

AutomaTech™

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AutomaTech Solution Brief

iFIX Redundant Historian Collector Setup

April 2017 – SB-RJH-001A



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iFIX Redundant Historian Collector Setup



Solution Background and Challenges:

- Prevent irretrievable loss of data caused by improperly configured collectors when using iFIX Failover and Redundant Historian Collectors
- Best configuration practices
- Testing iFIX Redundant Historian Collectors



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Explanation of AutomaTech's Solution:

- Provide for a successful configuration of iFIX Redundant Historian Collectors
- Provide steps to test a system fail-over
- This Solution Brief assumes that the iFIX Redundant SCADA pair have been configured according to the *Proficy HMI/SCADA - iFIX* documentation



Architecture/Best Practices: Primary & Standby SCADA Servers

- Required Configuration
 - Add the Historian IP Address and Server Name to the HOSTS file of both SCADAs
 - Open firewall TCP Port 14000 (test throughput via Ping command, if permissible)
 - Install the latest/supported iFIX Collector version for both SCADA nodes
 - Add the collector to each iFIX SCU Task Configuration with command line, runasdos
- Recommended On the Backup SCADA only
 - Modify the FIX.INI file (Local directory)
 - Locate the entry, RUN=%FIXTOHIST.EXE, preface this line with a semi-colon to disable this feature
 - This will ensure the Backup SCADA will never, inadvertently “own” tags in the Historian and preventing a loss of data



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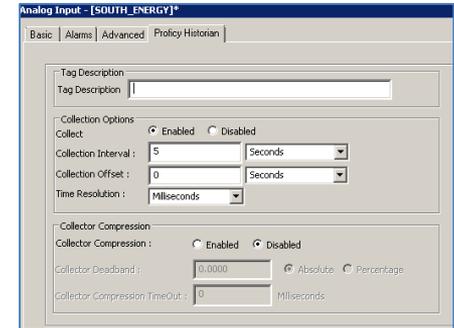
iFIX Redundant Historian Collector Setup

Start the Primary SCADA

- Do not start the Backup SCADA at this time
- If collection was defined within the iFIX database (Tag Configuration, Historian Tab), use the Tags Maintenance page in the Historian Administrator to display tags and check for values
- Otherwise, configure tags via the Historian Administrator, then wait ~30-60 seconds and check for values
- This will insure all tags belong to the Primary SCADA and it is the “Active” node

Start the Backup SCADA

- Check that synchronization is active (ScadaSyncMonitor.exe)
- Launch the Historian Administrator (if not already opened)



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Historian Administrator

- Ensure both Primary and Backup Collectors are running
- Select the Primary SCADA from the Collectors list
 - Select the Collectors Maintenance Page
 - On the Redundancy tab, select the Redundant Collector Enabled option and click the Update button
- Select the Backup SCADA from the Collectors list
 - On the Redundancy tab, select the Redundant Collector Enabled option and click Update.
 - In the Backup For ComboBox, select the associated Primary SCADA collector and click Update
- The Collectors are now set to back each other up

Collector	Status	Computer
LAB-HIST-70_Simulation	Running	LAB-HIST-70
LAB-IFIX-58-SSB_iFIX	Running	LAB-IFIX-58-SSB
LAB-IFIX-58-SSP_iFIX	Running	LAB-IFIX-58-SSP
WIN-HOE968PLBQJ_iFIX	Running	WIN-HOE968PLBQJ

Collector: LAB-IFIX-58-SSP_iFIX

General | Configuration | Tags | Advanced | Performance | Redundancy

Settings

Redundant Collector Enabled Disabled

Backup For

Collector: LAB-IFIX-58-SSB_iFIX

General | Configuration | Tags | Advanced | Performance | Redundancy

Settings

Redundant Collector Enabled Disabled

Backup For

Backed Up By LAB-IFIX-58-SSP_iFIX



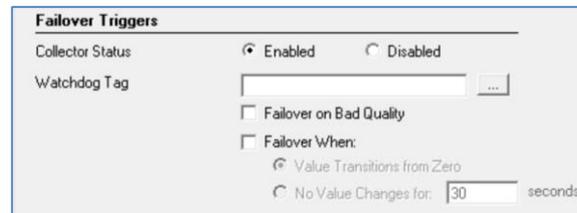
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Define a Failover Trigger

- The lower section of the Redundancy tab has the means to trigger a failover. By selecting only the Enabled option and clicking Update, the failover will occur when the Active Collector changes to an “Unknown” state. For this to happen the collector would have been: shut down purposefully; failed independently or; lost network connection.
- More specific triggers can be defined by using a Watchdog Tag and selecting the conditions to failover: “Bad Quality” and/or; “Transitions from Zero” failover occurs when a non-zero value is received, failure happens each time a non-zero value is received, not just when promoted from zero or; “No Value Change” failover occurs when the value hasn’t changed within the specified time period, checked every 5 seconds
- NOTE: The Watchdog Tag should always use the Logical Node Name

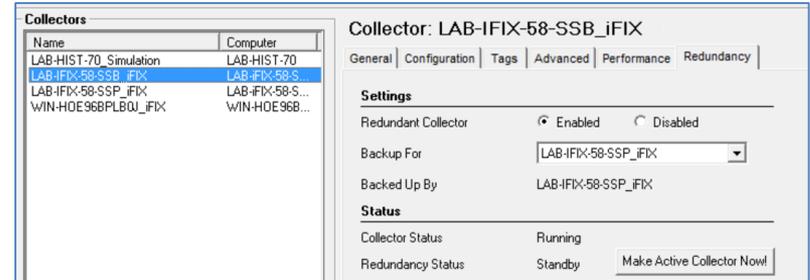


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Failover Testing

- From the Historian Administrator:
 - *Main* screen, check redundant collector status
 - Select *Collector Maintenance*
 - Select the *Redundancy* tab
 - Select the *Standby* collector
 - Click the **Make Active Collector Now!** Button
 - Return to the *Main* screen and check that the collectors' status has changed
 - Confirm data collection is still active (use *Tag Maintenance*, *Search Historian Tag Database*)
- This will confirm that the collectors and the redundancy configuration has been set up correctly

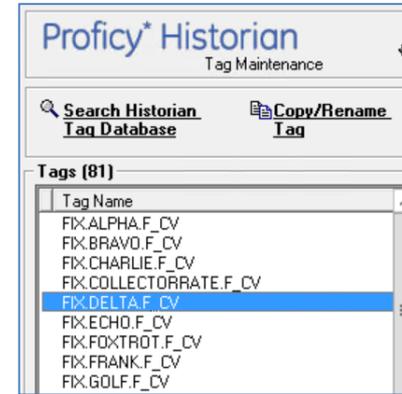


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Failover Testing (continued)

- From the Active SCADA node:
 - Pull the data network cable, wait 30-60 seconds
 - Open the *Historian Administrator*
 - Select *Tag Maintenance - Search Historian Tag Database*
 - Select and check for updated values of the selected tags
 - Click the **Make Active Collector Now!** Button
 - Return to the *Main* screen and check that the collectors' status has changed
 - Confirm data collection is still active
- This will confirm that the collectors and the redundancy configuration has been set up correctly



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Thank you! Please contact AutomaTech or visit www2.automatech.com/solution-briefs for additional information on future Solution Briefs and technology

