Govern

Govern Scheduler

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Harris Govern

Govern Scheduler

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Preface

Welcome to the Govern Suite, a comprehensive and fully integrated line of products that includes a wide variety of database modules.

Computer-Assisted Mass Appraisal (CAMA)

- Appraisals / Property Valuations
- Comparables Sales Management

Financial Management

- Accounts Receivable
- Bankruptcy
- Cash Collection

Land Management

- Appeals & Grievances
- Business & Individual Licenses
- Complaint Tracking
- Leasing
- Permit Tracking & Inspection Scheduling
- Planning
- Violations

Revenue Management

- Aircraft & Boat Excise Tax
- Miscellaneous Billing
- Personal Property Tax Billing
- Real Property Tax Billing
- Self-Reported Tax Billing
- Special Assessments
- Tax Title / Tax Lien / Tax Sales
- Utility Billing

Since 1980 MS Govern has worked hand-in-hand with state and local governments to simplify the implementation of software solutions that automate the flow of information related to their properties.

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Introduction

Overview

The Govern OpenForms product suite provides flexibility for setting up and running batch processes. You can:

- Customize the list of batch processes that appear in Govern.
- Add as many or as few batch processes as are required for your organization.
- Define the menus and submenus under which batch definitions appear.
- Set the transaction type and mode.
- Add automatic e-mail messaging.
- Add reports or attachment.
- Define a network path or FTP site for saving or uploading the attachment.
- Set up schedules to run processes at a later time or on a regular basis.
- Apply security so that only authorized users can view certain batch processes.

The Govern Scheduler is a part of the Govern Product Suite. It is used to monitor and track the scheduled Govern batch processes, from all subsystems.

- Monitor and track your Govern batch processes in one central location.
- View the progress of batch processes as they run.
- Modify or delete any scheduled process to which you have access permissions.
- View logs and details on previously-run batch processes.
- View reports generated from previously-run processes.
- Monitor the Govern Scheduler Services.

This document describes how to set up and run the Govern Scheduler. It includes the following chapters:

- Installing the Govern Scheduler Application and Services on page 3
- Administrative Setup on page 30
- Setting Up Schedules for Batch Processes on page 63
- Monitoring Batch Processes with the Govern Scheduler on page 70

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What's New

NEW This section lists the new features in the Govern Scheduler 5.1. Throughout the online manuals and the Help files, the new features are indicated by the **New** symbol.

Govern New Administration

NEW The **Sequential Batch Process feature** allows users to configure a list of Schedules in order to create a linked sequence of Batch Processes in the Govern New Administration (GNA). As each batch process is successfully completed, i.e. no errors generated, it will automatically initiate the next pre-configured batch process in the user defined sequence. *See Creating a Sequential Batch Process on page 53 for details.*

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Chapter 1: Installing the Govern Scheduler Application and Services

Overview

This chapter describes the installation and configuration of the Govern Scheduler application and services.

Getting Started

- Govern Scheduler Components on page 4
- Network Configuration Options on page 4
- Prerequisites on page 5
- Verifying and Configuring Microsoft.NET Framework 4 Full Profile Installation on page 6

Installing the Services and Software

- *Defining System Registry Settings on page 10*
- Installing the Scheduler Service on page 12
- Adding a Scheduler Service for a Different Database on page 15
- Installing the Govern Scheduler Application on page 16
- Setting Security for the Govern Scheduler on page 23

Uninstalling or Reinstalling the Govern Scheduler

- Uninstalling the Govern Scheduler on page 24
- Reinstalling the Govern Scheduler on page 25

Troubleshooting the Installation

- Verifying the Installation of the Service on page 26
- Verifying Firewall Settings on page 28

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Getting Started

Overview

Before installing the services and software for the Govern Scheduler, read the information in this section. It provides details on the following:

- Govern Scheduler Components on page 4
- Network Configuration Options on page 4
- Prerequisites on page 5

Govern Scheduler Components

The Govern Scheduler has the following components:

- **Scheduler Service**: The Scheduler Service handles the scheduling of the batch processes. It generates error messages for failed processes if required. If Worker Services are not installed, the Scheduler Service performs the computations of all scheduled services.

  Note: Previously an Appender Service installer was required in order to install multiple instances of the Scheduler service, this is no longer required.

- **Govern Scheduler Application**: The Govern Scheduler application is used for monitoring scheduled batch processes. It displays the progress of the processes as they run and maintains logs on the processes that have already run. You can modify or delete batch process schedules form this application, as well as from GNA, as long as you have the required permissions.

Network Configuration Options

The best configuration depends on the size of your organization and the number and size of the batch processes you are running. The Govern Scheduler application can be installed on any computer that can connect to the server where the Scheduler Service is installed. You can install several applications on several computers; so that several users can monitor the batch processes.

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It is recommended to install one version of the application on the server where the Scheduler Service is installed. The Services on this Server tab provides status information on the Scheduler Service or Services running on the same computer as the Govern Scheduler application. *See Services on this Server Tab Quick Tour on page 77.*

Note: You can install multiple Scheduler Services on the same server. However, all the services on the server use the same dlls and when you update the dlls, you would need to stop all the services at the same time. When the Scheduler Service is stopped, the scheduled batch processes do not run.

Therefore, rather than installing one or more Appender Services, it is recommended to install a separate Scheduler Service for each deployment and install them on separate servers.

Prerequisites

This section lists the required files and third-party prerequisites under the following headings:

- Prerequisites for the Scheduler Service on page 5
- Prerequisites for the Govern Scheduler Application on page 6.

Prerequisites for the Scheduler Service

The Scheduler Services require the following Govern and third-party software:

Govern Files: Verify that you have access to the following Govern file:

- `BatchSchedulerServiceInstaller.msi`

Third-Party Software: Verify that the following third-party software is installed on all servers where you are installing the Scheduler Service.

- Microsoft.NET Framework 4 Full profile
- Crystal Reports Engine
- Oracle Client if you are using an Oracle Database

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Prerequisites for the Govern Scheduler Application

Third-Party Software: Verify that the following third-party software is installed on all computers where you are installing the Govern Scheduler application.

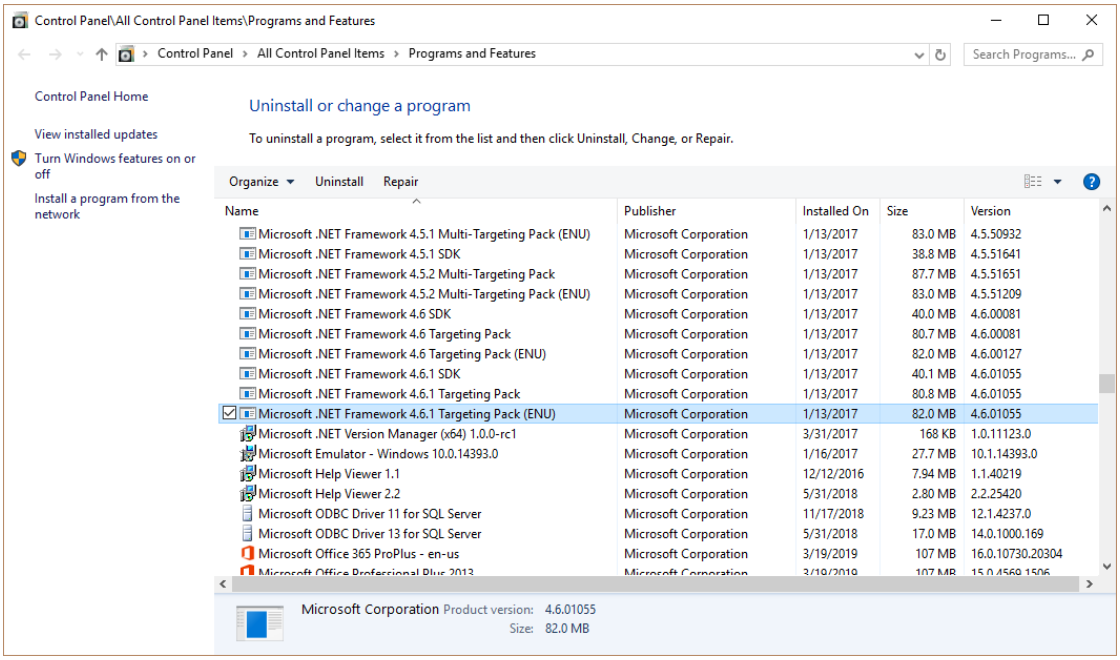
- Oracle Client if you are using an Oracle Database
- Microsoft.NET Framework 4 Full profile

Verifying and Configuring Microsoft.NET Framework 4 Full Profile Installation

Microsoft.NET Framework 4 Full Profile, or higher, is required for the Govern Scheduler application and services.

To verify that it is installed:

1. Launch Windows Control Panel.
2. Open the Programs and Features or Uninstall a Program list.

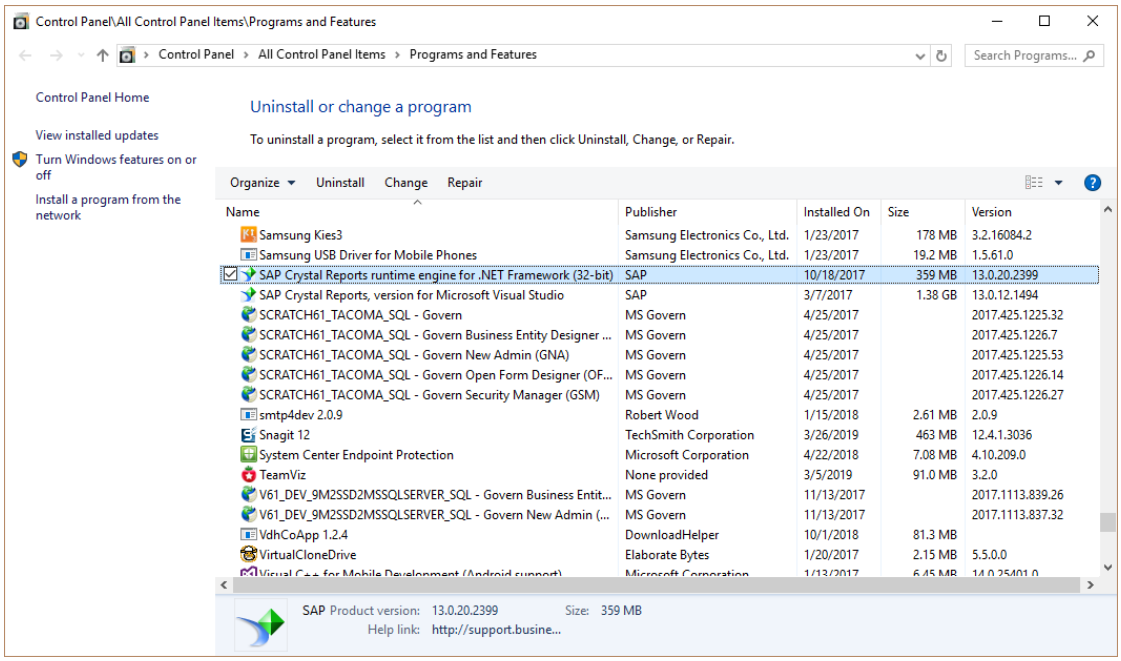


3. Ensure that Microsoft.NET Framework Extended is listed.

You can install Framework 4.6 from the following link http://www.microsoft.com/en-us/download/details.aspx?id=30653

Verifying and Configuring Crystal Reports and Oracle Client

Crystal Reports and Oracle Client can be verified using the same procedure.



Required Information

During the installation and configuration of the Govern Scheduler application and Scheduler Service, you are prompted for the following information:

- **Server Name**: Name of the server on which you are installing the Govern Scheduler Service
- **Port Number**: Port for the Scheduler Service: Port 45977 is used in this guide. Typically, this port is not used by other applications.
- **SMTP Settings**: The SMTP server name, port number, default sender, user name, and password are required for the e-mails sent to inform an administrator or other users if an error occurs with the Scheduler Service.

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- **Deployment Folder or Folders**: For each deployment, where you are installing the Govern Scheduler Service or application, you need the name of the deployment folder. This is the folder where the configuration file, `GovernNetConfig.xml`, is located.
- **Connection Key or Keys**: For each deployment, you need to know the connection key to the database for the service you are installing.

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Installing the Services and Software

Overview

The Govern Scheduler is the part of the Govern Product Suite that is used to monitor and track scheduled Govern batch processes from all subsystems. The following are the steps required to install an instance of the Govern Batch Scheduler Service.

Step by Step Installation

Deploy/Update Binaries and Govern Scheduler Files

You need to deploy/update the binaries and Govern Scheduler files with Deploy EZ

1. Open Deploy EZ
2. Download the binaries for the targeted version; see corresponding documentation for more information on this step.
3. Update the deployment; on the Deploy EZ main window, select the option 'Manage Deployment' and click next.
4. Select your deployment and click next.
5. In the last window, make sure you select all modules listed below with their corresponding versions:
   - Resources Files
   - System Files
   - Govern Custom Control
   - Govern Scheduler
   - Govern Scheduler Service
   - Govern Install Pack
6. Click Next and wait for the update to finish

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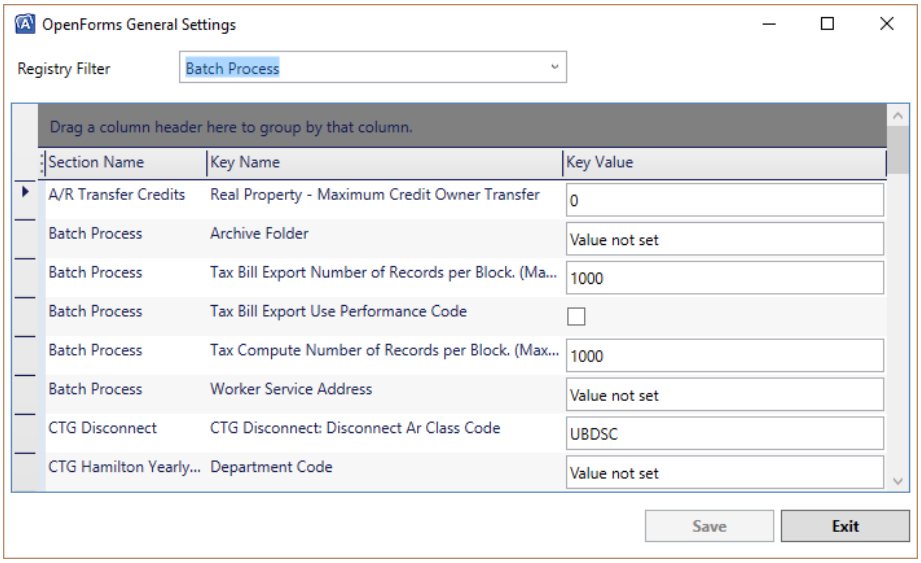
Defining System Registry Settings

Batch Process Settings

The first step is to update the **Batch Scheduler** keys in the System Registry table, in GNA, with the names of the servers in your deployment.

To update the System Registry keys:

1. Launch GNA.
2. From the GNA ribbon, select ***Parameters (tab)*** **> General Settings Editor**.
3. Select **Batch Process** from the **Registry Filter** drop-down list.



4. Go to the Section Name 'Scheduler' and fill in the required properties
   - **Minimum Batch Process Interval For Update (Minutes)** - This is the number of minutes needed between two Batch Process executions for upgrade. The interval must be at least greater than the time it took to copy the Custom Controls folder from the Deployment Server to the machine where the Govern Scheduler was installed
   - **Scheduler Service Machine Name** - The Machine Name where the Scheduler was installed

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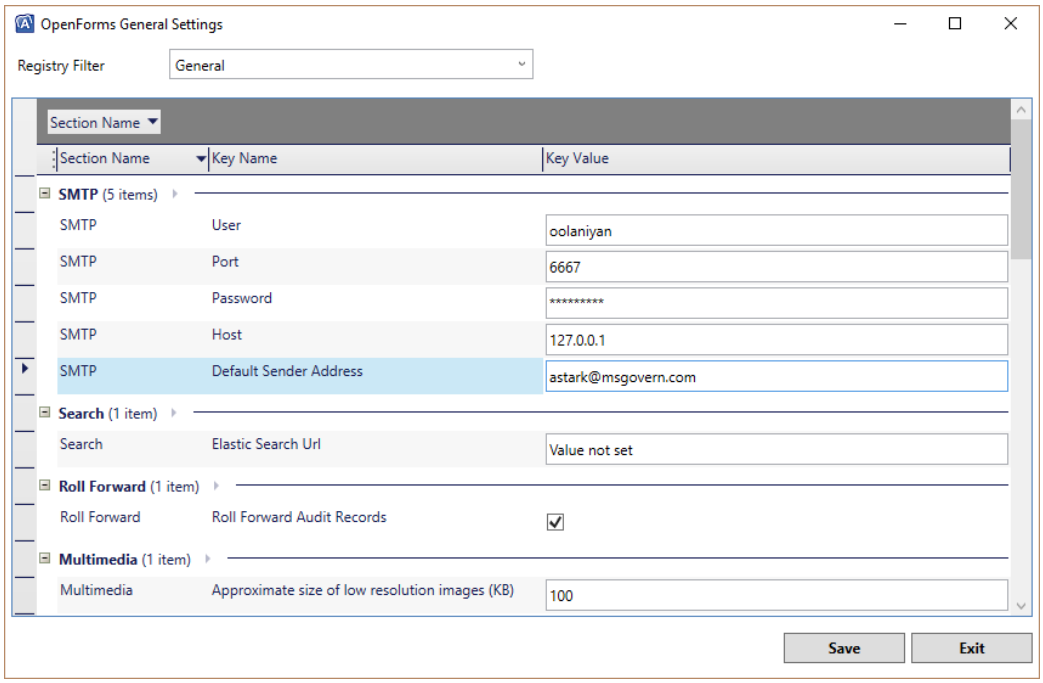
- Scheduler service Port Number - Any port that is not currently in use (ex: 65000). *Contact you administrator for more info.*.

Note: The port number is required for the Scheduler Service. If the port is already in used, when started, the Govern Scheduler will throw an error that you can view in the Windows Event Log. If you are installing multiple services, ensure that you assign a different port number to each instance.



5. Select **General** from the **Registry Filter** drop-down list.
6. Enter the e-mail address of the default sender in the **Default Sender Address** field. This is optional.
7. Enter the SMTP server name in the **Host** field.
8. Enter the default user ID and password for the e-mails.
9. Enter the e-mail port.

Note: The standard port for SMTP is 25.

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Installing the Scheduler Service

The installer for the Govern Scheduler is part of the INSTALL package that is updated through the Deploy EZ. The following procedure describes the installation of the Govern Scheduler Service. The installer is located in the folder 'Install Package/VersionNumber/Batch Scheduler Service Setup'. This folder is located in the root folder of your Deployment server.

To install the Govern Scheduler Service:

1. Open the installer 'BatchSchedulerServiceSetup.exe'.
2. In this example: \\HTJSXK2\GovernNetDeployments\Install Package\6.1\Batch Scheduler Service Setup\
3. Complete all required fields.
   - **GovernNetConfig.xml Path** - Use the ellipsis button '**...**' to select the deployment GovernNetConfig.xml. This must be a UNC path (i.e. \\serverName\)
   - **Base Installation Path** - Use the ellipsis button '**...**' to select the folder where you want the Govern Scheduler Service to be installed. Note that a sub directory will be created using the Deployment Name under the selected path
   - **Full Installation Path** - This is a Readonly field displaying the full installation path. For information only.
   - **Deployment Name** - This Readonly field shows the Deployment Name. This is an informational field.
   - **Connection Key** - This is an informational field that shows the **Deployment Connection Key**. For information only.
   - **Service Name** - This is a Readonly field that shows the full Govern Scheduler Service name.
   - **Failure Alert Configuration** (group) - This group is optional
   - Send an email alert when a program failure occurs
   - **Email Addresses** - Enter one or more email addresses
   - **SMTP Server** - Enter the SMTP server address
   - **Subject** - Enter the email subject
   - **Body** - Enter the default email body message
4. Click **Start**.

The Installer will then perform the following:

- Copy all required files

- Install the service,
- Start the service

When complete, click **Close** to complete and close the installer.

Verify the Govern Scheduler Status

After installation it is always recommended to verify that the service is running. The following steps can used to verify the status:

1. Open the Windows Services window.
2. Under Windows 7, 8 and 10...
3. In the Windows Search bar search for '*Local Services*'.
4. Click on the 'View local services' icon.
5. Locate the Govern Scheduler service you want to uninstall.
6. The Govern Scheduler service display name always starts with 'Govern Scheduler' followed by the deployment name.
7. Check the 'Status' column for the corresponding Govern Scheduler Service instance; ensure that the 'Status' is 'Running'

If the service is not running, review your Windows Event Log for information on why the service is not running.

Testing the Govern Scheduler Service

The status of the Scheduler Service or Services can be viewed under the Services tab of the Govern Scheduler application. You can also start or stop a service from this tab. *See Starting and Stopping the Services on page 78*

To ensure that the Govern Scheduler is installed properly you need to run a Test Batch Process

1. Open GNA.
2. In the 'Editors' ribbon tab, click on the button 'Batch Process Definition Editor.
3. Click on the '+' button to create a new Batch Process definition

Complete the following parameters.

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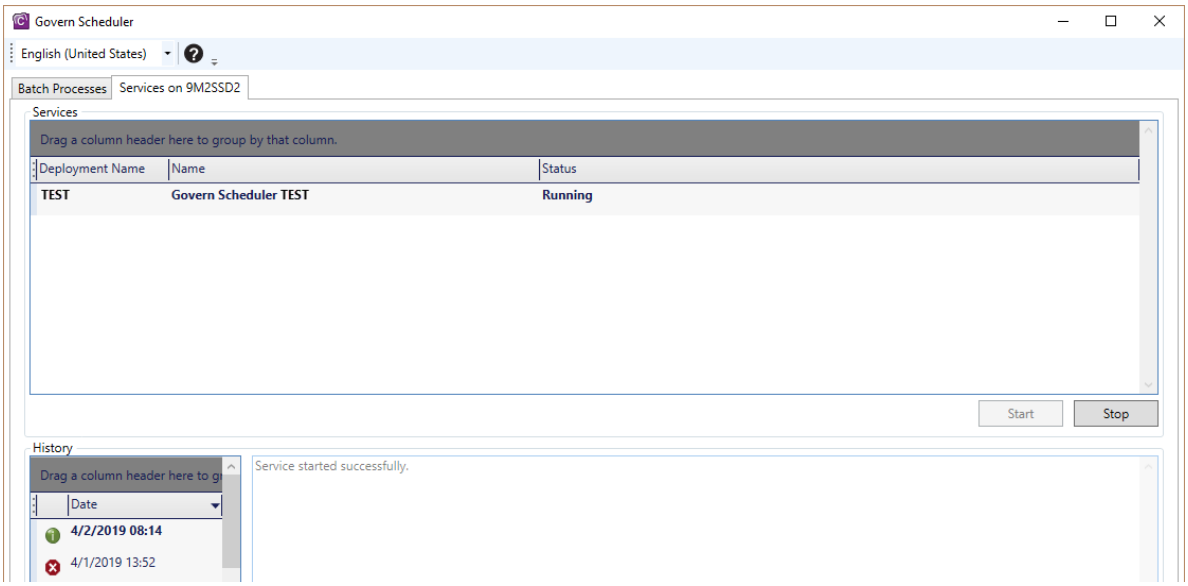
- **Code** - Enter a meaningful code
- **Description** - Enter a meaningful description
- **Process** - Select the Batch Process 'Test Batch Process'
- **Transaction** (tab) - Transaction Type; could be 'Synch' or 'Asynch'
- **Transaction Mode** - Set it to 'Continue If One Transaction Failed'
- **Emails** (tab) - Complete this parameter if you wish to test sending Emails.
- **Reports** (tab) - Add reports if you wish to test the reporting option.
- **Attachments** (tab) - Complete if you wish to test the attachment copy
- **Scheduling** (tab) - Create a new schedule. Any schedule can be tested.

Launch the *Govern Scheduler Console* (**SC**) to verify the execution of the 'Test Batch Process'. Note that the Test Batch Process will throw some Warning and Errors.



Auto Update Feature

Once the scheduler service is installed it will periodically monitor for updates. When an update is detected, it will update itself. Here are a few things to be aware of regarding the auto update feature:

The service checks every minute for updates in the deployment folder in the following places: BSS, CustomControl and SystemFiles.

In order for the update proceed, the following conditions must be met. If they are not, the system waits:

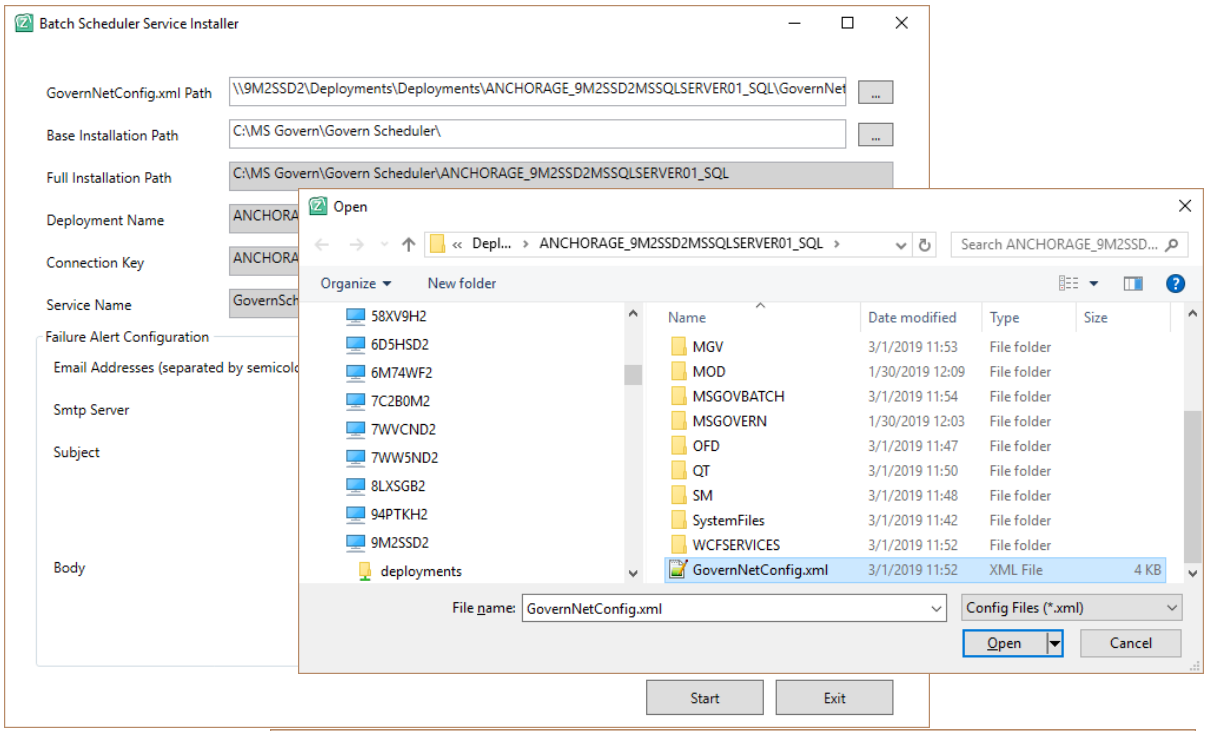
- No batch process is currently running and no batch process was detected as running in the last minute.
- No batch process is scheduled to run in a period less than the Minimum Batch Process Interval For Update. For example, if the minimum interval is 5 minutes we won't update if a process is scheduled to run in 4 minutes.

In order to update, the service calls the program BatchSchedulerService-Setup.exe and then shuts down itself. Once the update finished, BatchSchedulerServiceSetup.exe restarts the scheduler service.

Adding a Scheduler Service for a Different Database

If you have several deployments in your setup, such as testing, training, live, and production, you could install a Scheduler Service for each deployment on the same computer. If required, you may install as many secondary services as needed using the same installation program. To add an additional service:

Click to launch the **BatchSchedulerServiceSetup.exe** file. Repeat the steps used to install the service.



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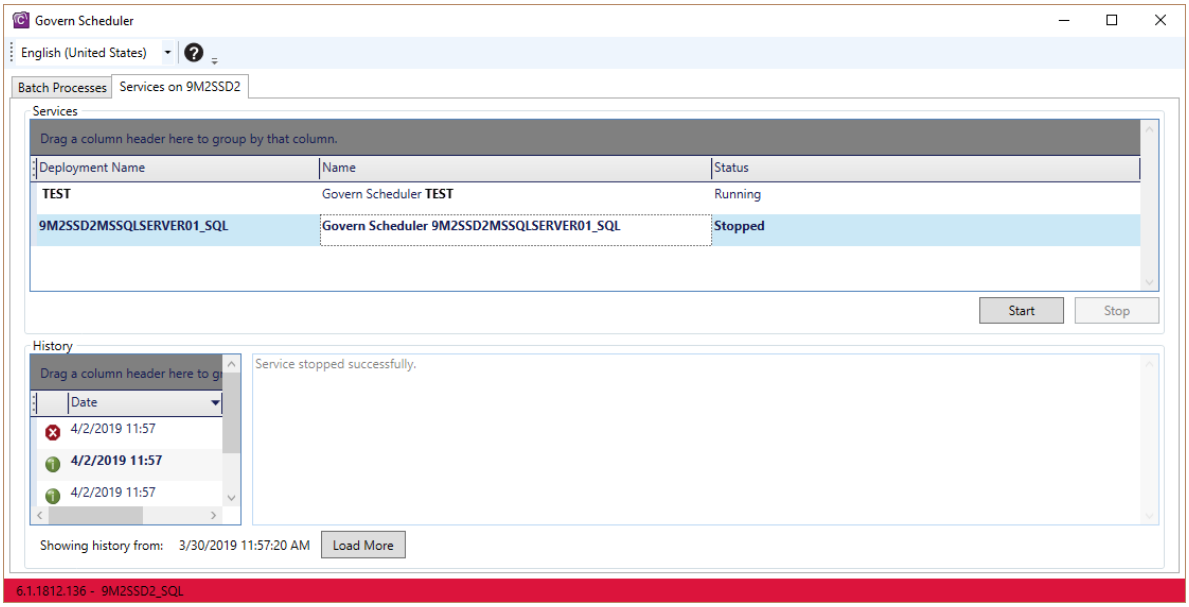
A setup with two services is displayed in the following screen shot. The names appear in the top section. You may also start and stop the services through this tab.



Note: Each Govern Scheduler Services installed must have a unique port number. Port numbers between 46000 and 49000 can be employed, if they are not in use by another application or service. The following link from the Internet Assigned Numbers Authority (iana) can be consulted: https://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.txt

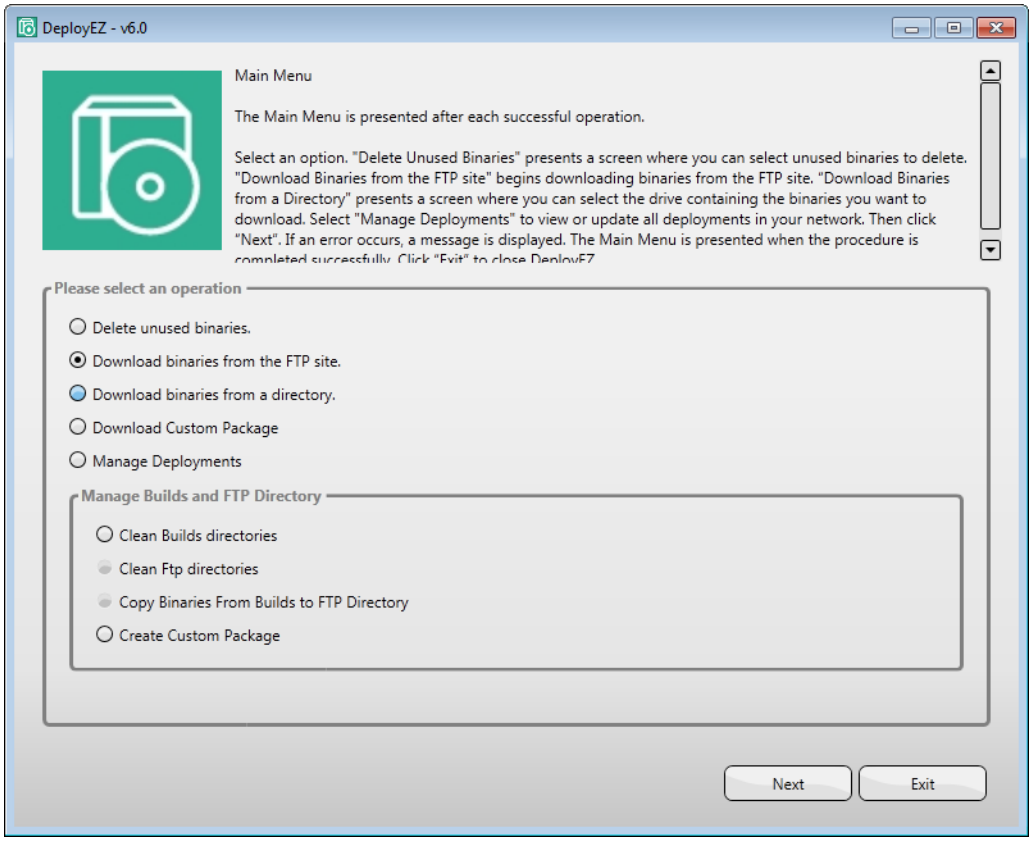
Installing the Govern Scheduler Application

The Govern Scheduler application is installed, as all other Govern OpenForms applications, through Deploy EZ.

Note: You can install the Govern Scheduler application before or after installing the Scheduler Service. Similarly, you can uninstall one without uninstalling the other. There is no dependency.

To install the Govern Scheduler application:

1. Launch Deploy EZ.



2. Select the **Download Files from the FTP Site** or from a **Directory** option, depending on where your files are saved, to ensure that you have the latest version.
3. Click **Next**.

   When the download is complete, the Importing the Binary Files screen appears.

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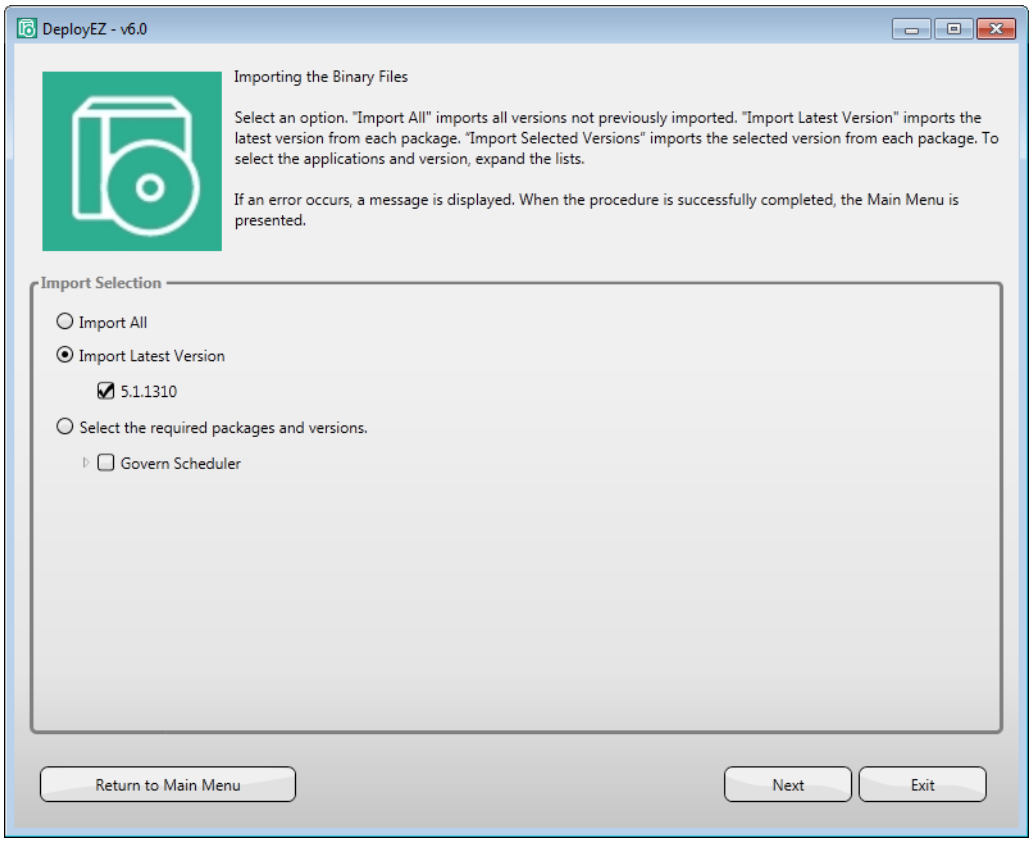
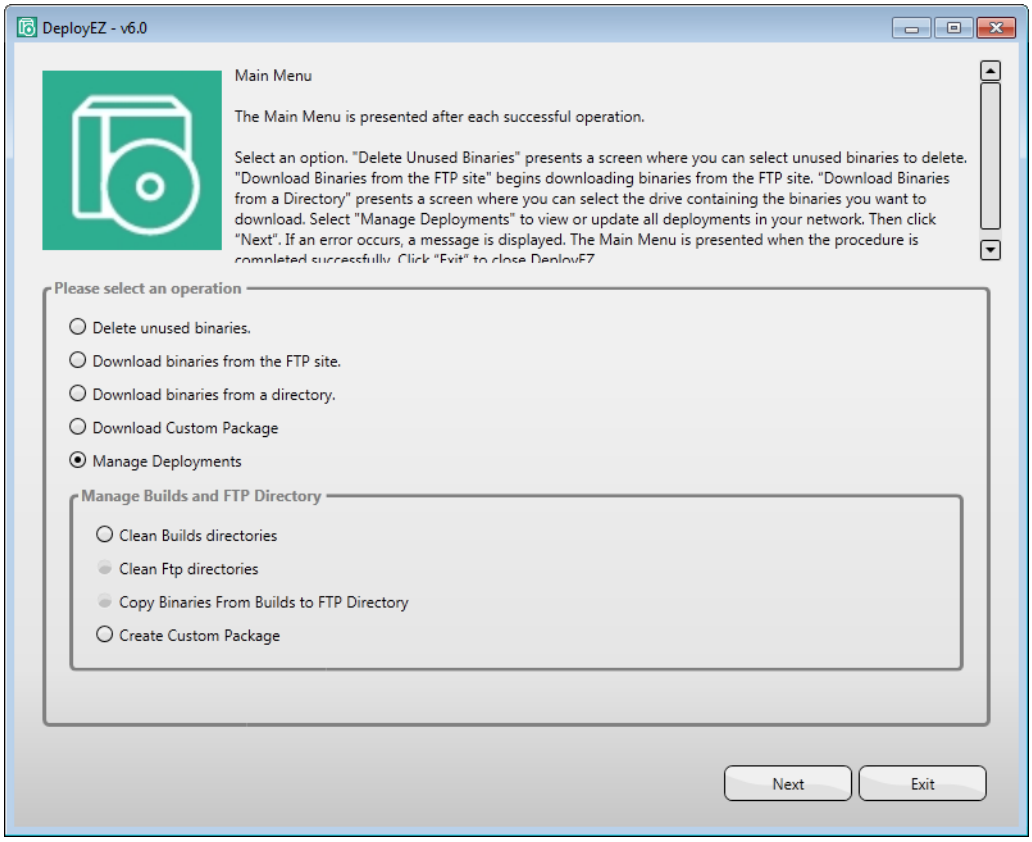


4. Select **Import Latest Version** and the version that you want to install or **Import All** if you want to import all versions.
5. Click **Next**.

   When the import is complete, the Main Menu appears.



6. Select **Manage Deployments** from the Main Menu.
7. Click **Next**.

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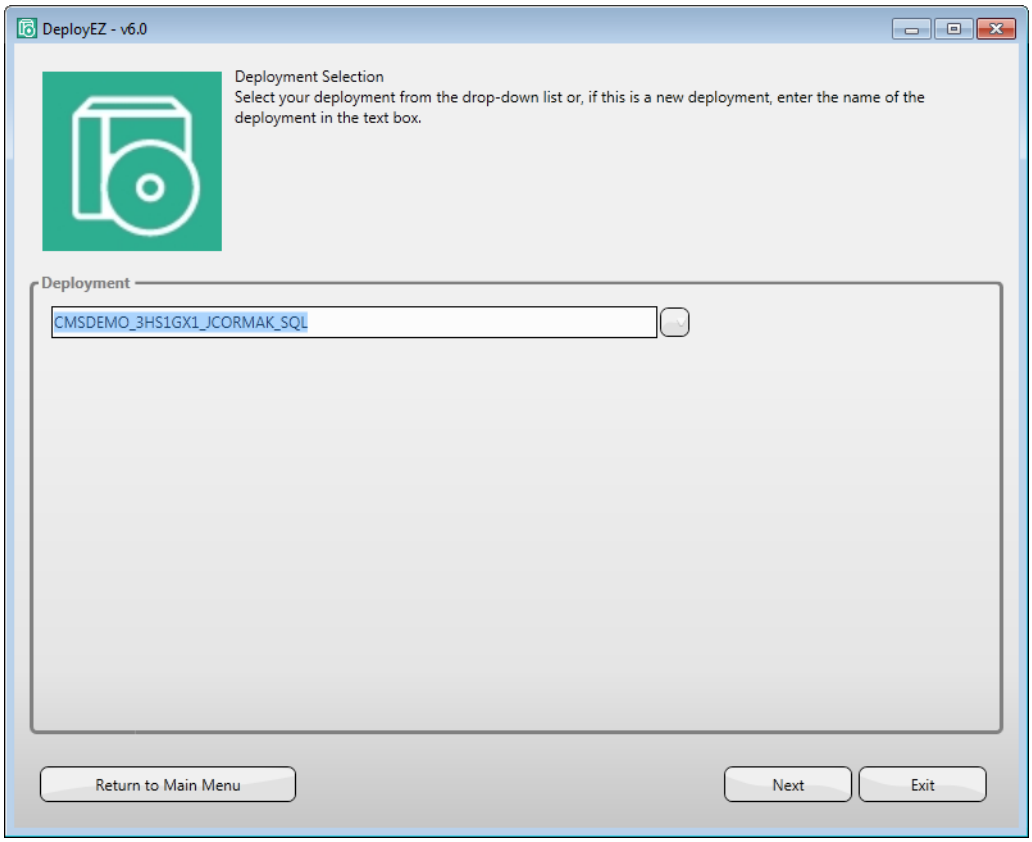
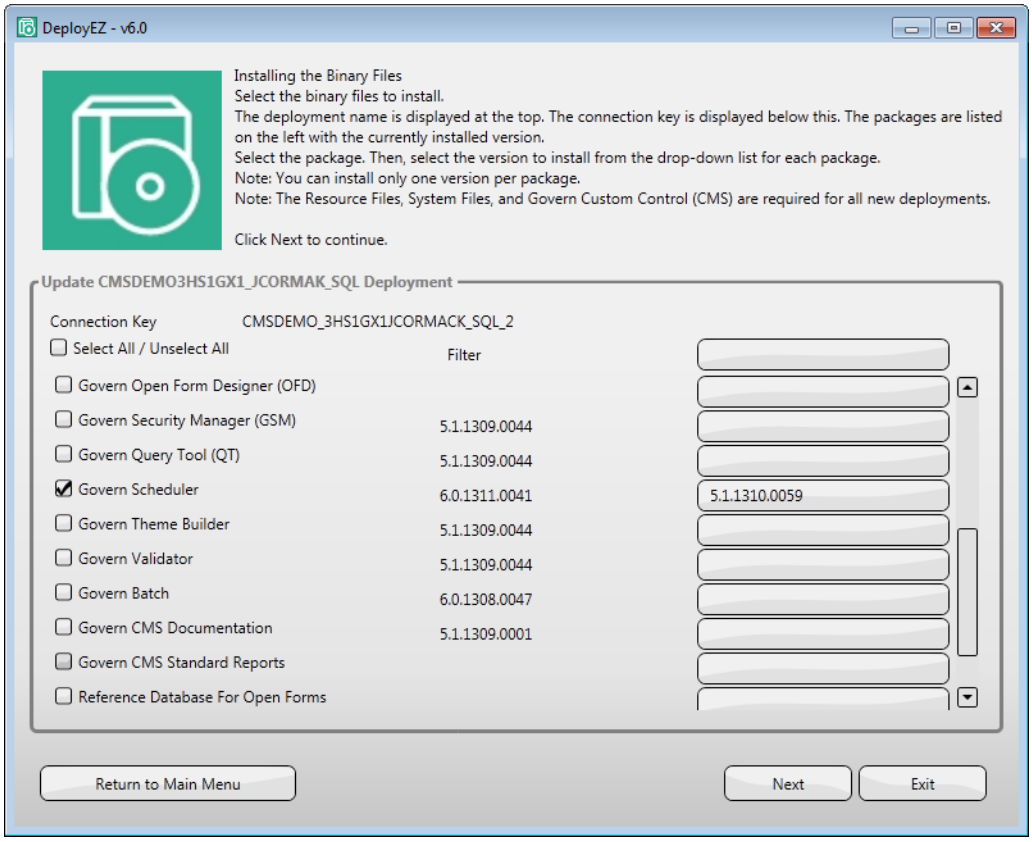


8. Select the name of the deployment, where you are installing the Govern Scheduler, from the **Deployment** drop-down list.
9. Click **Next**.

Govern Scheduler



10. Select the **Govern Scheduler** checkbox.
11. Select the required version.
12. Click **Next**.

    The next screen has a progress bar to indicate the progress of the installation or update.

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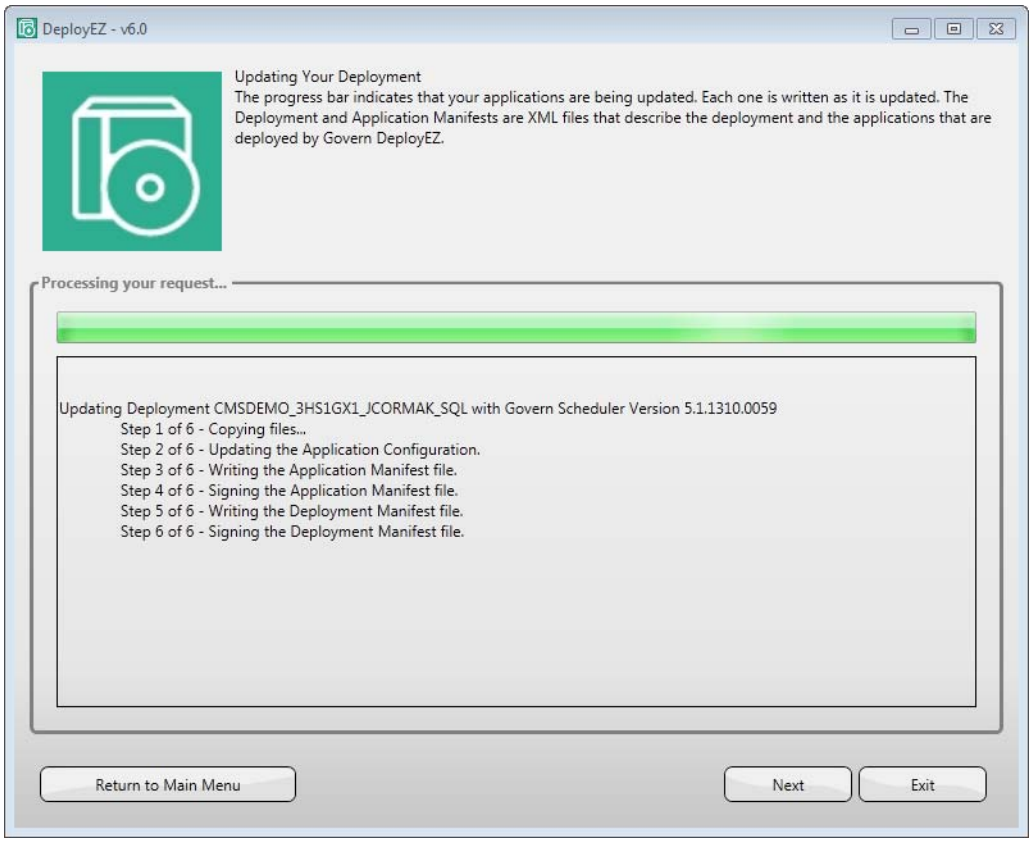
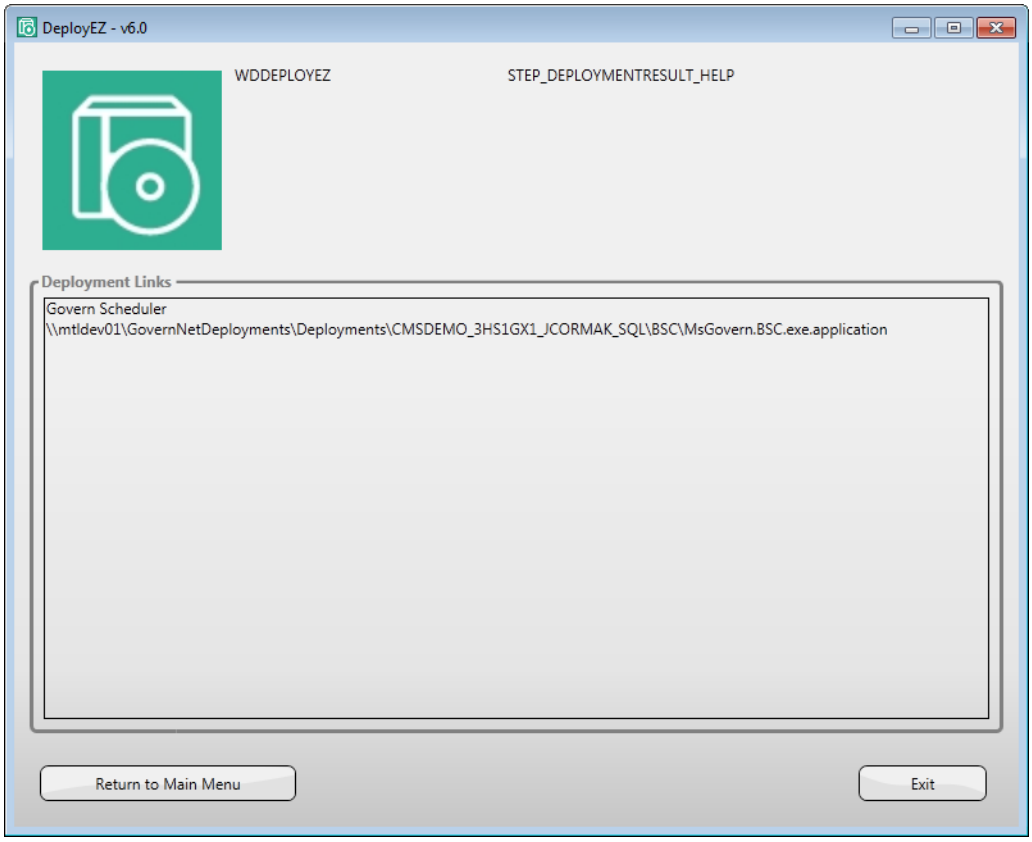


13. Click **Next** when the button becomes enabled.



14. Click **Exit** when the installation is complete.

For further details on creating new deployments and managing existing ones, refer to the Govern Deploy EZ guide.

Setting Security for the Govern Scheduler

Once the Govern Scheduler is installed, you can set the security rights for it. To do this, launch the Govern Security Manager and expand the **Applications** menu. Right-click on the **Govern Scheduler** and select **Edit**. *For further details on setting security rights, refer to the Govern Security Manager (GSM) guide*.

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Uninstalling or Reinstalling the Govern Scheduler

Overview

This section provides two procedures:

- Uninstalling the Govern Scheduler on page 24
- Reinstalling the Govern Scheduler on page 25

Uninstalling the Govern Scheduler

In order to completely uninstall the Govern Scheduler, you need to uninstall both the Govern Scheduler application and the Govern Scheduler Service application. However, you can uninstall one without the other.

The Appender Services cannot be uninstalled separately. They are automatically uninstalled when you uninstall the default Scheduler Service application.

To uninstall the Govern Scheduler application or components:

1. Launch Windows Control Panel and open Programs and Features or Uninstall a program.
2. Scroll to the application or service you want to remove.
   - The application is called MS Govern Batch Service Console.
   - The default service is called Govern Scheduler.

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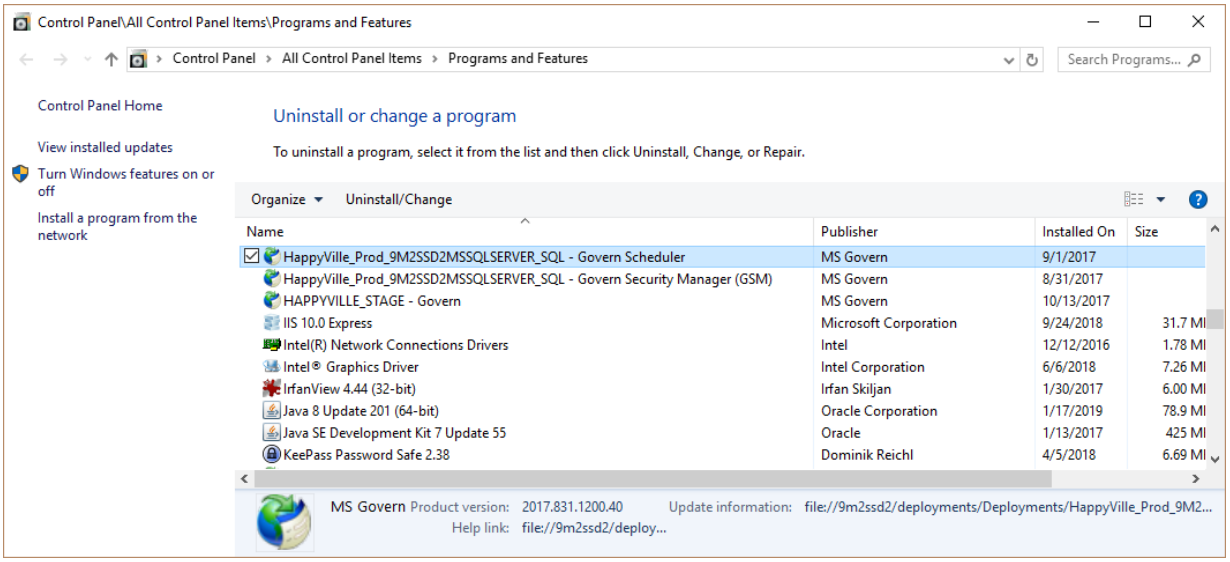

3. Right click on the application or service and select **Uninstall**.
4. Follow the instructions on the screen.

Reinstalling the Govern Scheduler

If you change the server on which the Govern Scheduler application is installed, you need to install both the Govern Scheduler service and the Govern Scheduler application on the new server.

The procedures for reinstalling the application and service are the same as the procedures for installing the application and service for the first time.

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Troubleshooting the Installation

Overview

For most deployments, the Installation programs configure all the service requirements. However, if problems occur during the installation, run the installers in *basic* mode and review the following procedures:

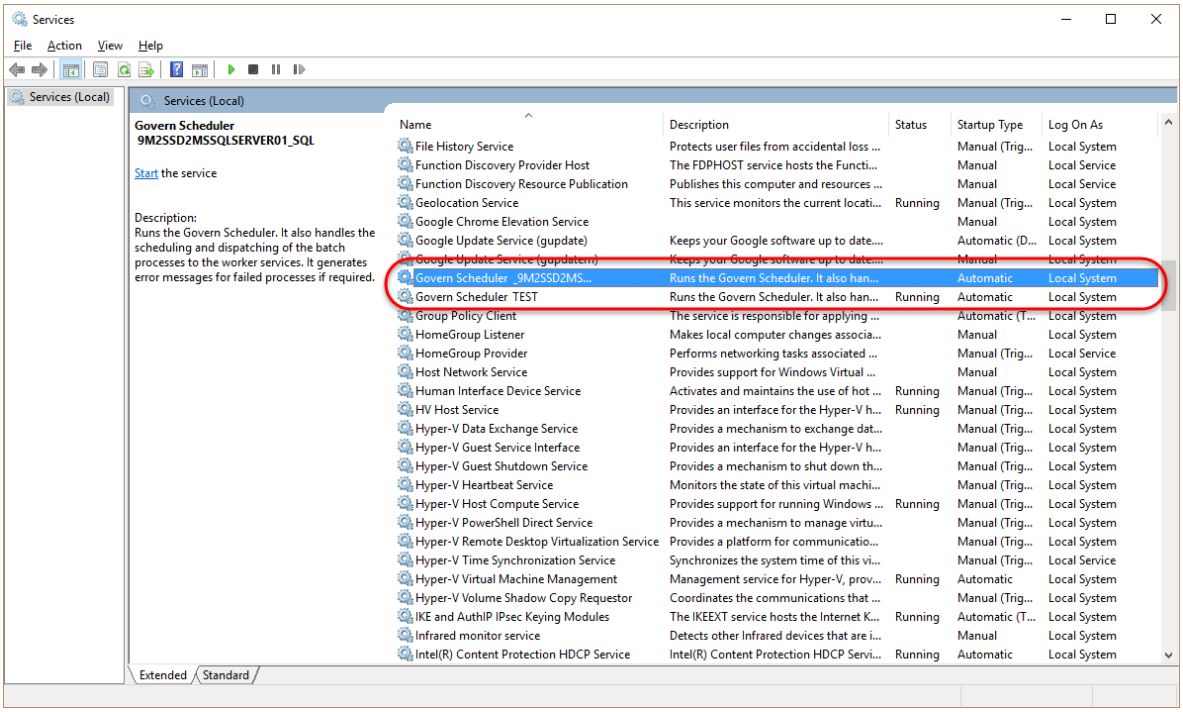
- Verifying the Installation of the Service on page 26
- Verifying Firewall Settings on page 28

Verifying the Installation of the Service

Once you have completed the installation of the Scheduler Service the service is listed under Windows Services.

To view the Scheduler Service:

1. Launch Windows Control Panel.
2. Open Windows Services.



3. Ensure that the Govern Scheduler Service is listed.

Tip: Once the Govern Scheduler application is installed, the status of the Scheduler service or services installed on the local server can be seen and modified on the interface.

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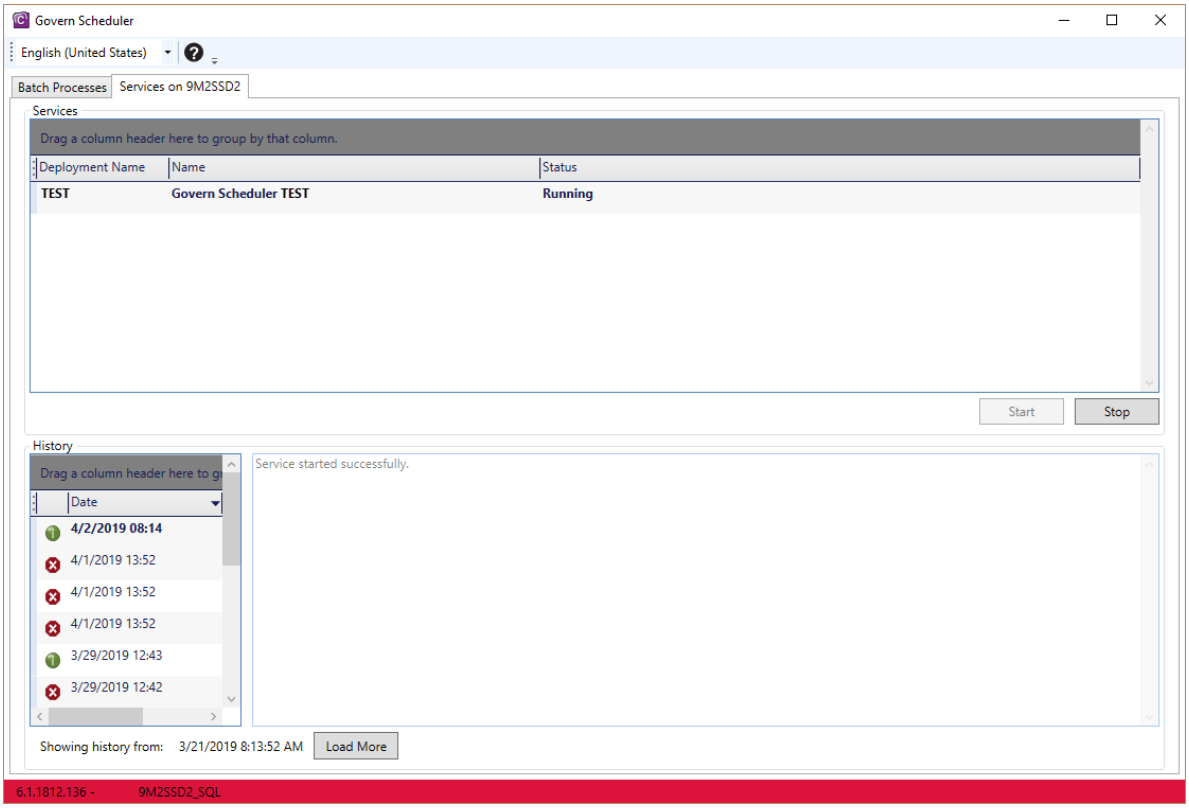

Whenever you perform a deployment, it is recommended to restart the Scheduler Service or Services on the server. If any updates, such as new batch processes or software enhancements are added for the Govern Scheduler, they are available in the deployment. The Scheduler Service automatically performs a search for updates when it starts. If any are available, they are automatically installed.

Note: Ensure that no one is running a scheduled batch process when you start or stop the Scheduler Service.

For further information, see Scheduler Services on page 77.

Verifying Firewall Settings

If the server is located behind a firewall, verify that incoming traffic is allowed on the port you are using; i.e., **TCP port** 45977 or the port that you entered when you added the address in GNA. *See Defining System Registry Settings on page 10*.

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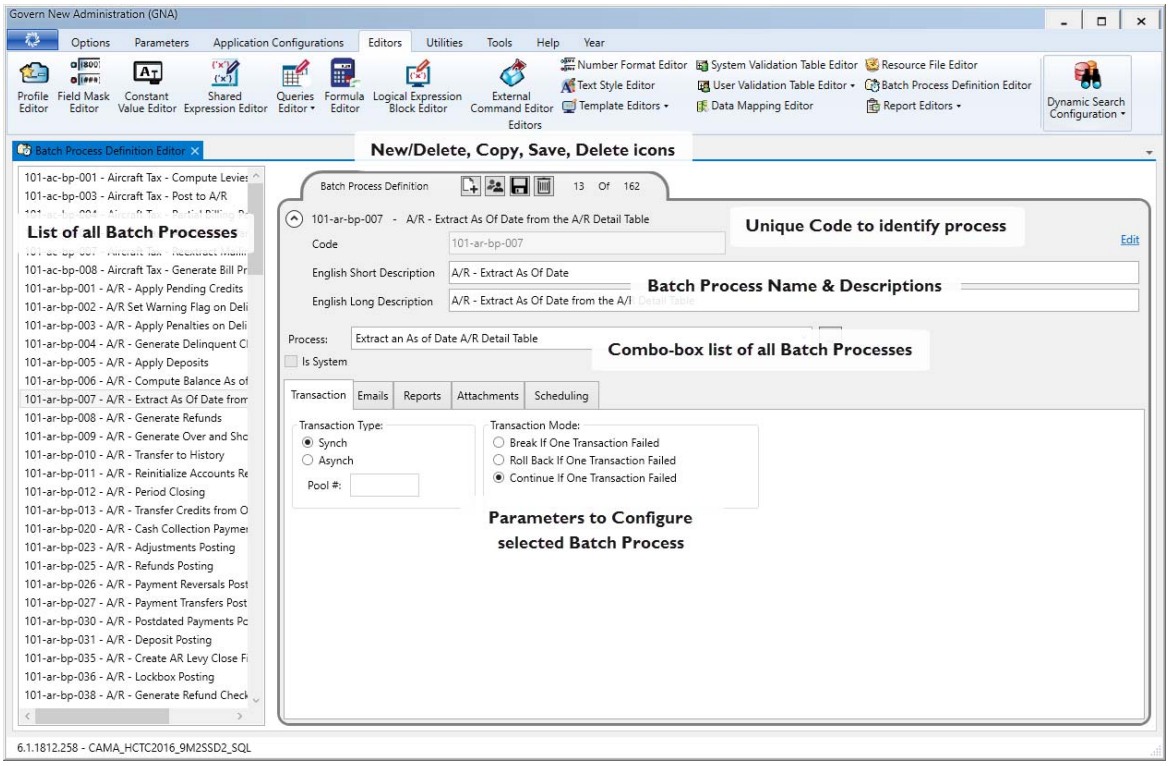
Chapter 2: Administrative Setup

Overview

This chapter describes the *Batch Process Definition editor* form in Govern New Administration (GNA). This form can be used for the following:

- Naming the batch processes
- Defining the menus and submenus under which they appear in Govern
- Adding automatic e-mail messaging
- Defining paths for attachments
- Adding, modifying, and schedules
- Adding reports

The following screen shot provides a quick tour of the Batch Process Definition form in GNA. All batch processes are defined and configured from the same form. You can return to the Batch Definition Editor at any time to view or modify a batch process definition. The only thing that you can't modify is the Code that uniquely identifies the batch process.



Configuring Batch Process Definitions

Overview

The procedures described in this section are applicable to all batch processes whether they are run from Govern or scheduled and run in the Govern Scheduler:

General Information

This section provides procedures for accessing the batch process

- Accessing the Batch Process Definitions Form on page 32
- Entering General Information on page 33
- Defining the Transaction Type on page 35

E-mail Messaging

You can add automatic e-mailing to a batch process in order to notify key personnel when a process is complete.
See Setting Up Automatic E-Mailing on page 39.

Reports

You can associate one or more reports with the selected batch process. You can also add report parameters and default values, depending on how the report is set up. *See Adding a Report on page 42*.

Attachments

You can define a network or local path for the reports and files that are generated by the selected batch process. You can also enter an FTP address for these attachments.

This is useful for batch processes that generate an attachment, such as a **.csv** or text file. For example, information about tax accounts with an overdue balance could be extracted from the database and copied to a **.csv** file by a batch process. You can specify the local or network path for this file and / or upload it directly to an FTP site where it can be made available to the bank.

See Setting a Path or FTP Address for an Attachment on page 45.

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Scheduling

This section describes how to set up schedules in order to run batch processes at a later time or on a regular basis, such as daily, weekly, or monthly. *See Setting Up Scheduling on page 47*.

Maintenance

The procedures in this section describe how to update and delete existing batch process and / or how to set security permissions for them.

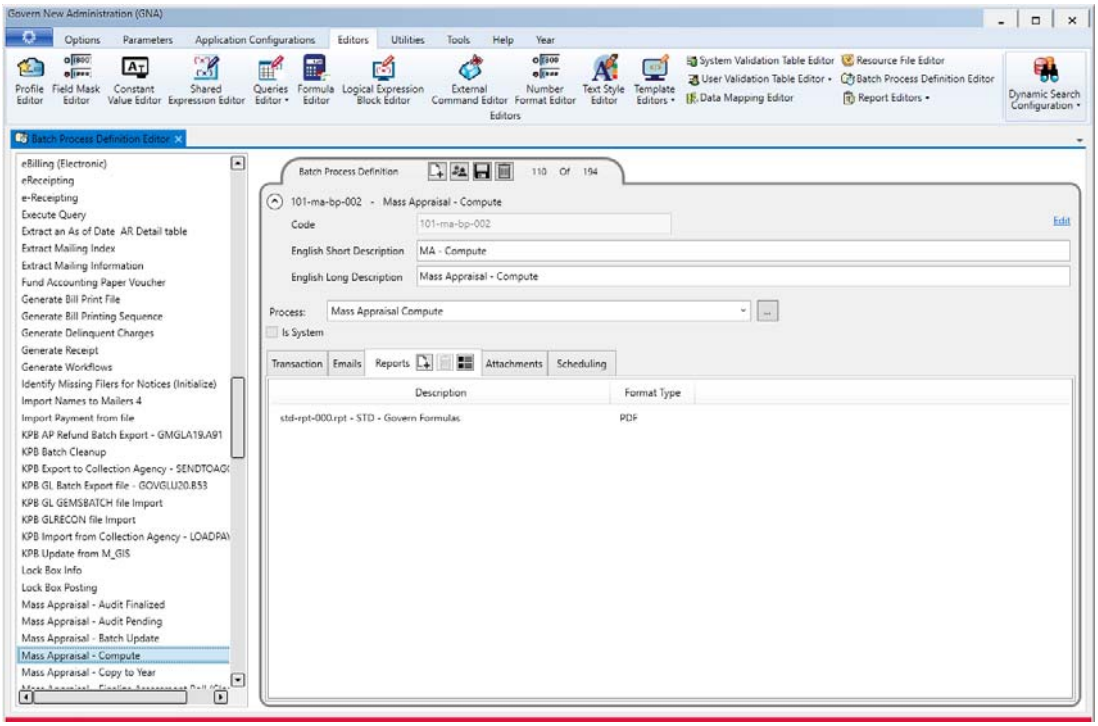
- Modifying and Deleting a Batch Process Definition on page 52
- Setting Security for Batch Processes on page 62

Accessing the Batch Process Definitions Form

To access the Batch Process Definitions form:

1. Launch GNA.
2. In the GNA ribbon, select **Batch Process Definitions**.

The Batch Process Definitions interface has two (2) sections:



- On the left, a treeview listing the existing batch processes and categories
- In the center, the list of the batch processes within the category selected in the treeview
- On the right, the definition form, including four tabs for defining the transaction information, e-mails, scheduling, and reports

Entering General Information

Naming a Batch Process

This section describes how to define the name, code, descriptions for a batch process.

Note: When defining batch processes, you can show or hide the English and French Short and Long descriptions as required:

To define a Batch Process:

1. Open the *Batch Process Definition* form.
2. Select the category and subcategory for the batch process.
3. Click the **New** icon in the Batch Process Definition menu on the right.

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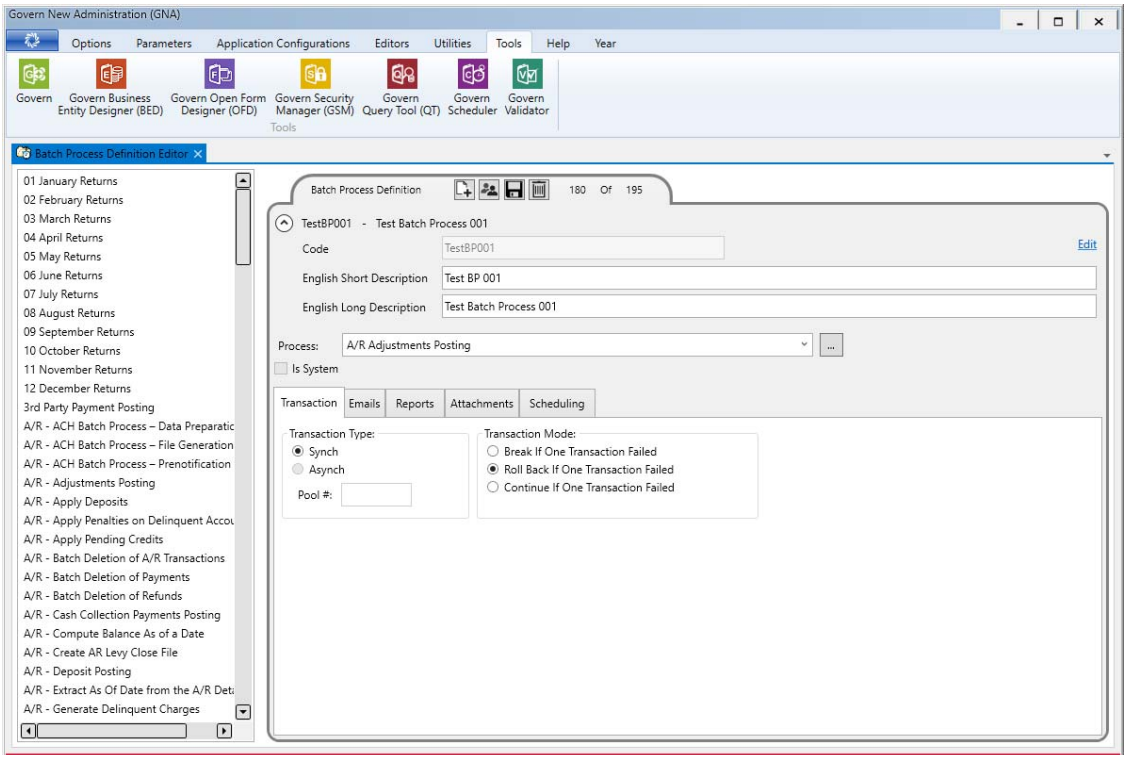
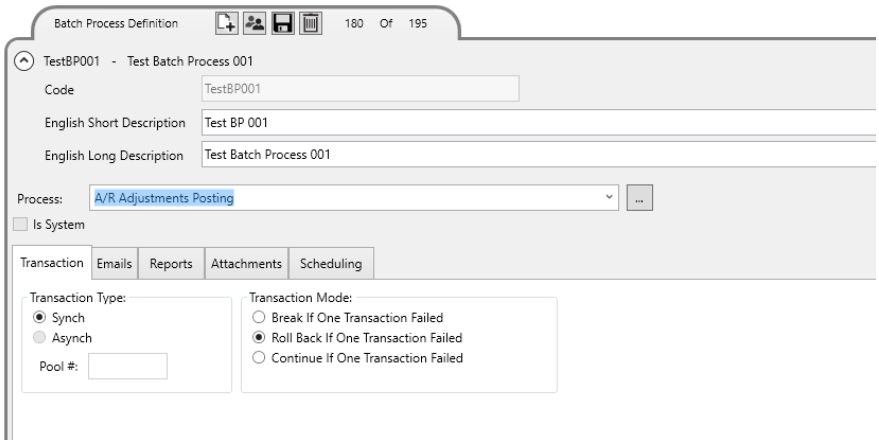


4. Enter a code for the new batch process definition in the **Code** text box. This is required.
5. Enter a name for the record in the text box at the top right. This is automatically added to the **English Long Description** field.
6. Click the arrow beside the text box at the top of the form.

   This expands the description text boxes.



7. Enter descriptions in the **English** and **French Short** and **Long Description** fields as required.
8. Select a Govern batch process from the **Process** drop-down list. This is a required field.
9. Click the **Save** icon.

Defining the Transaction Type

A Govern batch process can be run synchronously or asynchronously. In synchronous batch processing, transactions are processed one after another in a sequence. If there are multiple steps in the process, one step is completed before the next begins. In asynchronous processing, multiple operations are started and run at the same time. As soon as one finishes, the next begins. Multiple steps may also be run at the same time; for example, steps one, two, three, and four can all begin at the same time.

If a batch process has multiple steps that need to be performed in order; for example, if the results of the first step are required for a calculation in the second step, use synchronous batch processing.

For long batch processes, using asynchronous batch processing can speed up the transaction time, because multiple computer operations or threads are processed at the same time. In synchronous batch processing, one operation has to finish before the next can begin.

You can define a Maximum Connection Pool Size for asynchronous batch processing in the addition to the general Connection Pool Size. You can also set a Connection time out for batch processes These parameters are defined on the *Connection Key General Parameters Management* form in GNA.

The Connection Pool is the number of connections that can be open on the server at the same time. Connections are required for the asynchronous batch processes. They are used by the threads to perform operations for batch processing. They are also required for all other Govern operations from all deployments in your organization.

The **Connection TIme Out** refers to the length of time that a batch process executes a query before a time out occurs. The default is zero (0). This means that there is no time out.

To define these parameters:

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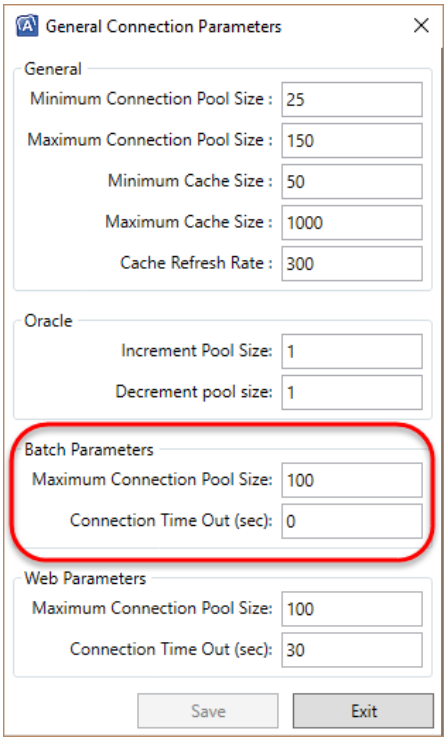
1. Launch Govern New Administration.
2. From the GNA ribbon, select Utilities (tab) > Utilities (group) > **General Connections Parameters**.

   The *Connection Key General Parameters Management* form opens.



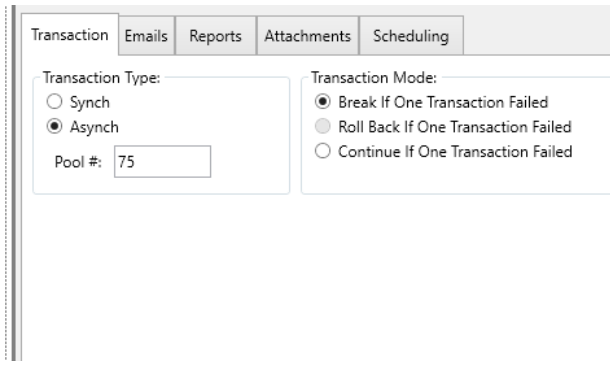
3. Enter a value in the **Maximum Connection Pool Size** field under Batch Parameters or use the default.

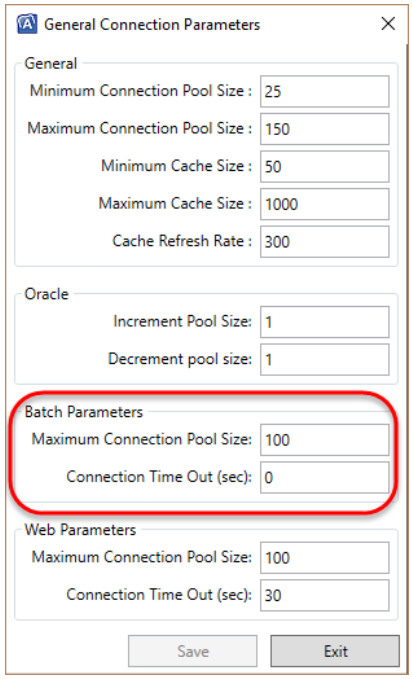
   This is used for asynchronous batch processing only. The value set in this field creates an override of the **Maximum Connection Pool Size** entered under General on this form. The default is **100** for both.
4. Enter a value in seconds in the **Connection Time Out** field or use the default

   This is the number of seconds that a batch process runs a query before a time out occurs. The default is **0**. This means that there is no time out.
5. Click **Save**.

If you are using asynchronous batch processing, the Pool Number is required on the Batch Process Definitions form for each process. This is the maximum

number of operations that can be performed at the same time. When you define the **Pool #** for a batch process, ensure that it is less than the maximum pool size defined on the *Connection Key General Parameters Management* form in the **Maximum Connection Pool Size** parameter.





The Batch **Pool #** must be less than (<) the General Settings **Maximum Connection Pool Size**.

The **Pool #** on the *Batch Definitions Editor* form refers to the number of threads or operations that can run at the same time.

The **Pool Size** on the *Connection Key General Parameters Management* form refers to the number of connections that can be open at the same time. Connections are required by the threads to perform operations for batch processing. They are also required for all other Govern operations from all deployments. *Refer to the Govern New Administration (GNA) guide for details about connection key settings*.

You can change the **Maximum Connection Pool Size** before you run the batch process if required.

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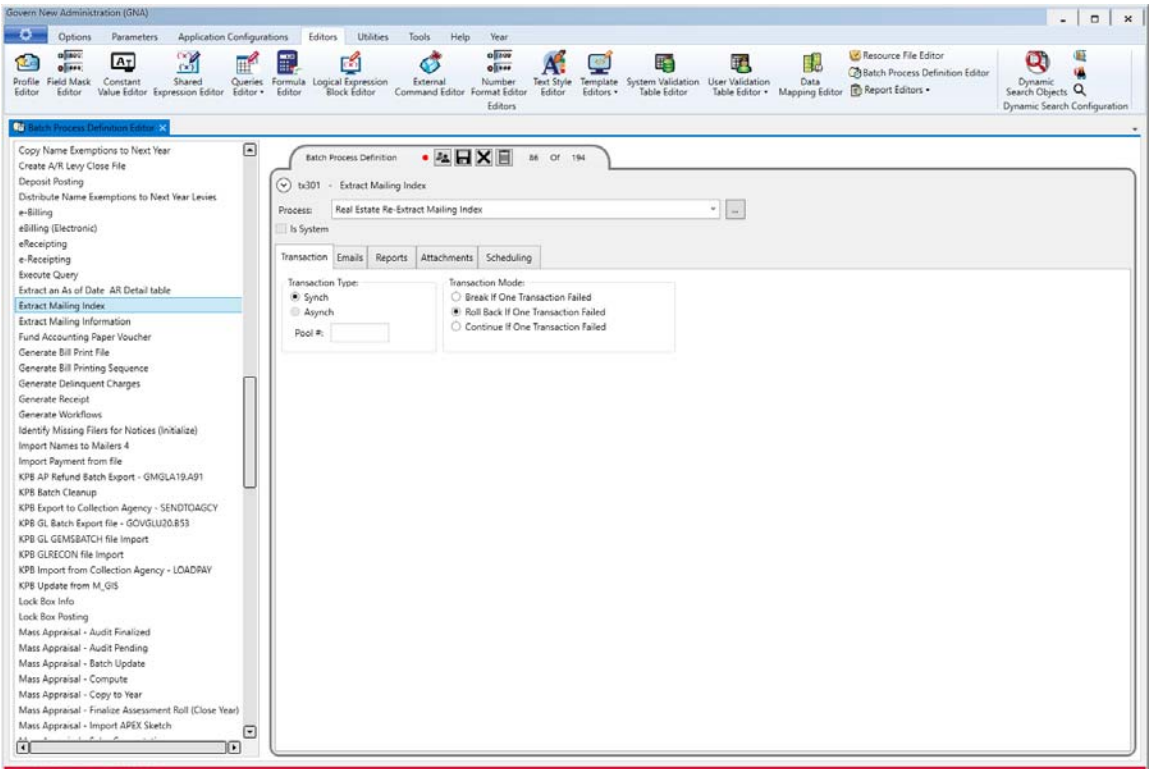
Note: If you change the **Maximum Connection Pool Size** when the batch process is open, you need to close the batch process. Then, close and reopen Govern.Then, restart the batch process.

Refer to the Govern New Administration guide for further details on defining the Connection Key Parameters.

To define the Transaction Type:

1. Launch GNA.
2. From the GNA ribbon, select *Editors (tab)* > *Editors (group)* > **Batch Process Definition Editor**.
3. Open the **Transactions** divider.
4. In the left hand pane, click to select the batch process that you want to define.



5. Select **Synch** or **Asynch** according to how you want to run the process.
6. If you are setting up Asynchronous processing, enter the maximum number of operations to be handled at any one time in the **Pool #** field. This is the Pool Number.

   Note: Ensure that this number is less than the Maximum Connection Pool Size entered on the *Connection Key General Parameters Management* form.

7. Click the **Save** icon.

Defining the Transaction Mode

Select one of the following transaction modes for the process.

- **Break If One Transaction Failed**: the process terminates when the transaction fails.
- **Roll Back If One Transaction Failed**: the process terminates when a transaction fails. All the transactions that were completed are cancelled. All the computations are returned to the starting point.
- **Continue If One Transaction Failed**: the process continues to run even if a transaction fails.

Note: Under the following conditions, the **Roll Back if One Transaction Failed** option is not available and **Break if One Transaction Failed** becomes the default.
- If you have only the Scheduler Service installed and not the Worker Services,
- The **Transaction Type** is set to **Asynchronous**

Setting Up Automatic E-Mailing

You can add automatic e-mailing to your batch processes in order to send out messages when the batch process is completed.

Note: During the installation procedure of the Scheduler Service, you can set up automatic e-mailing for alerts. These e-mails are only sent when there is a fatal error and are intended to alert the system administrators. They are separate from the e-mails configured in this section. *See Installing the Scheduler Service on page 12*.

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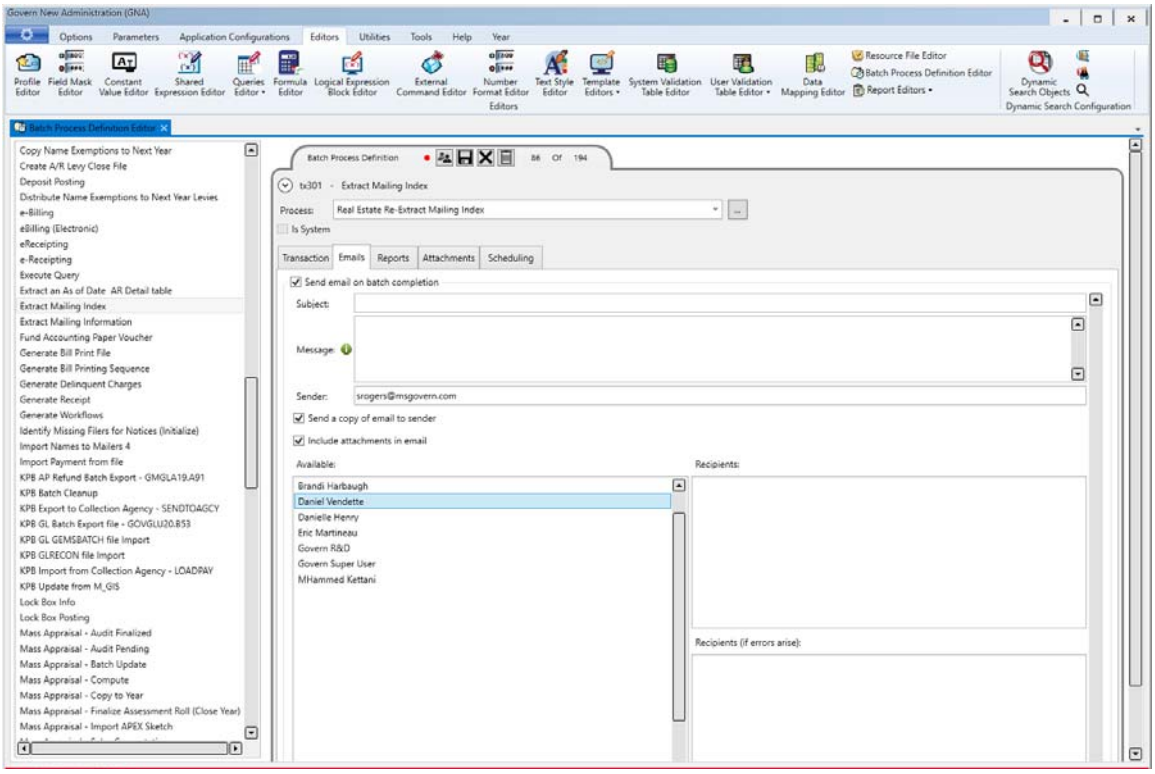
Prerequisites

Before sending an e-mail, ensure that the SMTP parameters are defined. *See Required Information on page 7*

Batch Definition Editor E-Mail Parameters

To set up e-mail parameters:

1. Launch GNA.
2. Select **Setup / Editors** > **Batch Definitions Editor**.
3. Select the **E-mails** tab.



Send e-mail on batch completion: Select this option if you want to send an e-mail each time the batch process is completed. Selecting this option enables the e-mail configuration parameters.

Subject: Enter a subject for the e-mail, such as the name of the batch process.

Message: Enter a descriptive message for the e-mail. You can add the following placeholders in the message. When the process is run, the required information is entered in place of the placeholder. For example, if you enter the {Name} placeholder in the body of the e-mail message, the name of the batch process appears in the e-mail message, such as Deposit Posting. The curly brackets are part of the placeholder and are required.

- **{ID}**: This is the **Code** defined for the batch process at the top of the *Batch Process Definition* form.
- **{Name}**: This is the name of the batch process entered in the **Name** field at the top of the form.
- **{Start}** / {**End}**: These are the dates and times the batch process was started and completed.
- **{Originator}**: This is the user name of the user logged in to GNA.
- **{Errors}**: This is the list of errors generated by the batch process.
- **{Warnings}**: This is the list of warnings generated by the batch process.
- **{Attachments}**: This is the list of files, such as reports, generated by the batch process.
- **{Schedule}**: This is the schedule information associated with the batch process. *See Setting Up Scheduling on page 47*.

You can view a list of the placeholders. To view the list, hover the mouse over the information icon beside the e-mail **Message** field.

Sender: Enter the e-mail address of the sender. This is displayed in the **From** field of the e-mail sent by the batch process.

Send a copy of e-mail to sender: Select this option to send the e-mail to the Sender's e-mail inbox.

Include attachments in e-mail: Select this option to include the attachments, such as reports, generated by the batch processes.

Available: This list box displays the users in the USR_USERFILE database table, where the EMAIL field includes an e-mail address.

Recipients: This list box displays the users who will receive an e-mail when the batch process is run. Select the users in the Available list box and drag them to the Recipients list box. This is a required field.

Recipients (if errors arise): This list box displays the users who will receive an e-mail when errors are generated from the batch process. Select

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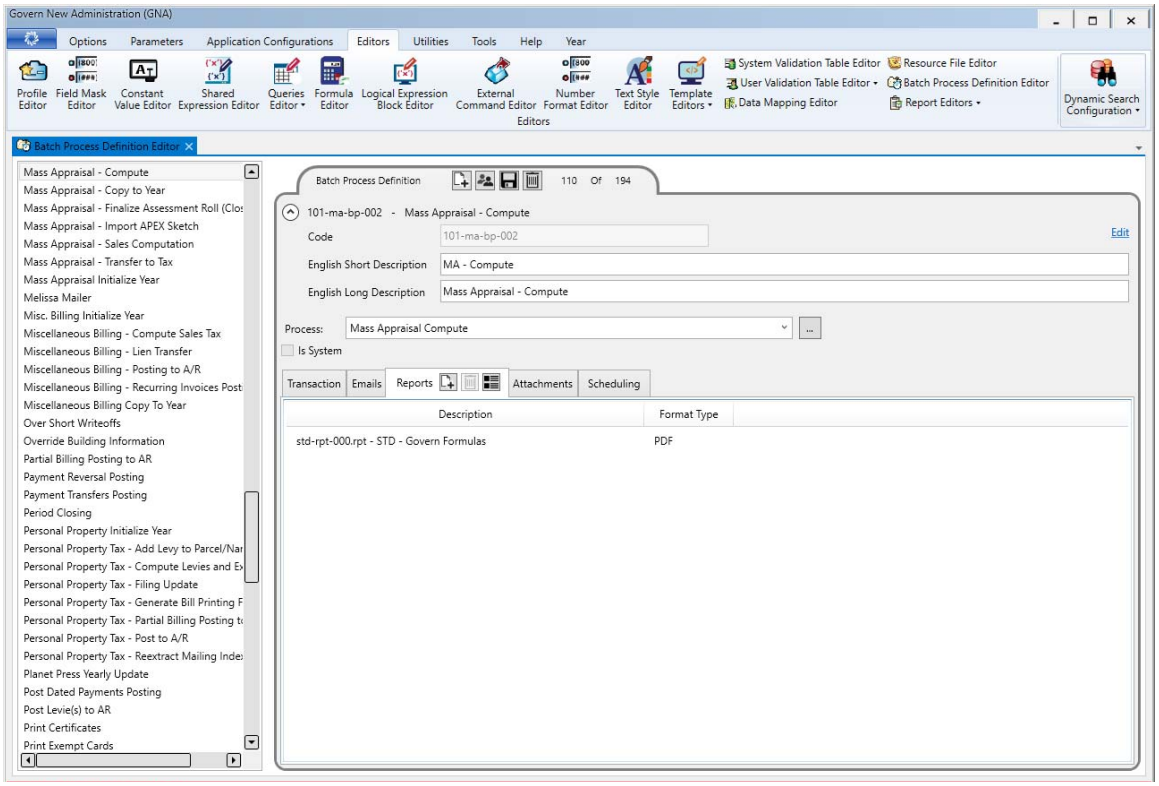
the users in the Available list box and drag them to the Recipients list box. This is a required field.

Adding a Report

Use the following procedures to associate one or more reports with the selected batch process. You add report parameters and default values, depending on how the report is set up.

To add a report: to the batch process:

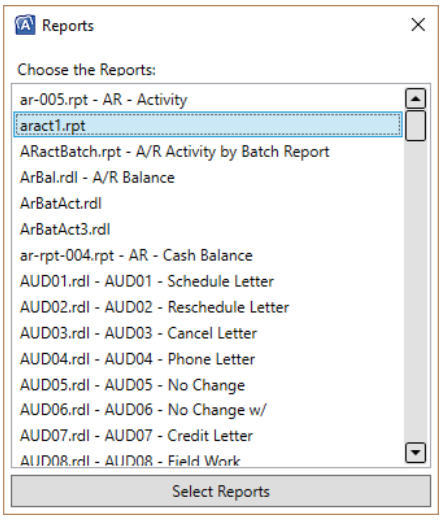
1. Launch GNA.
2. Select **Setup / Editors** > **Batch Definitions Editor**.
3. Select the batch process to which you want to add a report.
4. Select the **Reports** tab.



5. Click **Add Reports**.

   This opens a secondary window listing the reports that have been added through the Reports Editor.

   Note: The secondary window lists all the reports added with the Reports Editor. This includes the reports that have been removed from the directory used by the Reports Editor. You can add one of these deleted reports to the batch process, but when you open it in the Edit Report Details window, a message appears.



6. Select the report or reports that you want to add to the batch process and click the **Select Reports** button.

   These reports are added to the Reports tab of the *Batch Definitions Editor* form.

7. Click **Save**.

Editing Report Details

Use the following procedure to modify report parameters.

To modify report parameters:

1. Launch GNA.
2. From the ribbon, select *Editors (tab)* > *Editors (group)* > **Batch Process Definition Editor**.

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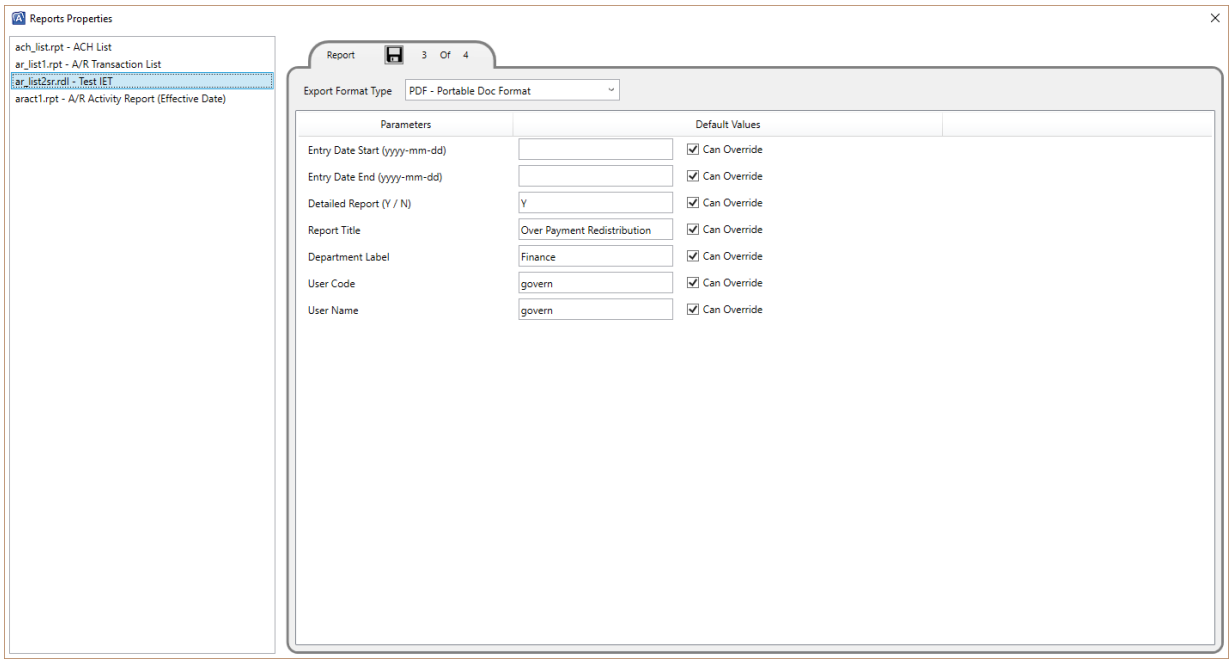
3. Select the batch process with the report you want to edit.
4. Select the **Reports** sub tab.
5. Click the **Edit Report Details** icon.

   This opens the Report Details window.
6. Select the report you want to modify.



The fields that show up on the Reports Detail window vary according to the report selected.

Export Format Type: The default format in which the report is saved is Adobe PDF. You can export and save the report to any of the following formats, as supported by Crystal Reports:

- ASCII Comma Separated Values (csv)
- Document file (doc)
- Editable Rich Text format (ertf)
- Adobe Portable Document format (pdf)
- Crystal Reports file (rpt)
- Rich Text Format text file (rtf)
- Printer test file (tst)

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- ASCII text file (txt)
- Microsoft Excel Spreadsheet (xls)
- Read-only Microsoft Excel Spreadsheet (xlsr)
- Read-write Microsoft Excel Spreadsheet (xlsw)

Parameters: The **Available Parameters for the Report** list box displays the parameters that can be included in the report and that can be used to build an external report; for example, these could include **Date To** and **Date From** fields. The purpose is to give you the exact reference and wording of these fields.

Default Values: This columns lists the default values for the parameters. Select **Can Override** to enable the override on the data entry form for the batch process.

Removing a Report

To remove a report from a batch process:

1. Launch GNA.
2. Select *Editors (tab)* > *Editors (group)* > **Batch Process Definition Editor**.
3. Select the batch process from which you want to remove a report.
4. Select the **Reports** tab.
5. Select the report in the **List of Reports** list box.
6. Click **Remove Report**.

Setting a Path or FTP Address for an Attachment

A network or local path for the reports and other files that are generated by the selected batch process can be defined. You can also enter an FTP address for these attachments.

This is useful for batch processes that generate an attachment, such as a CSV or text file. For example, information about tax accounts with an overdue balance could be extracted from the database and copied to a CSV file by a batch process. You can specify the local or network path for this file and / or upload it directly to an FTP site where it can be made available to the bank.

To define the path or FTP site credentials:

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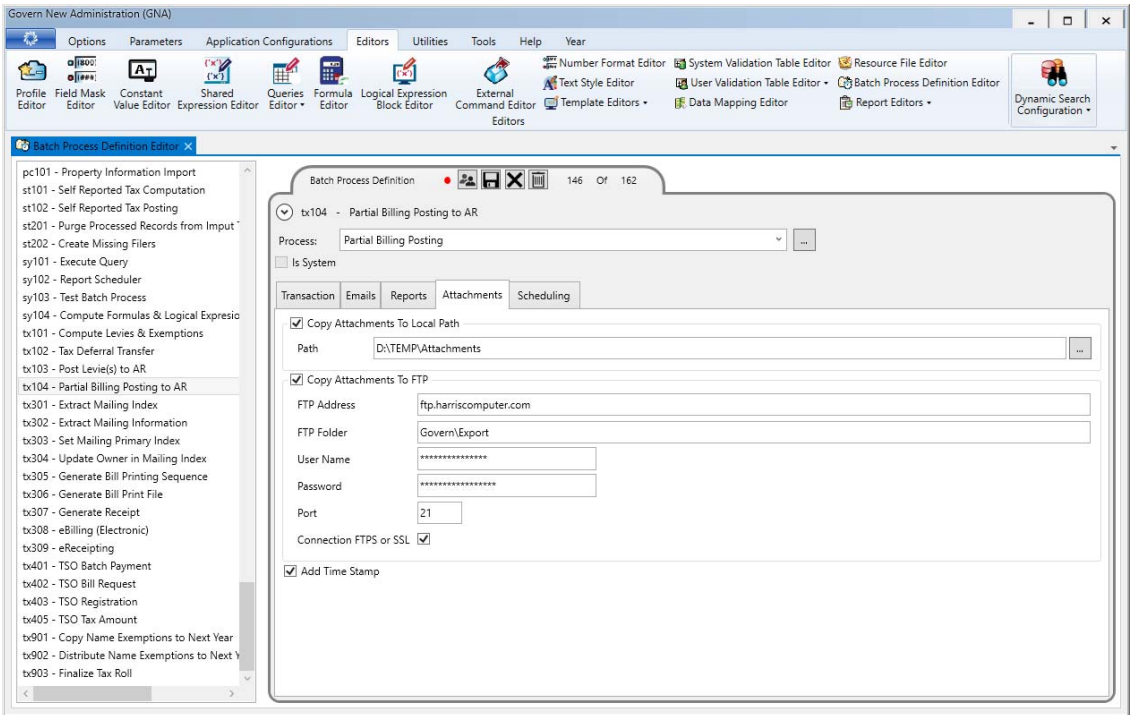
1. Launch GNA.
2. Select *Editors (tab)* > *Editors (group)* > **Batch Process Definition Editor**.
3. Select the batch process that you want to update.
4. Select the **Attachments** tab.



5. Select **Copy Attachments to Path** if you want to copy the attachment to a specific folder on the network or server.
6. Click the ellipsis button [**...**] and enter the path to the server or network folder where you want to save the exported file.

   Note: Ensure that you enter the path in UNC format.

7. Select **Copy attachments to ftp** if you want to upload the attachments to an ftp site.
8. Enter the following data:
   - **FTP Address**: Enter the address of the ftp server.
   - **FTP Folder**: Select the folder and any subfolders for the files.
   - **User Name**: Enter the user name for the ftp account
   - **Password**: Enter the password for the ftp account

- **Port**: Enter the Port Number for ftp communications. The default is 21.

9. Select **Add Timestamp** if you want to add a timestamp to the file

   This is appended to the file name, using the following format: Filename_YYYY_MM_DD_HH-MM-SS.File Extension, where
   - Filename is the name of the file.
   - YYYY are the four digits reserved for the year.
   - MM are the two digits reserved for the month.
   - DD are the two digits reserved for the day.
   - HH are the two digits reserved for the hour. This uses the 24-hour clock format.
   - MM are the two digits reserved for the minutes.
   - SS are the two digits reserved for the seconds.
   - The file extension can be any format supported by OS and ftp site. csv and txt are typical.

   Following is an example of a file generated by a batch process.
   - `InvoiceCloudInvoiceReport_UB_2013-05-22_12-07-42.csv`

10. Click **Save**.

Setting Up Scheduling

You can set up a schedule to run a batch process at a later time or on a regular basis, such as daily, weekly, or monthly. When a schedule is added to a batch process, you can monitor it in the Govern Scheduler. If the process is executed in Govern without a schedule, it cannot be viewed in the Govern Scheduler.

Batch process schedules can be created and maintained as follows:

Govern	Create
Govern Scheduler:	Modify, Delete
GNA:	Create, Modify, Delete

This section describes how to set up a batch process schedule, modify it, or delete it from the **Scheduling** tab of the *Batch Definition Editor*.

To access a batch process schedule:

1. Launch GNA.

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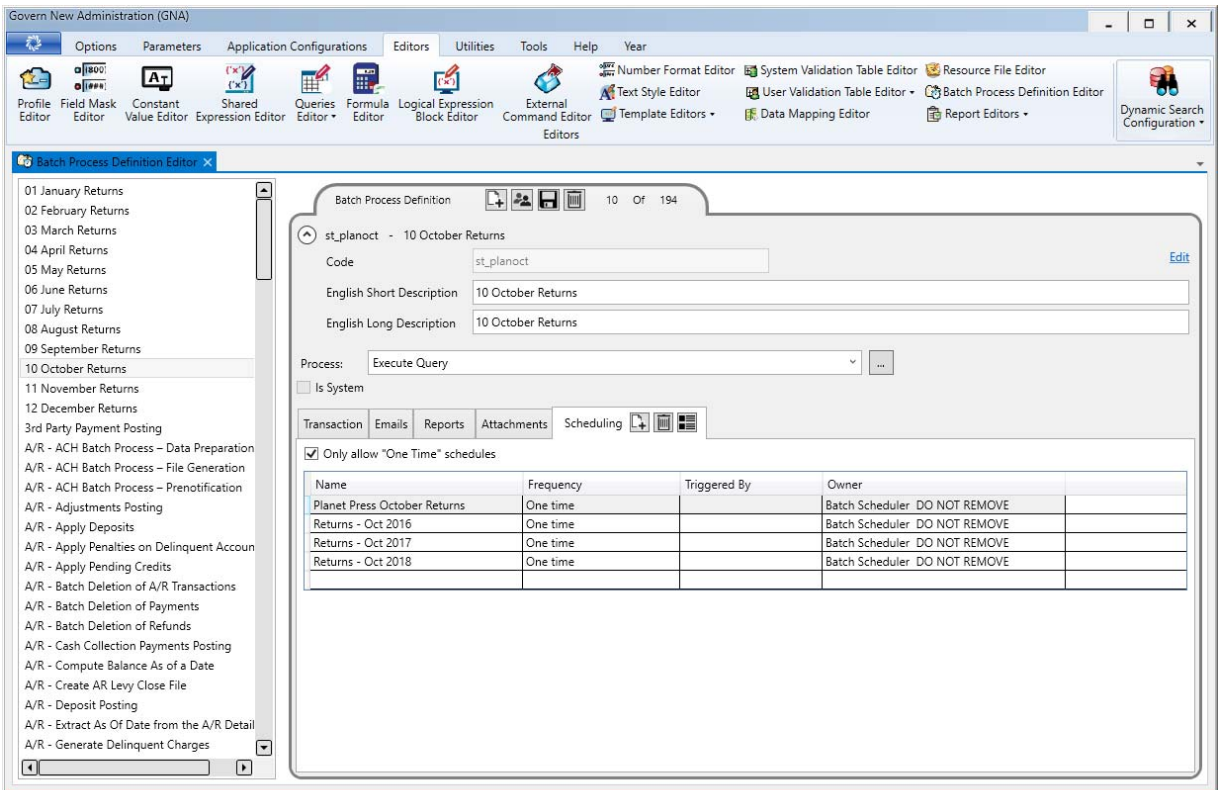
2. Select *Editors (tab)* > *Editors (group)* > **Batch Process Definition Editor**.
3. Select the **Scheduling** tab.



Select the **Only allow "One Time" schedules** option to disable all options on the Schedule screen with the exception of running the process One Time.

This existing schedules for the selected batch process are listed in the grid.

Name: The Name Column lists the names of the batch process schedules.

Schedule by: the Schedule by column shows how the batch process schedules are defined. This can be One time, by Day, by Week, or by Month.

Note: When you define a schedule by day, you can define the hours so that the process runs more often than once a day or you can set it to run every second, third, or even tenth day so that it runs less often than once a day. Likewise, when you define a schedule by week, you can set it to run more or less often than once a week.

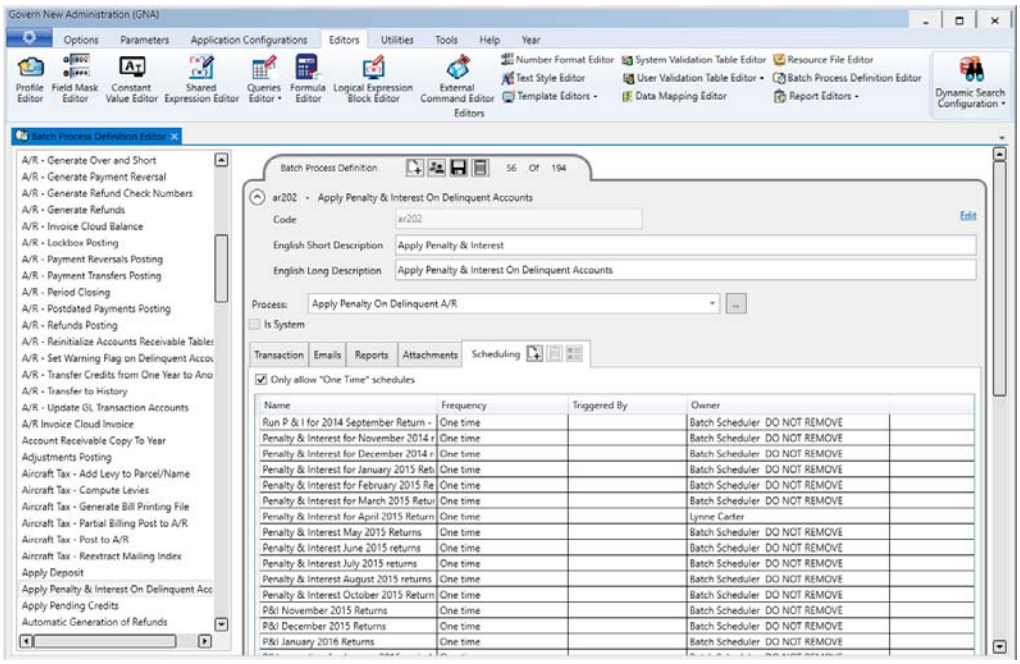
Owner: By default, the **Owner** field displays the user name of the user who defined the process.

Creating a Batch Process Schedule

The following procedure describes how to create a batch process schedule in the *Batch Process Editor.*

To create a batch process schedule:

1. Launch GNA.
2. Open the *Batch Process Definition Editor*.
3. Select the **Scheduling** tab.



4. Select the **Add Schedule** icon This opens the selected batch process.
5. Select the **Schedule** tab.

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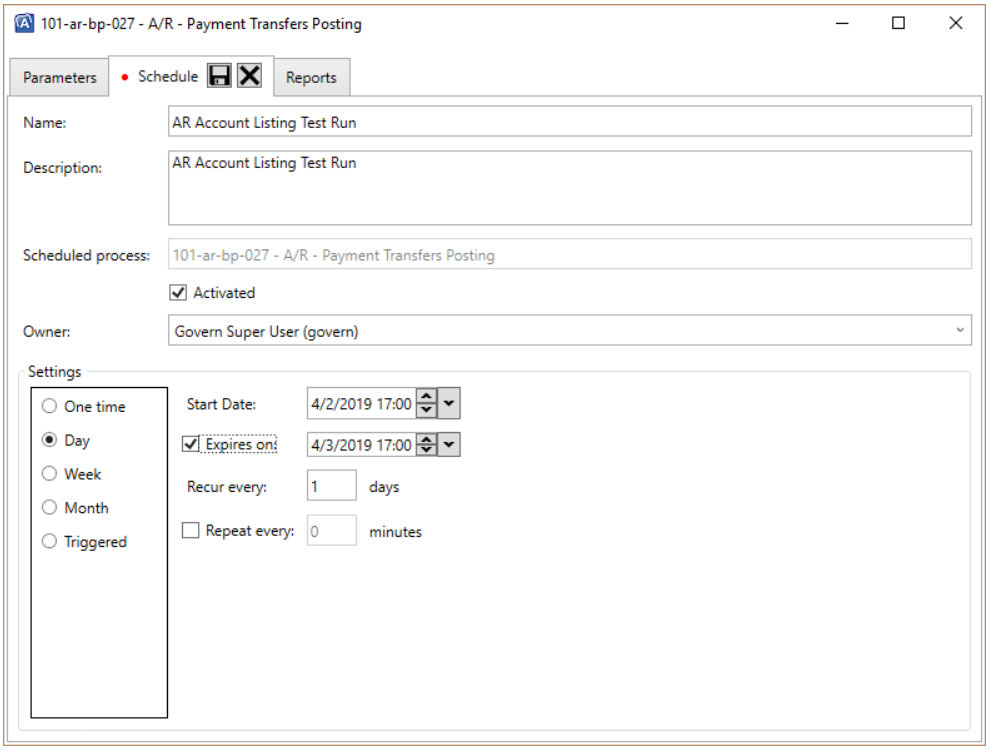

6. Enter a name and description for the schedule. These are required fields. The name appears in the Govern Scheduler window.
7. Select the user name of the owner of the batch schedule. By default, the user name of the logged in user is selected.
8. Deselect the **Activated** option if required.

   You can activate or deactivate the schedule by selecting the **Activated** parameter. This means that you can set up the schedule, then activate it when you are ready to use it.
9. Select one of the following settings: **One time**, **Day**, **Week**, or **Month** and fill in the parameters as described under *Setting Up Schedules for Batch Processes on page 63*
10. Click **Save**.

Modifying a Batch Process Schedule

The following procedure describes how to modify a batch process schedule directly from the Batch Process Editor. You can also modify a batch process from the Govern Scheduler.

To edit a batch process.

1. Launch GNA.
2. Open the *Batch Process Definition Editor*.
3. Select the process with the schedule you want to delete.
4. Select the **Scheduling** tab.
5. Right-click on the process.
6. Select **Edit** from the menu.

   This opens the Schedule screen.
7. Modify the parameters as required.

   For full details, see Setting Up Schedules for Batch Processes on page 63.

Deleting a Batch Process Schedule

The following procedure describes how to delete a batch process schedule from the Batch Process Editor.

You can also delete a batch process from the Govern Scheduler.

To delete a batch process definition:

1. Launch GNA.
2. Open the *Batch Process Definition Editor.*
3. Select the process with the schedule you want to delete.
4. Select the **Scheduling** tab.
5. Select the **Delete** icon .

   A confirmation message appears.
6. Click **Yes** on the confirmation message to delete the selected schedule.

Modifying the Report Parameters for a Scheduled Process

If a report is associated with a batch process, you can modify the parameters for the selected schedule.

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To modify the report parameters:

1. Launch GNA.
2. Open the *Batch Process Definition Editor.*
3. Select the process with the schedule and report you want to delete.
4. Select the **Scheduling** tab.
5. Select the **Edit** icon .
6. Select the **Reports** tab.
7. Modify the parameters as required.
8. Click **Save**.

Modifying and Deleting a Batch Process Definition

Modifying a Batch Process Definition

To modify a batch process definition:

1. Open the batch process that you want to modify.
2. Select the applicable tab.
3. Make any changes directly on the form.
4. Click **Save**.

Note: You cannot modify the code in the General Information of the form. If you need to change the code, you would need to delete the existing process and create it again.

Deleting a Batch Process Definition

To delete a batch process definition:

1. Launch the Batch Process Definitions form.
2. Do one of the following:
   - Select the category and the batch process from the treeview on the left. Then click the **Remove** button.

- Select the batch process in the *Batch Process Definition* form. Then click the **Delete** icon.

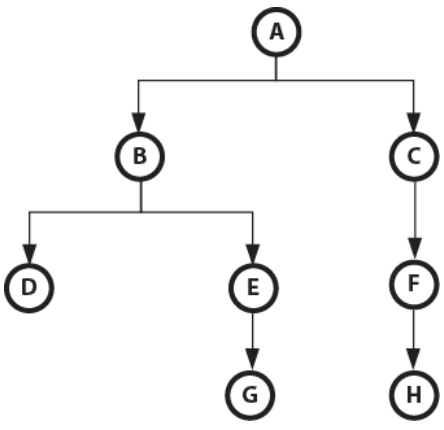
Creating a Sequential Batch Process

NEW A standard feature that is available in version 6.0 and 6.1 of the Scheduler Console is sequential batch process scheduling. This feature may be configured to allow users to execute multiple batch processes without human interaction. This feature is convenient for launching batch processes during periods where there is less impact on users accessing the network. As an example, these sequenced batch processes could be initiated and set to run overnight, over a weekend, or through the extended periods of a holiday.

The Sequential Batch Process feature allows users to configure a list of Schedules in order to create a linked sequence of Batch Processes in the Govern New Administration (GNA). As each batch process is successfully completed, i.e. no errors generated, it will automatically initiate the next pre-configured batch process in the user defined sequence.

Note: Sequential Batch Processes are initiated, and monitored in the Govern Scheduler (SC). The status of the execution of each batch process is displayed through the console of the Govern Batch Scheduler application.

Example of a Sequential Batch Process



The following is an example of a possible Sequential Batch Process. The example will demonstrate a basic batch process that, upon successful completion, will initiate two (2) child batch processes. Each of the two child processes will in turn trigger other processes, and so on. Refer to the example below.

Example

1.Batch process A is configured to run daily.

2. When Batch process A ends it will initiate batch processes B and C
3. Batch process B initiates batch processes D and E

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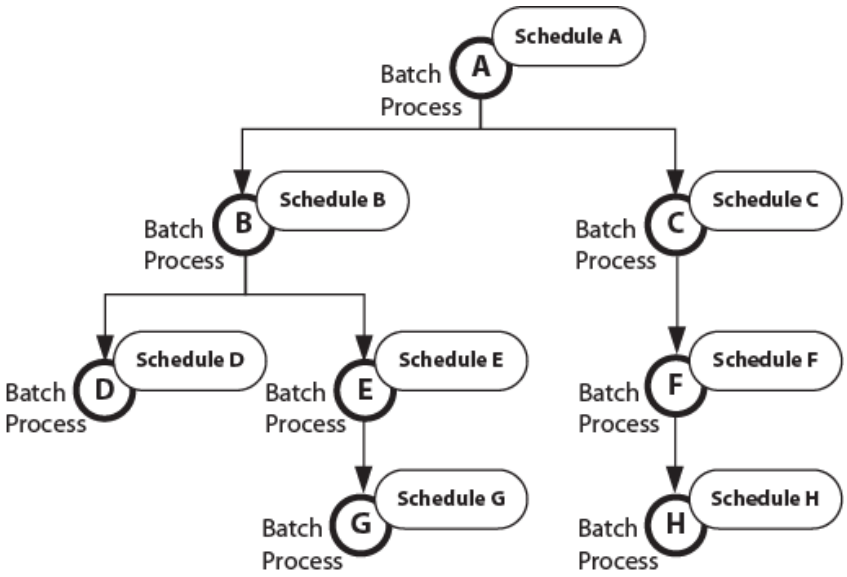
4. Batch process E initiates batch process G
5. Batch process C initiates batch process F
6. Batch process F initiates batch process H

All batch processes B, C, D, E, and F are configured to be triggered upon successful completion.

Configuration

Sequential batch processes are configured in the Govern New Administration (GNA). Preview and execution of the batch processes are presented in the Govern Scheduler.

For further details about Govern batch process scheduling, see *Setting Up Schedules for Batch Processes on page 63* for details.



Govern New Administration (GNA)

To configure Sequential Batch processes it will be necessary to first create a new batch process or use an existing one. You would next need to create a

schedule for that Batch Process. This batch process will then be configured to, upon completion, trigger the next batch process in the sequence.

Tip: When planning sequential batch processes, it is recommended that a flowchart of sorts is sketched out to use as a guide to visualize your setup. In addition, as each schedule is associated with a batch process, the batch process used should also be noted.

Using the example flowchart of schedules, i.e. A, B, C, D, E, and F, we will say that Batch Process A is associated with Schedule A. Batch Process B will be associated with Schedule B, and so on.

Parent Schedule

With our flowchart drawn out for our example, we will say that the Batch Process A schedule will be called *Schedule_A*. Schedule A is also the parent batch process that will trigger all subsequent processes. As the parent process its configuration is different from all subsequent processes.

Creating the Parent Schedule

To create the **first schedule** called *Schedule A* in the GNA...

1. On the GNA ribbon, click Editors (tab) > Batch Process Definition Editor.
2. In the Batch Process Definition Editor select the batch process that will be the parent.
3. On the Batch Process Definition tab, either select an existing batch process, or click Create a new item to create a batch process.
4. Click to select the Scheduling sub tab.
5. Click Add.
6. The form to configure the schedule is displayed.

Note: If the batch process requires parameters to be configured, this must be completed first. The save action is required before you can schedule the batch process.

7. Click to select the Schedule
8. Enter a Name, and a Description.

Note: Name and Description are required parameters; you will not be able to save without completing them.

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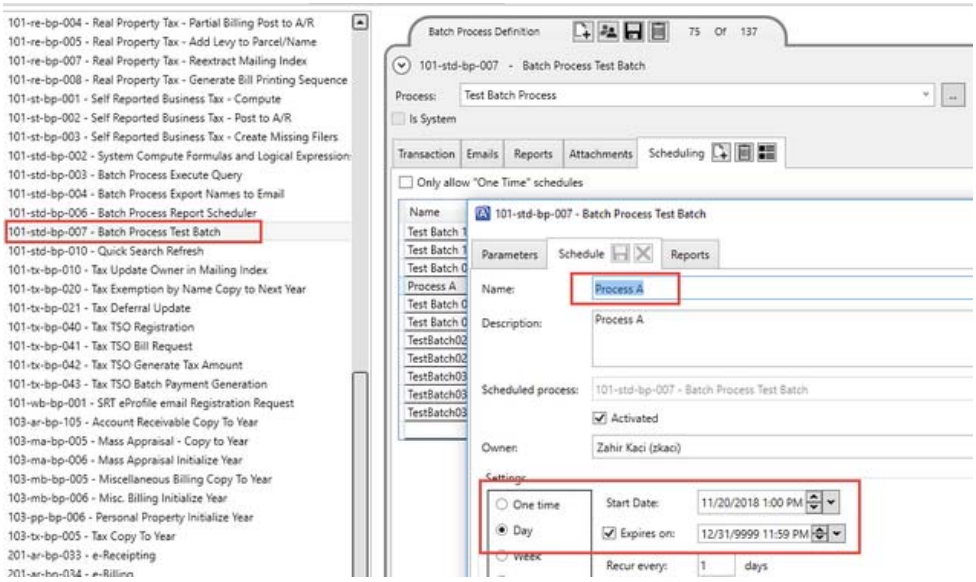


9. In the Settings group below, set a frequency for the schedule; select **One time**, **Day**, **Week**, or **Month**. Additional settings allow you to specify a Start Date, and expiration date, i.e. **Expires on:**. For our example, this will be a one time schedule so select **One time**.

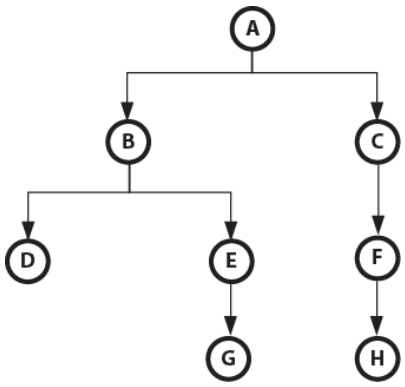
Note: As this is the first batch process, the option for *Triggered* should not be selected.

10. Click **Save Changes** on the *Schedule* tab.
11. Click the Close button [X] in the upper right hand corner to close the form.

Creating the Child Schedule

Configuring B and C

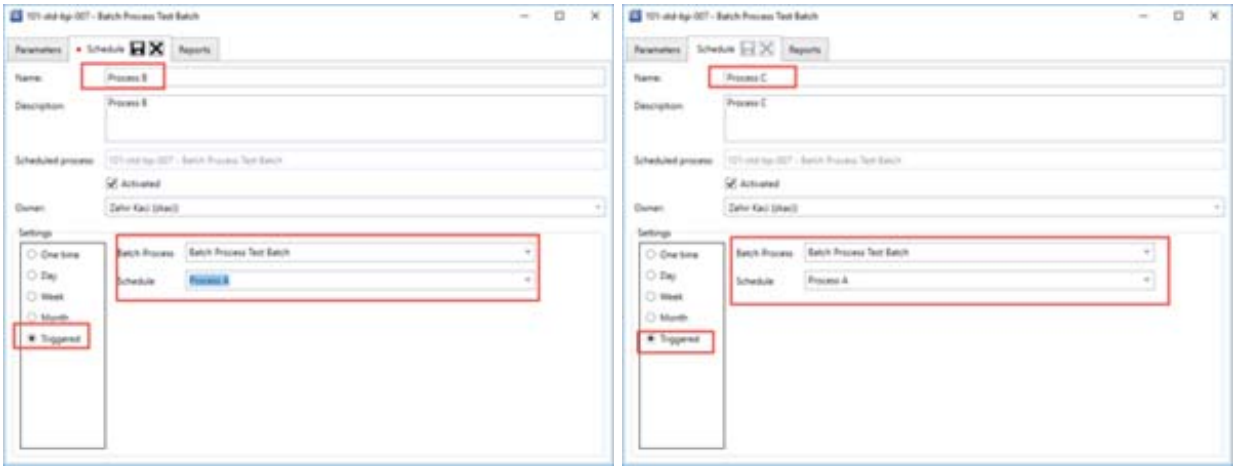
Referring back to our flowchart, we see that the *Children* batch processes, *B*, and *C*, are at the same level and are triggered by batch process *A*. We will need to configure Schedule B to trigger batch process D, and E. Batch process C will trigger batch process F. As batch processes B and C are both at the same level, they will be run simultaneously.



To create any **Children schedules**, e.g. *Schedule B, C,* and all other subsequent processes...

1. On the GNA **Batch Process Definition Editor**, click to select the batch process that will be designated as *Schedule B*.
2. On the Batch Process Definition tab, click to select the *Scheduling* sub tab.
3. Click **Add** to display the *Schedule* window.
4. If the batch process requires parameters to be configured, this must be completed first. The save action is required before you can schedule the batch process.
5. Select the *Schedule* tab.
6. Enter a Name and a Description for the schedule; for our example we will use *Schedule B*, and "*Schedule B triggered by Schedule A*" for the **Name** and **Description:** respectively.

We now need to specify that Schedule B is to be triggered by the successful completion of the batch process that is attached to Schedule A.



7. In the Settings group, click the *Triggered* radio button.
8. In the Parent group, select the batch process for Schedule A from the combo box, i.e. *Batch Process A*.
9. Select the *Schedule*; the combo box will display Schedule A.

Note: If the batch process is also associated with other schedules, they will also be listed. It is important that you select the correct schedule.

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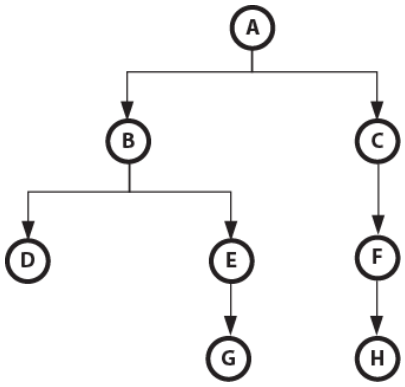
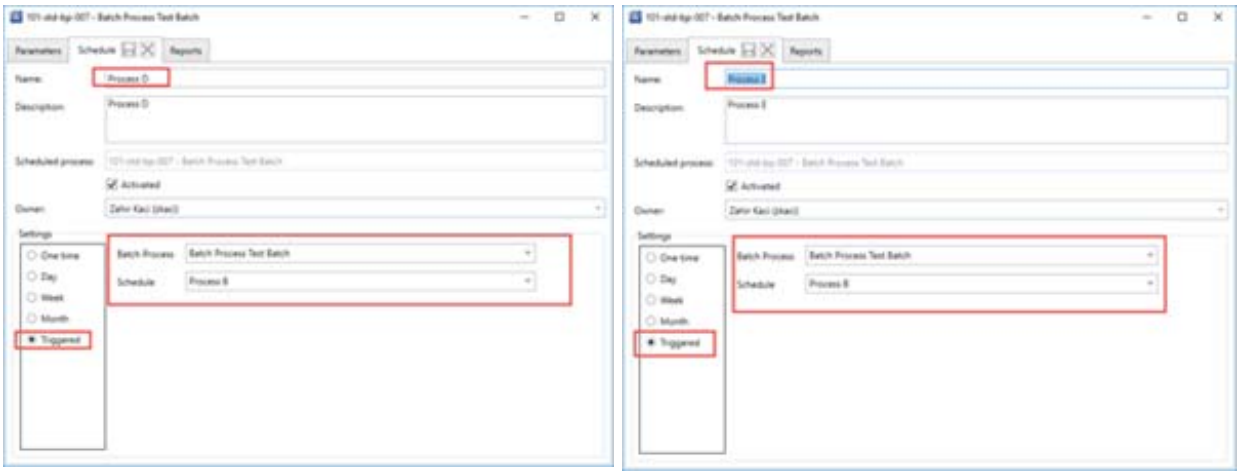
10. On the *Schedule* tab, click **Save Changes**, to save the setup.
11. Click the [X] in the upper left hand of the form to close the form.

Configuring Sequential Schedules D and E

Referring to the workflow sketch, we see that **Schedule C / Batch Process C** is at the same level as Schedule B, it will be necessary to select the batch process that will be associated with *Schedule C*. For the Parent you will specify *Schedule A*. For the configuration, it will be necessary to repeat all steps for configuring a *Child Schedule; see above steps*. **Schedule D / Batch Process D** and **Schedule E / Batch Process E** are triggered by Batch Process B and should be configured accordingly.



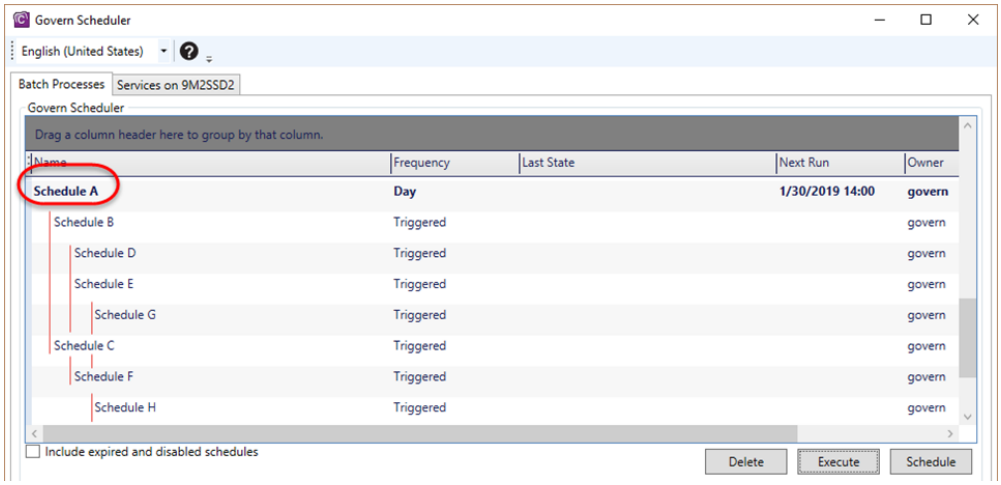


Govern Scheduler Console Preview and Execution

Viewing the setup in Govern Scheduler

When complete the final sequential batch processes can be seen in the **Govern Scheduler** group of the Govern Scheduler console. Looking at the interface, we can see that Schedule A is at the top of the list as the parent process. Schedule B and Schedule C are at the same level, both have their sub processes which they will trigger. *Schedule D* and *Schedule E* will be

triggered by *Schedule B*, and *Schedule F* is triggered by *Schedule C*. Finally *Schedule G* is triggered by *Schedule E*, and *Schedule F* triggers *Schedule H*.



If a Batch Process fails…

During execution of the batch processes, if a batch process in the sequence fails, all subsequent children processes in that chain will not be executed. For example, if *Batch Process B* for *Schedule B* fails to execute, it will need to be corrected. After rectifying the error with the process, it will be necessary to execute *Batch Process B* again. After which all subsequent processes will then be triggered. It is not necessary to execute the entire process flow again, i.e. **Schedule A**.

Executing the Batch Process

To execute the Batch Processes in the Scheduler Console

1. Click to select the process in the console.

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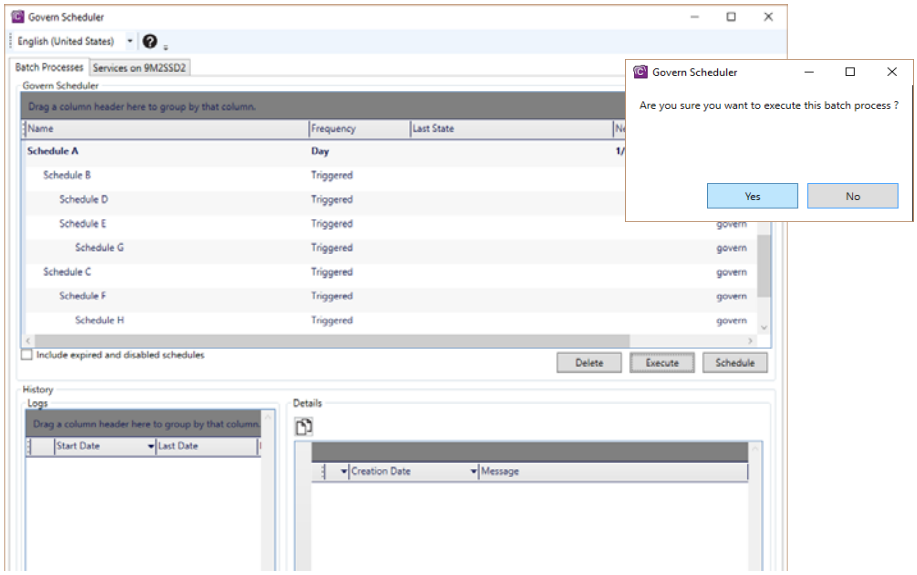
2. Click **Execute**.



Note: Refer to the Govern Scheduler user guide for additional configuration details and running Batch Processes.

Business Rules

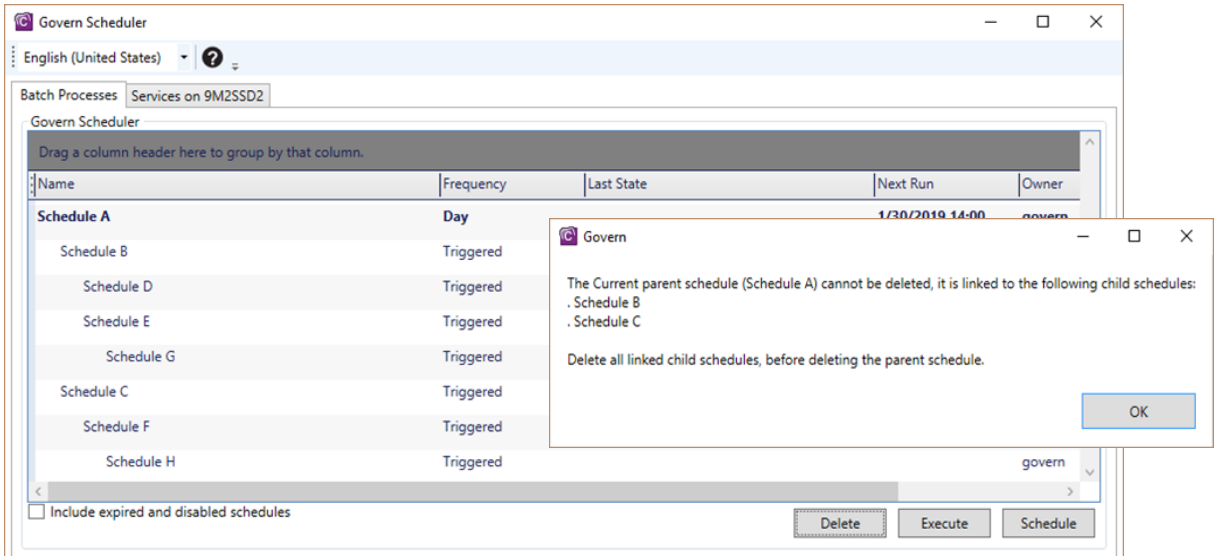
Deletions of Processes in Batch Scheduler and GNA

In the Batch Scheduler or in GNA, trying to delete a schedule with Child schedules will generate an error message. This message will indicate that to proceed, you must first delete the child schedules before you can delete the parent.

Presentation of Error message

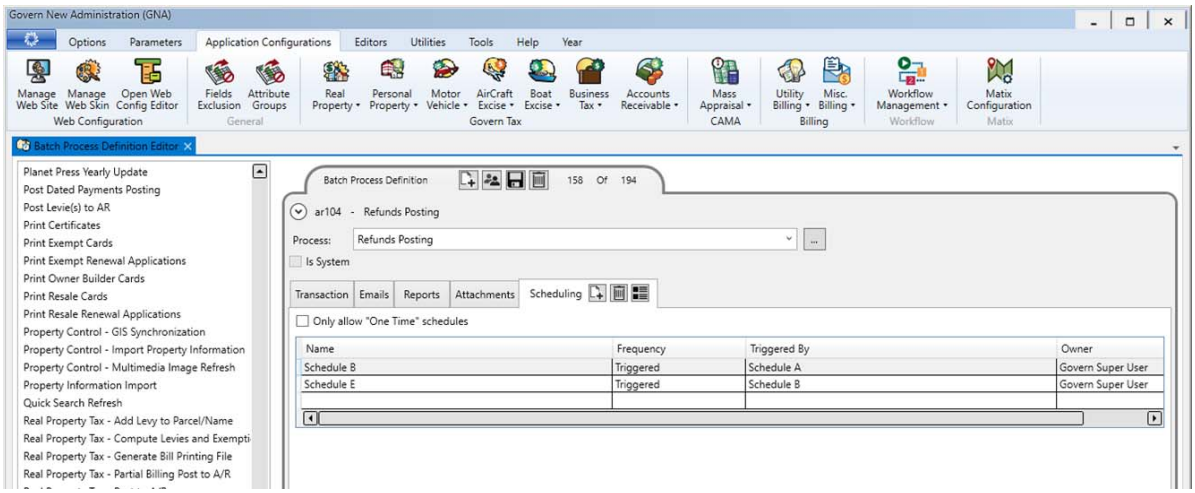
Deleting Parent Schedules in the Batch Scheduler

An error will be generated when attempting to delete parent schedules that are linked to sub schedules, i.e. schedules that they trigger.



Deleting Schedules in Govern New Administration (GNA)

When attempting to delete Schedule B in the GNA, an error will be generated.



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Adding Batch Process Definitions to Govern

Overview

Once you have defined your batch processes, you are ready to add them to Govern. In order to do this, you need to launch the Govern Security Manager and synchronize your new processes with Govern. Then, you can assign access permissions.

Setting Security for Batch Processes

You can grant permissions and set exclusions for each batch process, or by batch process definition. *Refer to the Govern Security Manager (GSM) guide for details*.

Chapter 3: Setting Up Schedules for Batch Processes

Overview

This chapter describes how to set up the daily, weekly, and monthly schedules for batch processes. The definitions of the parameters on each batch process are described in the specific user guide for the modules. For example, the batch process parameters for the Accounts Receivable processes are described in the *Govern Accounts Receivable* guide.

You can create a schedule for a batch process from the following applications provided you have the required access permissions.

- Govern
- Govern New Administration

You can modify or delete the schedule from the following applications. The procedures are the same.

- Govern New Administration
- Govern Scheduler

Setting Security for Batch Process Schedules

In the Govern Security Manager (GSM), you can set security for viewing, modifying, and running batch processes in Govern. You can also set general security for the Govern Scheduler application. However, you cannot set separate security for the schedules associated with a batch process. *Refer to the Govern Security Manager (GSM) guide for details.*

In GNA you can set security on each batch process to restrict users to creating one time schedules only. This applies to all applications.

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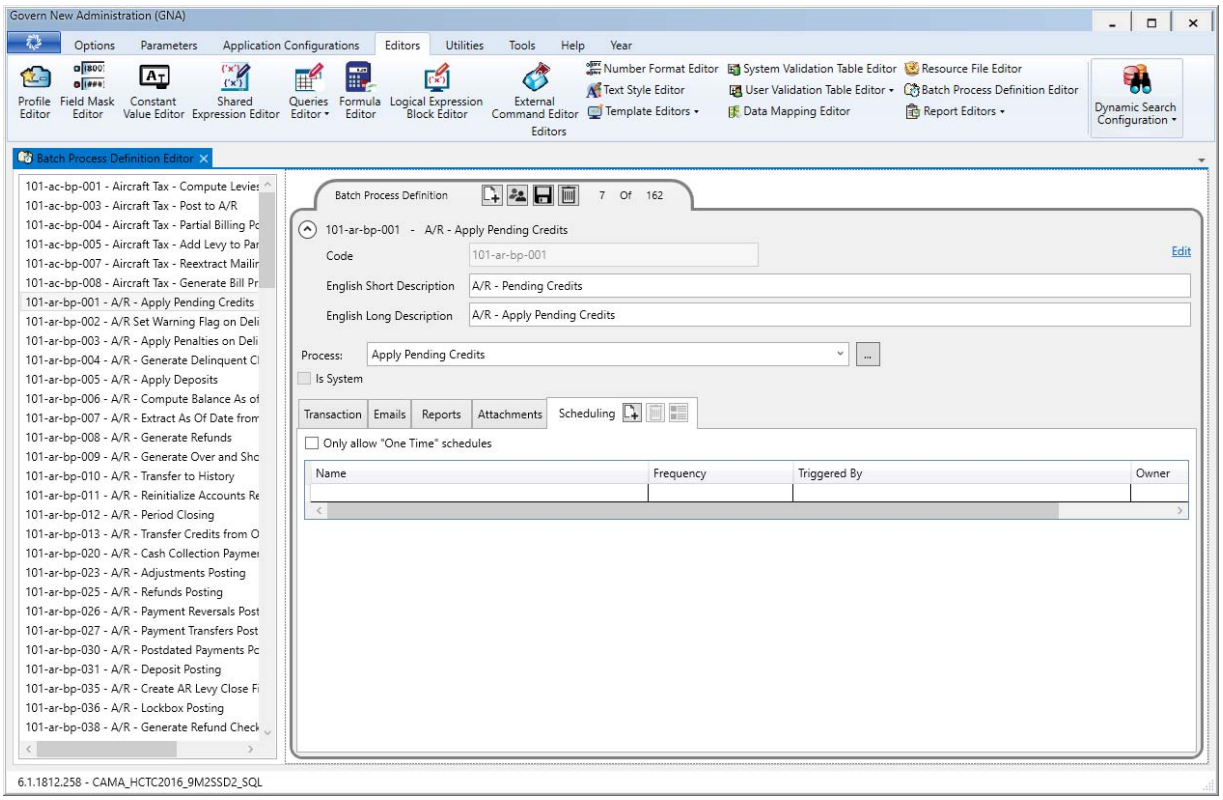
Setting Up a Batch Process Schedule

This procedure describes the general information setup for any batch process schedule.

To set up a batch process schedule:

1. Launch the application you are using to create the schedule: Govern or GNA.
2. Select the batch process for which you want to create the schedule.
3. Select the Scheduling tab.



4. Enter a name for the batch process schedule in the **Name** field. This is displayed in the Govern Scheduler menu. This name could include, for example, the name of the process and how often you are running it, such as Daily – Apply Deposits.
5. Enter a description for the batch process schedule. This could explain the process or the reasons for creating the schedule.

6. Select the **Activated** option when you are ready to use the schedule.

   Note: This option is selected by default. However, you deselect it in order to deactivate the schedule. Set up the schedule. Then, select this option when you are ready to use the schedule.

7. Select the owner of the batch process from the **Owner** drop-down list. By default, this parameter displays the user name of the logged-in user.
8. Select one of the following under **Schedule by**. Then, follow the applicable procedure.
   - **One Time**: See page 65.
   - **Day**: See page 65.
   - **Week**: See page 67.
   - **Month**: See page 68.

Setting Up a Schedule for Running a Batch Process Once

Use this procedure to create a schedule for running a batch process at a later date.

1. Set up the general information for the schedule as described under *Setting Up a Batch Process Schedule on page 64*.
2. Select **One Time** under **Schedule by**.
3. Click the calendar icon beside the **Start date** parameter and select the date and time to run the process.
4. Click **Save**.

Setting Up a Schedule by Day

Use this procedure to set up a schedule for running a batch process on a daily basis, or more frequently such as every hour.

1. Set up the general information for the schedule as described under *Setting Up a Batch Process Schedule on page 64*
2. Select **Daily** in the **Settings** group box.

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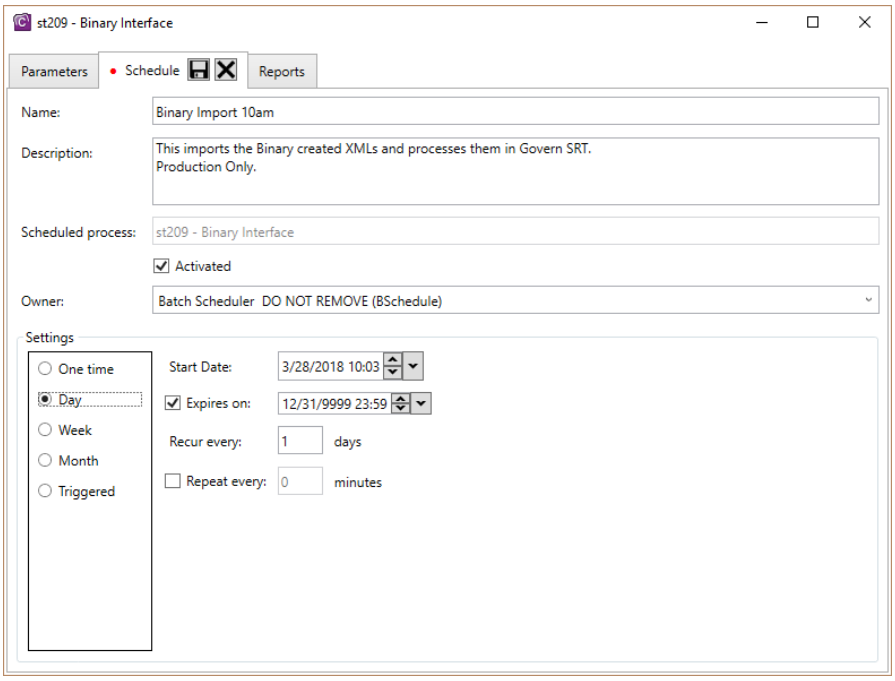
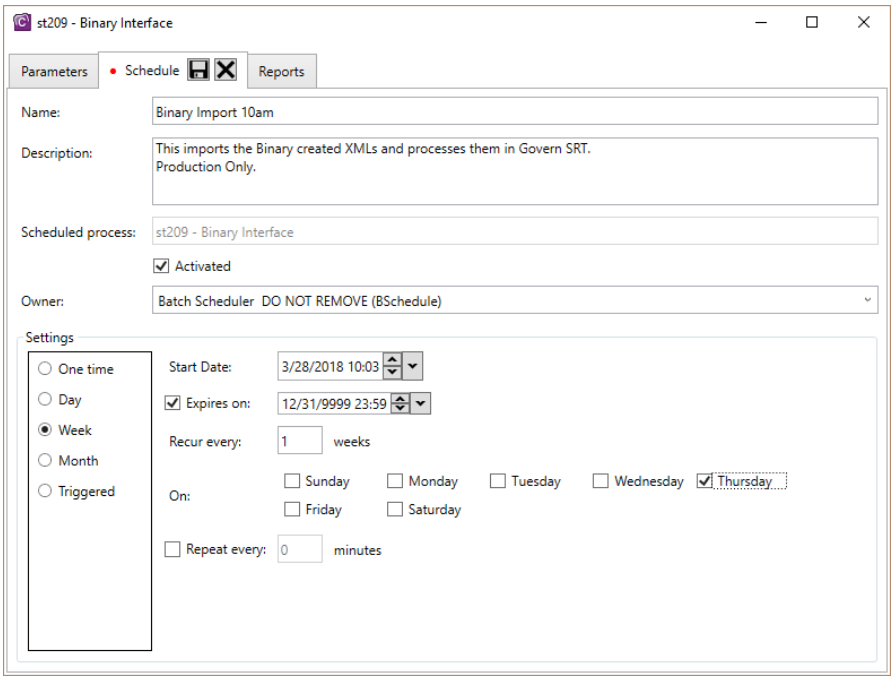


3. Click the calendar icon beside the **Start date** parameter and select the date and time to run the process.
4. Select the **Expires on** check box if applicable.
5. Click the calendar icon beside the **Expires on** field and select ending date and time for the process.
6. Enter the interval between processes in days in the **Recur every**... **days** fields. For example, if you want to run the process every day, enter **1**. If you want to run the process every two days, enter **2**, and so on.
7. Select the **Repeat every** check box to run the process more frequently than once a day.
8. Enter the minutes between processes in the **Minutes** text box.
9. Click **Save**.

Setting Up a Schedule by Week

Use this procedure to set up a schedule for running a batch process on a weekly basis, or more frequently such as every Monday, Wednesday, and Friday, or on an hourly basis.

1. Set up the general information for the schedule as described under *Setting Up a Batch Process Schedule on page 64*.
2. Select **Weekly** in the **Settings** group box.



3. Click the calendar icon beside the **Start date** parameter and select the date and time to run the process.
4. Select the **Expires on** check box if applicable.
5. Click the calendar icon beside the **Expires on** field and select ending date and time for the process.
6. Enter the interval between processes in weeks in the **Recur every**... **weeks** fields. For example, if you want to run the process every week, enter **1**. If you want to run the process every two weeks, enter **2**, and so on.
7. Select the day or days of the week to run the process. You can select as many days as applicable.

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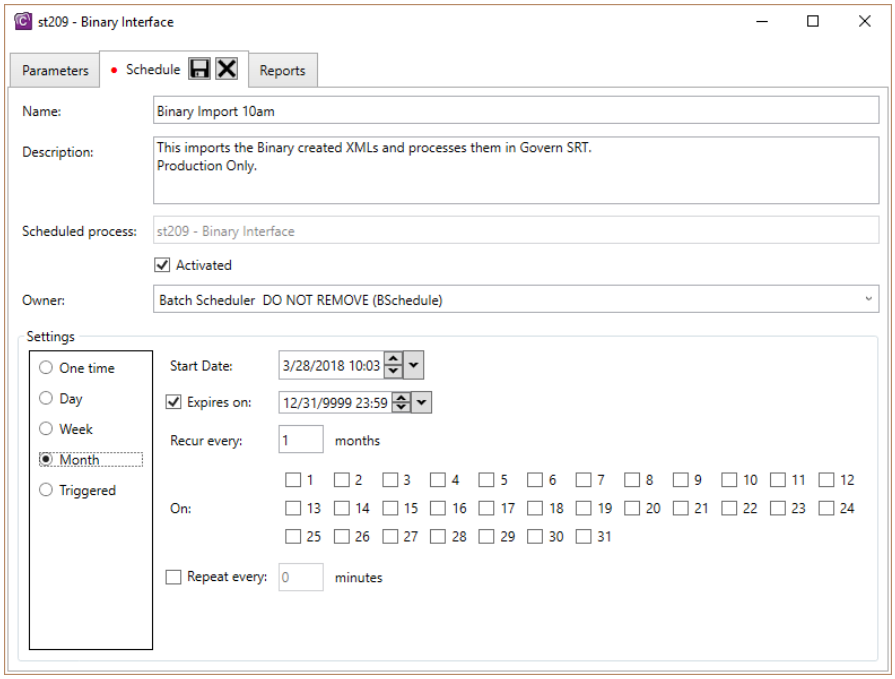
8. Select the **Repeat every** check box to run the process more frequently than once a day.
9. Enter the minutes between processes in the **Minutes** text box.
10. Click **Save**.

Creating a Schedule by Month

Use this procedure to set up a schedule for running a batch process on a monthly basis, or more frequently such as three or four times a month, or on an hourly basis.

1. Set up the general information for the schedule as described under *Setting Up a Batch Process Schedule on page 64*.
2. Select **Month** in the **Settings** group box.

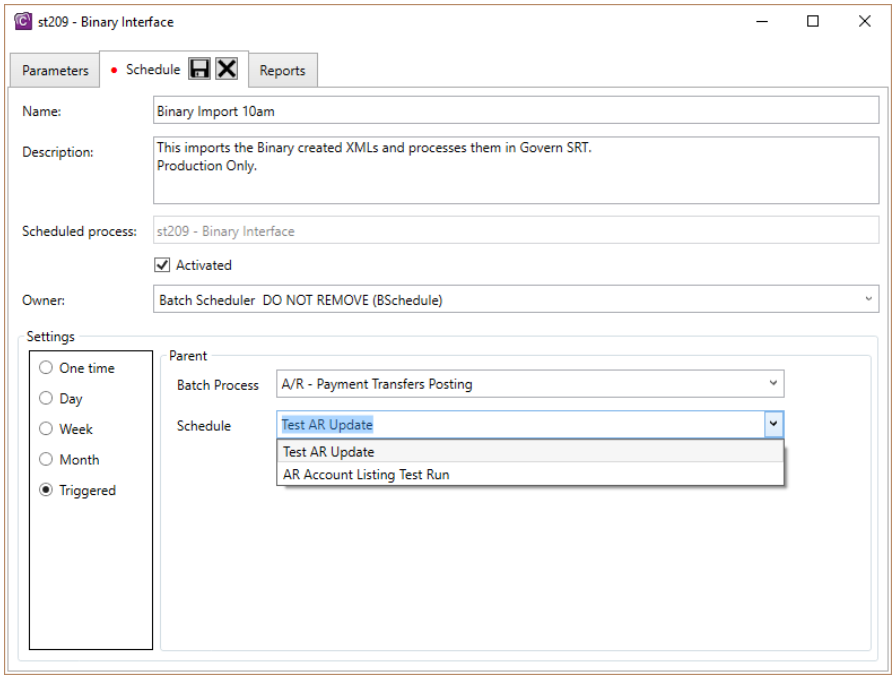


3. Click the calendar icon beside the **Start date** parameter and select the date and time to run the process.
4. Select the **Expires on** check box if applicable.
5. Click the calendar icon beside the **Expires on** field and select ending date and time for the process.

6. Enter the interval between processes in months in the **Recur every**... **months** fields. For example, to run the process every month, enter **1**; to run the process every two months, enter **2**; and so on.
7. Select the day or days of the month to run the process. You can select as many days as applicable.
8. Select the **Repeat every** check box to run the process more frequently than once a day.
9. Enter the minutes between processes in the **Minutes** text box.
10. Click **Save**.

Creating a Sequential Process

Use this procedure to set up a sequential batch process. For details about configuring sequential batch processes, *see Creating a Sequential Batch Process on page 53 for details.*



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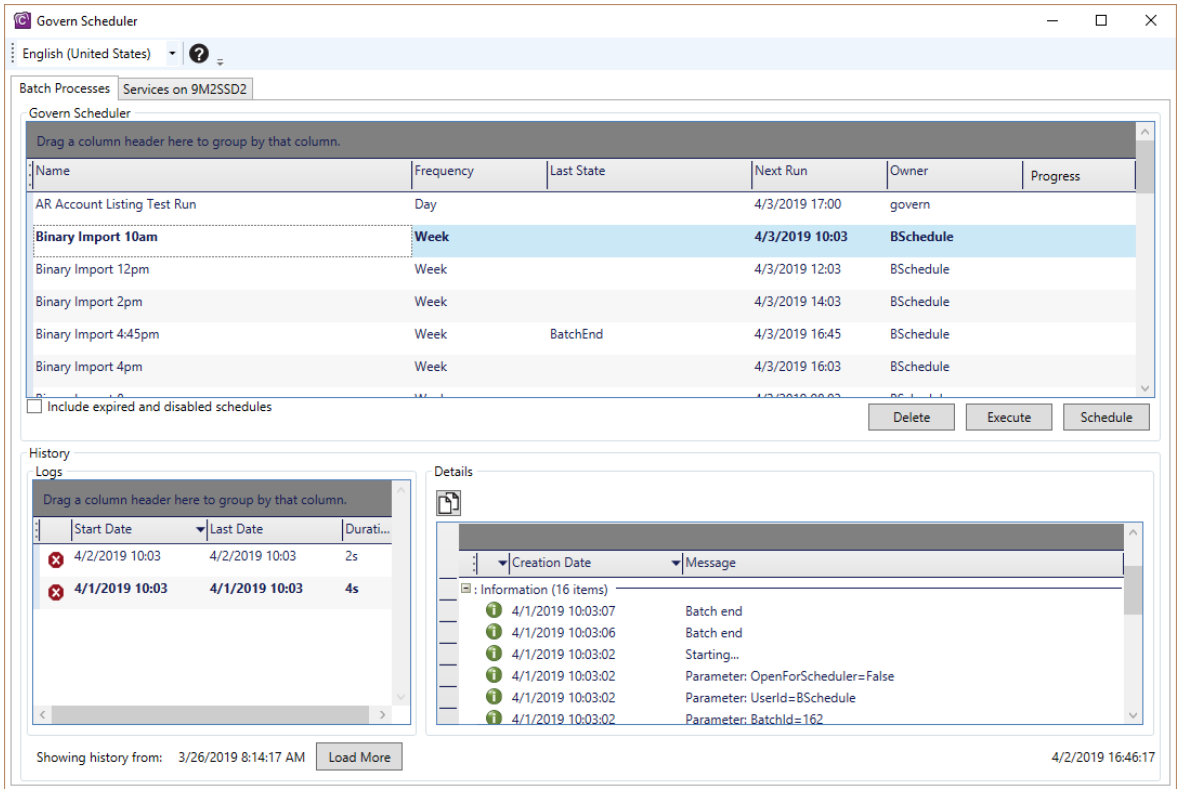
Chapter 4: Monitoring Batch Processes with the Govern Scheduler

Overview

The Govern Scheduler monitors all batch processes. It displays the progress of the scheduled batch processes when they run and maintains logs on all batch processes after they have run. In addition to viewing, you can modify and delete batch process schedules form the Govern Scheduler as long as you have the required access permissions.

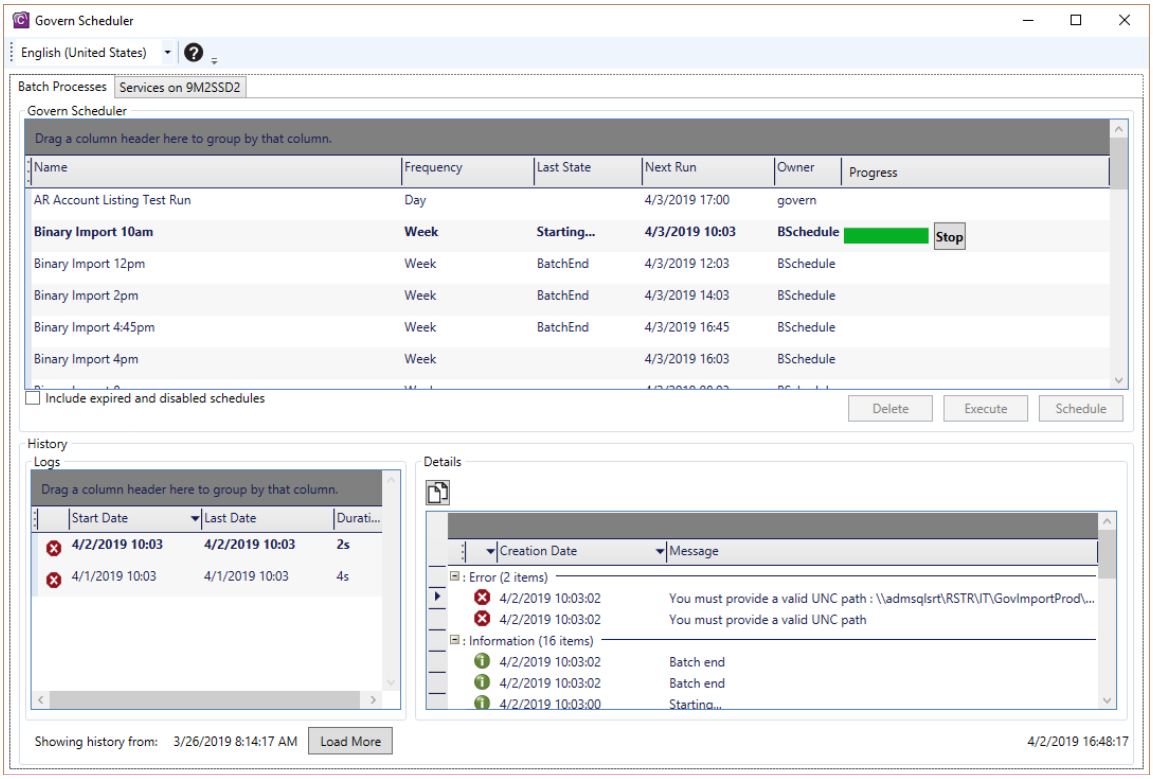
After installing the Govern Scheduler, you can launch it from the Windows Start menu or desktop shortcut.



Govern Scheduler Interface Quick Tour

Overview

This section presents an overview of the Govern Scheduler interface.



The interface has two tabs, two menu items, and a status bar.

Tabs

The Govern Scheduler has two tabs:

- **Batch Processes**: Provides information on all scheduled batch processes in your deployment.
- **Services on this Server**: Provides status information on the Scheduler Services installed on the same server.

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Menus

LIke all products in the Govern Suite, the Govern Scheduler includes two menus.

File: The file menu has one option: Exit to close the application.

Options: From the **Options** menu, you can change the language or the background color of the application.

Govern Scheduler Status Bar

The Govern Scheduler Status Bar provides information displays the following information:

Version Number and Connection Key: The version number and connection key for the application are displayed in the lower left corner of the application.

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Batch Processes Tab Quick Tour

Overview

The Batch Processes tab has three sections: Schedules, Logs, and Details.

Batch Process Schedules: The Batch Process Schedules are listed in the top pane of the interface. You can view, modify, or delete a batch process schedule from this pane. Security rights are required.

History Logs: The History Logs are listed in the bottom right of the Govern Scheduler interface. Logs are maintained on all batch processes that have run from an application in the Govern Product Suite. These logs list the **Starting** and **Ending Date** of each process. A icon identifies the processes that failed.

History Details: The HIstory Details section provides the following information:

- Attachments
- Event Date
- Type
- Message

System Information: The Number Lock and the system time of the computer on which the Batch Process Scheduler is installed are displayed on the bottom right of the application.

Batch Process Schedules

The Batch Process Schedules created under the selected connection key are listed in the top section of the Govern Scheduler. If a batch process was run from Govern but no schedule was created, the process is not displayed in this section.

Name: This column displays the name of the batch process schedule. This is assigned in the **Name** field on the **Schedule** divider for the batch schedule.

Frequency: This column displays how the batch process is set up. This can be one time, day, week, or month.

- **One time**: the schedule is run once only.

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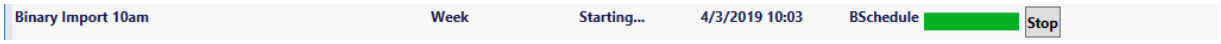
- **Day**: the schedule has been set up by day. It may be run several times a day or once every several days depending on the options selected.
- **Week**: the schedule is set up by week; It may be run several times a week or once every several weeks depending on the options selected.
- **Month**: the schedule is set up by month. It may be run several times a month or once every several months depending on the options selected.

Last State: This column displays the last state of the batch process schedule when it before it ended. This could be batch end or error.

Next Run: This column displays the next day and time that the process is scheduled to run.

Owner: By default, this column displays the user name of the user who created the process. Another user can be selected as the owner when the process is created or modified.

Progress: When the batch process is being run, this column displays a progress bar.



You can stop the process from this window by clicking the Stop button.

Including Expired and Disabled Schedules

Expiry: You can select an expiry date and time for a batch process schedule on the **Scheduling** tab.

Activated: When you create a batch process, you can deselect the Is enabled option.The batch process is only run when this option is selected.

Select or deselect the **Include expired and disabled schedules** option according to whether or not you want to include the schedules that have reached the expiry date or are no longer enabled.

Deleting a Batch Process Schedule

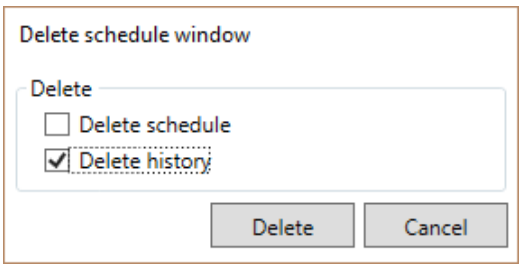
To delete a batch process schedule:

1. Launch the Govern Scheduler.

The existing batch process schedules are listed at the top of the interface.

2. Select a batch process schedule.
3. Click the **Delete** button.

   The Delete Schedule window is displayed.



4. Select one of the following options:
   - **Delete history**: to remove only the historical logs and details
   - **Delete schedule**: to remove the selected batch process schedule with all historical logs and details.
5. Click **Delete**.

Viewing or Modifying a Batch Process Schedule

To view or modify a batch process schedule from the Govern Scheduler:

1. Select a batch process schedule in the top section of the application.
2. Click **Schedule**.

   The opens the selected schedule. *For details on the parameters, see Setting Up a Batch Process Schedule on page 64*.

Viewing History Logs

The History logs are displayed in the lower left of the Govern Scheduler interface. They History Logs show all batch processes that have run, whether they were scheduled or not.

To view the history logs for a specific process, select a batch process schedule in the top section of the from.

- A list of the starting and ending dates for the process is displayed.
- If errors were generated, the error icon is displayed beside the log.

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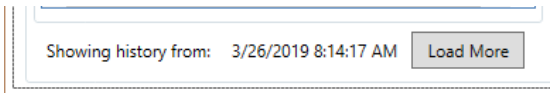
By default the logs from the last seven days are displayed in the History Logs section of the Govern Scheduler, as in the following screen shot:



To display logs from an earlier date, click the **Load more** button. Each time you click this button, logs from another seven days are displayed.

Viewing the Event Details Logs

The Details logs are displayed in the lower right of the Govern Scheduler.

To view the details logs for a specific schedule:

1. Select a batch process schedule in the top section of the from.

   The history logs for that process are displayed in the lower left section.
2. Select the history log in the lower left.

   A list of the starting and ending dates for the process is displayed in the bottom left.
3. Select the date that the event occurred.

   The following details are displayed ion the lower right.

Attachment: Any attachment, such as reports generated with the batch process, are displayed in this column.

Event Date: The date and time that the event occurred are displayed in this column.

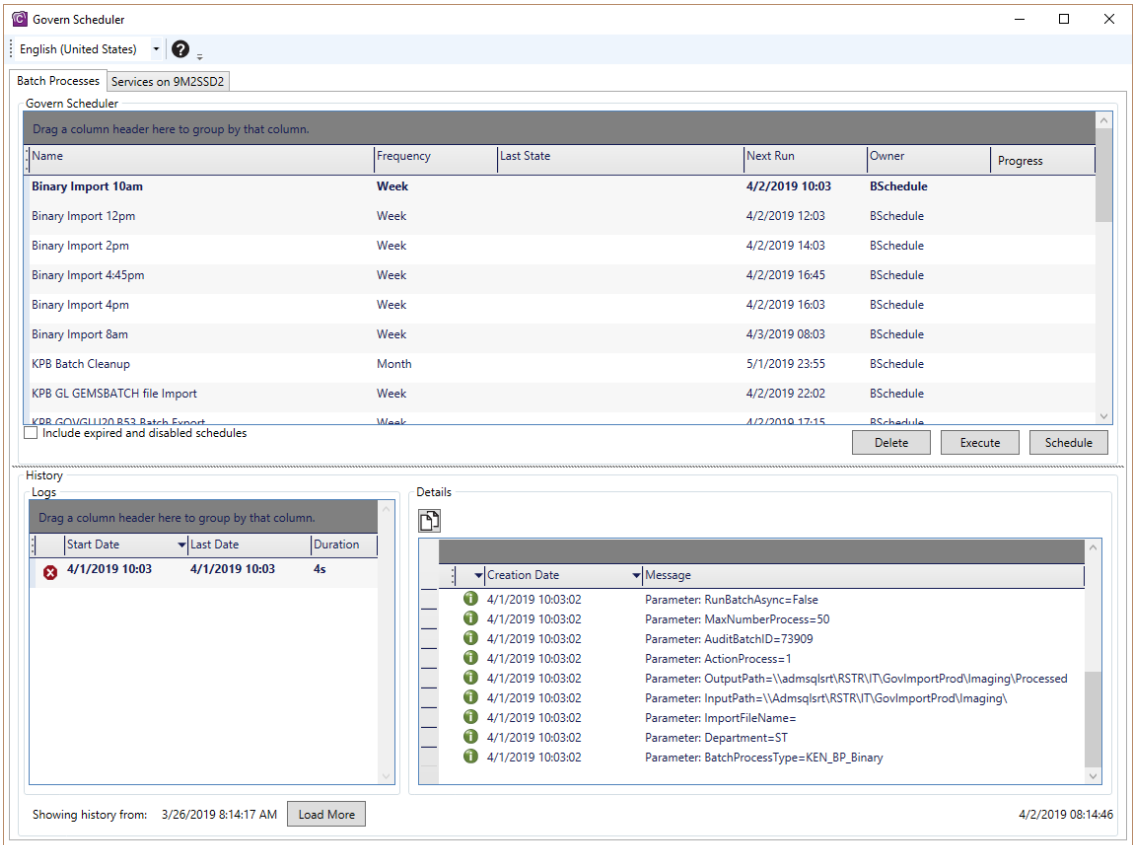
Type: The type of event is displayed in this column. This can be the starting or ending of the process, a warning, or change in status.

Message: Any message that was generated with the event is displayed in this field.

Services on this Server Tab Quick Tour

Overview

The Govern **Scheduler Services on this Server** tab provides status information about the Scheduler Services installed on the same server as the Govern Scheduler application. This is the same information available under Services in Windows Control Panel.



Like the Batch Processes tab, the **Services on this Server** tab has three sections: Services, History, and Details.

Scheduler Services

All the Scheduler Services installed on the same server as the Govern Scheduler application are listed at the top of the interface. You can view and

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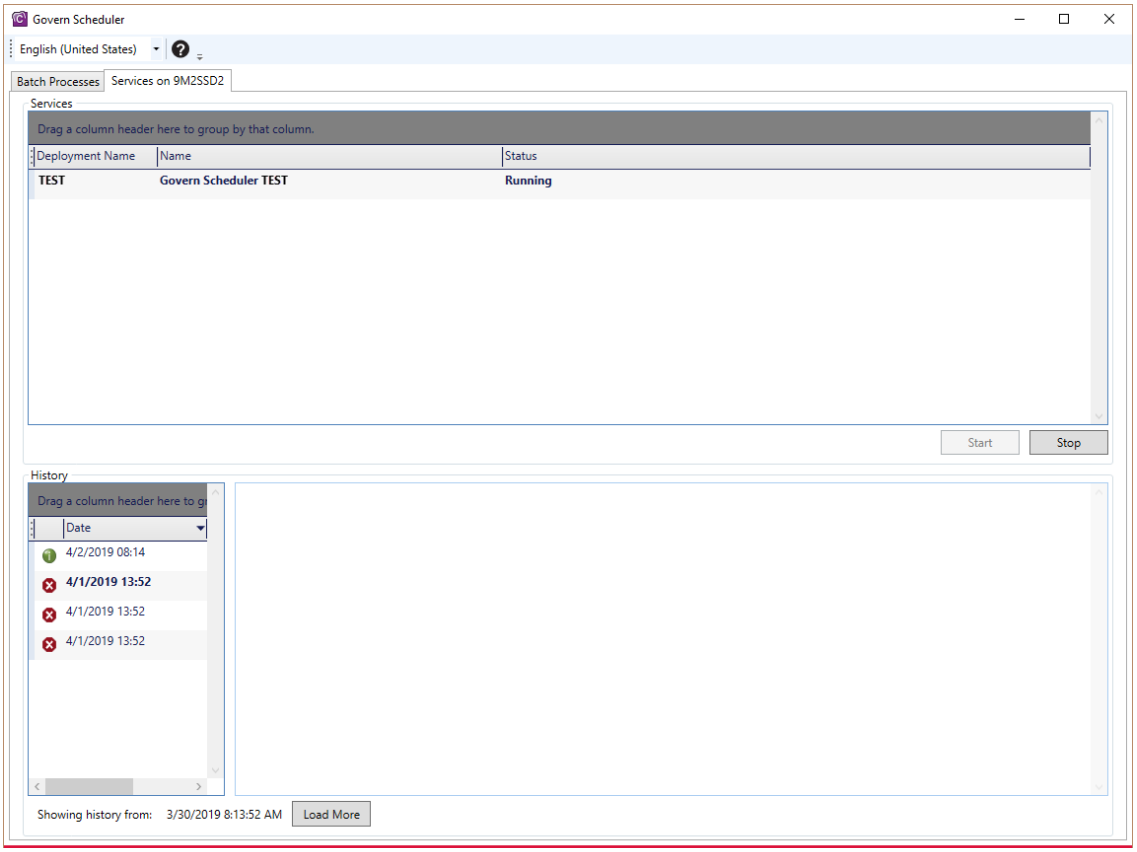
change the status of the services; i.e., change the services from stopped to started or started to stopped.

Note: If the Govern Scheduler Service is stopped, scheduled batch process do not run.If any batch processes were missed because the Scheduler Service was stopped, they are not automatically run when it is started.

Starting and Stopping the Services

To change the status

1. Launch the Govern Scheduler.
2. Open the **Services on this Server** tab.



3. Right-click on the applicable service.

4. Select **Start** or **Stop** from the context menu.

Note: It is recommended to start the Govern Service whenever you perform a deployment update.

When you restart or stop the Scheduler Service ensure that no scheduled batch processes are running.

To ensure that no scheduled batch processes are running:

1. Launch the Govern Scheduler.
2. Select the Batch Processes tab.
3. Ensure that the progress bar is not displayed beside any process.

Scheduler Services Events History

The History tab lists the Scheduler Services events. Details of the Scheduler Service events are displayed to the right of the events listing.

To view the past events for a Scheduler Service:

1. Launch the Govern Scheduler.
2. Open the **Services on this Server** tab.
3. Select a Scheduler Service at the top of the interface.

Showing Events From Earlier Dates

By default, events are listed for the last three days only.

To show events from earlier dates:

1. Launch the Govern Scheduler.
2. Open the **Services on this Server** tab.
3. Click the **Load more** button beside **showing history from**.

   Events from another three days in the past are displayed.
4. Click the **Load more** button again to display another three days of events.
5. Repeat step 4 if required and as often as required.

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Scheduler Services Event Details

Details of the Scheduler Service events are displayed to the right of the events listing.

To view details on an event:

1. Launch the Govern Scheduler.
2. Open the **Services on this Server** tab.
3. Select a Scheduler Service at the top of the interface.
4. Select the event for which you want to view the history in the **History** section.

   Details for that event are displayed.

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