recommended for production mode. It should be used to debug Web Services during the initial configuration of the system or in development environments.
- **Number Of Log Entries To Keep**: Enter the number of Web Service calls to keep in the log file.
- **Web Service Log File Name**: This field will display log file name for the Web Service debugging. This log file typically will be created under the main Log Folder entered on this tab.

Reporting Tab

Use the Reporting tab to review and update configuration properties used by WebLogic application servers to process reports.
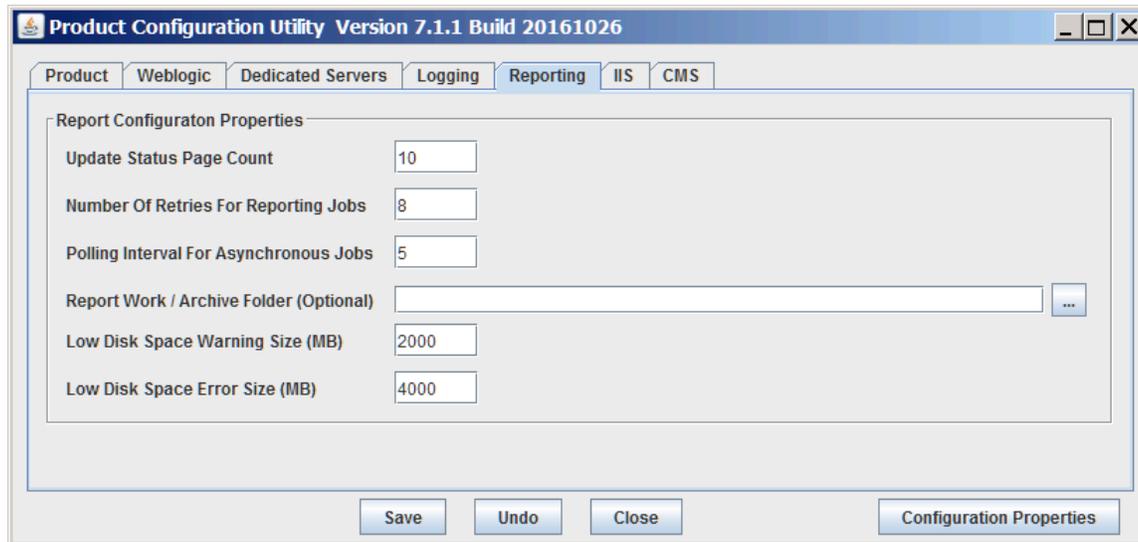
Report Configuration Properties

- **Update Status Page Count**: Enter the number of report pages built before the report updates the client (browser). This must be an integer greater than 0.

- **Number Of Retries For Reporting Jobs**: The number you enter in this field indicates the maximum number of attempts to generate a report. This must be an integer greater than 0.

- **Polling Interval For Asynchronous Jobs**: Enter a polling interval in seconds for asynchronous jobs. This must be an integer greater than 0.

- **Report Work / Archive Folder (Optional)**: By default, the reporting work folder and the reporting archive folder are located under the main Product installation folder (for example, C:\deltek\costpoint\71\applications\birt\report). You can change the folder if needed.
  Note: If you are planning to use reporting or report archiving intensively, have limited space under the main Product installation folder, you should enter another folder name. Keep in mind that all your Weblogic servers should have full access to this folder in order to properly process reporting jobs.

- **Low Disk Space Warning Size (MB)**: Enter the minimum disk space (in MBs) at which the system will generate a Low Disk Space Warning when executing a report. This must be an integer greater than 0.

- **Low Disk Space Error Size (MB)**: Enter the minimum disk space (in MBs) at which the system will generate a Low Disk Space Error when executing a report and the report execution will be aborted. This must be an integer greater than 0, but less than or equal to the Warning Size.

IIS Tab

Use the IIS tab to review and update the configuration options that control how the IIS Web server (if you use one) will communicate with the WebLogic server or cluster that is running the Product application.

Costpoint supports up to five IIS servers. Typically, the load on IIS Servers is not high, so Deltek recommends having additional IIS servers only if you are concerned that a single IIS server represents a single point of failure in your deployment chain.

You should keep in mind that if you have more than one IIS server, you need to have either a software or hardware load balancer in front of your IIS servers. Also, it is important to correctly configure this load balancer to forward HTTP requests back to the correct IIS server and not to repeat them.

Attention: For more information about installing and configuring the IIS Web server, refer to the *Deltek Costpoint 8.0 Deployment Options Technical Overview* guide or to Microsoft IIS Web server documentation.

Note: If you make any changes on this tab, you must restart the ISS server for these changes to take effect. If you update the **Cookie ID**, you must restart both IIS and Weblogic server.

- **Use IIS #X:** Select this option if you use an IIS Web server number X with your Product application. If you have just one IIS server, you would select only the **Use IIS#1** check box and leave the **Use IIS#2** check box cleared.

- **Configuration File Location:** Enter, or click ⬚ to select, the full path to the iisproxy.ini configuration file for

corresponding IIS Server. This file contains the settings that control how the IIS Web server communicates with your WebLogic server or cluster. If you have more than one IIS Server, all the iisproxy.ini files will be synced by the Utility.

If you do not have full access to this file (for example, if a particular IIS is behind a firewall), do not add the IIS in Configuration Utility. You will have to manually copy the iisproxy.ini file and DEWebApp folders from another IIS server to which you have full access after changes to your cluster and deployment of every MR.

▪ **DEWebApp Folder Location**: Enter, or click to select, the network location of the DEWebApp folder for corresponding IIS Server. This folder contains the Web parts (static HTML and images) of the Product application that should be deployed on the IIS Web server. When you deploy hot fixes, the MR installer copies the new Web part files into this folder.

If your IIS server is located behind a firewall and you do not have direct file access to that folder, enter a folder that will be used as a temporary storage folder for updated Web parts. You will need to synchronize all files to IIS manually each time after applying hot fixes.

▪ **IIS to Weblogic Connection Configuration Parameters**: Follow these rules for entering the configuration parameters:

  ▪ For a Single Server deployment, enter:

    ▪ **WebLogic Host IP**: This is the network (IP) address of the WebLogic administrative server where the Product application is running.

    ▪ **Port**: This is the listening port of the WebLogic administrative server where the Product application is running.

  ▪ For a Homogeneous Cluster deployment, enter:

    ▪ The DECluster cluster DNS name or the comma-separated IP addresses and ports of the WebLogic servers in this cluster. Do <u>not</u> include the protocol (http: or https:) in the cluster address (for example, enter: **host1:7001,host2:7003**).

▪ **Cookie ID**: Enter a custom Cookie ID that holds the session identification, or leave it blank to use the default value of **jsessionid**.

Entering a unique Cookie ID allows end users to open two different Weblogic-based applications (for example, Costpoint and Time & Expense) in in different tabs of the same browser window and not interfere with each other when both products are deployed on the same IIS server or on IIS servers that have addresses of the same origin.

According to the same origin policy (you can read more here: http://en.wikipedia.org/wiki/Same-origin_policy), when two products based on Weblogic are deployed on the same IIS sever, the session cookies for those two products overwrite each other each time another product is accessed. This leads to the inability for end users who work in one product (for example, Costpoint) to log into a different product (for example, Time & Expense) in the same browser and maintain valid sessions for both products. This happens because the session cookie (which keeps the session ID for your Costpoint session) gets replaced by the Time & Expense cookie after you log into the second product. This will happen (according to same origin policy mentioned above) even if the products are accessed through different sub-domains on the same IIS. For example:

  ▪ http://comanyintranet.com/Costpoint/page1.html

  ▪ http://comanyintranet.com/TimeAndExpense/page2.html

  ▪ http://east.comanyintranet.com/TimeAndExpense/page3.html

So after you've logged into the second product, the session cookie for the first product is lost and your still open browser window will no longer be able to work correctly with first product. This results in you being

kicked out of the first product with a message like, "Your session is invalid or timed-out."
To prevent this type of behavior, Deltek recommends having unique **Cookie ID** for each product/installation.

CMS Tab

Use the CMS tab to review and update the configuration options for the Content Management System (CMS) Integration.

Attention: For more information about Content Management Integration, refer to the *Deltek Costpoint 8.0 Content Management Integration* guide. Also see the Costpoint online help topics for the "Enter/Manage Content Types" (SYMCMICT) and" Enter/Manage Application/Content Links" (SYMCMIAL) applications.
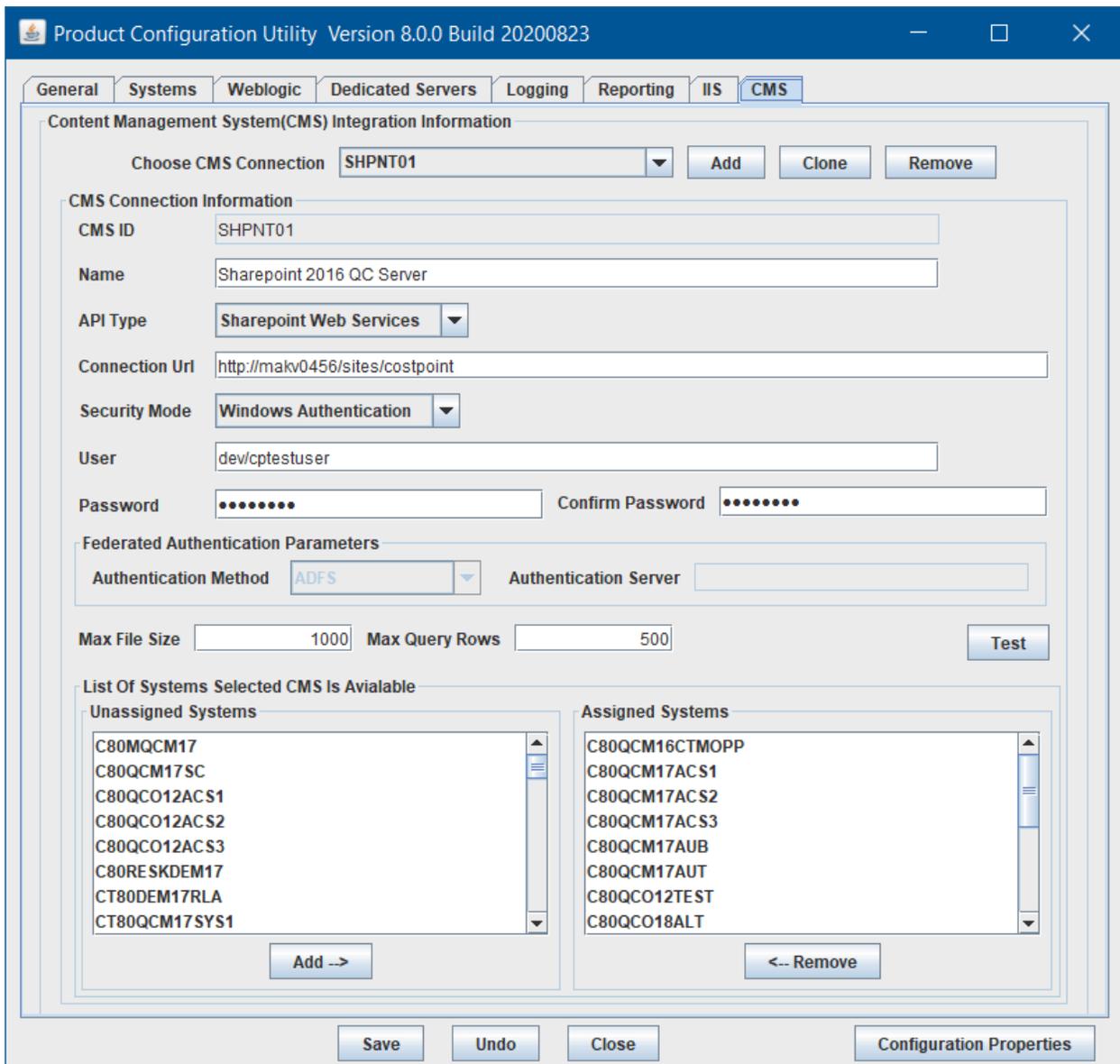
In the **Choose CMS Connection** section, select one of the following actions:

- To create a new CMS connection, click **Add**. You will be prompted for a new **CMS ID.**
- To clone an existing CMS connection, select an existing CMS connection from the drop-down list, and click **Clone**. You will be prompted for a new **CMS ID**. The rest of the connection information will be cloned from the selected CMS connection.
- To remove an existing CMS connection, select the connection from the drop-down list, click **Remove**, and confirm your choice.

For each connection, enter the following information.

- **CMS ID**: Enter the ID that used to identify this connection.
- **Name**: Enter a descriptive name for this connection.
- **API Type**: Select one of the available API types from the drop-down list.
- **Connection URL**: Enter the URL address used to connect to the CMS. This must be an URL pointing to a site or sub site dedicated for Costpoint (not a library or folder).
  Note: This field is case-sensitive. To avoid system errors, be sure that the value matches the case of the URL.
- **Security Mode**: Select one of the available authentication modes for this connection from the drop-down list.
- **User**: Enter the user name used to authenticate the user to the CMS. This account site must have administrator privileges for a site (or a sub site) to which the Connection URL points.
- **Password** and **Confirm Password**: Enter the password used to authenticate the user to the CMS.
- **Federated Authentication Parameters**: When **Federated(SAML)** is selected as the **Security Mode**, additional selection and parameters are required:
- **Authentication Method**: Select either Office 365 with Windows Live authentication, Office 365 with ADFS on premises, or Sharepoint on premises with ADFS on premises
- **Authentication Server**: Enter the name of the ADFS server.
- Integration with SharePoint in Office 365 is possible without a username and password. When using SharePoint Online, you can define Costpoint as an application in Azure AD and grant permissions to SharePoint as well as to all the other services in Office 365. This model is the preferred model in case you are using SharePoint Online. So, if you want to use this model, select **Federated (OAUTH2)** as the **Security Mode**. Additional selection and parameters are required in this case:
  - Certificate
  - Application (client) ID
  - Directory (tenant) ID
  Attention: For more information and detailed instructions on how to set up this **Federated (OAUTH2)** as **Security Mode**, refer to the "SharePoint App Only Authentication" section in *Deltek Costpoint 8.2 Content Management Integration* guide.
- **Max File Size**: Enter the maximum file size (in Kb) that can be loaded from the CM server. Loading big files from CMS to Weblogic can affect the available memory for other tasks.
- **Max Query Rows**: Enter the maximum number of files that the CMS server will return when querying a list of

files from the CMS server. This parameter can affect the speed of returning results of query from CMS server. However, if this parameter is set too low, the CMS server may return an incomplete list of files available in the CMS.

After you enter all the parameters, click **Test** to test the connection to the CMS.

For each CMS connections entered, you will need to assign a list of systems in which this CMS connection will be available in the **List Of Systems Selected CMS Is Available**.

Additionally, there is CMS tab under **Systems tab » System Integrations » CMS**. This tab displays the same CMS configuration Information, but it is filtered to show only CMS Integrations assigned to the selected Costpoint system. If you have several systems and several CMS(s) configured, the tab can be helpful for you in reviewing the CMSs used in one particular system.

Note: If you make any changes on this tab, you must run the Rebuild Global Settings (SYPSTNG) application for these changes to take effect.

Appendix A: WebLogic Clustering with Product

A WebLogic server cluster consists of multiple Oracle WebLogic server instances, running simultaneously and working together to provide increased scalability and reliability. To a user, a cluster appears to be a single WebLogic server instance.

The server instances that constitute a cluster can run on the same machine or be located on different machines. You can increase a cluster's capacity by adding additional server instances to the cluster on an existing machine, or you can add machines to the cluster to host the incremental server instances. Each server instance in a cluster must run the same version of WebLogic server.

Benefits of Clustering

A WebLogic server cluster provides these benefits:

- **Scalability**: The capacity of an application deployed on a WebLogic server cluster can be increased dynamically to meet demand. You can add server instances to a cluster without interrupting service; the application continues to run without impact to clients and end users.
- **High Availability (failover)**: In a WebLogic server cluster, application processing can continue when a server instance fails. You "cluster" application components by deploying them on multiple server instances in the cluster so that, if a server instance on which a component is running fails, another server instance on which that component is deployed can continue application processing.
- **Load Balancing**: Load balancing is the even distribution of jobs and associated communications across the computing and networking resources in your environment.

The choice to cluster WebLogic server instances is transparent to application developers and clients. However, understanding the technical infrastructure that enables clustering will help programmers and administrators

maximize the scalability and availability of their applications.

Attention: For more information about WebLogic clustering, refer to the Oracle document "Using Clusters" at: http://download.oracle.com/docs/cd/E12839_01/web.1111/e13709/toc.htm.

Recommended Homogeneous Cluster Architecture Overview

The recommended architecture is a combined tier (Homogeneous Cluster) architecture. All tiers of the Product application are deployed to the same WebLogic server cluster. This architecture is illustrated in Figure 1.

Figure 1: Recommended Combined Tier Architecture with Stand-Alone Web Server Layer
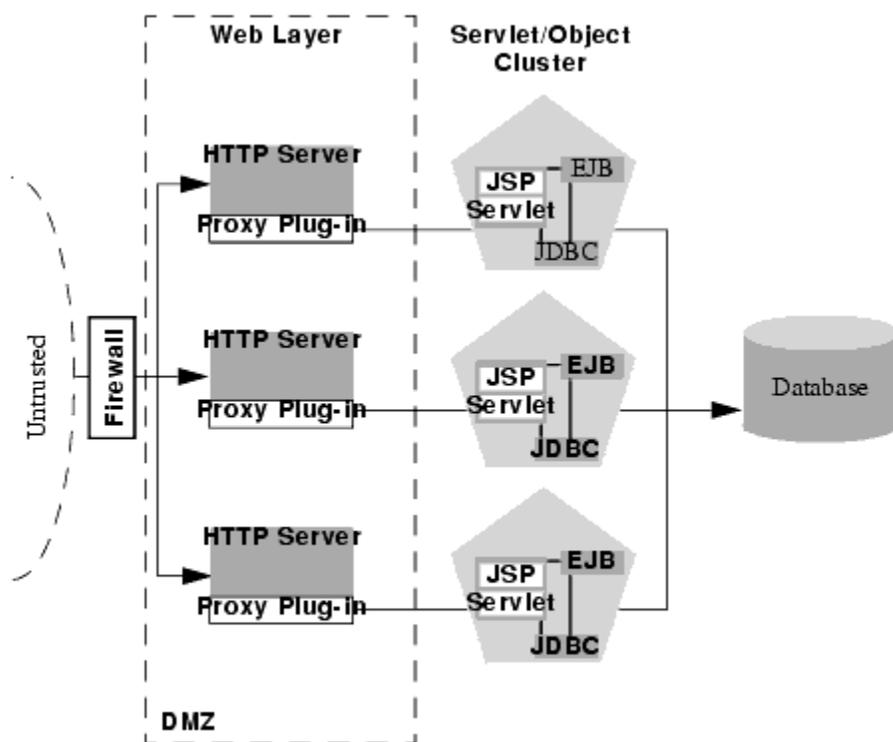
* Graphic source - ORACLE WebLogic Server™ Documentation

In Figure 1, you see a separate Web server layer. The HTTP server(s) serve static HTML content. All servlets and EJBs are deployed on each WebLogic server instance, which allows all requests between objects to be processed locally without expensive serialization/deserialization of requests and remote calls.

Attention: This appendix focuses on WebLogic cluster setup, not configuring Web (HTTP) servers. For help setting up and configuring proxy servers and Web servers, refer to the appropriate documents under \install\ proxy\

Alternatively, you may not be using separate HTTP Web servers. In this scenario, shown in Figure 2, your

WebLogic server (which has a build-in Web server) will service HTTP requests along with business logic requests.

Deltek also strongly recommends having an Administrative server which is not part of the cluster in your domain. This server is not shown in Figures 1 and 2.

Attention: For firewall and other security considerations for both scenarios, refer to:

http://docs.oracle.com/cd/E24329_01/web.1211/e24425/planning.htm#BCGIAJEB

Note: All servers in your WebLogic domain should have file access to the folder where the Product application will be deployed.

Figure 2: Recommended Combined Tier (Homogeneous Cluster) Architecture without Stand-Alone Web Server Layer
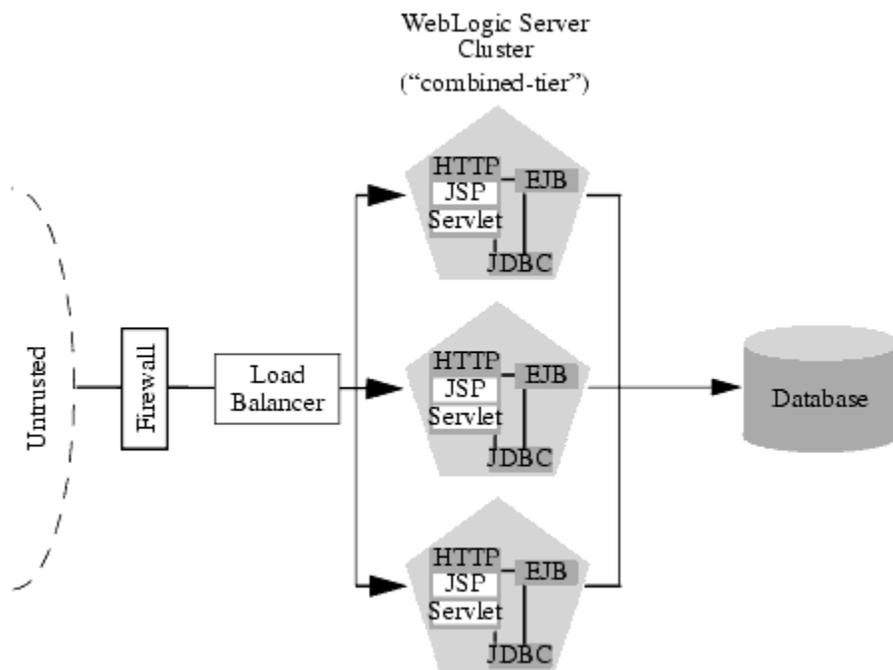
* Graphic source - ORACLE WebLogic Server™ Documentation

Physical Hardware and Software Layers

In the recommended multi-tier architecture, the application tiers are hosted on two separate physical layers of hardware and software.

- **Web Servers (Web Tier):** A bank of Web servers provides static HTTP content for the Web application, using a WebLogic proxy plug-in or HttpClusterServlet to direct servlet requests to a servlet cluster. This tier is optional since the Servlet Tier may serve static HTTP content.
- **Servlet/Presentation Layer**: The Web/presentation layer consists of a cluster of WebLogic server instances

dedicated to hosting static servlets. This servlet cluster does not host clustered objects. Instead, servlets in the presentation tier cluster act as clients for clustered objects, which reside on a separate WebLogic server cluster in the object layer.

▪ **Object Layer**: The object layer consists of a cluster of WebLogic server instances that hosts only clustered objects—EJBs and RMI objects as necessary for the Web application. By hosting the object tier on a dedicated cluster, you lose the default collocation optimization for accessing clustered objects. However, you gain the ability to load balance on each method call to certain clustered objects.

Deltek also strongly recommends having an Administrative server which is not part of any cluster in your domain. This server is not shown in Figure 3.

Attention: For setup and configuration instructions for the IIS Proxy Web Server, refer to the Deltek *Costpoint Installation* guide and to the *Costpoint 8.0 Deployment Options Technical Overview* guide.

For firewall and other security considerations, refer to:

http://docs.oracle.com/cd/E24329_01/web.1211/e24425/planning.htm#i1069911

Note: All servers in your WebLogic domain should have file access to the folder where the Product application will be deployed.

Before You Begin

Before you begin, you must decide on the overall architecture and topology of your WebLogic domain.

Attention: For help with this task, refer to current Oracle documentation and review their recommendations and supported configurations (for both hardware and software) under Oracle WebLogic Server:

http://www.oracle.com/technology/software/products/ias/files/fusion_certification.html

Creating a WebLogic Cluster

To convert a single server WebLogic installation to a WebLogic cluster (or to convert it back from cluster to single server):

1. Have all Product users log out of Product.

2. Start the WebLogic Admin Server.

3. Shut down all other WebLogic nodes (including dedicated servers).

4. Start the Configuration Utility, and follow the instructions for Changing Deployment Types.

Startup Files for WebLogic Servers

To start WebLogic server instances, you must create a startup command for each instance and execute each command file on the physical machine.

Tip: You can use Remote Desktop to do this.

To start an Administrative server, use the regular StartCPWeb.cmd command file located in the <Product Home>\bin folder.

You need a command file to start each WebLogic instance in a cluster or each WebLogic dedicated server. The Configuration Utility will create a new command (.cmd) file for you each time a WebLogic server is added through the utility, or you can create a copy of the StartCPWebNode.cmd file yourself manually. Name the files StartCPWebNode1.cmd, StartCPWebNode2.cmd, StartCPWebNode3.cmd, and so on.

In each of those command files, update the SERVERNAME variable as shown below:

set SERVERNAME=DEServer1

In addition, you can register WebLogic servers as Windows Services. This will allow you to automatically start WebLogic servers each time the operating system restarts. To register the WebLogic administrative server as a Windows Service, use the following file:

<Product Home>\bin\InstallCPWebasService.cmd

Executing the command file on the physical machine where you want to host the Windows Service will create (or recreate) a Windows Service named **Costpoint 7.0**. After creating the service, you may need to enter the Windows Login Account under which the service will be running:
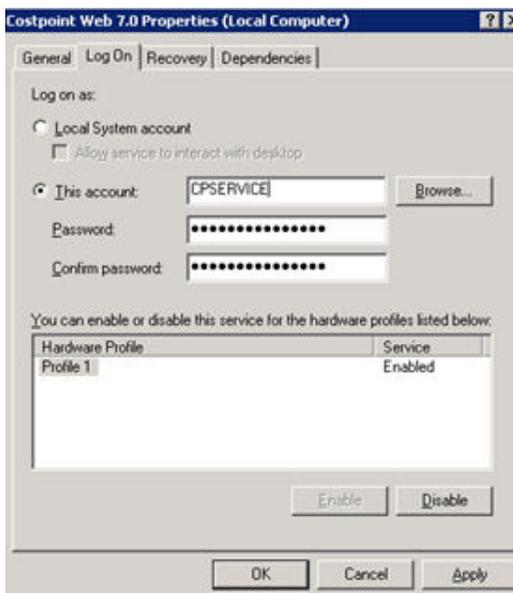
Keep in mind that this account should have full rights to the <Product Home> folder.

Registering other WebLogic servers as Windows Services is similar to registering the Admin server, but you should use the appropriate node command file to register the corresponding WebLogic server. For example:

- InstallCPWebNodeAsServiceDEServer1.cmd
- InstallCPWebNodeAsServiceDEServer2.cmd
- InstallCPWebNodeAsServiceDEServer3.cmd

Again, keep in mind that you need to execute each command file on the physical machine that will host the Windows Service.

Tip: You can use Remote Desktop to do this.

If you plan to run several WebLogic nodes on the same physical machine, you need to provide different Windows Service names for each node. To do this, open the appropriate InstallCPWebNodeAsService.cmd command file in the text editor, and change SERVICE_NAME to have a unique name. For example:

SET SERVICE_NAME="Costpoint 7.1 Node 1"

If you plan to run the WebLogic administrative server and the WebLogic node on the same physical machine, you should set the Windows service for a node to be dependent on the Windows Service for the WebLogic administrative server.

Attention: Review the following Microsoft article on how to delay the loading of specific services:

http://support.microsoft.com/kb/193888

Starting Servers in a WebLogic Domain

Start each WebLogic server instance while logged into the physical machine.

Note: Always start the administrative server first because all other instances are dependent on the administrative server to download the domain configuration. Make sure that it is fully started and that you see this message in the console or in the server log:

<BEA-000360> <Server started in RUNNING mode>

Next, start all instances in the WebLogic cluster, and then start the dedicated server(s).

Network Communication between Web (IIS) Server(s) and Weblogic Server(s)

When end users work with the product, their requests flow from the Web (IIS) servers to the Weblogic server(s).

For such requests, the IIS servers open outbound communication ports between those tiers. Additionally, when the Weblogic nodes perform session replication communication between Weblogic nodes, they also open outbound communication ports.

In a bigger deployment (cluster or not) with lots of end users, all those network communications can put a strain and even exhaust a number of available outbound ports on all those machines/VMs where the Web Servers and Weblogic nodes are deployed. By default, there is less than 16,000 dynamic ports available on each Windows machine. So, it is important to monitor the number of available ports and increase the dynamic range if it's needed. Typically, Event ID 4227 will be logged on the Windows OS side for such occurrences.

Attention: For more details on this topic, refer to the Microsoft Windows documentation or consult with network engineers:

https://learn.microsoft.com/en-us/troubleshoot/windows-client/networking/tcp-ip-port-exhaustion-troubleshooting

Appendix B: Dedicated Processing Job/Web Service Servers

Using a dedicated server where processing and reporting jobs can run asynchronously is a Product business requirement (as it was in the previous client/server version of the product). A dedicated server is one on which no other tasks can be run except specially scheduled processes and reports. Closing the accounting period or sub-period or calculating and posting payroll are examples of such tasks.

Product meets this business requirement by having a separate WebLogic server instance that doesn't service any Web or integration requests. This dedicated WebLogic server must be part of the same WebLogic Deltek domain as all other instances of WebLogic servers where Product is deployed. Note, however, that this dedicated server cannot be part of any cluster. A pre-configured message EJB deploys only on this new dedicated WebLogic server. This message EJB is configured to listen to a separate queue where messages are sent only if a new job is ready for processing on this dedicated server. The dedicated job server processes those messages in consecutive order.

You can also use dedicated server(s) to respond to incoming Web Service(s)/ integration requests if your business requirements dictate such a configuration.

Product comes pre-configured with 10 message queues and 10 dedicated message beans, so you can set up as many as 10 dedicated servers.

Appendix C: Backing Up Product

This appendix guides you through the process of backing up Product components.

Since the Product runtime is distributed across multiple components that reside on different hardware servers, it is essential that all these components are backed up and restored to the same level. A restore point will consist

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of backups of the following components that are taken around the same time frame:

- Product software that resides on your WebLogic server or a shared Product install location
- Product software that resides on your Microsoft IIS Web server (if applicable)
- Product databases

Product Application

This step provides instructions for stopping your Product WebLogic server and making backups. It must be performed on the machine on which the Product files are installed.

To stop the Product WebLogic server:

1. On the WebLogic server, click **Start » Run**, enter **services.msc**, and click **OK** to open the Windows Services dialog box.

2. Locate the Product service, right-click it, and click **Stop** on the shortcut menu.

To back up the Product directories:

1. Use Windows Explorer to navigate to the C:\Deltek folder where your Product application software is installed.

2. Make a backup of the C:\Deltek folder.

3. Make a backup of the C:\Oracle folder.

IIS Web Application

This step provides instructions for backing up the Product software that resides on the Microsoft IIS Web server. This step must be performed on the Microsoft IIS Web server.

To back up the Web part of the Product application on a Microsoft IIS Web server:

1. Use Windows Explorer to navigate to the \Deltek folder under the Microsoft IIS Web server's default folder.

   The Microsoft IIS Web server's default folder will normally be located under the directory path: C:\Inetpub\wwwroot and will contain the \DEWebApp.

2. Use Windows Explorer to make a backup of the C:\Inetpub\wwwroot\Deltek folder.

Databases

This section provides instructions for backing up the Product databases for both Microsoft SQL Server and Oracle installations.

Microsoft SQL Server

To back up the Product databases in a Microsoft SQL Server environment:

1. Click **Start » All Programs » Microsoft SQL Server » SQL Server Management Studio** to launch SQL Server Management Studio.

2. Log in as **sa** or another user who has system administration access on the database S.

3. Select the Product database that you want to back up, right-click it, and click **Tasks » Back Up** on the shortcut menu.

4. On the Database Back up dialog box, perform the following:

    - Under General tab
        - **Database**: Select your Product Database (**DELTEKCP**).
        - **Backup type**: Select **Full**.
    - Under Backup Set
        - **Name**: Enter a name for this backup set (for example, **DELTEKCP.BAK**).
        - **Description**: Enter a description for this backup set (optional).
        - **Backup set will expire**: Leave the default of **0** days.
        - **Destination**: Select the **Backup to Tape** or **Backup to Disk** option, and then specify a backup destination. If no backup destinations appear, click **Add** to add an existing destination or to create a new one.
    - Under Options tab
        - **Overwrite Media**: Select **Append to the existing backup set** (to append the backup to an existing backup on the backup device) or **Overwrite all existing backup sets** (to overwrite an existing backup on the backup device).

5. Repeat the above steps to back up the ADMIN and META databases.

Oracle

To back up the Product databases in a Oracle environment:

1. Perform an export of your Product database using Oracle's export utility.

   The recommended syntax for exporting the Product database is as follows:

   exp <Deltek User>/<DeltekPassword>@<DatabaseInstance> file=<ExportName>.dmp log=<LogName>.log

   Where:

   - **<DeltekUser>** identifies the owner of the schema. For the transaction database, the ID is **DELTEK**.
   - **<DeltekPassword>** identifies the password for your DELTEK user. The default is **INSTALL**.
   - **<DatabaseInstance>** identifies the Oracle SID for the instance containing your Product database.
   - **<ExportName>** identifies the name of the export file you will be creating.
   - **<LogName>** identifies the name of the log file you will be creating.

2. Repeat the above step to back up the CPADMIN and CPSYSTEM schemas.

Appendix D: Moving Product

This appendix guides you through the process of moving Product files.

To move Product files:

**Note:** Before you proceed, make sure that all users are out of Product.

1. Create a new shared location, and give the costpointtoolsgroup full access to the folder.

2. Shutdown all the Product WebLogic services.

3. Uninstall the Product service on your servers.

4. On the Admin server, start WebLogic using the StartCPWeb.cmd file in the bin folder.

5. Verify that you can access the shared drive from the Admin server

6. Open Product Configuration Utility.

7. On the Product tab, click the **Move** button.

8. When prompted to save your changes before proceeding, click **Yes**.

9. When the following message box displays, click **OK**.
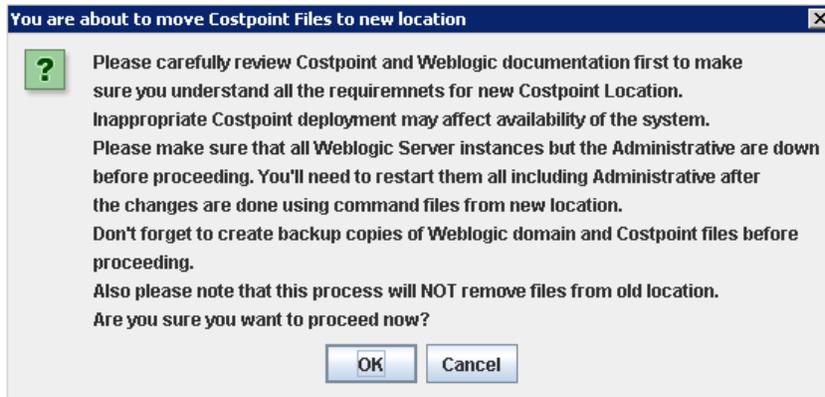
10. On the Move Product Location dialog box, enter, or click the ellipsis button to select, the folder created in step 1.
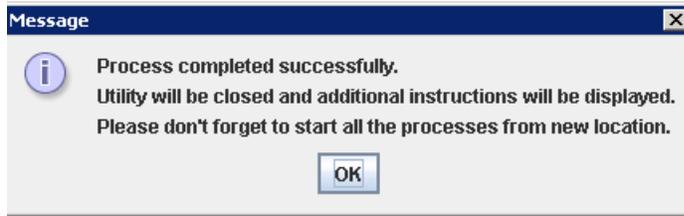
   The Deltek\Costpoint\80 files will be moved to that location.
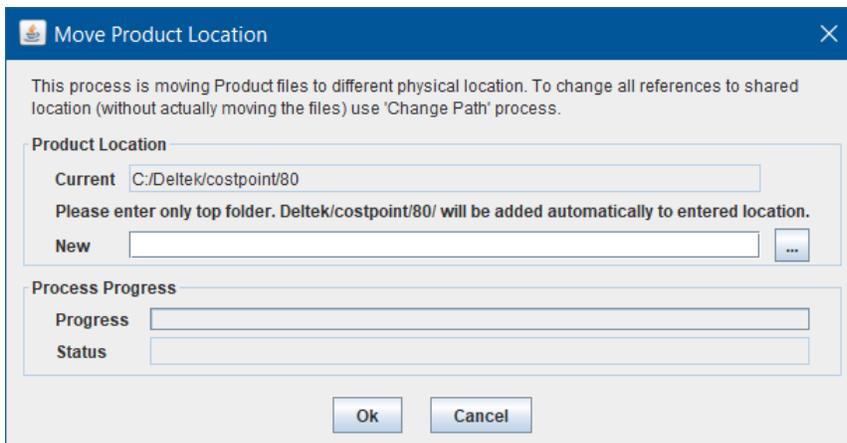
11. Click **Ok** to start the move process.

   Note: On the Deltek test environment, the process took 15-20 minutes to complete.

12. When notified that the process has completed successfully, click Ok..

Note: The utility creates a **moveInstructions.txt** file in the <Product Home>\bin\ folder with instructions for the manual steps that are needed to complete the process:

1. Reinstall the Product service.

2. Reset IIS to use the files from the new location.

On the CPWEB virtual directory, click on advanced settings and change the default location for the files.

It may be easier to just uninstall and reinstall the web tier...that can be faster that troubleshooting issues.

Close the text file so the utility can finish updating the install CP Web Service file with the correct locations.

13. Remove the file share from C:\Deltek, and then rename the folder to something like C:\DeltekOLD.

14. If you are using Windows Services to start WebLogic server(s), register the updated versions of Windows Services by running **InstallCPWebNodeAsService.cmd** on the machine where the WebLogic nodes will run.

15. You are finished.

Please start all new command files from the new location.

Appendix E: Creating a Brand New System on the Oracle DB Platform

Note:

- This section is only applicable if you use the Costpoint 8.2 New DB Tier installer to create new Costpoint 8.2 schemas.

▪ This section does not apply if you are not licensed to use either Time and Expense or Planning or both.

To add a brand new Costpoint 8.2 system on Oracle RDBMS DB (not a copy of your existing production/test DB) to an existing Application Tier machine:

1. Execute the Costpoint 8.2 Database Tier installer and create your Oracle Costpoint 8.2 schemas.

2. Add the new Costpoint 8.2 system through the **Costpoint 8.2 Config Utility**.

   Include Time & Expense and Planning schemas when creating the Costpoint system if you are licensed to use them, but do not activate the system.

3. Execute **Link-Views** using the **Costpoint 8.2 DBWizard** for the newly added co-deployed system.

4. Apply your Costpoint/Time & Expense/Planning license(s) to the new system using the **Costpoint 8.2 DBWizard**, **Apply License** option.

5. Execute **Link-Views** using the **Costpoint 8.2 DBWizard**.

6. Execute and compile invalid objects in your Time and Expense schema.

   Deltek provides a script called **CompileSchemaObjectsAfterLinkViews.sql**. This script is packaged and available under your DB Tier Time & Expense installation folder:

   C:\Deltek\Costpoint\82\Database\Scripts\ORACLE\TE_TRANSACTION\Scripts\
   CompileSchemaObjectsAfterLinkViews.sql

7. Execute and compile invalid objects in your Planning schema.

   Deltek provides a script called **CompileSchemaObjectsAfterLinkViews.sql**. This script is packaged and available under your DB Tier Planning installation folder:

   C:\Deltek\Costpoint\82\Database\Scripts\ORACLE\PL_TRANSACTION\Scripts\
   CompileSchemaObjectsAfterLinkViews.sql

Appendix F: Log Files and Logging

As you read this appendix, please keep in mind that Costpoint uses different kinds of independent products under the hood (IIS, Weblogic, DB server, and so on). Each of these products have their own logging mechanisms and their own log files and log file configuration.

When you review log files, it is important to first think about which tier(s) you are troubleshooting since the answer to this question will require setting up logging on different tier(s)/server(s) and later reviewing different log files. Subsequently once logging is set up, log files are usually located on corresponding tiers/servers. Because of this, you will need to log in remotely to a particular VM/tier to review that tier's log files. And since the log files are generated by different products, their filenames will be different and have a different format.

The following sections describe the most typical types of issues you may want to troubleshoot, how logging is configured on a particular tier, and which log files from that tier you may need to review:

IIS

If you are troubleshooting issues related to accessing IIS or how IIS is forwarding browser or integration (Web Services) requests to Weblogic, you may want to enable logging on IIS server(s). When you deploy Costpoint to IIS, you configure IIS to use Weblogic's IIS dll plug-in, which uses the iisproxy.ini configuration file. This dll has very basic and limited logging options. To configure logging in that file, open it in Notepad and add following lines to enable logging:

```
Debug=ALL

DebugConfigInfo=ON

WLLogFile=c:\temp\wlproxy.log
```

Please note that since logging is done under a user who is running IIS, the list of folders where it can log is usually very limited by Windows OS and IIS itself. Typically, it can't access network, system, or user folders. Deltek recommends using the c:\temp folder on IIS. Please make sure such folder exists and IIS have rights to write to that folder. After saving changes to the iisproxy.ini file, you need to invoke the iisreset command to make them effective.

After those changes are made, log in into the product and you'll see that the log file (c:\temp\wlproxy.log) in the above example was created. This log file will contain every request the iisproxy.dll receives from IIS and how these requests are forwarded to Weblogic node(s). Keep in mind that this log file will not rotate, and it can grow very quickly. To prevent that, it is important to turn off logging after troubleshooting of this tier is complete.

Weblogic

If you are investigating an issue related to Weblogic behavior, whole cluster or a particular node, you can review the Weblogic logs. There are four different levels and types of logs:

- **Each Weblogic node** has a dedicated log file. Typically, these are named after each node (DEServer.log, DEServer1.log, DEServer2.log, and so on).
  Attention: Please see the configuration options related to these logs under the Weblogic -> Main tab of this guide.

- **Domain log**: Each Weblogic node forwards its events to the Admin Server and the Admin server logs the appropriate events to the whole Weblogic domain log file named delteke.log. These domain log files are located under the main logging folder mentioned above.
Very rarely will you be asked to review the Weblogic domain logs instead of the individual node logs since the domain log contains mostly duplicate information from the nodes. You configure the Weblogic domain log using the Weblogic Console under **Domain » Configuration » Logging**.

- **Windows Service logs**: Each Weblogic node can be registered as a Windows Service. If you are investigating issues related to why a particular Service is not starting, you can review the corresponding service logs. These logs are usually named serviceDEServer.log, serviceDEServer1.log, serviceDEServer2.log, and so on. The names and folder for these logs are set in in the corresponding service installation command files InstallCPWebNodeAsServiceDEServer.cmd, InstallCPWebNodeAsServiceDEServer1.cmd, and so on, and are specified in the last line of such files:
%WL_SRVC% -install -log:%CP_ROOT%\logs\serviceDEServer1.log ...

- **Weblogic node access logs**: Each Weblogic node logs information each time it is accessed. The file is called access.log and is located under the Weblogic node folder (\deltek\costpoint\82\delteke\servers\DEServer1\ logs\. The node access logs have information about accessing resources like servlets on each node and are configured using the Weblogic Console under each **Servers » Logging » HTTP** sections.

Costpoint

There are several log files created by Deltek Costpoint developers and most events that are related to Costpoint functional behavior are logged into these files. Most Costpoint functional inquiries can be investigated using these logs. While there are many types of Costpoint logs, here are the three major ones:

- **Main Costpoint log**: Each Weblogic node has a dedicated Costpoint log file. These files are named after each node (for example, CP_DEServer.log, CP_DEServer1.log, CP_DEServer2.log, and so on).
Attention: Please see the configuration options related to these logs under the Logging tab of this guide.
On top of the configuration options is another configuration file called \deltek\costpoint\82\applications\ enterprise\properties\CPLog4j.properties. This file allows you to make the system log more events related to particular application(s) or product area(s). Refer to the comments in this file as it contains the most typically used examples of how to set up more logging for a given system, user, or application.

- **Security logs**: Each Weblogic node creates files named CP_Security_DEServer.log, CP_Security_DEServer1.log, CP_Security_DEServe2r.log, and so on, and logs security-related events into these log files.

- **Integration log files**: Several product integrations between Costpoint and other systems receive their own integration log files. Among those are integrations with COBRA, CRM, GovWinIQ, MES, SFT, SilkRoad, NGRP, HR Smart, and so on. Events for such integrations are logged into files called:
  - CP_INT_COBRA_DEServer.log
  - CP_INT_CRM_DEServer.log
  - CP_INT_GOVWINIQ_DEServer.log
  - CP_INT_MES_DEServer.log.

  If you are interested in or you are troubleshooting a particular product integration, these would be the files to review. As with most other Costpoint-related logs, these are created for each Weblogic node where the integration is invoked.

Appendix G: Configuring Interactive Email by Registering Actionable Messages Provider

Note: Registering with Microsoft is not required for Deltek Cloud customers because Deltek is registered with Microsoft as a Global Sender. The following instructions are applicable only for on-premise Costpoint customers.

To use the Interactive Email features, you have to register your Organization with Microsoft as a Provider (Sender) of Actionable Messages.

To start the registration process:

1. Go to https://outlook.office.com/connectors/oam/publish, and click **+ New Provider**.

2. For the **Scope of submission**, select **Organization** and then return to the first section.

   2. Scope of submission

   Who are you enabling this for? *

   ○ Test Users (Test your provider on users from same tenant, auto-approved)

   ●

   Organization (You will be submitting this request to your organization's Exchange administrators. Please note that rollout takes 24 hours after this submission is approved)

   ○ Global (Please note that rollout takes 2 weeks after this submission is approved)

   3. Additional Information

   Email addresses of other people who should be notified.

   expense-notification@contoso.com ⊗

   Add another email address

   Comments

   Any additional detail for your administrator to easily approve this request.

   ☐ I accept the terms and conditions of the App Developer Agreement

   [Save] [Cancel]

3. In the **Friendly Name** field, enter a name that is meaningful to you.

This value is used just for your reference.

Actionable Email Developer Dashboard

⊖ Back

1. New Provider

Friendly Name *

(any name as you wish)

Provider Id (originator)

232191db-4a70-4832-a218-d6a4dcf015cf

Organization Info

Deltek, Inc(   )

Sender email address from which actionable emails will originate *

costpoint@deltek.com

Add another email address

Target URLs *

(HTTPS URLs which will be invoked by the actions from the message card. Regex can be used to club mutiple URLs)

(Costpoint public URL)

Add another actions URL

Public Key

(Provide your own public key if you want to send signed card payloads)

(generated public key from Config Utility)

Add another public key

Logo

Logo must be of type .png, .jpg or .gif and no greater than 60 kb

4. Make note of the **Provider Id** and the **Sender email address**.

These are the values that you need to enter into Configuration Utility:

Interactive Email Settings

Provider ID	7▢▢▢▢▢▢-e▢▢▢▢▢▢▢▢▢▢▢	Sender Email	costpoint@deltek.com	
Private Key	MIIEvQIBAD...	...	Public Key	>AQAB</Exponent></RSAKeyValue> ... Generate Keys

5. After you generate a key pair, click ellipses button to copy the **Public Key**, and enter it into the provider page.

   The **Target URL** is the Costpoint URL that must be publicly available on the Internet with a valid SSL certificate.

6. When done, save the provider page and save changes in Costpoint Configuration Utility.

Appendix H: Installing Costpoint Bot for Microsoft Teams

This appendix explains the steps to set up the Costpoint bot in Microsoft Teams. The Costpoint bot is integrated into the Costpoint web application, and it enables access to Costpoint data and functions from the Teams chat interface. The bot can be associated with only one Costpoint system. If you need to integrate Teams chat with multiple systems, the steps below will need to be repeated for each system separately.

Keep in mind that **Enterprise App External URL** must be public if you want to use integration with MS Teams as Azure servers (where Office 365 is running) should be able to talk to Costpoint.

These steps assume that you have Microsoft Teams administrative privileges.

Note: As of the second half of 2025, Microsoft has disabled the creation of multi-tenant Teams bots. Make sure that all of the following steps are performed at the tenant where the Teams bot will actually be deployed.

To install the Costpoint bot in MS Teams:

1. Go to https://dev.teams.microsoft.com/home and log in with your Microsoft account.

2. In the lefthand navigation pane, click **Apps**.

3. Click **+ New app.**

4. On the Add app dialog box, enter the name you want to use for the app as it will appear in MS Teams, and click **Add**.

You can name it **Costpoint**, or if you plan to have more than one, you can append the name of the system (for example, **Costpoint-CPDB82**).

The app will encapsulate the bot, which you will create later.

5. On the Basic Information page, fill in the remaining required fields except for the Application (client) ID and click Save.

   The following entries are just suggestions you can follow or change, based on your preferences.

6. In the **Configuraion** section on the lefthand navigation pane, select **App features**, and click **Bot**.

7. On the Bot screen, click **Create a new bot**.

8. On the Bot Management page, click **+ New Bot**.
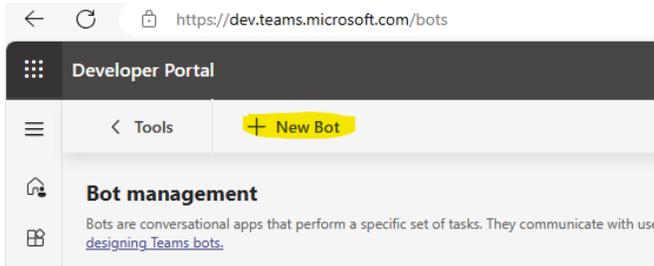
9. On the Add bot dialog box, enter a name for the bot, and click **Add**.

    Note: Deltek suggests entering the same name as the Teams app for simplicity.

10. After the bot is created, on the Configure page, enter the bot's **Endpoint address** and click **Save**.

    This is the address of the Costpoint bot service. The URL has the following structure:

    <CostpointEnterpriseAppUrl>/cprestfulws/bot.cps?system=<systemName>

    (for example, https://sample.deltek.com/CPWeb/cprestfulws/bot.cps?system=CBDB82)
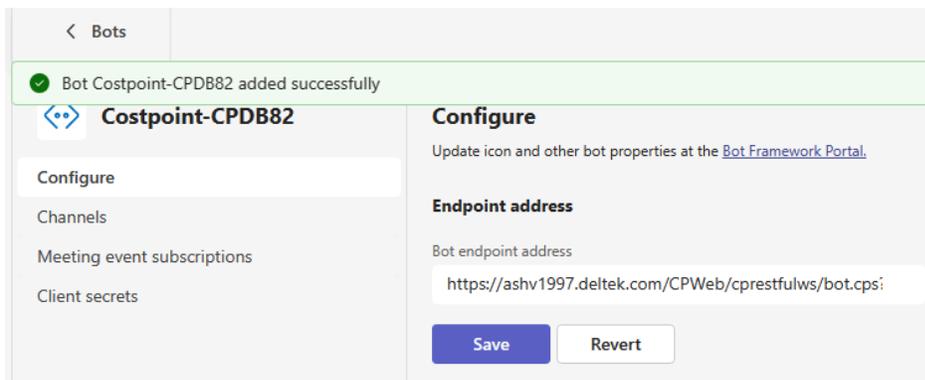
11. On the Channels page, make sure that the **Microsoft Teams** checkbox is selected.
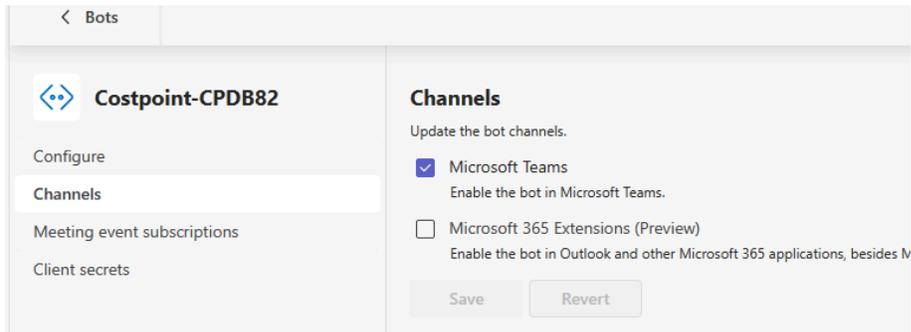
12. Select the Client Secrets page, and click **Add a client secret for your bot**.

    This operation generates a secret (password) that you need to copy immediately. This value will be required later for the Costpoint configuration.

13. Return to the Apps page on the Developer Portal and select the App from steps 1 -6.

14. In the lefthand navigation pane, select **App features**.

15. On the App features screen, click the **Bot** feature tile.
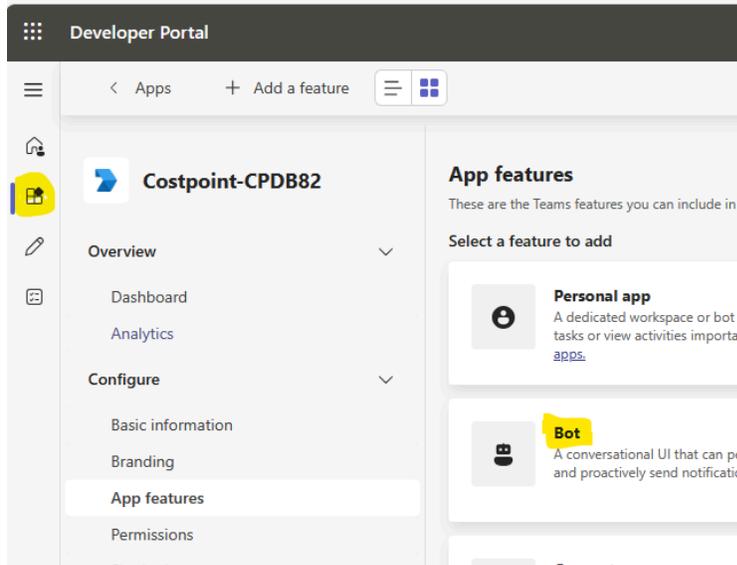
16. In the drop-down field below the **Select an existing bot** option, select the bot that you just created, and click **Save**.

17. Ensure that the **Upload and download files** and **Personal** checkboxes are selected:
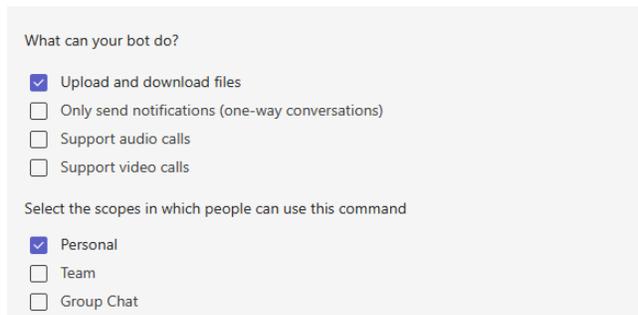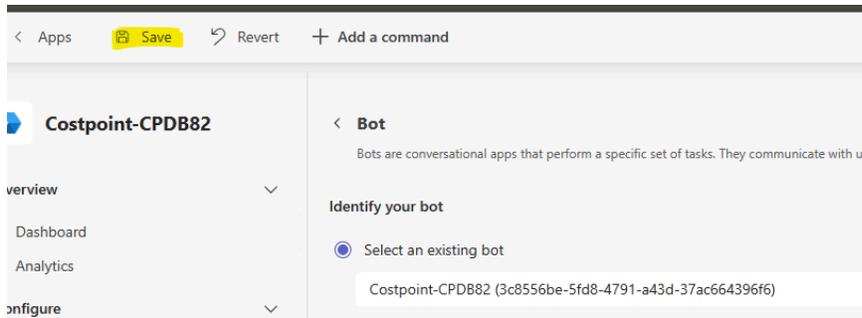
18. Click **Save**.

19. In the lefthand navigation pane, select **App features**.

20. In the Bot title, copy the bot ID and save it in a text file.

    You will need this ID in the Costpoint configuration.
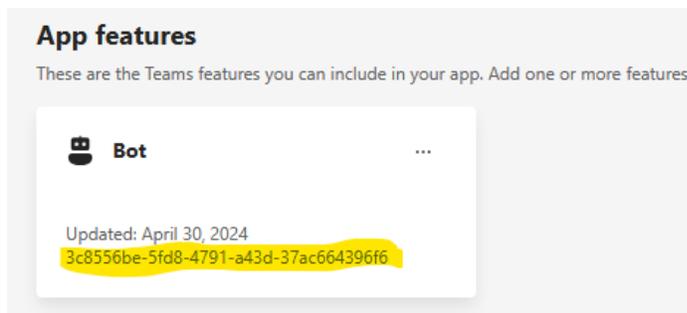
21. Click **Save**.

22. In the lefthand navigationpane, select **Branding**.

23. Find the **Teams_app_color.png** and **Teams_app_outline.png** icon files in the Costpoint web application folder (...\deltek\costpoint\82\applications\enterprise\DEWebApp\images) and upload them to the corresponding app/bot branding icons.

24. Click **Save** after upload.

Color icon

Select a full-color, 192x192-pixel PNG

⤒ Upload an image

🗑 Delete

CP

Cancel | Save

Outline icon

Select a white or transparent 32x32-pixel PNG.

⤒ Upload an image

🗑 Delete

CP

Cancel | Save

25. In the left-hand navigator pane, select **Domains**.

26. Click the **Create your first domain** button, enter the domain name from the URL (that is, *.deltek.com), and click **Add**.

27. Select **Publish** and then select the **App Package** option.

28. Click the Manifest and verify the content of the Manifest file.

It should look similar to the definition below. The app and bot IDs will be different, but the structure and options should match.

"$schema": "https://developer.microsoft.com/en-us/json-schemas/teams/v1.16/MicrosoftTeams.schema.json",

"version": "1.0.0",

"manifestVersion": "1.16",

"id": "2f182eae-2a8f-4981-b03b-789d8aeab2be",

"name": {

 "short": "Costpoint-CPDB82",

 "full": "Costpoint Bot"

},

"developer": {

```json
    "name": "Deltek, Inc.",

    "mpnId": "",

    "websiteUrl": "https://deltek.com",

    "privacyUrl": "https://deltek.com/privacy",

    "termsOfUseUrl": "https://deltek.com/terms"

  },

  "description": {

    "short": "Costpoint Bot integrated with the Costpoint system CPDB82.",

    "full": "Costpoint Bot integrated with the Costpoint system CPDB82 for user notifications and AI interface."

  },

  "icons": {

    "outline": "Teams_app_outline.png",

    "color": "Teams_app_color.png"

  },

  "accentColor": "#FFFFFF",

  "bots": [

    {

      "botId": "3c8556be-5fd8-4791-a43d-37ac664396f6",

      "scopes": [

        "personal"

      ],

      "isNotificationOnly": false,

      "supportsCalling": false,

      "supportsVideo": false,

      "supportsFiles": true

    }
```

```
    ],

    "validDomains": []
```

29. If everything looks correct, you can publish the app to the Teams, or download the package to publish later.
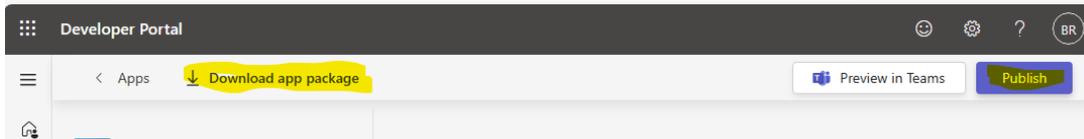
Note: After installing the bot in Teams, you need to add its definition to the Costpoint configuration. This is done in the System Integrations – MS Teams Bot section of this manual.

You will need the parameters. The first two you were instructed to save in previous steps:

- **Bot ID**: Save in step 14, also highlighted in the manifest from step 17
- **Secret**: Password/secret you were instructed to save in step 9
- **Tenant ID**: Your Azure tenant ID from Entra ID of your Azure portal https://portal.azure.com/

If you do not have access to the Configuration Utility app, these values can also be entered in the Microsoft Teams Bot Connection Information subtask of the Manage System Integration Accounts (SYMINTGR) screen in Costpoint.,

Appendix I: Create a Costpoint Bot in Azure GCC High

To create a Costpoint bot in Azure GCC High:

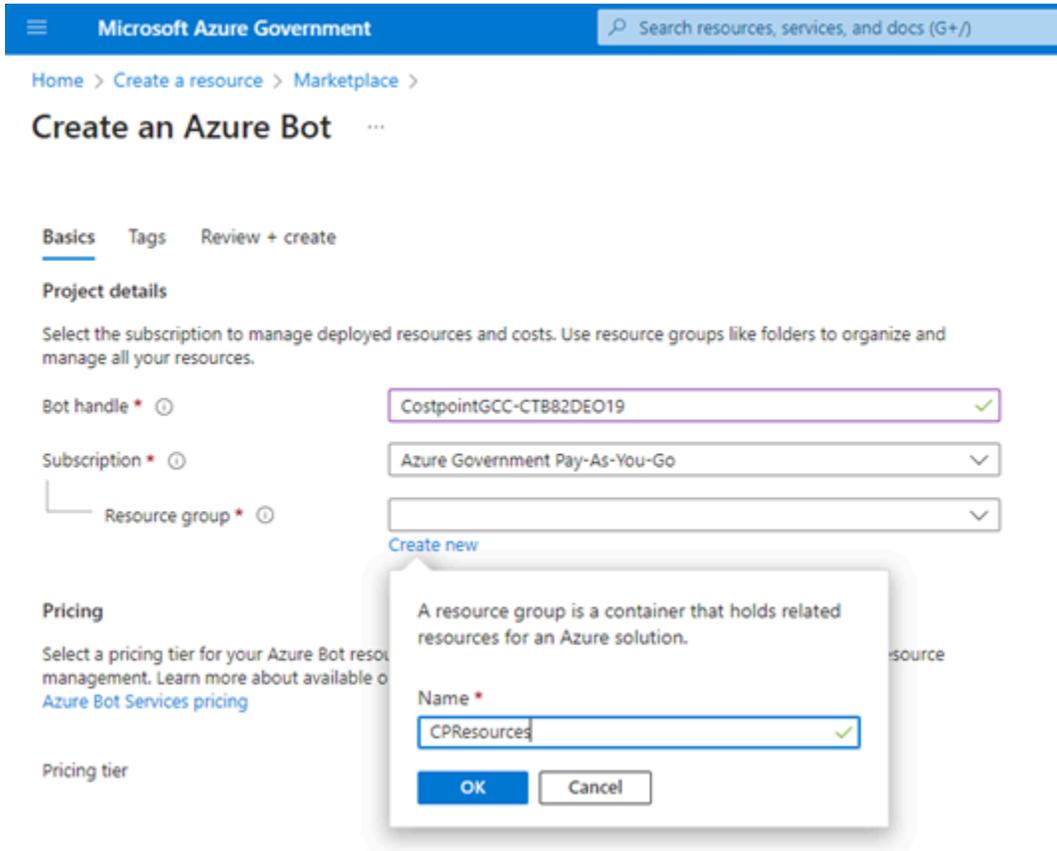1. Open the Azure portal at: https://portal.azure.us/#home.
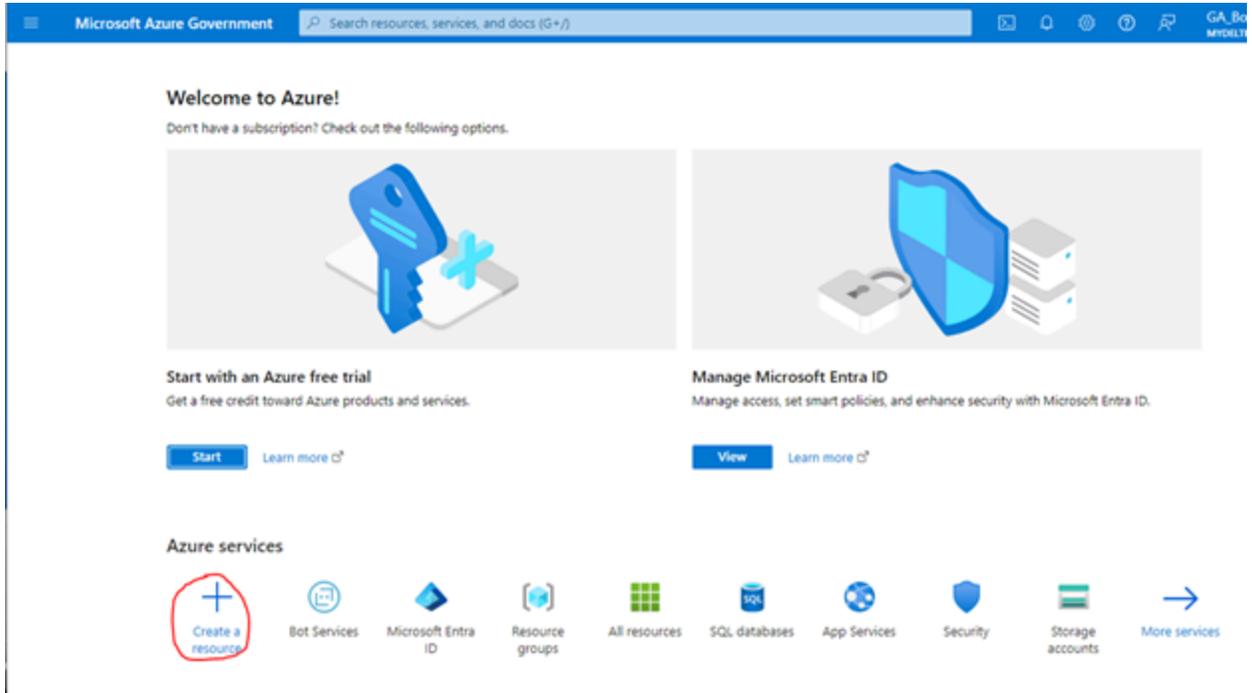
2. Using the search field, enter **Azure bot** to search for the resource.

> Tip: To limit results, select the **Azure services only** checkbox.
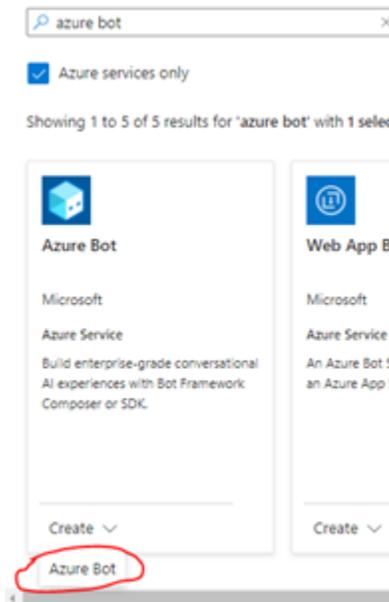
3. Click **Create** and select **Azure Bot** from the dropdown list.

4. Enter a bot handle, a common name that uniquely identifies your bot.

5. Select subscription, and then select a Resource group or create a new one.

Pricing

Select a pricing tier for your Azure Bot resource. You can change your selection later in the Azure portal's resource management. Learn more about available options, or request a pricing quote, by visiting the
Azure Bot Services pricing

Pricing tier	**Standard** Change plan

Microsoft App ID

A Microsoft App ID is required to create an Azure Bot resource. If your bot app doesn't need to access resources outside of its home tenant and if your bot app will be hosted on an Azure resource that supports Managed Identities, then choose option User-Assigned Managed Identity so that Azure takes care of managing the App credentials for you. Otherwise, depending on whether your bot will be accessing resources only in it's home tenant or not, choose either Single tenant or Multi tenant option respectively.

Type of App	Multi Tenant ⌄

An App ID can be automatically created below or you can manually create your own, then return to input your new App ID and secret in the open fields.
Manually create App ID

|	
Creation type	◉ Create new Microsoft App ID ○ Use existing app registration
Service management reference	[ ]

[Previous] [Next] [**Review + create**]

> **Note:** As of the second half of 2025, Microsoft does not permit the creation of Multi-Tenant bots. Make sure that the bot is configured as **Single-Tenant**, and the bot application in **Entra ID** is also **Single-Tenant**.

The bot is an Azure application and must be assigned the appropriate unique identifier. You should let the system automatically create the App ID for the bot application.

6. Click **Review + create**.
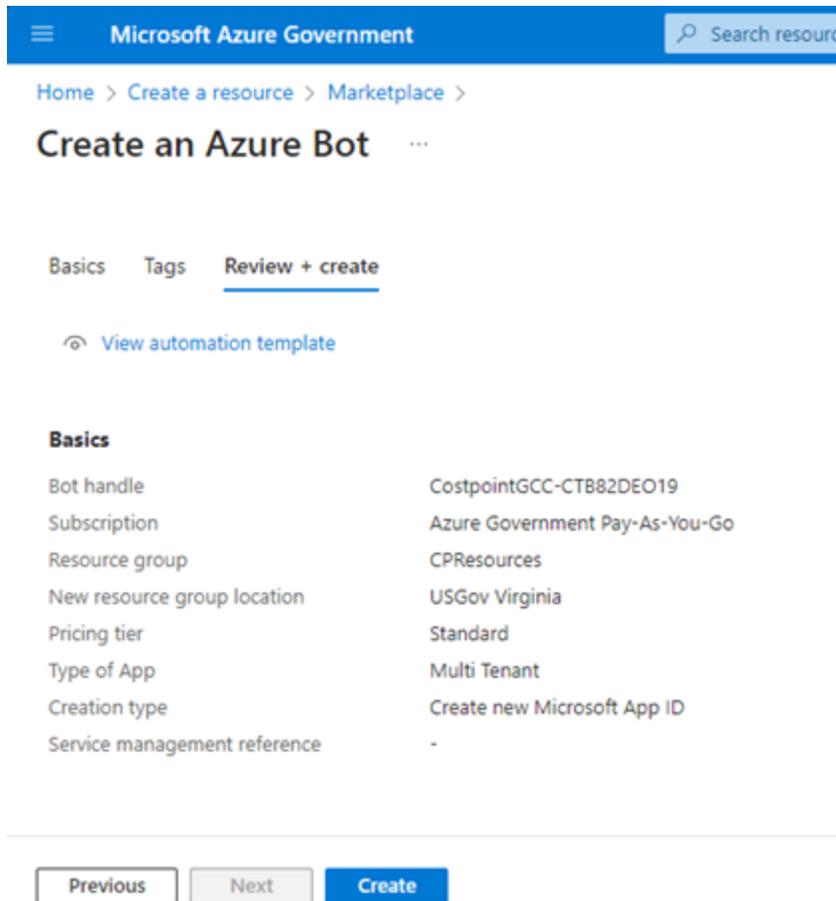
The system will validate your entries and if everything is fine, the **Create** button becomes available.
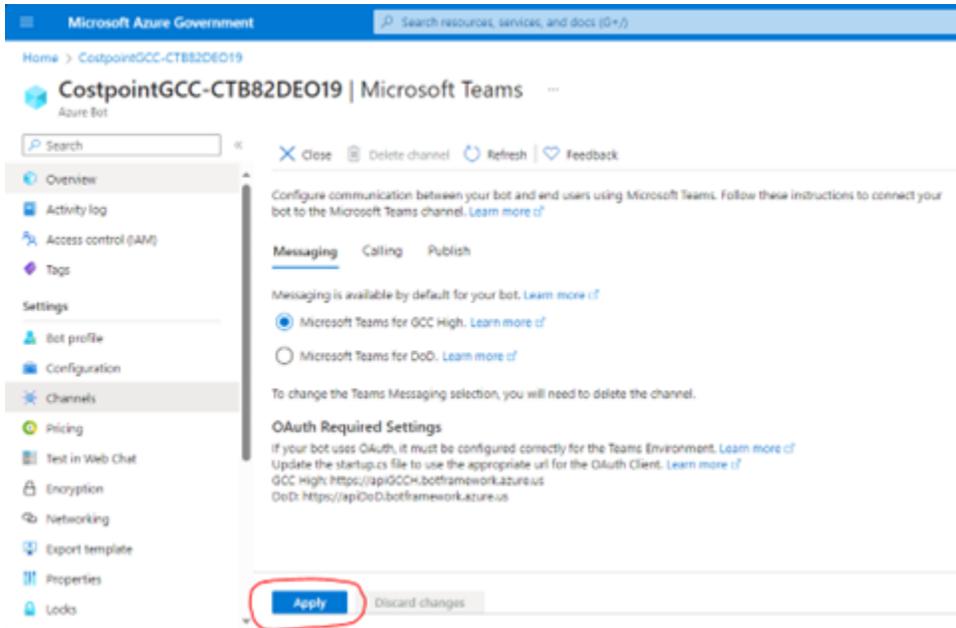
Clicking the **Create** button will initiate deployment and then display the deployment details when done.
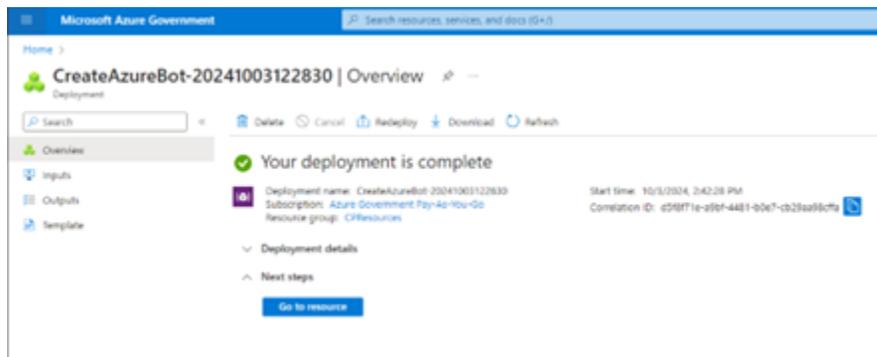
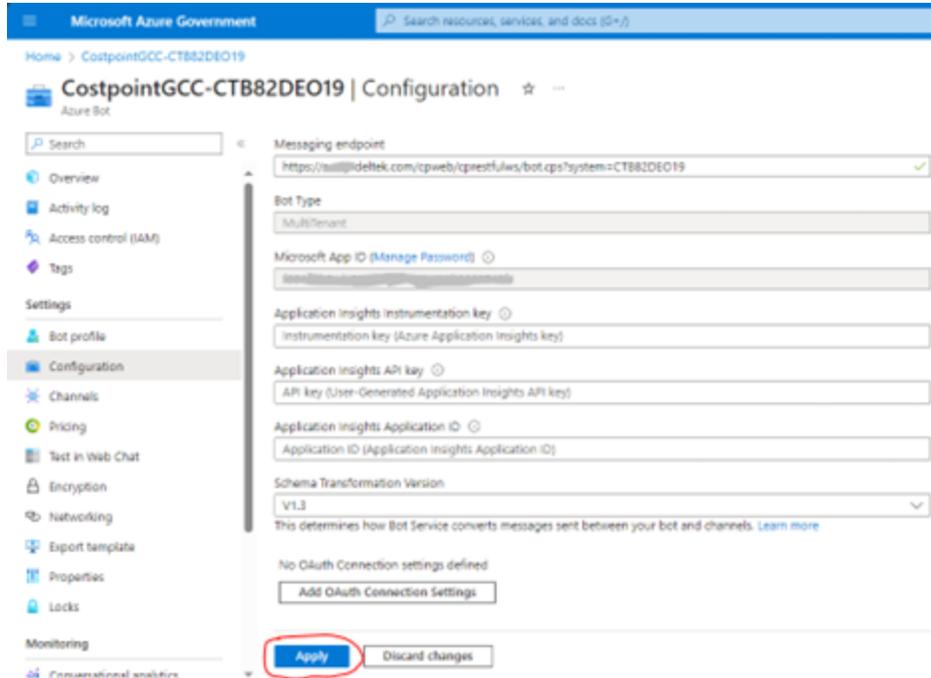7. Click the **Next steps » Go to resource** button.

This will open the bot application Overview page.

8. Click **Channels** on the left and select **Microsoft Teams** from the available channels.

9. On the Teams page, select the appropriate Teams app option and click **Apply**.

10. Click **Configuration** on the left to enter other required parameters for the bot.
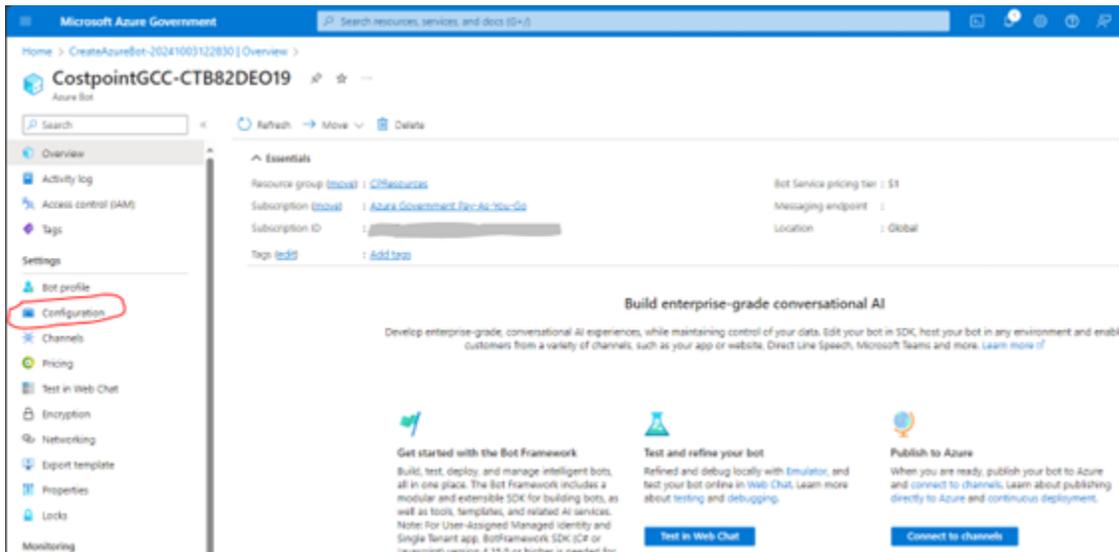
11. Enter the messaging endpoint.

    This is the URL of the Costpoint bot REST endpoint, and it is in the form of:

    <enterpriseAppUrl>/cprestfulws/bot.cps?system=<systemName>

12. Click **Apply** when done.

13. While still on the Configuration page, click the **Manage Password** link next to the **Microsoft App ID** field.

    This will take you to the Certificates & secrets page of the bot application configuration section in the Azure Entra ID.
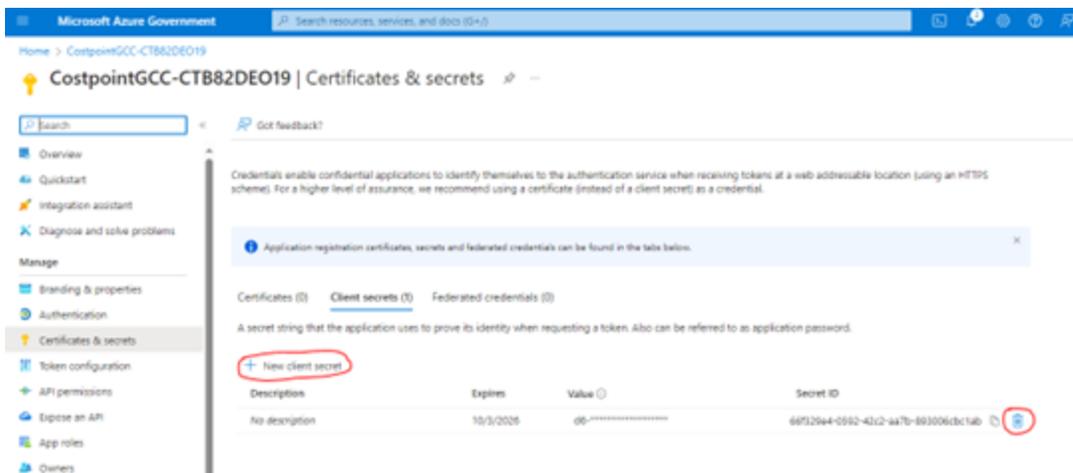
You can see that the secret was already generated when the bot was created, but we did not have an option to save that secret. Click the trashcan icon and delete the secret. Then click **+ New client secret** and create a new one.
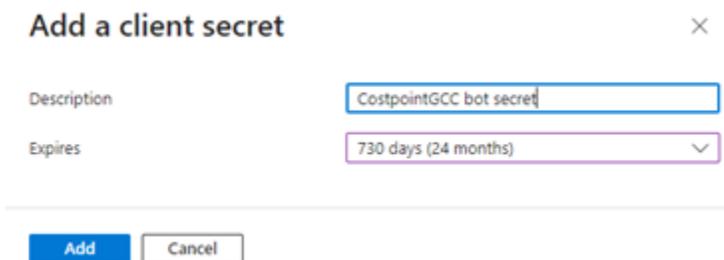
Once generated, you will be able to copy it. Save it to a separate file because it will be required later by Costpoint.

14. While still on the Application settings in the Entra ID, open Overview page.
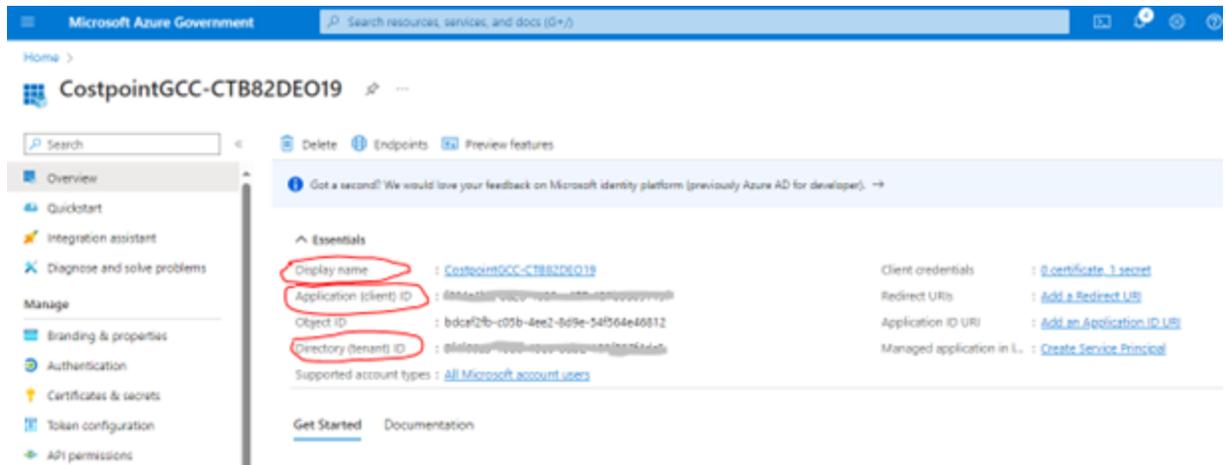
Record Display name, Application (client) ID and Directory (tenant) ID together with the secret that you saved in the separate file.

As a result of all previous configuration steps, you will need the following data to proceed:

```
BotHandle (display name) = CostpointGCC-CTB82DEO19
Tenant = (Directory/tenant ID)
BotAppID =(Application ID)
Secret = (saved previously)
DomainName = (the domain from Costpoint enterpriseAppUrl, i.e. '*.deltek.com'
or '*.yourcompany.com')
Costpoint SystemName = (the system name from Costpoint enterpriseAppUrl)
```

The next step is to create the application package zip file.

15. Find the attached manifest.json template and images.

16. Open the manifest.json file in a text editor.

17. Replace highlighted values with actual values from the bot setup and compress the manifest files together with images to a zip file with the same name as the BotHandle.

    This is the package that will be uploaded to the Teams for deployment.

```
{
    "$schema": "https://developer.microsoft.com/en-us/json-schemas/teams/v1.17/
```

```
MicrosoftTeams.schema.json",
      "version": "1.0.0",
      "manifestVersion": "1.17",

      "id": "<BotAppId>",

      "name": {
          "short": "<BotHandle>",
          "full": "Costpoint Bot <BotHandle>"
      },
      "developer": {
          "name": "Deltek, Inc.",
          "mpnId": "",
          "websiteUrl": "https://deltek.com",
          "privacyUrl": "https://deltek.com/privacy",
          "termsOfUseUrl": "https://deltek.com/terms"
      },
      "description": {
          "short": "Costpoint Bot integrated with the Costpoint system <SystemNam
e>",
          "full": "Costpoint Bot integrated with the Costpoint system <SystemNam
e> for user notifications and AI interface."
      },
      "icons": {
          "outline": "outline.png",
          "color": "color.png"
      },
      "accentColor": "#FFFFFF",
      "bots":
          {
              ["botId": "<BotAppId>",
              "scopes":
                  ["personal"
              ],
              "isNotificationOnly": false,
              "supportsCalling": false,
              "supportsVideo": false,
              "supportsFiles": true

          }
      ],
      "validDomains": [
    "<domainName>"
```
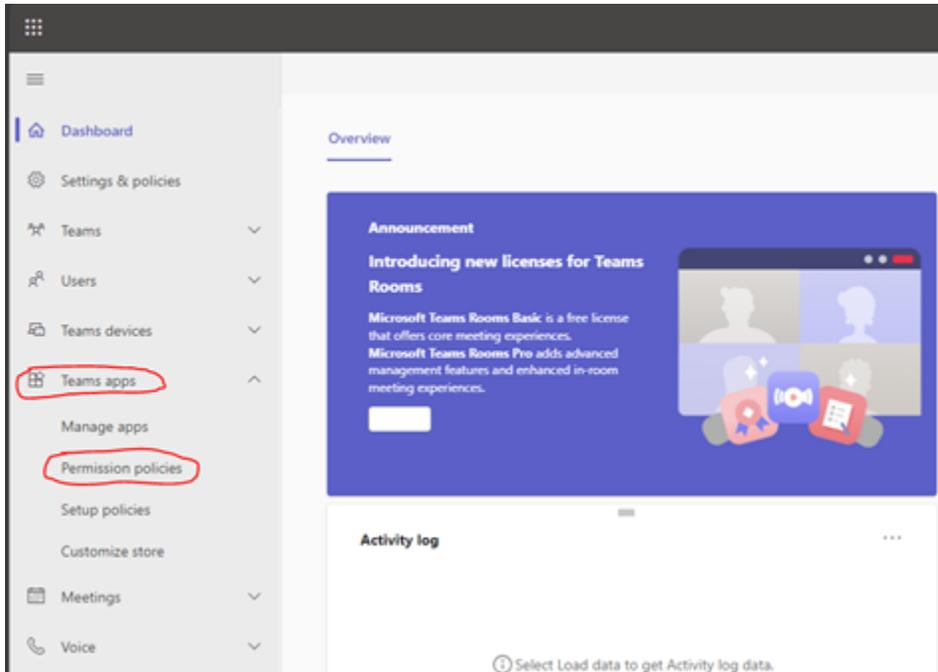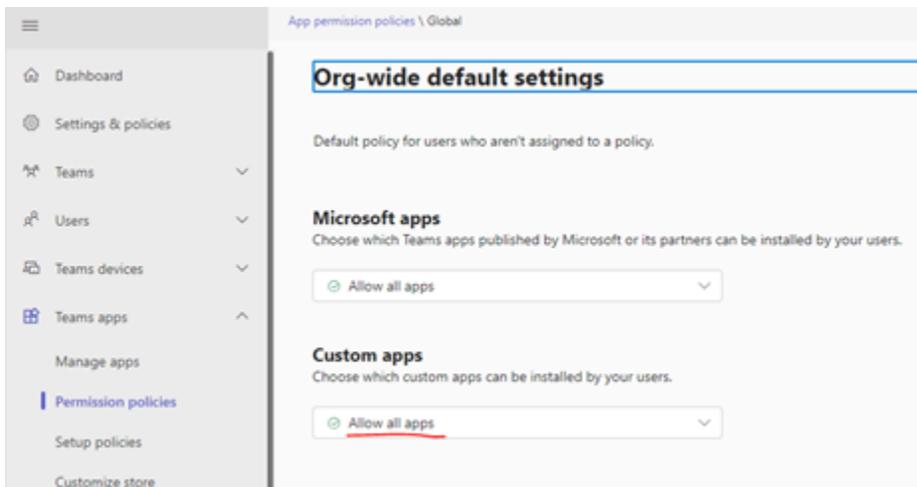
```
        ]
    }
```

18. Log in as a Teams Administrator and open https://admin.gov.teams.microsoft.us/.

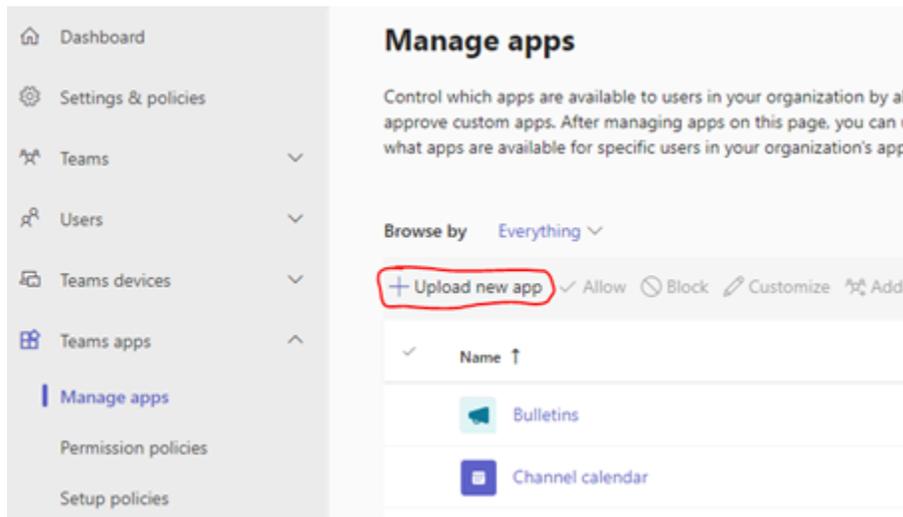19. Click **Teams apps » Permission policies.**

Make sure there is a policy (**Global** or **Custom**) that allows Custom apps.

20. Click **Manage apps** and select **+ Upload new app**.

Permissions for **Custom apps** can be tuned to your specific situation.

Upload a zip file with the deployment manifest. Wait for about 10-15 minutes after for deployment to be available.

21. Open Costpoint and go to **Manage System Integration Accounts » Microsoft Teams Bot Connection Information**.

22. Enter **TenantID, Bot Application ID,** and **Bot Application Secret,** and then click **Save**.
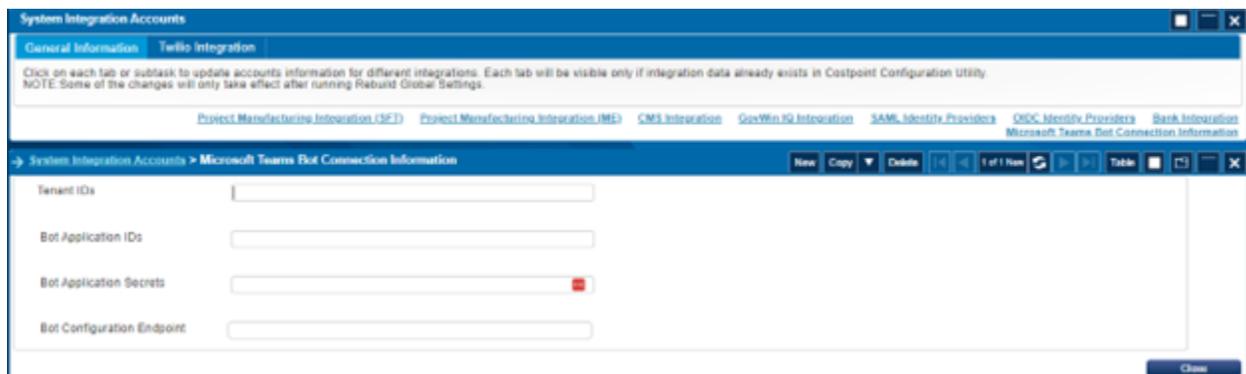
23. Open the Rebuild Global Settings application and run the **Reload** action.

> Note: Before testing Teams bot, make sure that users in Costpoint belong to the same domain as the users in Teams. Specifically, every user accessing the bot in Teams has a corresponding user entry in Costpoint with the matching email address.

After the bot manifest package deployment is completed, users in Teams should be able to install the bot app in their Teams instance.

24. After selecting the **Apps** option, the user will be able to see the bot app listed in the **Built for your org** section.

25. Click **Add** and then click **Add** again on the dialog box.
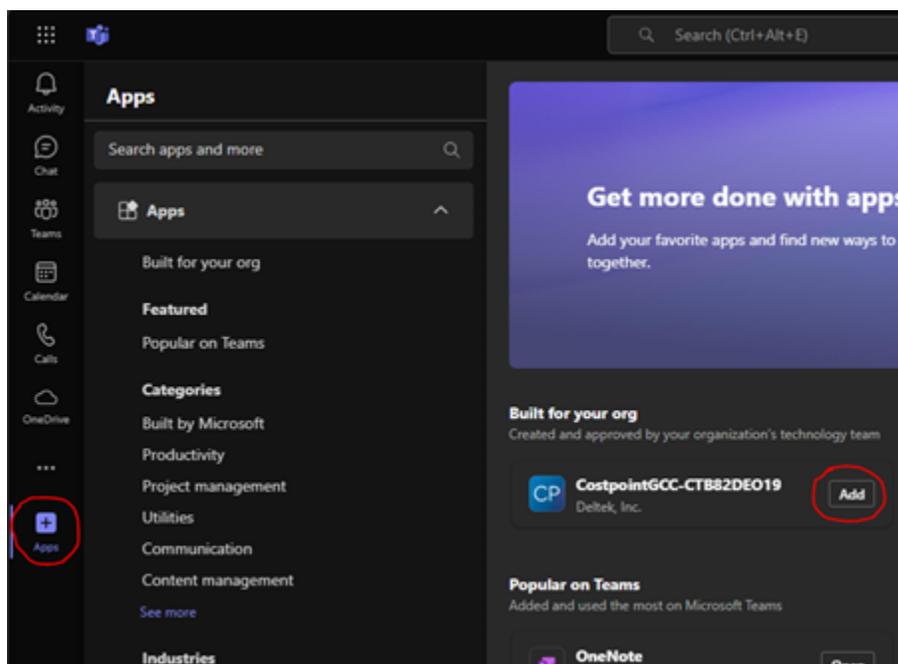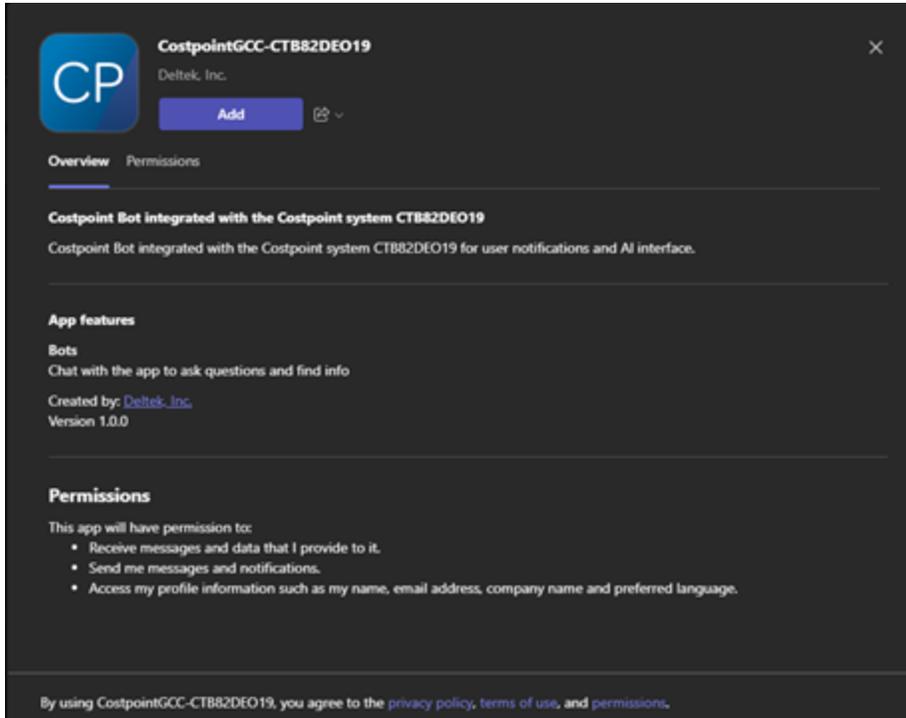
26. Once the Costpoint bot is added, the user can test the response simply by typing "Hi" or "Hello."