Deltek

Deltek PM Compass and Cobra® Concurrency Solution

Setup and Configuration Guide

July 14, 2023

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Contents

Overview 1
Concurrency Components 2
Concurrency Requirements 4
Installation and Deployment Models 5
Implementing Concurrency 7
Viewing Job Status and Process Logs 20
Troubleshooting Concurrency Issues 21
Appendix A: If You Need Assistance 22

Overview

To increase efficiency and improve performance, Cobra leverages the PM Compass Process Server to implement concurrency when running Cobra processes.

By using the concurrency feature, you can:

- Load multiple projects concurrently during import file integration.
- Run a process on batches of control account. A project can be split into multiple jobs, with each job processing a different batch of control accounts concurrently.

You can use the concurrency feature when running the following Cobra processes:

- Integration of a single import with multiple projects
- Apportionment calculations on batches of control accounts
- Progress calculations on batches of control accounts (beginning with Cobra 8.4 Cumulative Updates 05)
- Forecast calculations on batches of control accounts (beginning with Cobra 8.4 Cumulative Updates 10)

Note:

- The concurrency feature is available only if you are running Cobra and PM Compass in your environment.
- The degree of concurrency you can achieve will depend on how you have configured your Cobra environment.
- The concurrency feature is not yet supported in the Cobra API.

Concurrency Components

Before you implement concurrency, it is important to understand its different components.

Cobra Concurrency Machine

You need a machine that will become the Cobra Concurrency machine.

The Cobra Concurrency machine can be a new machine dedicated to processing only the Cobra queue, or an existing machine PM Compass Process Server configured to handle Cobra-initiated jobs. However, Deltek strongly recommends that you use a new machine dedicated to Cobra queue only instead of an existing machine with PM Compass Process Server since that machine can only process Process Server jobs submitted to the Cobra queue. If you modify an existing PM Compass Process Server machine to handle Cobra-initiated jobs, you must have at least one PM Compass Server still configured and available for processing PM Compass-initiated jobs.

> **Important:** The “Cobra Concurrency machine” in this document refers to either a new machine dedicated to Cobra queue only, or an existing machine with PM Compass Process Server configured to handle Cobra-initiated jobs.

The Cobra Concurrency machine will also run the Cobra Web Service Gateway. The PM Compass Process Server must point to the Cobra Web Service Gateway Service. You can only have one Cobra Web Service Gateway server.

> **Attention:** For more information, refer to the "Dedicated Process Server" and the "Process Server Tier" sections in the *Deltek PM Compass Installation Guide*.

Cobra Web Service

You need to host a Cobra Web Service instance to run the Cobra process. Each Cobra Web Service instance can run four processes at a time. You can run more processes at a time if more instances are hosted.

You can create as many Cobra Web Service instances as you need. Some can be created on the dedicated Cobra Concurrency machine. Some can be created on separate machines.

> **Attention:** For more information, refer to the “Cobra Web Service” topic in the Cobra Help System.

Cobra Web Service Gateway

Currently, the PM Compass Cobra Process Server can only connect to one instance of the Cobra Web Service, which means that the number of processes that you can run is limited to the capacity of a single instance of the Cobra Web Service. To allow the PM Compass Process Server to connect to multiple Cobra Web Service instances and expand the number of processes that you can run, you can utilize the Cobra Web Service Gateway.

The Cobra Web Service Gateway is a node that you need to set up between the PM Compass Process Server and the Cobra Web Service instances. The Cobra Web Service Gateway distributes the requests from the PM Compass Process Server to the multiple instances of the Cobra Web Service. Using the Cobra Web Service Gateway allows the Cobra Concurrency machine to run more processes. Use the

Cobra Web Service Gateway Configuration tool to identify the Cobra Web Service instances and host the Cobra Web Service Gateway on the Cobra Concurrency machine.

Cobra Web Service Gateway Service

The Cobra Web Service Gateway Service is responsible for distributing Cobra jobs to the next appropriate Cobra Web Service. The Cobra Web Service Gateway Service ensures it sends a maximum of four jobs to a single Cobra Web Service. The Cobra Web Service Gateway Service sends a job to any available service. Once a service completes a job, the Cobra Web Service Gateway Service recognizes that it is now available to receive another job.

The Cobra Web Service Gateway Service must point to one or more Cobra Web Service instances. You can host additional Cobra Web Service instances that will process Cobra-initiated jobs on multiple servers. You can create as many Cobra Web Service instances as you need on the Cobra Concurrency machine or on separate machines, including those machines with PM Compass Process Server installed. You then point the Cobra Web Service Gateway Service to the Cobra Web Service instances on these machines.

Scaling Concurrency

Each Cobra Web Service can process four jobs concurrently. You may deploy and configure multiple Cobra Web Service instances to scale the number of concurrent jobs the solution can handle. Multiple Cobra Web Service instances can be deployed on a single machine if the machine has sufficient resources. Each Cobra Web Service instance requires approximately two GB of available RAM to operate successfully.

The Cobra Web Service may be deployed across multiple machines. The Cobra Web Service Gateway Service is configured with each Cobra Web Service's address details and will send jobs to the services according to their availability.

> **Attention:** For the recommended minimum hardware requirements for deploying this feature, see the "Concurrency Feature System Requirements" section of the *Deltek Cobra Installation Guide*.

Concurrency Requirements

It is important to understand the concurrency components before you implement it in your environment.

These requirements are as follows:

- You must install Cobra 8.3 Cumulative Update 08 or higher, PM Compass 8.1 Cumulative Update 25 or higher, and Cobra 8.3 Integration for PM Compass 8.1 or higher.
- You must set up and configure the Cobra Concurrency machine.
- You must host a Cobra Web Service instance to run the Cobra process.
- You must create a dedicated Cobra process queue in the PM Compass EPM Security Administrator for Cobra-initiated jobs. The dedicated Cobra Concurrency machine must be assigned to this queue. You must not assign any other process queues to the Cobra Concurrency machine. You select this dedicated Cobra process queue in the **Queue** field on the Data Access tab of the Application Preferences dialog box in Cobra.
- You must have a dedicated Windows Domain Account that has access to the shared folder.
- You must have a shared folder (for example, network drive) with at least a modify permission and that is accessible to:
  - The Cobra user who will run the concurrent process, if you are in a standalone or client/server environment
  - The n-tier server machine, if you are in an n-tier environment
  - The Cobra Concurrency machine
  - The machines where the Cobra Web Services are hosted
  - The dedicated Windows Domain Account that runs the Cobra Web Service and the Gateway
- You must specify the **Queue Name**, **Shared Folder**, and **Control Accounts per queue** fields on the Data Access tab of the Application Preferences dialog box in Cobra.

Installation and Deployment Models

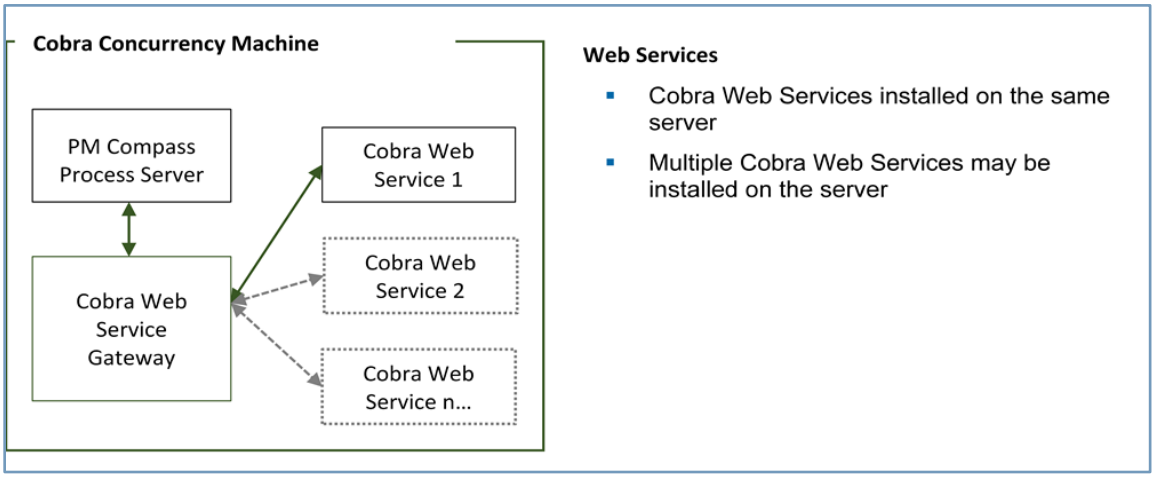
There are three supported installation and deployment models for running concurrent processes.

> **Important:** The "Cobra Concurrency machine" in this document refers to either a new machine dedicated to Cobra queue only, or an existing machine with PM Compass Process Server configured to handle Cobra-initiated jobs.

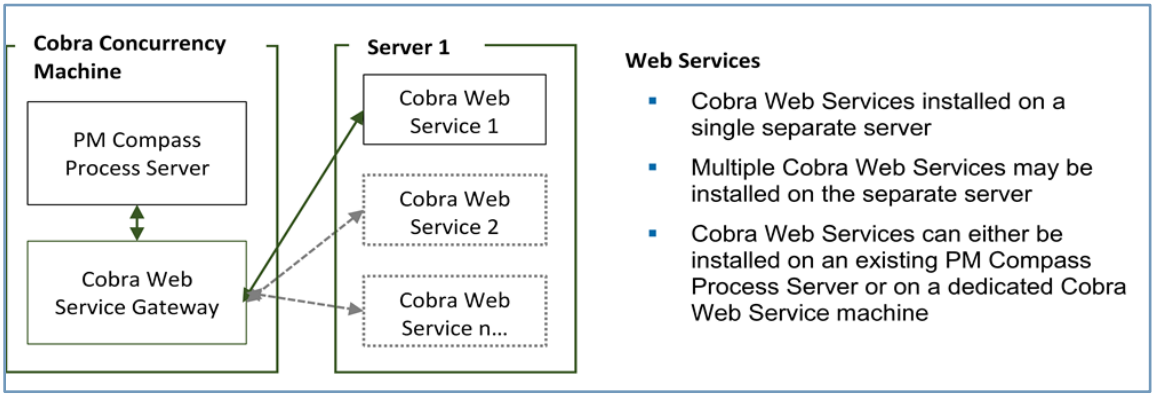
For all implementations, the following applies:

- The PM Compass Process Server must be dedicated to processing the "Cobra" queue.
- The PM Compass Process Server must point to the Cobra Web Service Gateway Service.
- The Cobra Web Service Gateway must be configured on the Cobra Concurrency machine (PM Compass Process Server).
- The Cobra Web Service Gateway Service must point to one or more Cobra Web Services.

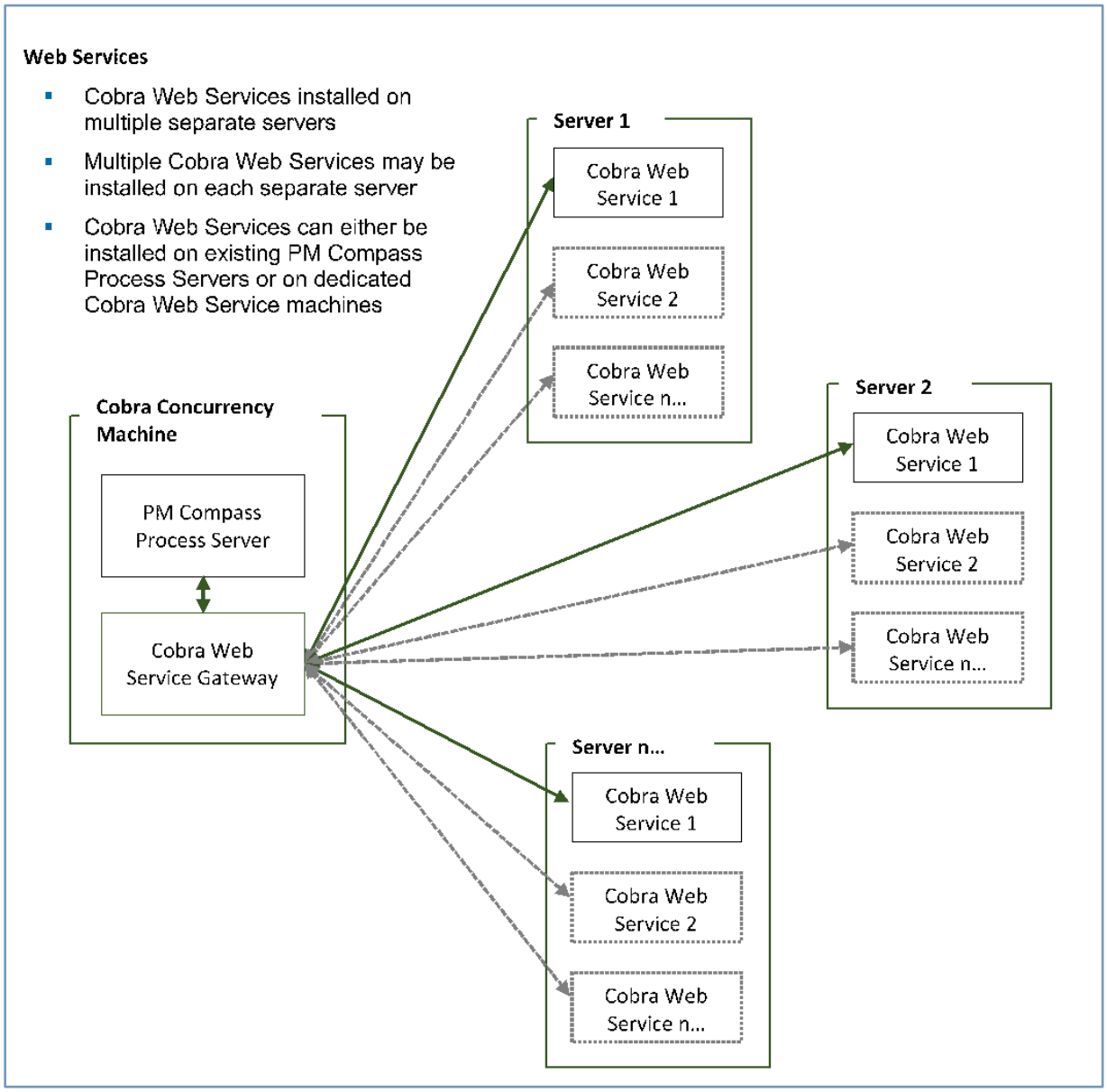
Single-Server Implementation



Two-Server Implementation



Three-or-More-Server Implementation



Implementing Concurrency

This is a summary of the steps you need to complete in order to implement and use the concurrency feature when running a Cobra process.

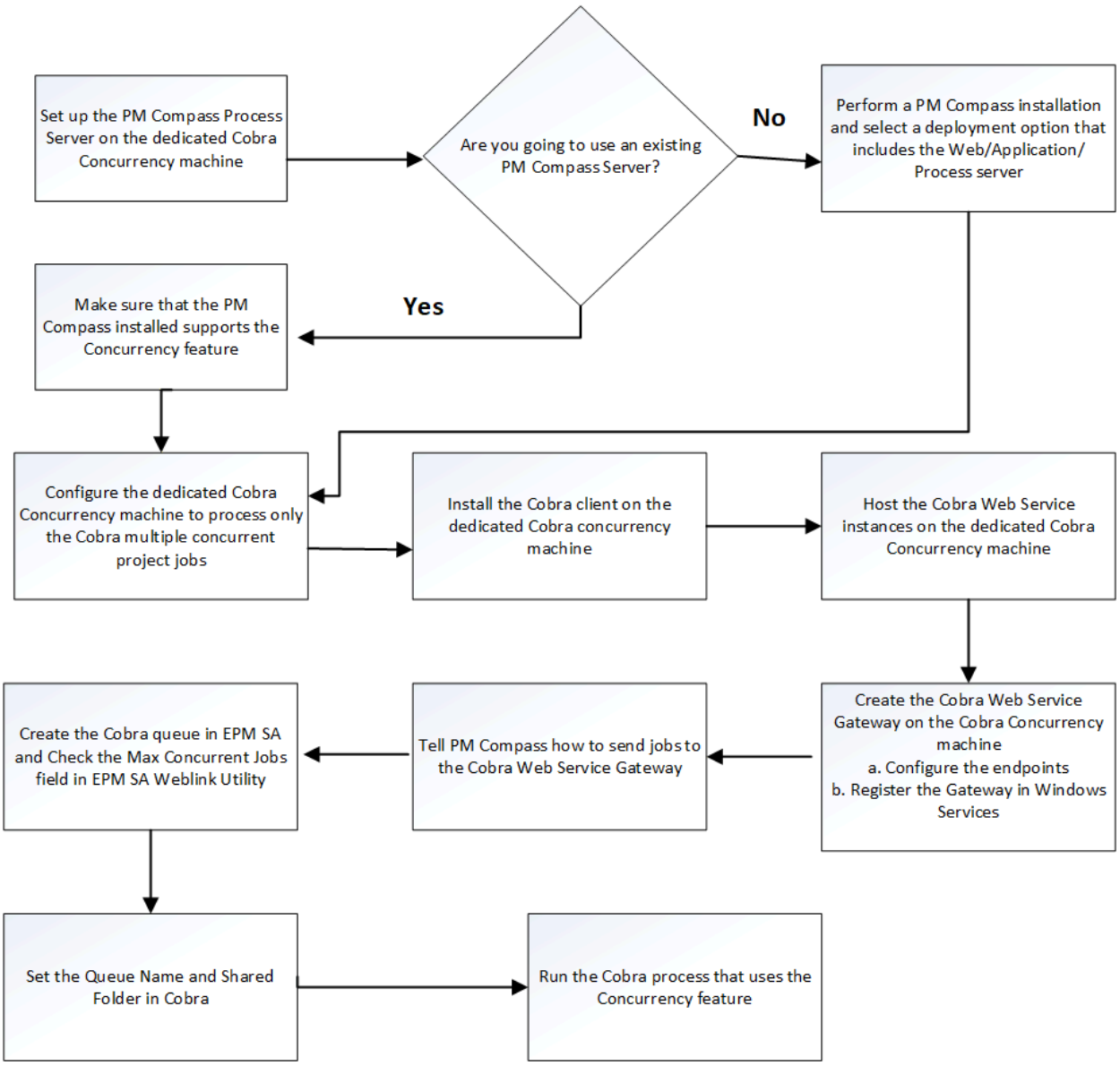
Important:

- Before installing an update, back up the *.config files.
- If you are using the Cobra installer to perform an upgrade on a machine with the Cobra Gateway Service, stop the service before installing the update, and start it afterwards to avoid having to restart the machine.

Step	Action	Notes
1	Install the Cobra components on the Cobra Concurrency machine. a) Install the Cobra client. b) Host Cobra Web Service instances. c) Create the Cobra Web Service Gateway. i. Configure the endpoints. ii. Register the Gateway in Windows Services.	This installation assumes that the machine is running the PM Compass Process Server and the Cobra Web Service Gateway. If you decide to configure the Cobra Web Service Gateway to send jobs to the Cobra Web Service on a separate machine, you must perform 1 and 2 on that machine. Before you start your deployment, you must also stop all Cobra Web Service instances, including those that are deployed in PM Compass. Check the status after the deployment and restart them manually, if needed.
2	Set up the PM Compass Process Server on the dedicated Cobra Concurrency machine. a) Set up the PM Compass Process Server on the dedicated Cobra Concurrency machine using a new machine. ***or*** b) Set up an existing PM Compass Process Server to become the dedicated Cobra Concurrency machine. c) Configure the dedicated Cobra Concurrency machine to process only the Cobra multiple concurrent project jobs.	
3	Tell PM Compass how to send jobs to the Cobra Web Service Gateway.	

Step	Action	Notes
4	Create the Cobra Queue in EPM SA and Check the **Max Concurrent Jobs** Field in EPM SA Weblink Utility.	
5	Set the **Queue Name**, **Shared Folder**, and **Control accounts per queue** fields on the Data Access tab of the Application Preferences dialog box in Cobra.	
6	Run the Cobra process that uses the Concurrency feature.	

The following diagram illustrates the steps in implementing the concurrency feature.



Step 1: Install the Cobra Components on the Cobra Concurrency Machine

You must install the Cobra client, host the Cobra Web Service instances, and create the Cobra Web Service Gateway on the Cobra Concurrency machine.

Perform these steps on the Cobra Concurrency machine.

a) Install the Cobra client.

b) Host the Cobra Web Service instances.

c) Create the Cobra Web Service Gateway.

Warning: This installation assumes that the machine is running the PM Compass Process Server and the Cobra Web Service Gateway. If you decide to configure the Cobra Web Service Gateway to send jobs to the Cobra Web Service on a separate machine, you must perform the following procedures on the additional server: "Install the Cobra Client" and "Host the Cobra Web Service Instances".

Install the Cobra Client

Use these instructions to install Cobra on the Cobra Concurrency machine. Make sure that you are installing the minimum required version in order to run concurrent processes.

Warning: Before you start your deployment, you must also stop all Cobra Web Service instances, including those that are deployed in PM Compass. Check the status after the deployment and restart them manually, if needed.

To set up Cobra:

1. Verify that Cobra is not running.
2. Install Cobra 8.3 Cumulative Update 25 or higher.
3. Complete the pages of the installation wizard.

   Attention: For detailed instructions on how to install Cobra, see the *Deltek Cobra Installation Guide*.

4. Launch the Deltek Cobra shortcut to log into Cobra and confirm that you are connecting to the correct data source.

   Attention: For more information on data source, see the "Data Tool and Data Source" section in the Deltek Cobra Installation Guide or the Data Tool Help System which you can access from within the tool or from the Cobra folder.

5. Confirm that the correct version is installed.

- Log into Cobra, and click » **Help » About Deltek Cobra**.
- Check that the version number reflects the installation of the update.

Next step: Host the Cobra Web Service Instances.

Host the Cobra Web Service Instances

Use this procedure to host instances of the Cobra Web Service on the Cobra Concurrency machine or on other machines.

- When hosting to another machine, you will need to install the Cobra 8.3 Cumulative Update 08 or higher on that machine. You must update the Cobra.WebService.Host.exe.2.config or the Cobra.WebService.Host.exe.3.config file, which are both shipped with Cobra. These files are located in the Cobra installation directory.
- The default port for the first new Cobra Web Service instance is 8117. The default port for the second new instance is 8118.
- Use the Cobra Web Service Management Tool to host the Cobra Web Service instances.
  - Follow this procedure using the Cobra.WebService.Host.exe.config, Cobra.WebService.Host.exe.2.config, and Cobra.WebService.Host.exe.3.config files for each instance. If you need more instances, you can create the configuration file by specifying a new .config file (for example, Cobra.WebService.Host.exe.4.config, Cobra.WebService.Host.exe.5.config, and so on) in the **Config File** field in Cobra Web Service Instance Settings. Use the Cobra installation directory as the location of these new configuration files.

To host Cobra Web Service instances:

1. Click **Start » Deltek Cobra 8.x » Deltek Cobra Web Service Management Tool**.

   Note: Alternatively, navigate to the Cobra installation directory, locate **CWSManagementTool**, right-click it, and select **Run As Administrator** command from the shortcut menu.

   Attention: For more information on the Cobra Web Service Management Tool, refer to "Cobra Web Service Management Tool" in the Cobra Help System.

2. In the left pane under the Instances tree, click **<New Instance>.**
3. In the Cobra Web Service Instance Settings, perform the following steps:

a) In the **Config File** field, locate the Cobra.WebService.Host.exe.config file in the Cobra installation directory.

b) Enter the Cobra Web Service instance name in the **Name** field by using a unique name that represents the Cobra Web Service instance.

When you are installing multiple instances of the Cobra Web Service, Deltek recommends using names that can be easily identified for each instance. For example, include the port number dedicated to the instance such as Cobra Web Service 8116.

c) Optionally, enter a description for the instance in the **Description** field.

d) Enter the appropriate values in the **Host**, **Protocol**, and **Port** fields.

If you are configuring the instance for SSL, you must first bind the port to the Windows Server Certificates.

> **Note:** For more information, refer to the "Configuring Cobra Web Service to Use Secure Socket Layers" topic in the Cobra Help System.

4. Click the **Save** button to save the settings in the configuration file.
5. In the toolbar, click the Install button to deploy the instance.

> **Attention:** For more information, refer to the "Toolbar in the Left Pane of the Cobra Web Service Management Tool topic" topic in the Cobra Help System.

6. Check whether the host is running properly.

a) Copy the URL in the **Address** field, and remove the trailing **'/service'**.

b) Browse the address in an internet browser.

> **Note:** If the host is running, the page displays that you have created a service and provides details on how to test the service. If the page is not displayed, the host is either not configured correctly or not running in Windows Services.

> **Note:** If you are using Windows authentication, see Configure the Cobra Web Service When Using Windows Authentication. If you want to configure the Cobra Web Service ClientAPI in your application, see Deploy the Cobra Web Service ClientAPI.

Next step: Create the Cobra Web Service Gateway.

Create the Cobra Web Service Gateway

To create the Cobra Web Service Gateway:

- Configure the endpoints using the Cobra Web Service Management Tool.
- Register the Gateway in Windows Services.

Before you use the Cobra Web Service Gateway, you must set up the following:

- Set up multiple Cobra Web Service instances across servers (for example, two instances on a single machine or two instances on different machines).
- Set up the Cobra Web Service Gateway, which must be on the same machine as the Cobra Concurrency machine.

> **Warning:** The Cobra Web Service Gateway Service must not be configured to point to the Cobra Web Service instances created by PM Compass (configured on port 8000).

Configure the Endpoints

Use Cobra Web Service Management Tool to define the gateway's listening endpoint and the Cobra Web Service endpoints on the Cobra Concurrency machine.

To configure the endpoints:

1. Click **Start » Deltek Cobra 8.x » Deltek Cobra Web Service Management Tool**.

> **Note:** Alternatively, navigate to the Cobra installation directory, locate **CWSManagementTool**, right-click it, and select **Run As Administrator** command from the shortcut menu.

2. In the left pane in the Gateway tree, click **Cobra Web Service Gateway**.

   The tool reads the application configuration file and populates the fields in the Cobra Web Service Gateway Settings. The tool displays a prompt if the application configuration file does not exist. You can copy the application configuration file from another machine with Cobra installed, or you can reinstall the latest version of Cobra on the machine you are using.

3. In the Cobra Web Service Gateway Settings in the right pane, perform the following steps:

a) You can change the **Host** and **Port** fields in the Gateway Endpoint grid. The **Address** field is automatically updated when you modify these fields.

> **Note:** The name and address of each Cobra Web Service endpoint is required. The name must be unique. To easily trace specific web service in the log, Deltek recommends entering a meaningful value in the **Name** field (for example, including the machine name that hosts the Cobra Web Service and port number).

b) To add a new endpoint, click the row with an asterisk (*) in the row header in the Cobra Web Service Endpoints grid, and enter the appropriate values.

> **Note:** The name and address of each Cobra Web Service endpoints are required. The name must be unique.

c) To delete an endpoint, click the header row of the appropriate row and press **Delete** on your keyboard.

> **Note:** The Cobra Web Service Gateway will treat blank rows as invalid. You must delete the row to proceed.

4. Click S**ave** to save your changes.

The tool validates that there are no duplicate Cobra Web Service endpoint names. If there are duplicate entries, the tool displays a message that there are duplicate entries for a specific name.

Register the Gateway in Windows Services

Perform this procedure to register the gateway in Windows Services after configuring the endpoints.

To register the gateway in Windows Services:

1. Launch the Windows Services Manager (Services MMC).
2. Locate the **Cobra Web Service Gateway** service, right-click, and select P**roperties**.
3. On the Log On tab, specify the dedicated Windows Domain Account in the **This account** field.
4. Close the Properties window.

5. Restart the "**Cobra Web Service Gateway**" service in Windows Services.
6. Check whether the host is running in Windows Services.

   Browse the Gateway Endpoint Address from Cobra Web Service Management Tool but remove the **/service**.

   For example, if the tool displays http://COBPROCSER:8108/CWSGateway/service, navigate to http://COBPROCSER:8108/Gateway.

   If the host is running, the page confirming that you have created a service displays and provides details on how to test the service. If the page does not display, the host is either not configured correctly, the port is possibly blocked by the Windows firewall, or the service is not running in Windows Services.

Next step: Step 2: Set up the PM Compass Process Server on the Dedicated Cobra Concurrency Machine.

Unregister the Gateway from Windows Services

Perform this procedure to unregister the gateway from Windows Services.

To unregister the gateway from Windows Services:

1. Click **Start » Deltek Cobra 8.x » Deltek Cobra Web Service Management Tool**.

   Note: Alternatively, navigate to the Cobra installation directory, locate **CWSManagementTool**, right-click it, and select **Run As Administrator** command from the shortcut menu.

2. In the left pane, click **Cobra Web Service Gateway** in the Gateway tree
3. Click **Uninstall** in the toolbar.

   If successful, the gateway status is changed to **Not Installed**.

4. Alternatively, you may take the following steps:

a) Launch the Command Prompt, and select **Run as administrator**.

b) Enter the following command:

"<Cobra folder>\Cobra.WebService.Gateway.Host.exe" –uninstall

Step 2: Set up the PM Compass Process Server on the Dedicated Cobra Concurrency Machine

Perform these steps on the Cobra Concurrency machine in order to set up your server environment to run concurrent processes.

Depending on your server environment, you can:

- Set up the PM Compass Process Server on the dedicated Cobra Concurrency machine using a new machine.
- Set up an existing PM Compass Process Server to become the dedicated Cobra Concurrency machine.

After setting up the dedicated Cobra Concurrency machine, you need to configure it to process only the Cobra multiple concurrent project jobs.

Note: It is important that all PM Compass Web and Process Servers are on the same CU and integration file versions.

Set up the PM Compass Process Server on the Dedicated Cobra Concurrency Machine using a New Machine

If you want to use a new machine as your dedicated Cobra Concurrency machine, you must perform a PM Compass installation and select a deployment option that includes the Web/Application/Process server. The Web/Application component is required to configure Weblink on this dedicated machine.

To set up the PM Compass Process Server on the dedicated Cobra Concurrency machine using a new machine:

1. Perform a PM Compass installation and select a deployment option that includes the Web/Application/Process server. Install PM Compass 8.1 Cumulative Update 25 or higher.

Attention: For more information on the installation models and steps, see the following sections in the *Deltek PM Compass Installation Guide*:

- Two-Server Installation
- Configuration 1 (Step 2) — Web/Application and Process Server Installation for Two-Server Deployment
- Configuration 2 (Step 2) — Web/Application, Report, and Process Server Installation for Two-Server Deployment
- Install on Three or More Servers

For more information on the pre-installation checklists, see the following sections:

- Web/Application Tier
- Process Server Tier

2. Complete the pages of the installation wizard.
3. Install the Cobra 8.3 Integration for PM Compass 8.1 file or higher.

Attention: For more information on how integrate Cobra with PM Compass, see "Integrating with Cobra" in the *Deltek PM Compass Installation Guide*.

4. Complete the pages of the installation wizard.

Next step: Configure the Dedicated Cobra Concurrency Machine to Process Only Cobra Multiple Concurrent Project Jobs.

Set up an Existing PM Compass Process Server to Become the Dedicated Cobra Concurrency Machine

Use these instructions to update an existing machine with PM Compass Process Server already installed and make it the dedicated Cobra Concurrency machine. Make sure that you are installing the minimum required version in order to run concurrent processes.

> **Note:** It is important that all PM Compass Web and Process Servers are on the same CU and integration file versions.

To set up an existing PM Compass Process Server to become the dedicated Cobra Concurrency machine:

1. Confirm that all users have logged out of PM Compass and that all jobs are completed.
2. Install PM Compass 8.1 Cumulative Update 25 or higher.

   > **Attention:** For more information, see “Steps to Upgrade PM Compass” in the *Deltek PM Compass Installation Guide*.

3. Complete the pages of the installation wizard.
4. Install the Cobra 8.3 Integration for PM Compass 8.1 file or higher.

   > **Attention:** For more information on how integrate Cobra with PM Compass, see "Integrating with Cobra" in the *Deltek PM Compass Installation Guide*.

5. Complete the pages of the installation wizard.

Next step: Configure the Dedicated Cobra Concurrency Machine to Process Only Cobra Multiple Concurrent Project Jobs.

Configure the Dedicated Cobra Concurrency Machine to Process Only Cobra Multiple Concurrent Project Jobs

After setting up the dedicated Cobra Concurrency machine, you need to configure it to process only Cobra multiple concurrent project jobs. This will make the dedicated Cobra Concurrency machine to only pick Cobra concurrency jobs and ignore the jobs assigned to queues, such as the PM Compass system queues or the scheduled processes queues.

To configure the dedicated Cobra Concurrency machine to process only Cobra multiple concurrent project job:

1. Launch Notepad using the **Run as Administrator** command.
2. Navigate to the <PM Compass Installation Directory>\PMCompass\Web folder.
3. Open the **web.config** file.
4. Locate **ListenToOnlyMyQueues** in the **<appSettings>** section and set the value to **Y**.

```
<appSettings>
<add key="OpenPlanSQLServerProviderType" value="SQLNCLI11" />
<add key="OpenPlanOracleProviderType" value="ORAOLEDB.Oracle.1" />
<add key="SqlLogDirectory" value="C:\metric" />
<add key="SqlLogging" value="Y" /> <add key="ListenToOnlyMyQueues"
value="Y" />
</appSettings>
```

Attention: For more information, refer to “Appendix O: Configure a Dedicated Process Server" in the *Deltek PM Compass Installation Guide*.

Next step: Step 3: Tell PM Compass How to Send Jobs to the Cobra Web Service Gateway.

Step 3: Tell PM Compass How to Send Jobs to the Cobra Web Service Gateway

Perform this procedure to tell PM Compass how to send jobs to the Cobra Web Service Gateway.

Warning: These steps should only be performed on the dedicated Cobra Concurrency machine.

To configure the PM Compass Process Server to connect to the Gateway:

1. On the dedicated Cobra Concurrency machine, navigate to **<PM Compass installation directory>\Web\bin**, locate **Cobra.WebService.ClientAPI.dll.config,** and open it using a text editor (such as Notepad).
2. In the **<basicHttpBinding>** section, change “**None**” in the following lines:

   Before

   ```
   <security mode=”None”>
   <transport clientCredentialType=”None” />
   </security>
   ```

   After

   ```
   <security mode=”TransportCredentialOnly”>
   <transport clientCredentialType=”Windows” />
   </security>
   ```

3. In the **<client>** section, replace the URL on the address field with the address from the Cobra Web Service Management Configuration tool.

   Before

   ```
   <endpoint address=”http://localhost:8000/CobraWebService/service”
   ```

   After

   ```
   <endpoint address=”http://<ServerName>:8108/CWSGateway/service”
   ```


4. Save and close the file.
5. Restart the "Deltek PM Compass Process Server" in Windows Services.

Next step: Step 4: Create the Cobra Queue in EPM SA and Check the Max Concurrent Jobs Field in EPM SA Weblink Utility.

Step 4: Create the Cobra Queue in EPM SA and Check the Max Concurrent Jobs Field in EPM SA Weblink Utility

To configure the number of jobs to run on the PM Compass Process server, you must create the Cobra Queue in EPM SA, specify the maximum number of jobs for the Cobra queue in the **Maximum** field, and make sure that the **Max Concurrent Jobs** field in the EPM SA Weblink Utility is set to the **Maximum** field value.

> **Important:** You must perform this procedure on the Cobra Concurrency machine where PM Compass and Cobra are installed.

1. Log into EPM Security Administrator (EPM SA).
   - Launch your browser and enter the URL of the Deltek EPM Security Administrator (for example, **http://<web server>/EPMSA/).**
   - If the application does not load automatically, click the **Deltek EPM Security Administrator** link.
2. In the left navigation pane, click **Configuration » System Settings**.

   The System Settings form displays on the right pane. The General tab displays by default.
3. Click the Servers tab.
4. On the Process Queues grid toolbar, click **Insert**.

   A new is row displayed below the current row.
5. In the **Name** field, enter the name of the queue (for example, "**Cobra Jobs**").
6. In the **Dedicated Server** field, click the drop-down to display all available servers, and select your Process server.
7. In the **Maximum** field, specify the maximum number of jobs from the selected queue that you want to run concurrently on the Process server.

   > **Important:** You must enter a value that is equal to the number of your Cobra Web Service instances multiplied by four. For example, if you have two Cobra Web Service instances, then you must enter **8** in the **Maximum** column.
8. In the **Status** column, modify the status of a selected queue.

   You can click either **Pause** or **Continue**. By default, the status is set to **Stopped**.
9. Complete or modify other fields on this form.
10. On the form toolbar, click **Save**.
11. Check the **Max Concurrent** Jobs field in the EPM SA Weblink Utility and make sure that the value is equal to the value in the Maximum field for the “Cobra Jobs” queue.
    a) Launch EPM SA Weblink, enter your password, and click **OK**.
    b) On the System Settings tab, update the **Max Concurrent Jobs** field.

The value specified in this field is what ultimately determines the maximum number of jobs that can run concurrently. Update the Max Concurrent Jobs field with the value you entered in the **Maximum** field. For example, if you entered **8** in the **Maximum** field, enter **8** in this field as well.

c) Click **Save**.

12. Log into PM Compass as **SYSADMIN** or any user with access to PM Compass.
13. On the Navigation menu, click **Administration » Process Server »Process Queue Manager**.
14. On the Process Queue Manager form, in the **Queue** field, select the name of the Cobra job.
15. In **Queue Status**, click **Continue**.
16. On the form toolbar, click **Save**.

Next step: Step 5: Set the Queue Name and Shared Folder in Cobra.

Step 5: Set the Queue Name and Shared Folder in Cobra

You must set the required fields on the Application Preferences dialog box in Cobra before you run the process.

Before you perform this step, take note of the following:

- You have created a Cobra Queue on the PM Compass Process Server (Step 4.)
- You must have a shared folder (for example, network drive) that should be accessible both to Cobra and to the server where the Cobra Web Service is installed. If you are using an n-tier environment, the shared location must be accessible to the server.

To set the queue name and shared folder location:

1. Log into Cobra as **SYSADMIN** or any user with access to Application Preferences.
2. Click **» Preferences » Application**.
3. Click the Data Access tab.
4. In the Process Server grid, set the following fields:

- **Queue**: Select the dedicated Process Queue for Cobra-initiated jobs, which you created in EPM Security Administrator. Cobra will send the job to this queue.
- **Shared Folder**: Specify a shared folder path (for example, \\<server name>\<shared folder name>) with at least a modify permission and that is accessible to:
  - The Cobra user who will run the concurrent process, if you are in a standalone or client/server environment
  - The n-tier server machine, if you are in an n-tier environment
  - The Cobra Concurrency machine
  - The machines where the Cobra Web Services are hosted
  - The dedicated Windows Domain Account that runs the Cobra Web Service and the Gateway

    This folder, which is maintained by Cobra, stores the temporary files executed by the Process server for each job. After a job is completed, Cobra automatically deletes the

temporary files. For failed jobs, Cobra automatically deletes the temporary files that are older than 1 day.

- **Control Accounts per queue**: Specify the number of control accounts to process per batch when running a concurrent process. By default, this field is set to **100**. Possible values are between **1** and **999**.

  Note: You must specify this field if you are running the concurrent apportionment calculations, concurrent progress calculations, or concurrent forecast calculations.

5. Click **Apply** to save your changes.

Next step: Run the Cobra Process that Uses the Concurrency Feature.

Step 6: Run the Cobra Process that Uses the Concurrency Feature

After you set up your environment, you can start running the Cobra process that uses the concurrency feature. Refer to the following topics in the Cobra Help System.

- **Importing File with Multiple Projects**
  - Multi-Project Concurrent Integration
  - Import File with Data from Multiple Projects
  - Load an Import File with Multiple Projects Concurrently
  - Save and Load Page of the Integration Wizard
- **Apportionment Calculations**
  - Concurrent Apportionment Calculations
  - Run Concurrent Apportionment Calculations
  - Run Page of the Apportionment Calculation Wizard
- **Progress Calculations**
  - Concurrent Progress Calculations
  - Run Concurrent Progress Calculations
  - Run Page of the Calculate Progress Wizard
- **Forecast Calculations**
  - Concurrent Forecast Calculations
  - Run Concurrent Forecast Calculations
  - Run Page of the Calculate Forecast Wizard

Viewing Job Status and Process Logs

You can view the job status and process logs in both Cobra and PM Compass. Refer to the following topics in the Cobra Help System:

- View Job Status and Process Logs in Cobra
- View Job Status and Process Logs in PM Compass

Post Job Processing

Once the Cobra Web Service completes the job, a number of activities occur on the PM Compass side.

- The Cobra Web Service notifies the Cobra Web Service Gateway and then relays to the PM Compass Process Server that the job is complete, with either a completed or a failed state.
- The PM Compass Process Server updates the status of the job in the queue.
- The PM Compass Process Server sends an email alert to the submitter of the job.

Troubleshooting Concurrency Issues

When one or more jobs on the Process Queue Manager form in PM Compass show a failed status, it means that the process was not able to complete successfully. Use the Process Queue Manager form in PM Compass to check the job status.

Here are some errors that you may encounter when using the concurrency feature as well as possible solutions.

- The server was unable to process the request due to an internal error.
- There was no endpoint listening at http://<machine>:<port>/CobraWebService/service that could accept the message.
- The encryption type requested is not supported by the KDC.

Appendix A: If You Need Assistance

If you need assistance installing, implementing, or using Cobra or PM Compass, Deltek makes a wealth of information and expertise readily available to you.

Customer Services

For over 30 years, Deltek has maintained close relationships with client firms, helping with their problems, listening to their needs, and getting to know their individual business environments. A full range of customer services has grown out of this close contact, including the following:

- Extensive self-support options through the Deltek Support Center.
- Phone and email support from Deltek Customer Success analysts
- Technical services
- Consulting services
- Custom programming
- Classroom, on-site, and Web-based training

Attention: Find out more about these and other services from the Deltek Support Center.

Deltek Support Center

The Deltek Support Center is a support Web site for Deltek customers who purchase an Ongoing Support Plan (OSP).

The following are some of the many options that the Deltek Support Center provides:

- Search for product documentation, such as release notes, install guides, technical information, online help topics, and white papers
- Ask questions, exchange ideas, and share knowledge with other Deltek customers through the Deltek Support Center Community
- Access Cloud-specific documents and forums
- Download the latest versions of your Deltek products
- Search Deltek's knowledge base
- Submit a support case and check on its progress
- Transfer requested files to a Deltek Customer Success analyst
- Subscribe to Deltek communications about your products and services
- Receive alerts of new Deltek releases and hot fixes
- Initiate a Chat to submit a question to a Deltek Customer Success analyst online

Attention: For more information regarding Deltek Support Center, refer to the online help available from the Web site.

Access Deltek Support Center

To access the Deltek Support Center:

1. Go to https://deltek.custhelp.com.
2. Enter your Deltek Support Center **Username** and **Password**.
3. Click **Login**.

> **Note:** If you forget your username or password, you can click the **Need Help?** button on the login screen for help.

About Deltek

Better software means better projects. Deltek delivers software and information solutions that enable superior levels of project intelligence, management and collaboration. Our industry-focused expertise makes your projects successful and helps you achieve performance that maximizes productivity and revenue. www.deltek.com