

## ReportCaster Failover

ReportCaster provides a feature known as Failover, which allows you to configure a backup Distribution Server. To enable ReportCaster Failover, a second Distribution Server must be installed. Then, using the host name and port number of the servers, one of the servers is designated as the primary Distribution Server and one as the secondary Distribution Server. The designations are labels only and the server that starts first is the server that runs as the actual Distribution Server. On the ReportCaster Console, the status of the Primary server is set to Full Function. The secondary server becomes the server operating in Failover mode. The status of the secondary (failover) server is set to Failover, as shown in the following image.

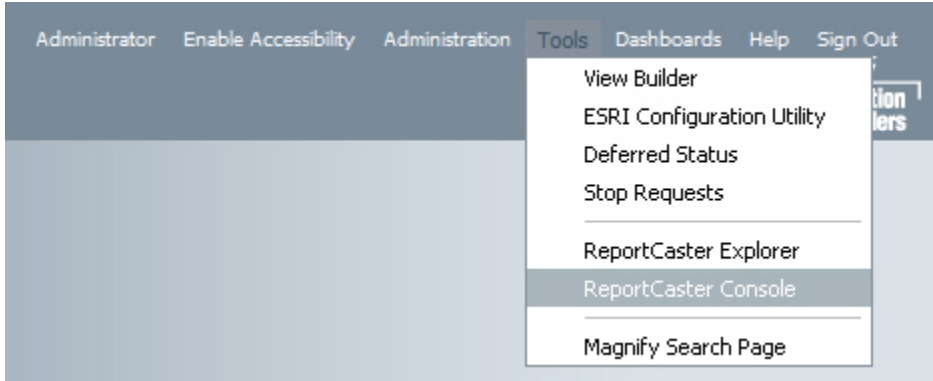
Distribution Server	Host	Port	Mode	Running	Queued	Services	Status
Primary	HOST_ONE	8201	Full Function	0 Scheduled 0 On Demand	0 Scheduled 0 On Demand	Console Failover Monitor Reader Dispatcher	Listening Standing By Polling Ready
Secondary	HOST_TWO	8209	Failover			Console Failover Monitor	Listening Monitoring

## Configuring ReportCaster Failover

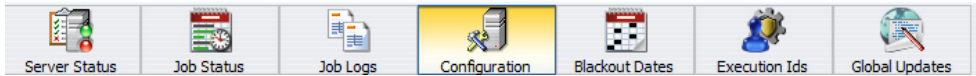
The ReportCaster Failover feature allows you to configure a secondary Distribution Server that can resume ReportCaster operations when there is an interruption (planned or unplanned) in the primary Distribution Server service. The primary Distribution Server is monitored to verify that it is operational. If there is an interruption in service, the Failover Distribution Server is triggered to take over the role of the Primary server. The following procedure provides instructions to configure Distribution Server Failover.

**Procedure: How to Configure Distribution Server Failover**

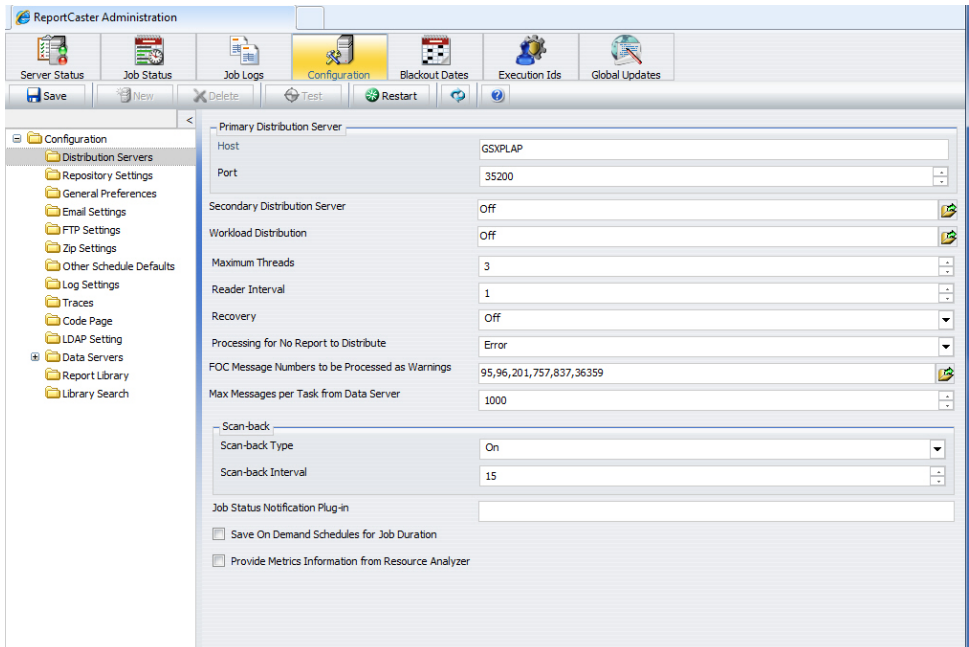
1. Click *Tools* and then click *ReportCaster Console*.



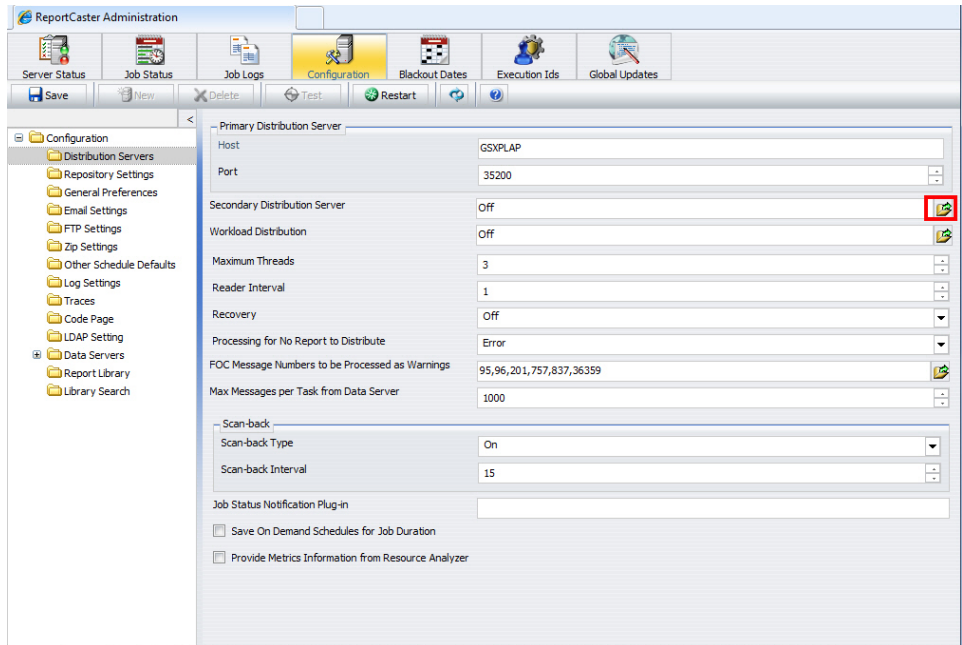
2. From the ReportCaster Console, click *Configuration* in the toolbar.



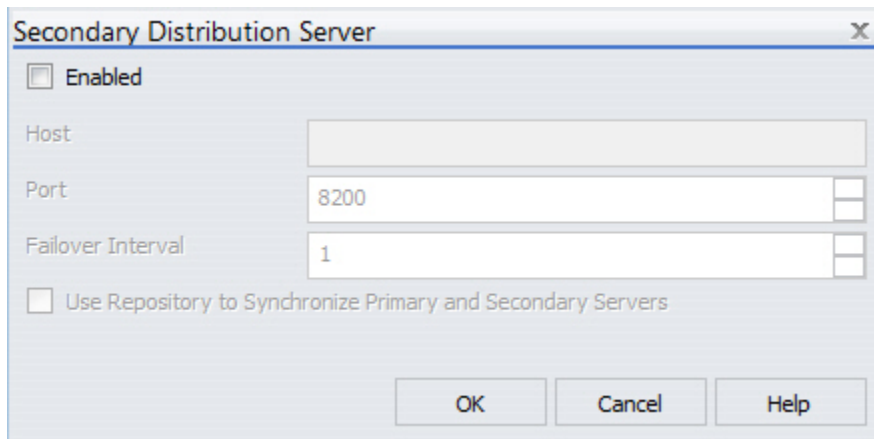
3. Click the *Distribution Servers* folder in the left pane.



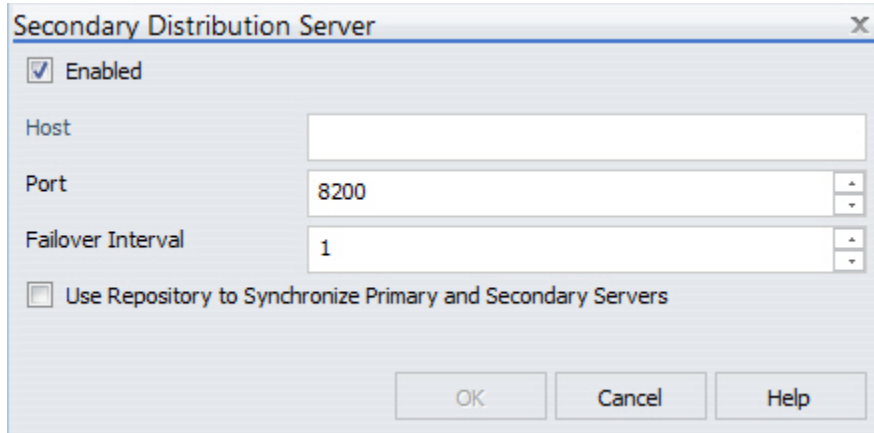
4. Click the folder icon to the right of the Secondary Distribution Server field.



The Secondary Distribution Server dialog box opens, as shown in the following image.

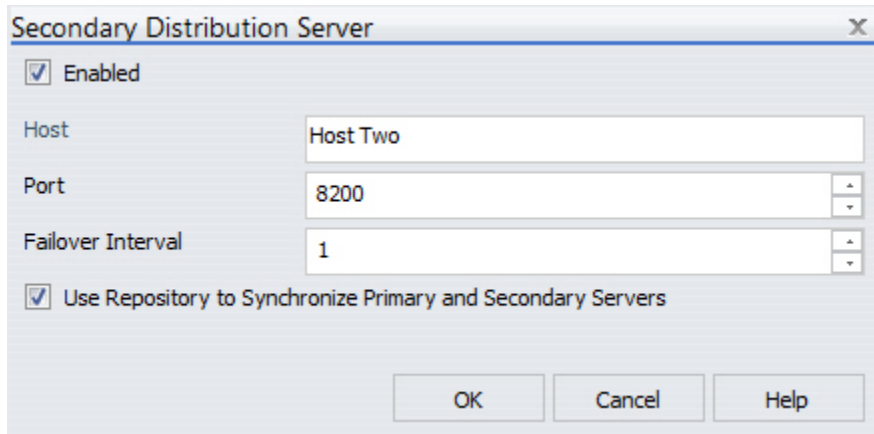


5. Select the *Enabled* check box, as shown in the following image.



The image shows a dialog box titled "Secondary Distribution Server". It has a close button (X) in the top right corner. The "Enabled" checkbox is checked. Below it are three input fields: "Host" (empty), "Port" (8200), and "Failover Interval" (1). The "Use Repository to Synchronize Primary and Secondary Servers" checkbox is unchecked. At the bottom are three buttons: "OK", "Cancel", and "Help".

6. Type the host name of the Secondary Distribution Server in the Host field.  
**Note:** Host names are case-sensitive and must match exactly wherever referenced in the installation.
7. Type or set the port number of the Secondary Distribution Server in the Port field.
8. Optionally, change the value in the Failover Interval field to the frequency (in minutes) at which the Failover Distribution Server will check the Primary Distribution Server to verify it is running. The default value is set to one minute.
9. Optionally, check the *Use Repository to Synchronize Primary and Secondary servers* check box. For more information, see [How the Failover Feature Works](#).



The image shows the same dialog box as above, but now the "Host" field contains the text "Host Two". The "Use Repository to Synchronize Primary and Secondary Servers" checkbox is now checked.

10. Click OK.

- 11.** Install the second Distribution Server on the specified host with the specified port number for that host.
- 12.** Start the Secondary Distribution Server.
- 13.** Click the *Server Status* button on the ReportCaster Console, as shown in the following image.

Distribution Server	Host	Port	Mode	Running	Queued	Services	Status
Primary	HOST_ONE	8201	Full Function	0 Scheduled 0 On Demand	0 Scheduled 0 On Demand	Console Failover Monitor Reader Dispatcher	Listening Standing By Polling Ready
Secondary	HOST_TWO	8209	Failover			Console Failover Monitor	Listening Monitoring

## Failover Distribution Server Status and Tasks

When you configure a failover Distribution Server for ReportCaster, the Server Status window lists the status of the primary and secondary servers, as shown in the following image.

Distribution Server	Host	Port	Mode	Running	Queued	Services	Status
Primary	Win2007-TM	8200	Full Function	0 Scheduled 0 On Demand	0 Scheduled 0 On Demand	Console Failover Monitor Reader Dispatcher	Listening Standing By Polling Ready
Secondary	winxp-tm	8200	Failover			Failover Monitor Console	Monitoring Listening

The primary Distribution Server is in Full Function mode. The Console service is listening for communication from ReportCaster, the Reader service is polling the WebFOCUS repository, and the Dispatcher service is ready to trigger the execution of ReportCaster jobs. The Secondary Server is in Failover Mode, monitoring the Primary Server. The Failover Monitor service monitors the Primary Server to verify that it remains active and, if it is not active, to signal the failover server to take over the role of the Primary Server. The Suspend option, which puts the Primary Server services on hold, is available for selection when a failover Distribution Server has been configured and the Primary Distribution Server is selected.

From the Server Status interface, you can perform the following failover tasks, which are described below:

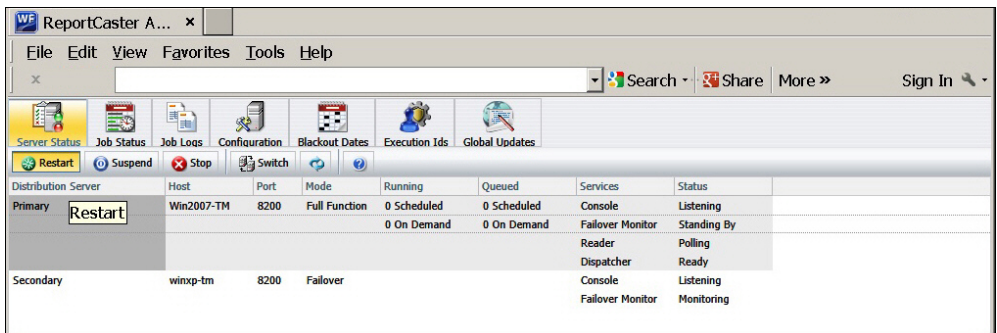
- ❑ Restart the Full Function or Failover Distribution Server.
- ❑ Suspend the Full Function Distribution Server.
- ❑ Stop the Full Function or Failover Distribution Server.
- ❑ Put the Failover Distribution server on Stand By.
- ❑ Switch server roles so that the Failover Distribution server becomes the Full Function server and vice versa. For more information, see [How to Switch Server Roles](#) on page 8.

**Procedure: How to Restart a Server**

1. Select a server that is running.
2. From the toolbar, click *Restart* to restart the server.

A window opens, asking you to confirm that you want to restart the server.

3. Click Yes.

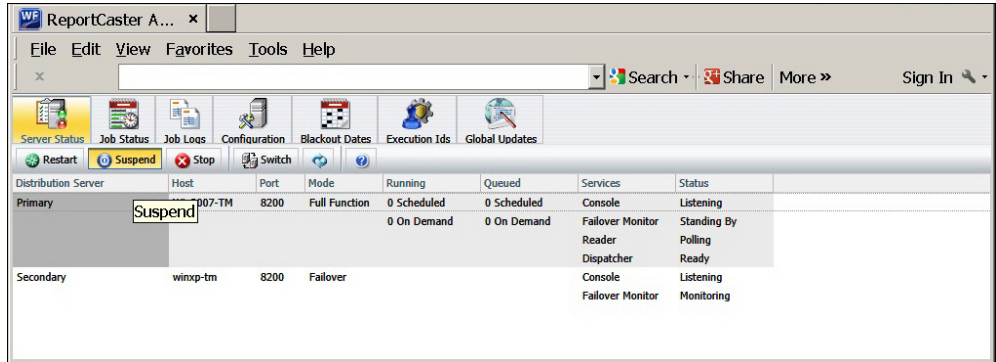


### Procedure: How to Suspend a Server

1. Select the server in Full Function mode.
2. On the toolbar, click *Suspend*.

A window opens, asking you to confirm that you want to suspend the server.

3. Click Yes.

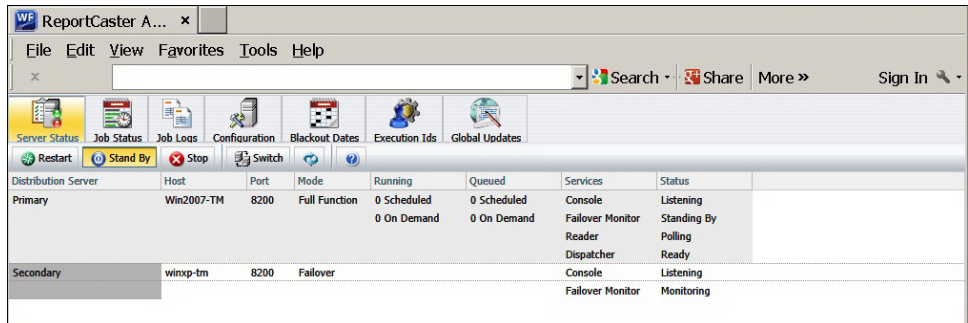


### Procedure: How to Set the Failover Server to Stand By Mode

1. Select the server in Failover Mode.
2. On the toolbar, click *Stand By*.

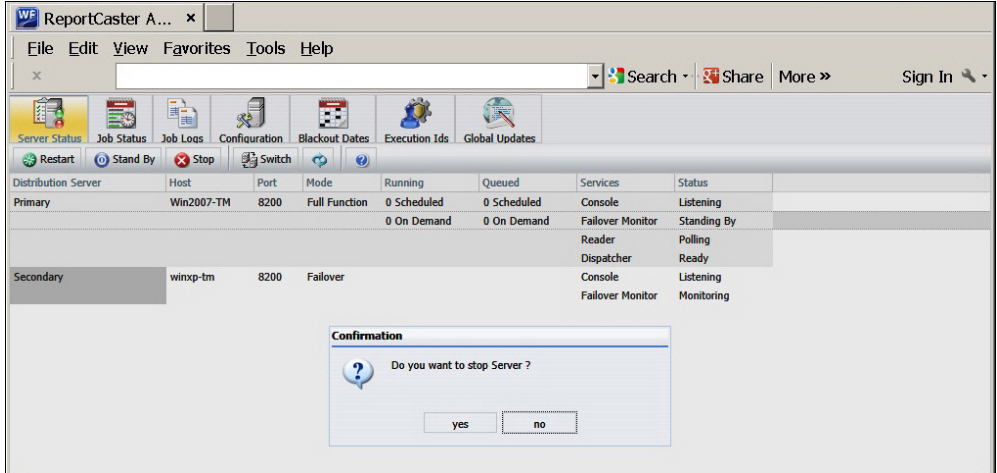
A window opens, asking you to confirm that you want to set the Failover server to Stand By Mode.

3. Click Yes.



**Procedure: How to Stop a Server**

1. Select a running server and click *Stop*.  
A window opens, asking you to confirm that you want to stop the server.
2. Click Yes.

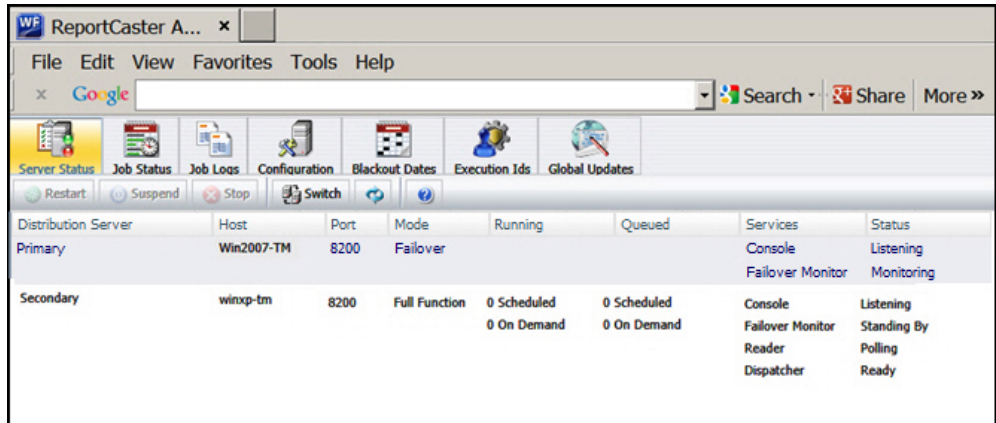


**Procedure: How to Switch Server Roles**

1. Select the server in Full Function Mode.
2. On the toolbar, click *Suspend*.  
A window opens, asking you to confirm that you want to suspend the server.
3. Click Yes.
4. Select the server in Failover Mode.
5. Click *Stand By* to put the failover Distribution Server on stand by.  
A window opens, asking you to confirm that you want to put the Failover Distribution server on Stand By.

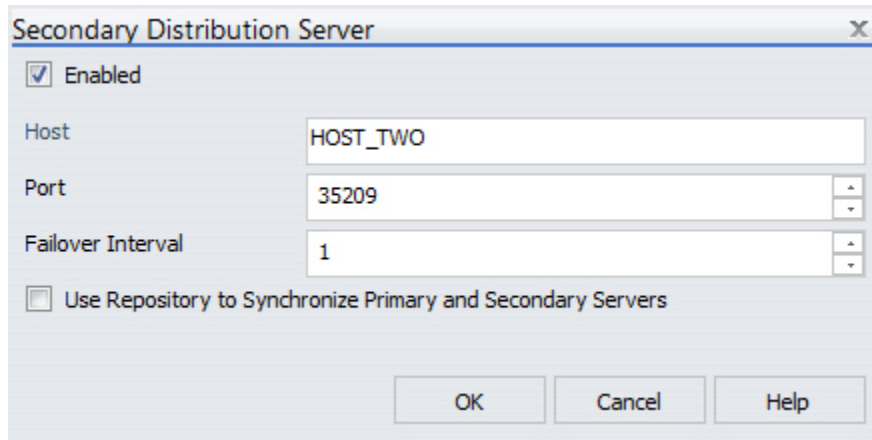


6. Click Yes.
7. On the toolbar, click *Switch*.  
A window opens, asking you to confirm that you want to switch the roles of the servers.
8. Click Yes.



## How the Failover Feature Works

By default, the *Use Repository to Synchronize Primary and Secondary Servers* check box is unchecked, as shown in the following image.



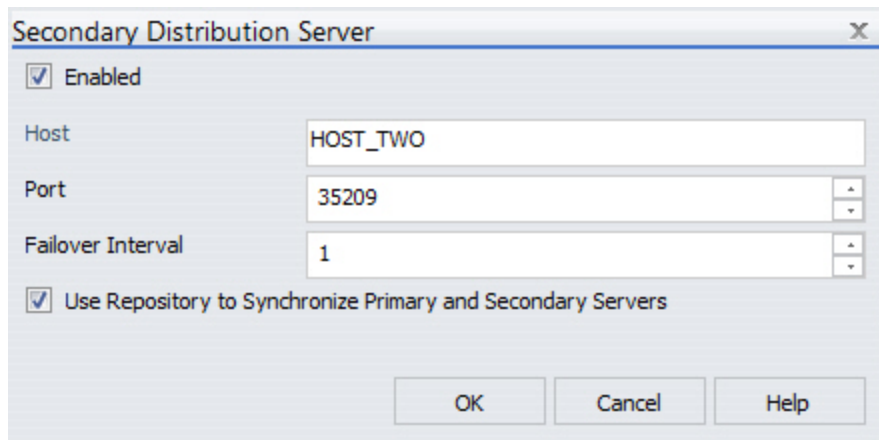
With this box unchecked, the Failover feature works by having the two Distribution Servers communicate with each other on a regular basis to monitor and confirm their statuses.

The following activities occur:

1. The server running in Failover mode pings the server running in Full Function mode each minute (or each time period specified by the Failover interval) to ask the Full Function server whether it is still running.
2. The Full Function server replies that it is running.
3. The server that is operating in Failover mode goes back to sleep for another minute.
4. If the server that is operating in Failover mode does not receive a reply, then it promotes itself to Full Function mode and takes over as the actual Distribution Server, polling the repository and running jobs.

This approach works, but relies on uninterrupted communication between the two servers. If the network is interrupted temporarily, the server operating in Failover mode may not get a response even though the Full Function server is running. If this happens, the server operating in Failover mode will switch to Full Function mode and there will now be two Full Function servers, both submitting jobs.

As an alternative, you can check the box labeled *Use Repository to Synchronize Primary and Secondary Servers*, as shown in the following image.



This option provides the server running in Failover mode an alternative method to decide whether to switch to Full Function status. Instead of having the two Distribution Servers talk to each other through the network, the two servers each query the ReportCaster repository. The ReportCaster repository stores a status record indicating which server is running as the Full Function server and a counter indicating the last time that the Full Function server polled the repository to search for scheduled jobs.

The Full Function server updates the counter on the status record each time it polls the repository. The server operating in Failover mode reads the counter from the status record each time it polls the repository.

The server operating in Failover mode compares the most recent version of the status record to the last version of the status record. If the current status record has been updated by the Full Function server, the server that is operating in Failover mode goes back to sleep for the designated interval. When the server that is operating in Failover mode wakes up, the process is repeated. As long as the status record continues to be updated by the Full Function server, the server that is operating in Failover mode continues to go back to sleep.

If the counter of the current status record matches the counter of the last status record, this indicates that the Primary server has not yet updated the status record. Because it is possible that, on a given cycle, the server that is operating in Failover mode could read the status record before the Full Function server updates the status record, the server in Failover mode waits for one more Failover interval and reads the status record again. If the status record is still unchanged, the server operating in Failover mode switches to Full Function mode.

## Startup Processing

With Failover configured and the *Use repository to synchronize Primary and Failover servers* setting unchecked, Distribution Server start up is as follows:

The Distribution Server that is starting up begins in Failover mode and attempts to contact the other configured Distribution Server to see if it is running in Full Function mode. If it does not receive an answer, it promotes itself to Full Function mode. In this case, start up is almost immediate.

The Server Status screen indicates that Failover monitoring is occurring, as shown in the following image.

Distribution Server	Host	Port	Mode	Running	Queued	Services	Status
Primary	HOST_ONE	35200	Full Function	0 Scheduled	0 Scheduled	Configuration Refresh	Active
				0 On Demand	0 On Demand	Console	Listening
						Failover Monitor	Standing By
						Reader	Polling
Secondary	HOST_TWO	35209	Failover			Dispatcher	Ready
						Configuration Refresh	Active
						Console	Listening
						Failover Monitor	Monitoring

With Failover configured and the *Use repository to synchronize Primary and Failover servers* setting checked, Distribution Server start up is as follows:

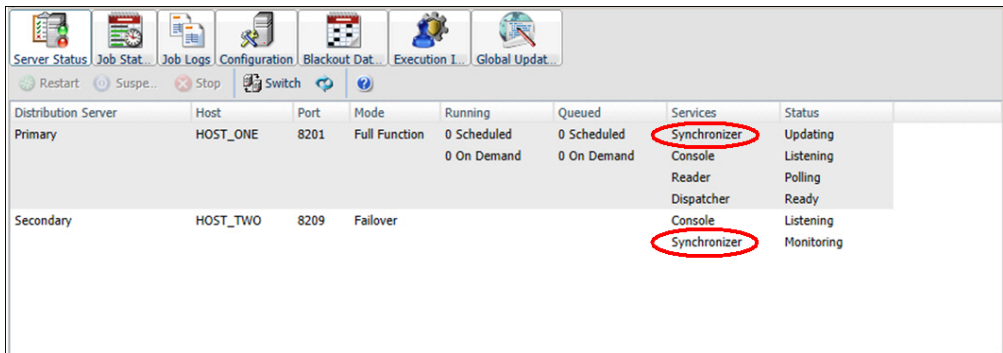
## Startup Processing

The Distribution Server that is starting up reads the status record to retrieve the counter. It waits for the Failover interval and reads the status record again. If the counter has been updated, the server starts in Failover mode since the update indicates that a Full Function server is running. If the counter is still unchanged, then the server attempts to update the status record with a new value for the counter. If the update is unsuccessful, this indicates that two servers were starting at approximately the same time and the other server is currently updating the status record and will be starting in Full Function mode. In this case, the server starts in Failover mode. If the update is successful, the server starts in Full Function mode. In this case, start up can take up to two minutes (or two failover intervals).

To speed up the start up process, the Distribution Servers also attempt to notify each other that they are starting. If a starting Distribution Server is waiting for a failover interval in order to read the status record and it receives notification that another Distribution Server has begun the start up process, it knows that it can start in Full Function mode immediately and does so. It then notifies the other server that it has started in Full Function mode and that server starts in Failover mode.

This notification process also occurs when a Distribution Server is shut down. If the server running in Full Function mode is stopped from the ReportCaster Console or from the command line, the Full Function server notifies the Failover server to stop waiting for the duration of the failover interval and immediately switch to Full Function mode.

The Server Status screen indicates the synchronizing method is being used by the presence of the Synchronizer service, as shown in the following image.



The screenshot shows the ReportCaster Server Status interface. At the top, there are several menu items: Server Status, Job Stat..., Job Logs, Configuration, Blackout Dat..., Execution I..., and Global Updat... Below the menus are control buttons: Restart, Suspe..., Stop, and Switch. The main area is a table with columns: Distribution Server, Host, Port, Mode, Running, Queued, Services, and Status. The table contains two rows: Primary and Secondary. The Primary server is in Full Function mode, and the Secondary server is in Failover mode. Both servers have the Synchronizer service listed in the Services column, which is circled in red in the original image.

Distribution Server	Host	Port	Mode	Running	Queued	Services	Status
Primary	HOST_ONE	8201	Full Function	0 Scheduled 0 On Demand	0 Scheduled 0 On Demand	Synchronizer Console Reader Dispatcher	Updating Listening Polling Ready
Secondary	HOST_TWO	8209	Failover			Console Synchronizer	Listening Monitoring