FactoryTalk Historian SE Redundant Interface Configuration Guide

Version 1.00.00

Reference Manual

Original Instructions

Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

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The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

IMPORTANT: Identifies information that is critical for successful application and understanding of the product.

These labels may also be on or inside the equipment to provide specific precautions.

SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.

BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

The following icon may appear in the text of this document.

Identifies information that is useful and can help to make a process easier to do or easier to understand.

Rockwell Automation recognizes that some of the terms that are currently used in our industry and in this publication are not in alignment with the movement toward inclusive language in technology. We are proactively collaborating with industry peers to find alternatives to such terms and making changes to our products and content. Please excuse the use of such terms in our content while we implement these changes.

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Third-Party Software Licenses

View a full list of all third-party software used in this product in C:\Program Files (x86)\Common Files\Rockwell\Help\FactoryTalk Historian SE\Third-party Licenses\third-party attributions.htm, including:

- Open-source software
- Commercial software
- Other third-party free software

You may obtain Corresponding Source code for open-source packages included in this product from their respective project websites. Alternatively, you may obtain the complete Corresponding Source code by contacting Rockwell Automation via the Contact form at the bottom of the Rockwell Automation website: http://www.rockwellautomation.com/global/about-us/contact/contact.page. Please include "Open Source" as part of the comments for your General Inquiry request.

Introduction

This document is a supplement to the FactoryTalk Historian SE Installation and Configuration Guide. It has been created to provide detailed step-by-step instructions on how to configure Phase 2 FactoryTalk Live Data Interface redundancy in a FactoryTalk® Historian Site Edition system.

The scope of this document is FactoryTalk Live Data Interface redundancy only. However, as a rule, FactoryTalk Live Data Interface redundancy is combined with FactoryTalk® Linx data server redundancy to create a redundant data server/interface pair. Additionally, the redundant data server/interface pair is often combined with server redundancy, also known as a collective, network redundancy, and controller redundancy to provide a robust solution for mission-critical data collection applications. For more information on configuring the other redundant components, refer to:

- Controller redundancy: ControlLogix Redundancy System User Manual (publication 1756-UM523)
- Data server redundancy: *FactoryTalk Services Platform Help*
- High Availability: See *Configuring Historian servers in High Availability mode* in FactoryTalk Historian SE Installation and Configuration Guide (publication HSE-IN025)

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Related documentation

The following related documents provide additional information that you may find of interest:

- FactoryTalk Historian SE Installation and Configuration Guide (publication HSE-IN025)
- FactoryTalk Historian SE Live Data Interface User Guide (publication HSELD-UM024)
- *High Availability Administration Guide*

These documents are typically available from the following locations:

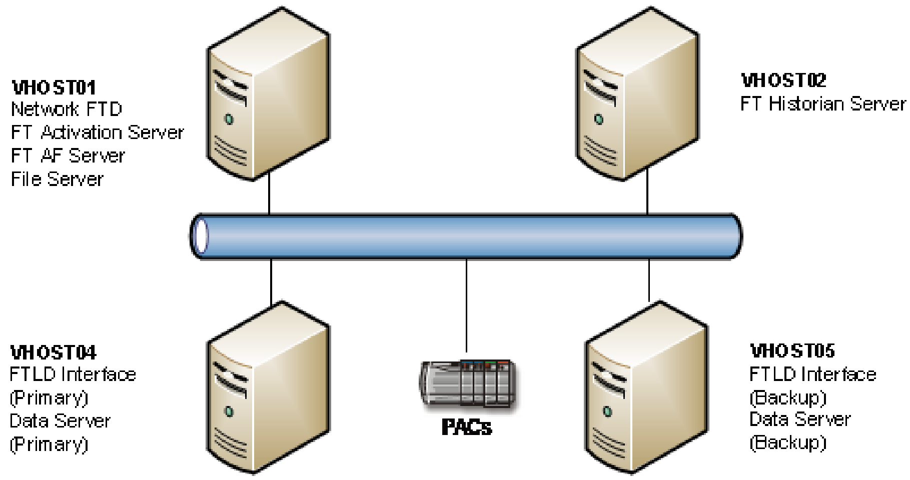
- Pre-installation from the \Docs\Common folder on the FactoryTalk Historian SE media
- Post-installation from \Program Files (x86)\Common Files\Rockwell\Help\FactoryTalk Historian SE

- The file name of FactoryTalk Historian SE Installation and Configuration Guide (publication HSE-IN025) is hse-in025_-en-e.pdf.
- The file name of FactoryTalk Historian SE Live Data Interface User Guide (publication HSELD-UM024) is hseld-um024_-en-e.pdf.
- The file name of *High Availability Administration Guide* is AVEVA-PI-Server-2018-SP3-Patch-4-High-Availability-Administration-Guide-EN.pdf.

Architecture

This document uses the following architecture to illustrate configuring a FactoryTalk Historian SE system with Phase 2 interface redundancy:

- VHOST01: Network FactoryTalk® Directory, FactoryTalk® Activation server, FactoryTalk® Asset Framework server, Microsoft® SQL Server®, and file server
- VHOST02: FactoryTalk Historian SE server
- VHOST04: FactoryTalk Live Data Interface (primary) and data server (primary)
- VHOST05: FactoryTalk Live Data Interface (backup) and data server (backup)



The architecture diagram doesn't show the domain controller and DNS server, but both are recommended. If a DNS server is not available, Host name resolution can be provided using the hosts file on each computer. For more information, see the Knowledgebase Document ID: [QA8701 - Using a HOSTS file to provide name resolution].

In addition, security configuration is beyond the scope of this document. For more information on designing and configuring system security, refer to *Configuring FactoryTalk Historian* in *FactoryTalk Historian SE Installation and Configuration Guide*.

Prerequisites

This document assumes that both time synchronization and FactoryTalk Historian SE security have been configured.

- For more information on time synchronization, refer to the FactoryTalk Historian SE Installation and Configuration Guide.
- For more information on configuring FactoryTalk Historian SE security, refer to:
  - FactoryTalk Historian SE Installation and Configuration Guide (publication HSE-IN025) in the \Docs\Common folder on the FactoryTalk Historian SE installation media. The file name is hse-in025_-en-e.pdf.
  - *PI Data Archive Security Configuration Guide* in the \Docs\Historian Server folder on the FactoryTalk Historian SE installation media. The file name is AVEVA-PI-Server-2018-SP3-Patch-4-PI-Data-Archive-Security-Configuration-Guide-EN.pdf.

Software installation

The following software installation procedures are intended only as an overview. For additional information, refer to the FactoryTalk Historian SE Installation and Configuration Guide.

Network FactoryTalk Directory server installation

The purpose of this section is to create a Network FactoryTalk Directory computer. If a Network FactoryTalk Directory exists in your system, you can skip this section.

On the Network FactoryTalk Directory computer (VHOST01), perform the following steps:

- Install FactoryTalk® Services Platform, which includes the FactoryTalk Activation server. Obtain and install Historian SE server activation files.

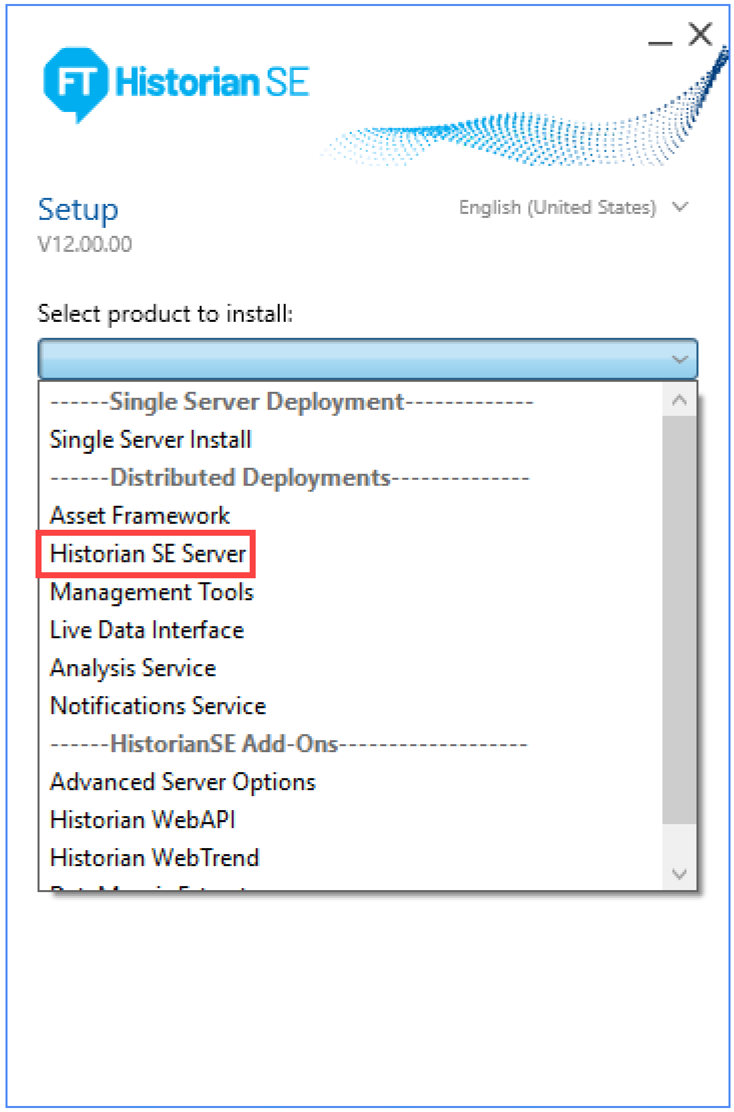
  Activation installation and configuration can be postponed because the Historian SE server will run without activation for a grace period of 7 days.

Historian SE server installation

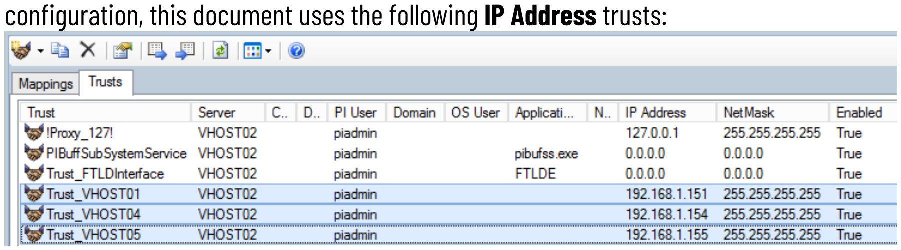
The purpose of this section is to create and activate a FactoryTalk Historian SE server computer. If an activated FactoryTalk Historian SE server exists in your system, you can skip this section.

On the FactoryTalk Historian SE server computer (VHOST02), perform the following steps:

1. Install FactoryTalk Services Platform and specify the FactoryTalk Directory server location as VHOST01.
2. Install FactoryTalk Activation Manager and configure activation from the FactoryTalk Activation server (VHOST01). For more information on activation, refer to **Chapter 5 – Configure FactoryTalk Historian** in the FactoryTalk Historian SE Installation and Configuration Guide.
3. Install the FactoryTalk Historian SE server by selecting **Historian SE Server**.



4. Launch the System Management Tools. Configure a trust for every other host in the architecture (VHOST01, VHOST04 & VHOST05). For more information on trust creation, refer to the System Management Tools Help or see the Knowledgebase Document ID: [QA16214 - FactoryTalk Historian SE: How to Create a Trust](). In the interest of a simplified configuration, this document uses the following **IP Address** trusts:



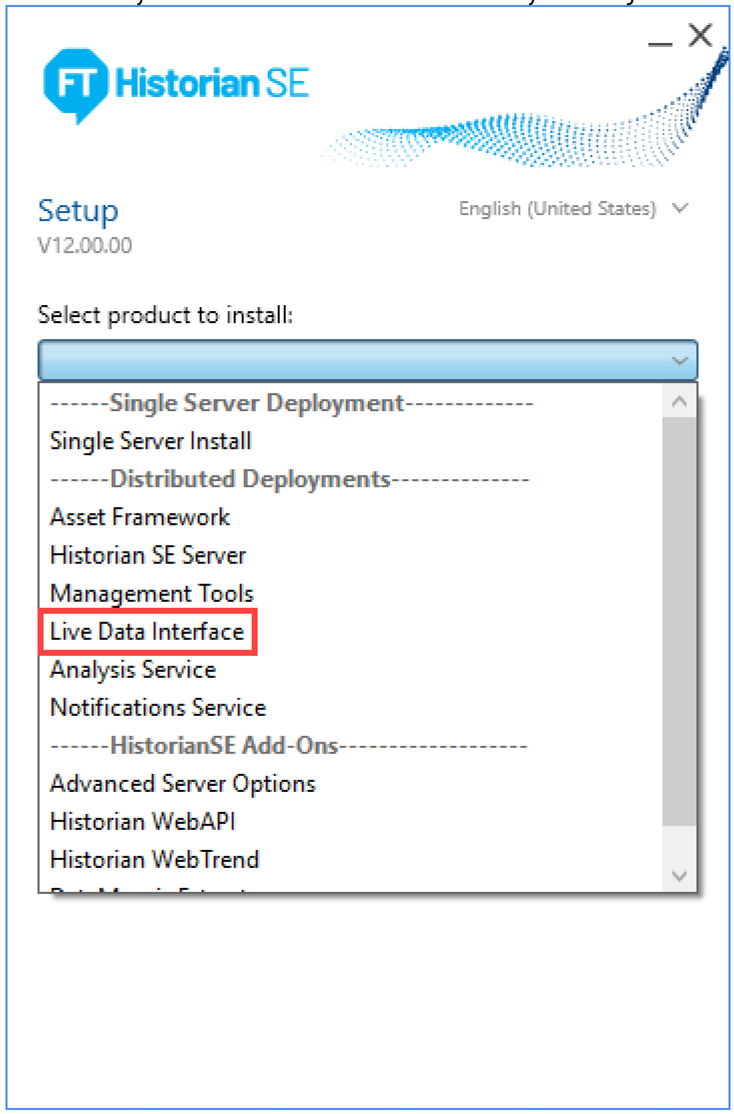
Trust	Server	C..	D..	PI User	Domain	OS User	Applicati...	N..	IP Address	NetMask	Enabled
!Proxy_127!	VHOST02			piadmin					127.0.0.1	255.255.255.255	True
PIBuffSubSystemService	VHOST02			piadmin			pibufss.exe		0.0.0.0	0.0.0.0	True
Trust_FTLDInterface	VHOST02			piadmin			FTLDE		0.0.0.0	0.0.0.0	True
Trust_VHOST01	VHOST02			piadmin					192.168.1.151	255.255.255.255	True
Trust_VHOST04	VHOST02			piadmin					192.168.1.154	255.255.255.255	True
Trust_VHOST05	VHOST02			piadmin					192.168.1.155	255.255.255.255	True

Historian SE Live Data Interface installation

The purpose of this section is to create two Historian SE FactoryTalk Live Data Interface computers for use with redundancy. If two FactoryTalk Live Data Interface computers exist in your system, you can skip this section.

On both the primary and backup interface computers (VHOST04 + VHOST05), perform the following steps:

1. Install FactoryTalk Services Platform and FactoryTalk Linx.
2. Specify the FactoryTalk Directory server location as VHOST01.
3. Install FactoryTalk Historian SE Live Data Interface by selecting **Live Data Interface**.



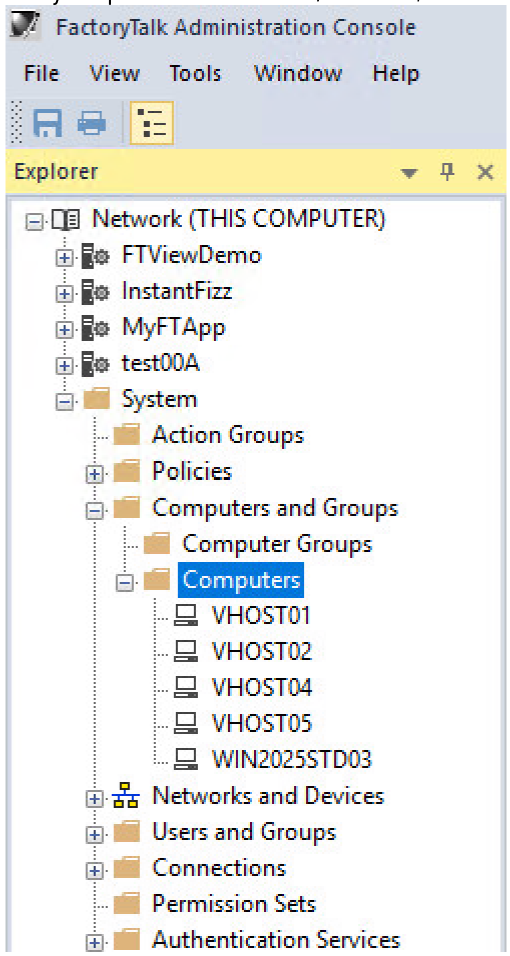
Installation verification

The purpose of this section is to verify that all FactoryTalk Historian SE computers are at the same revision of FactoryTalk Services Platform and connected to the Network FactoryTalk Directory (VHOST01). If you have already verified your FactoryTalk® system, you can skip this section.

On the Network FactoryTalk Directory computer (VHOST01), perform the following steps:

1. To verify the FactoryTalk Services Platform revision level, see the Knowledgebase Document ID: QA5266 – How to Determine the version of the FactoryTalk Services Platform installed.
2. Launch the FactoryTalk® Administration Console, select the **Network** directory.
3. Expand **System > Computers and Groups > Computers**.

4. Verify the presence of VHOST01, VHOST02, VHOST04 and VHOST05:



Configuration

In this chapter, you will learn to:

Create the FactoryTalk Application and redundant data servers

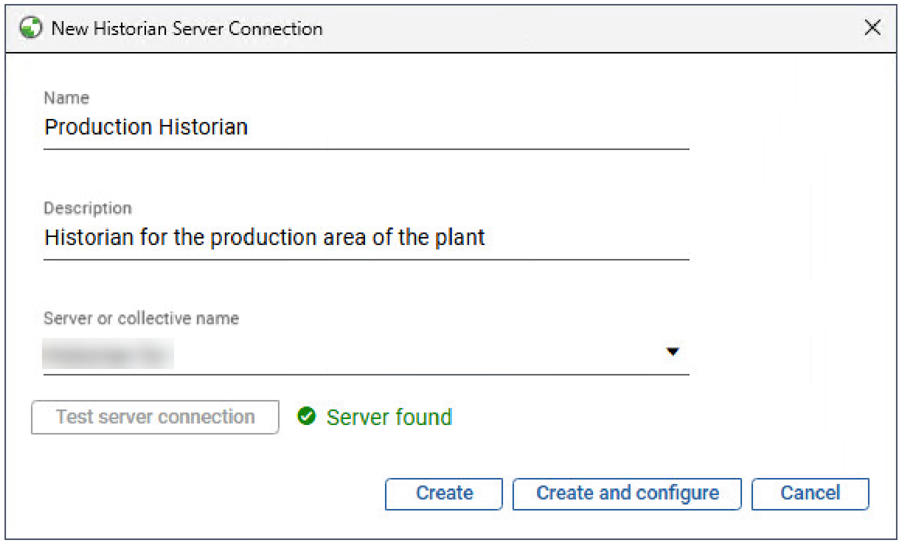
The purpose of this section is to create a FactoryTalk Application that includes redundant data servers. If you have an existing FactoryTalk Application that includes redundant data servers, you can skip this section.

1. On the primary interface computer (VHOST04), launch the FactoryTalk Administration Console, select the **Network** directory, and create:
   - A FactoryTalk Application, for example, MyFTApp
   - An Area, for example, MyArea
   - Within the new Area, create a Rockwell Automation Device Server or other data servers on VHOST04 with the redundant secondary server on VHOST05
     - The recommended redundancy switchover option is **Continue using the secondary server even when the primary server becomes available again**. This is the default option.
     - If FactoryTalk Linx, then use **Communication Setup** to create a shortcut, for example, SC1 pointing to the data source, for example, ControlLogix® on both the primary and backup data servers.
     - If other data servers, then use the OPC Server GUI to create an OPC Topic pointing to the data source on both the primary and backup data servers.
2. Using the FactoryTalk Live Data Test Client, verify that you can browse the tags in the data source and put them on scan. For more information, refer to FactoryTalk Services Platform Help.
3. Test the data server switchover using the FactoryTalk Administration Console. For more information, refer to FactoryTalk Services Platform Help.

Create the Historian server

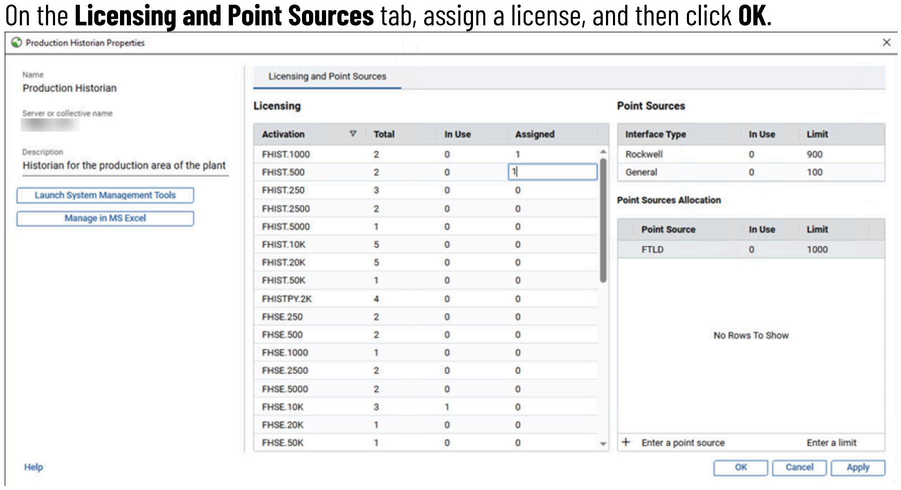
The purpose of this section is to create a Historian Server Connection for data storage. If you have an existing Historian Server Connection created in your Network FactoryTalk Directory, you can skip this section.

1. On the Historian SE server (VHOST02), launch the FactoryTalk Administration Console and select **Network**.
2. In the **Explorer** window, expand **System > Connections**, right-click **Historical Data**, and then select **New Historian Server Connection**.
3. In the **New Historian Server Connection** dialog, select the name of your FactoryTalk Historian SE server from the **Server or collective name** list, and then click **Test server connection**.



In addition to the Historian Server on VHOST02, this step also automatically created an instance of the FactoryTalk Live Data Interface on VHOST02. This local instance of the FactoryTalk Live Data Interface (FTLD1) cannot be used with a redundant configuration.

4. Click **Create**, then expand **Production Historian**.
5. Right-click **FTLD1** and select **Delete**.
6. Right-click **Production Historian** and select **Properties**.
7. On the **Licensing and Point Sources** tab, assign a license, and then click **OK**.



Create the shared folder on a file server

The purpose of this section is to create a network share that will contain a failover control file that the two redundant interface nodes will use to coordinate redundancy. We recommend that you put this file on a highly available, dedicated file server that has no other role in data collection, for example, the Network FactoryTalk Directory. If you have an existing network share with the appropriate access permissions specifically for this purpose, you can skip this section.

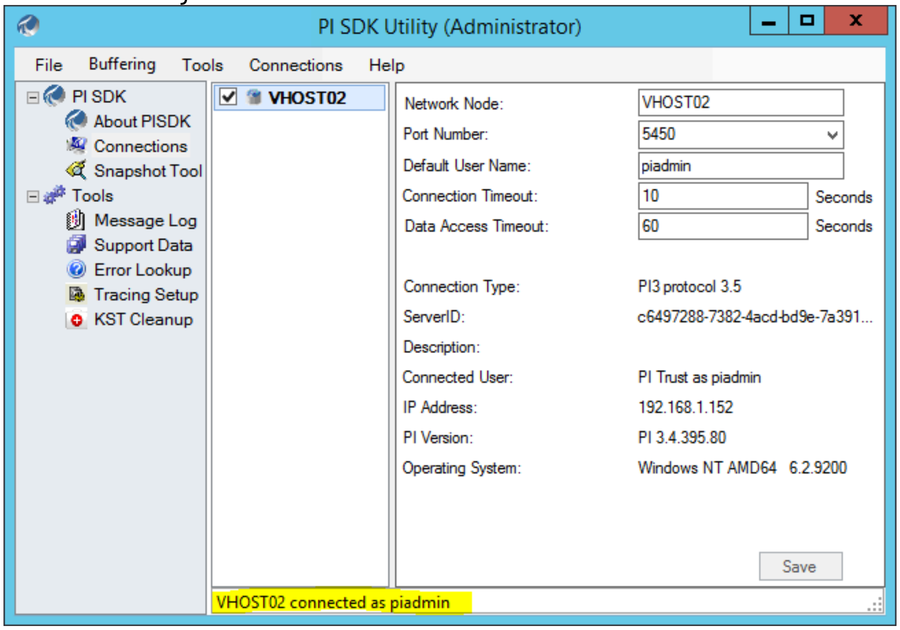
1. On the Network FactoryTalk Directory computer (VHOST01), use File Explorer to create a folder for the shared file required by the redundant interfaces.
2. On the C: drive, create an FTHSE_Failover folder.
3. Right-click this folder and select **Give access to> Specific people**.
4. In the **Network access** dialog, select **Everyone**, and then click **Add**.
5. Change the **Permissions Level** for **Everyone** for **Read** to **Read/Write**.
6. Click **Share**, and then click **Done**.

This is an insecure share. You might want to adjust these permissions for a specific username or group of users after interface redundancy has been successfully tested.

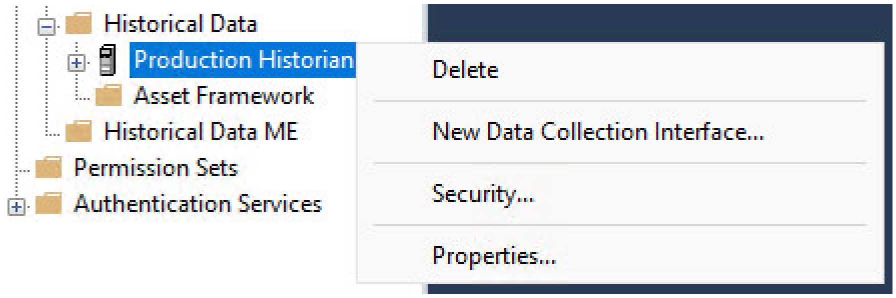
Create the primary Historian FactoryTalk Live Data Interface

The purpose of this section is to create a primary Historian FactoryTalk Live Data Interface for data collection. If you have an existing primary Historian FactoryTalk Live Data Interface, you can skip this section.

1. On the primary interface computer (VHOST04), launch the **PISDK Utility (64-bit).**
2. Create a connection to the Historian server (VHOST02) by selecting **Connections > Add Server**. For more information, refer to the Help.
3. Delete the existing connection **VHOST04** and select the new connection **VHOST02**:

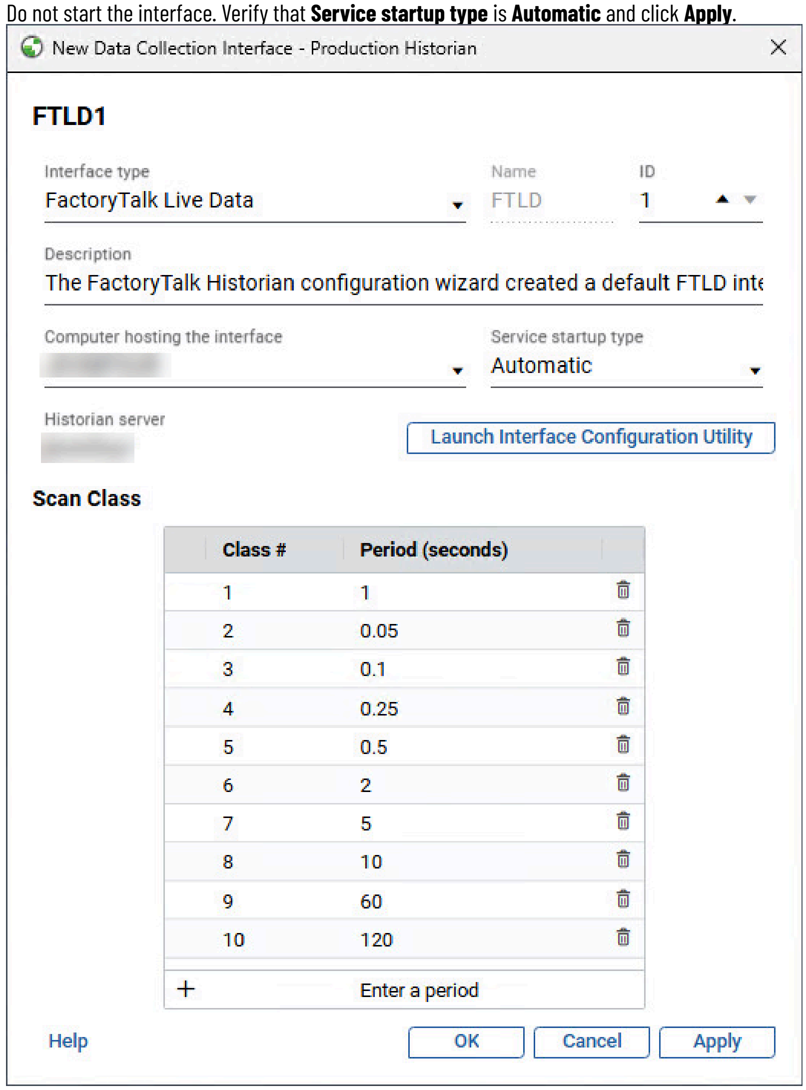


4. Launch the FactoryTalk Administration Console and select **Network**.
5. Right-click on this Historian SE server created in the previous section and select **New Data Collection Interface**:

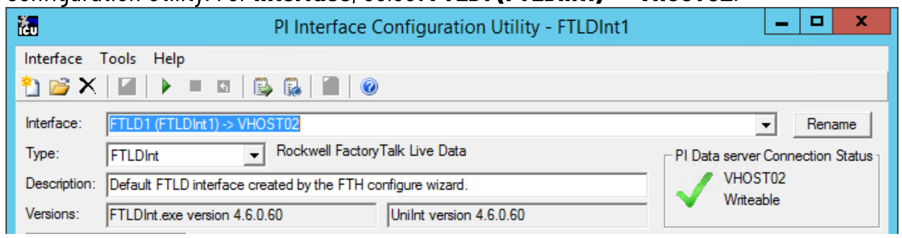


6. In the **New Data Collection Interface - Production Historian** dialog, change **Computer hosting the interface** from the Historian SE server (VHOST02) to the primary interface computer (VHOST04).

Do not start the interface. Verify that **Service startup type** is **Automatic** and click **Apply**.



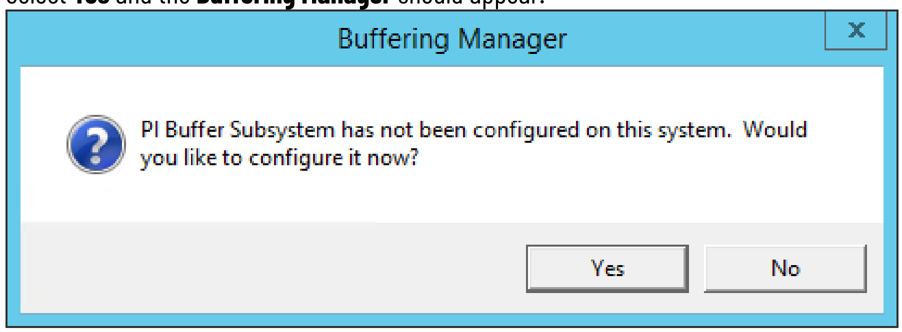
7. Click the **Launch Interface Configuration Utility** button to open the PI Interface Configuration Utility. For **Interface**, Select **FTLD1 (FTLDInt1) -> VHOST02**:

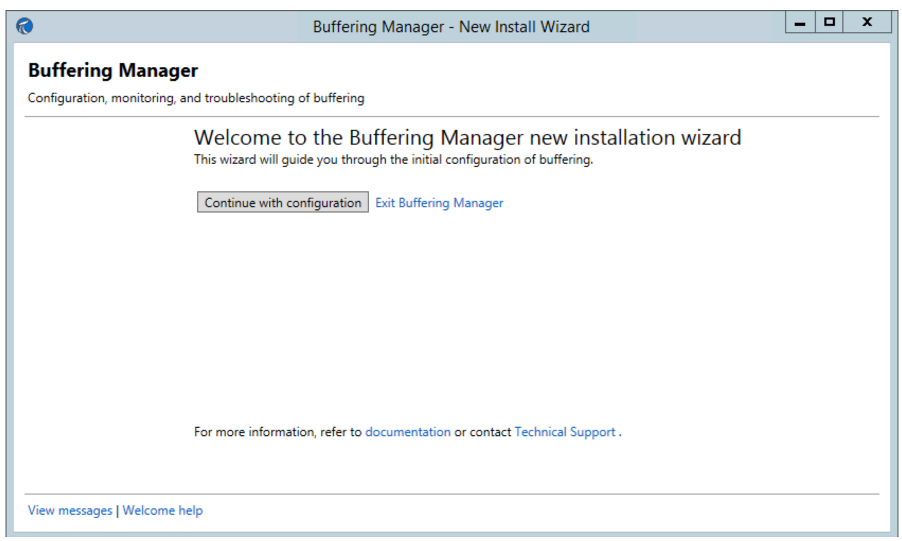


Configure buffering on the primary FactoryTalk Live Data Interface

The purpose of this section is to configure buffering on the primary Historian FactoryTalk Live Data Interface. If you have an existing primary Historian FactoryTalk Live Data Interface with buffering enabled, you can skip this section.

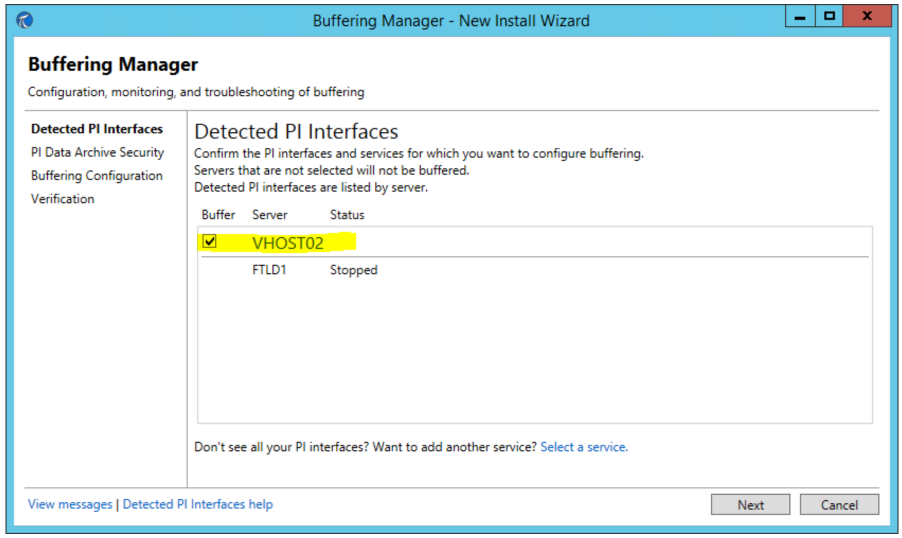
1. On the primary interface computer (VHOST04), select **Tools** > **Buffering**.
2. Select **Yes** and the **Buffering Manager** should appear:



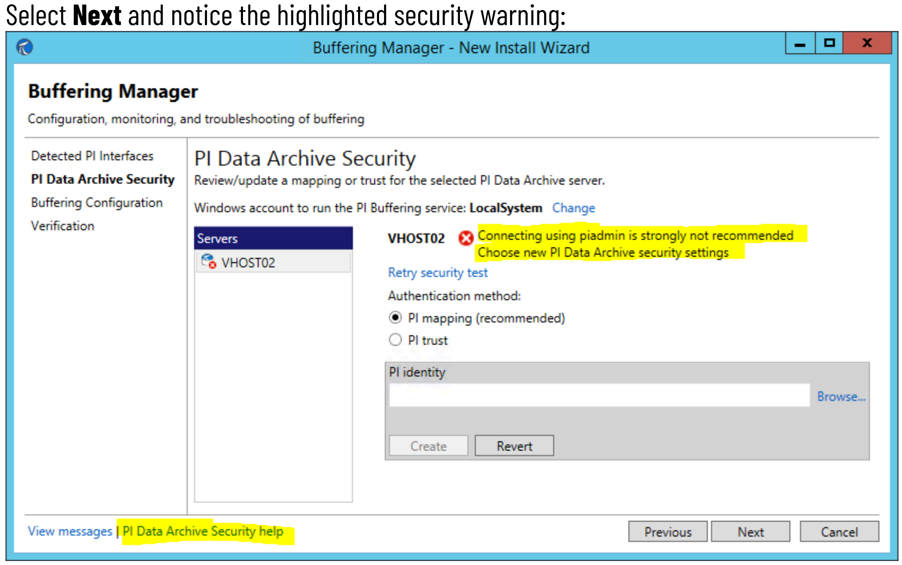


For more information, select the **documentation** link.

3. Select **Continue with configuration** and select **VHOST02**:

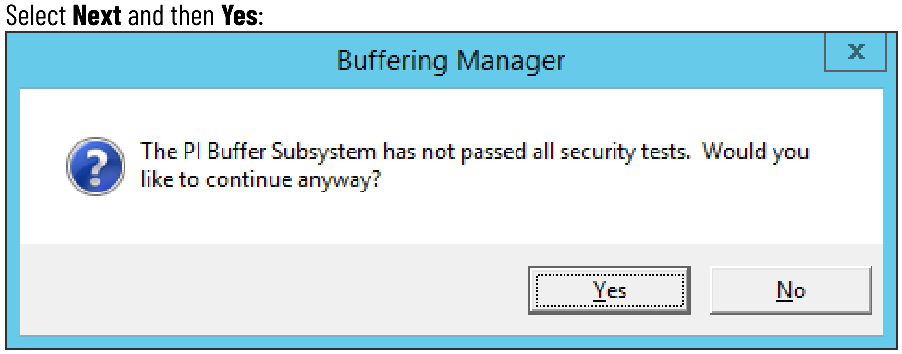


4. Select **Next** and notice the highlighted security warning:

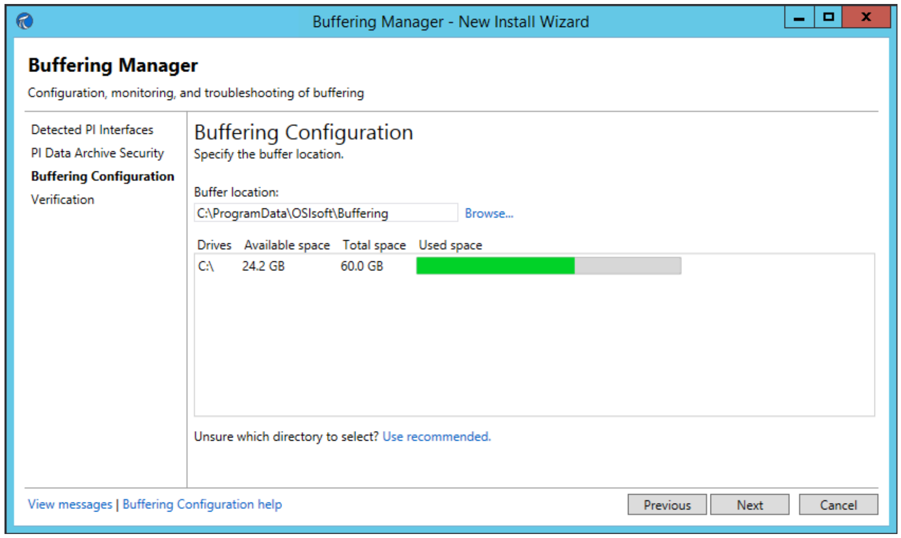


This warning is due to the IP Address trust for VHOST04 referenced earlier. For more information, select the highlighted link for **PI Data Archive Security help**.

5. Select **Next** and then **Yes**:

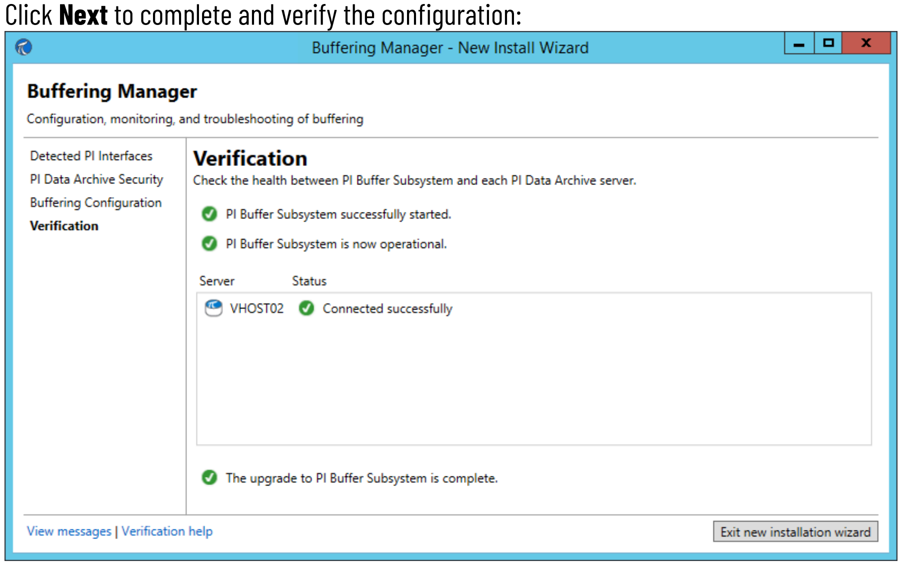


6. Select **Next** and the option to **Enable buffering with PI Buffer Subsystem**:

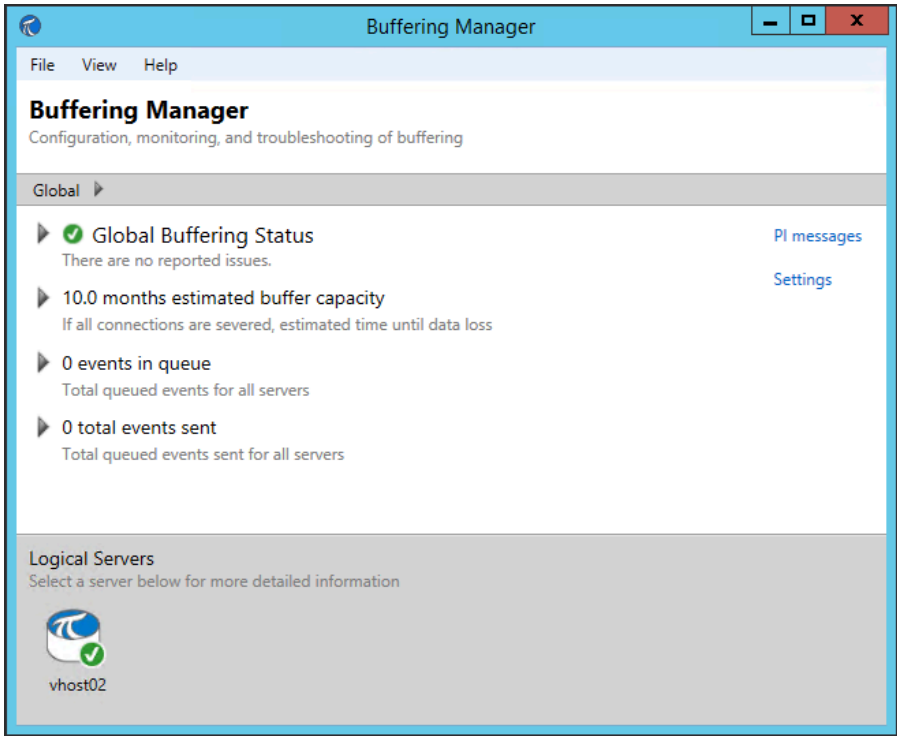


As a rule, the buffer location should be a local drive other than C to avoid consuming space on the operating system partition. For more information, click **Buffering Configuration help**.

7. Click **Next** to complete and verify the configuration:



8. Click **Exit new installation wizard** and review the **Buffering Manager** dialog:



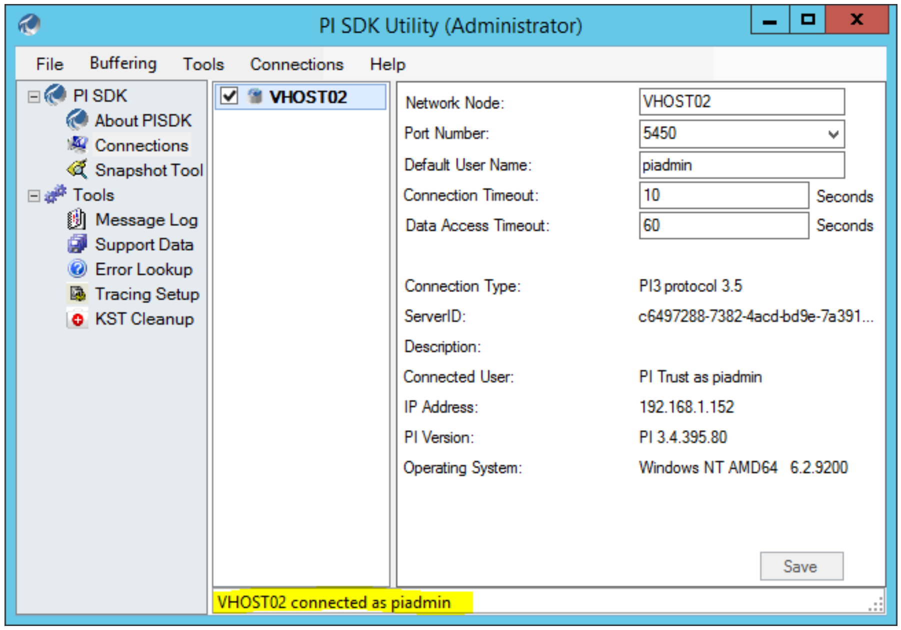
9. Close or minimize the **Buffering Manager** dialog. Leave the **PI Interface Configuration Utility** open.

Create the backup FactoryTalk Live Data Interface

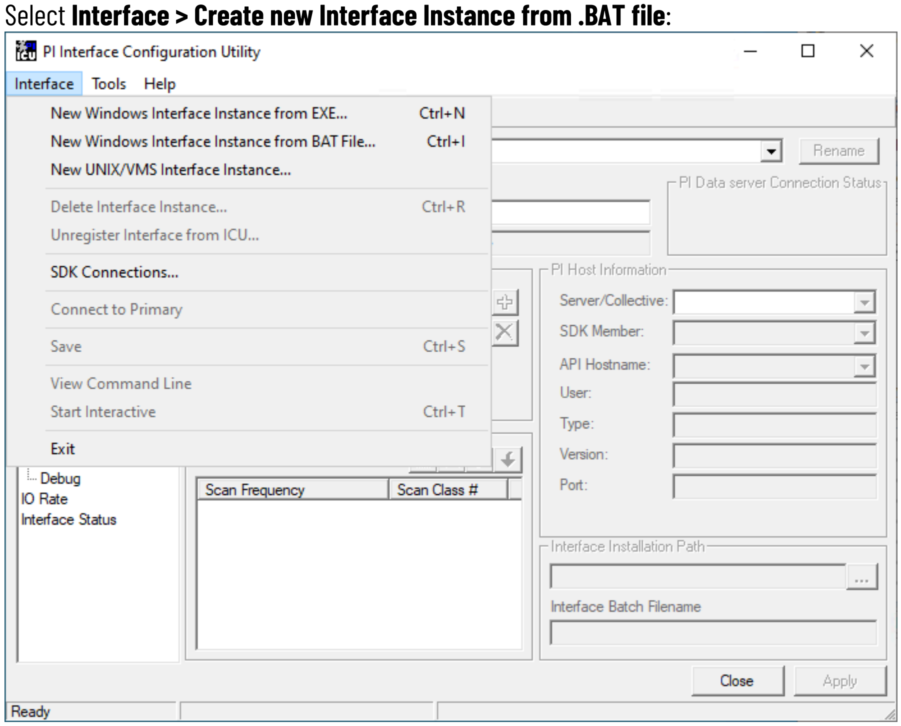
The purpose of this section is to create a backup Historian FactoryTalk Live Data Interface for data collection. If you have an existing backup Historian FactoryTalk Live Data Interface, you can skip this section.

Unlike the primary interface, the backup interface is created initially using the PI Interface Configuration Utility, not the FactoryTalk Administration Console.

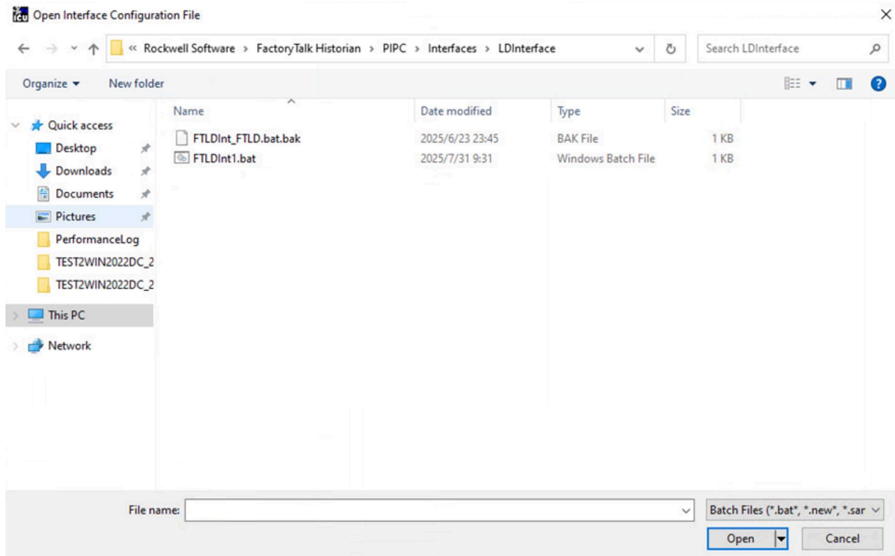
1. On the backup interface computer (VHOST05), launch the **PISDKUtility (64-bit).**
2. Create a connection to the Historian Server (VHOST02) by selecting **Connections > Add Server**. For more information, refer to the Help.
3. Delete the existing connection **VHOST05** and select the new connection **VHOST02**:



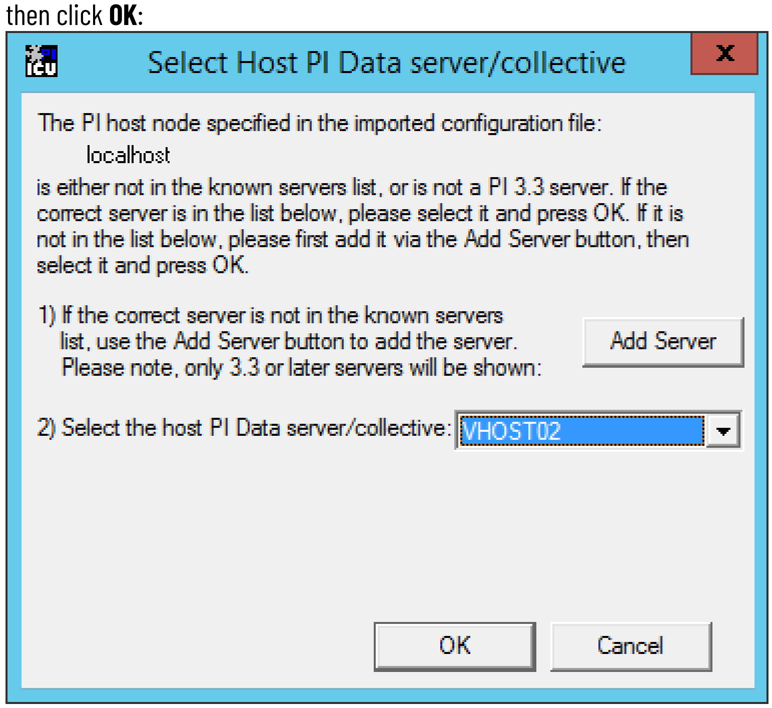
4. Close (or minimize) the SDK Utility.
5. Launch the **PI Interface Configuration Utility**.
6. Select **Interface > Create new Interface Instance from .BAT file**:



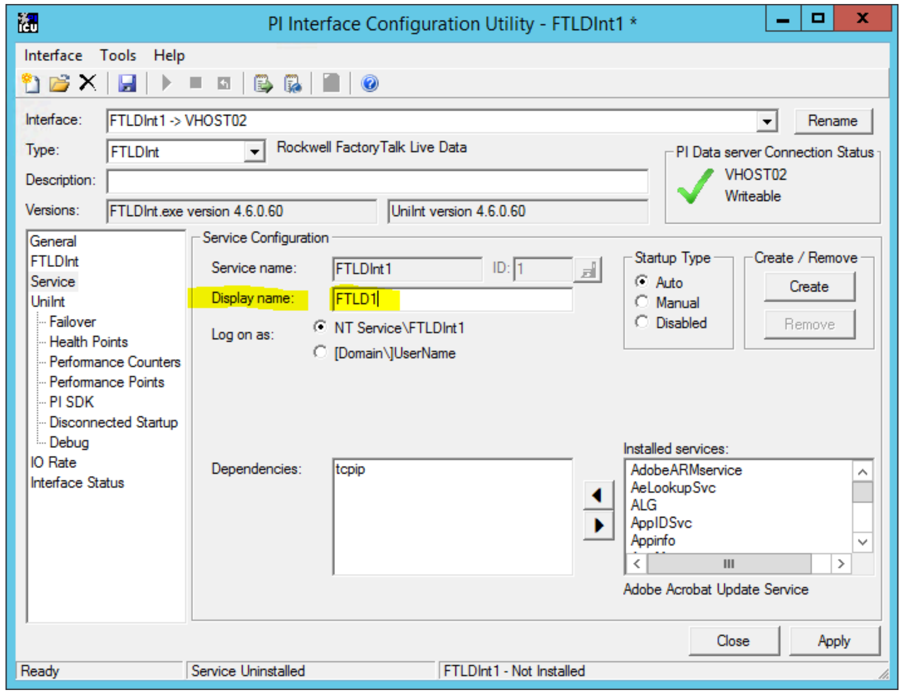
7. Open the **LDInterface** folder, select the **FTLDInt_FTLD.bat.bak** file, and then click **Open**:



8. When the **PI Interface Configuration Utility** creates the interface, it will prompt for a server to associate the interface with. Select the Historian SE computer **VHOST02**, and then click **OK**:

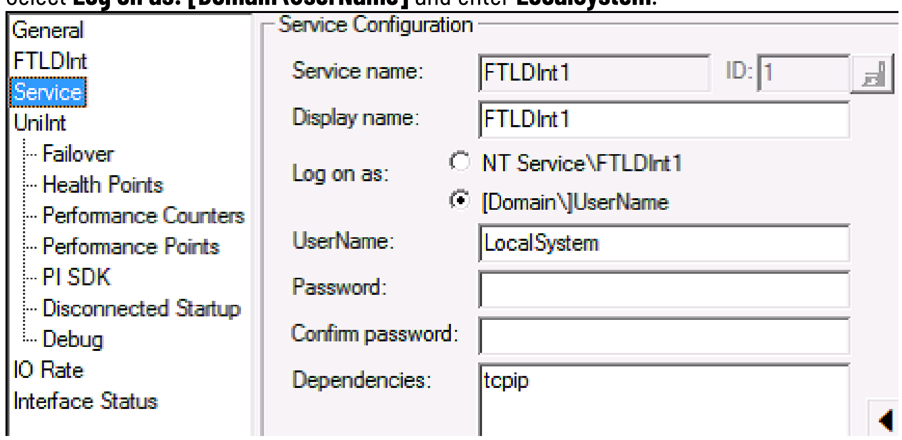


9. Select the **Service** category in the left-hand pane and then shorten the display name from **PI-FTLDInt1** to **FTLD1**:



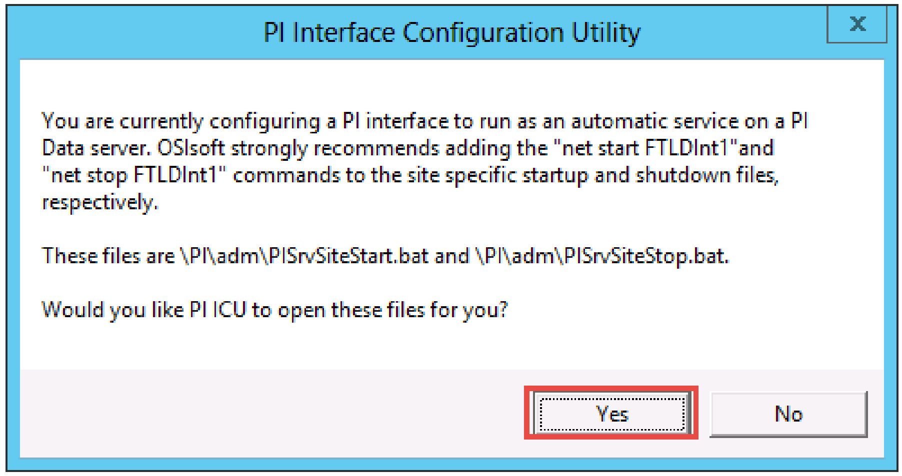
The existing Display name **PI-FTLDInt1** is acceptable, but ideally it should be changed to be consistent with the primary interface's Display name that is also **FTLD1**. Do not click **Create**.

10. Select **Log on as: [Domain\UserName]** and enter **LocalSystem**:



For more information on this requirement, see the Knowledgebase Document ID: IN25275 - FAQ: FactoryTalk Historian SE FactoryTalk Live Data Interface.

11. Click **Create**. The following **PI Interface Configuration Utility** dialog will appear:



12. Read the message and click **Yes** to open, edit, and save the batch files.

Configure buffering on the Backup FactoryTalk Live Data Interface

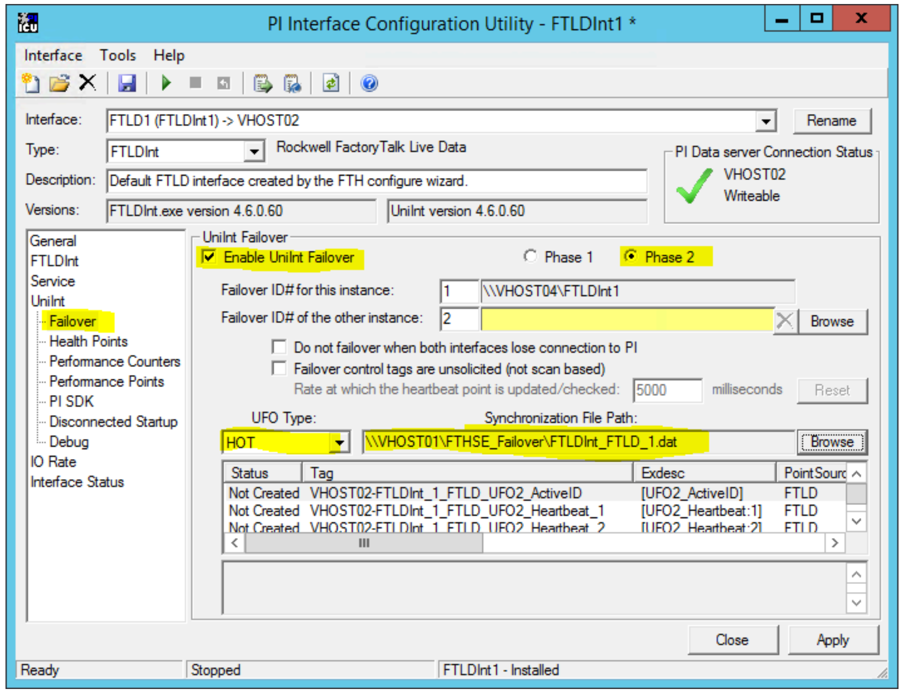
The purpose of this section is to configure buffering on the backup Historian FactoryTalk Live Data Interface. If you have an existing backup Historian FactoryTalk Live Data Interface with buffering enabled, you can skip this section.

1. While remaining on the backup interface (VHOST05), repeat the steps in the section entitled Configure buffering on the primary FactoryTalk Live Data Interface on page 15.
2. Leave the PI Interface Configuration Utility open on the backup interface (VHOST05).

Configure failover on the primary FactoryTalk Live Data Interface - Part 1

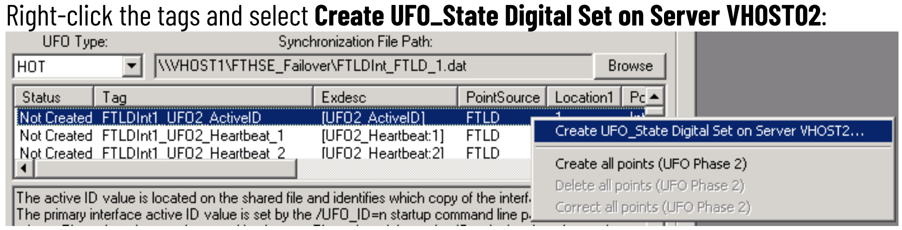
The purpose of this section is to begin the failover configuration on the primary Historian FactoryTalk Live Data Interface. If you have an existing primary Historian FactoryTalk Live Data Interface with failover enabled, you can skip this section.

1. Return to the primary interface computer (VHOST04) and the PI Interface Configuration Utility. If you closed the PI Interface Configuration Utility and need to relaunch it, be sure to select **FTLD1 (FTLDInt1) -> VHOST02** using the **Interface** dropdown list.
2. Select the **UniInt > Failover** subcategory in the left-hand pane. Configure the dialog as the following screenshot:

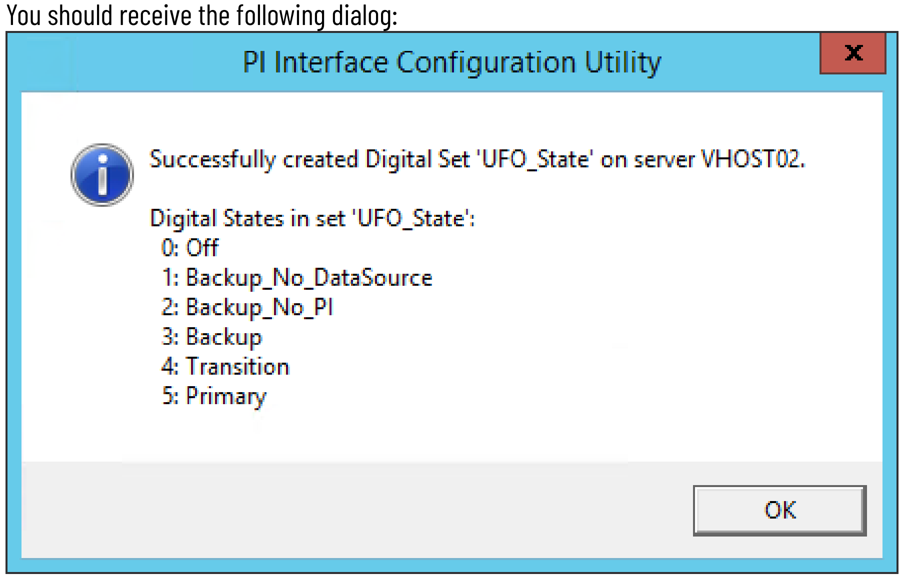


The **Failover ID# of the other instance** field is left intentionally blank at this time.

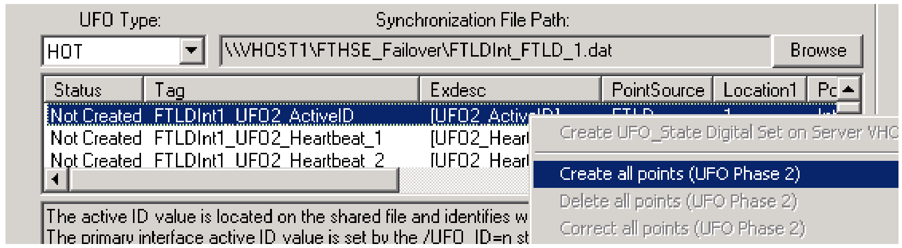
3. Right-click the tags and select **Create UFO_State Digital Set on Server VHOST02**:



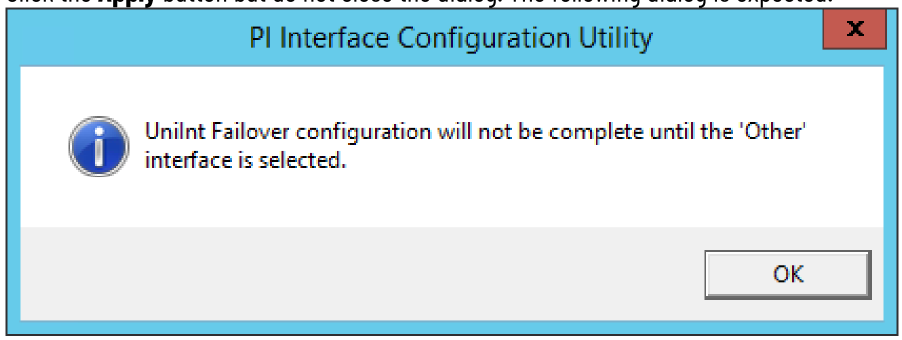
4. You should receive the following dialog:



5. Click **OK** and then **right-click** on the tag area again and select **Create all points (UFO Phase 2)**:



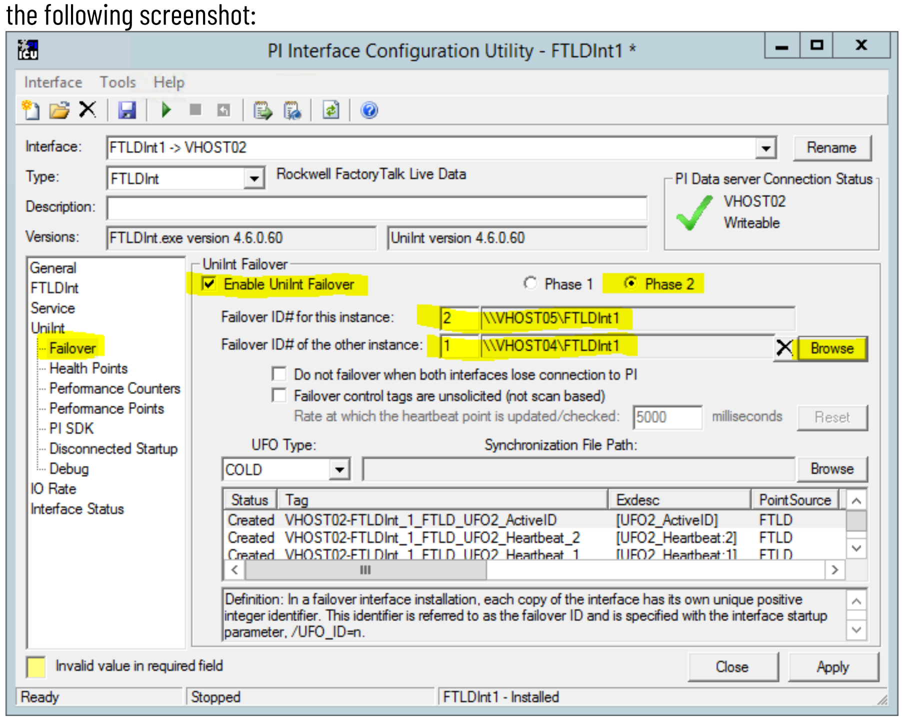
6. Click the **Apply** button but do not close the dialog. The following dialog is expected:



Configure failover on the backup FactoryTalk Live Data Interface

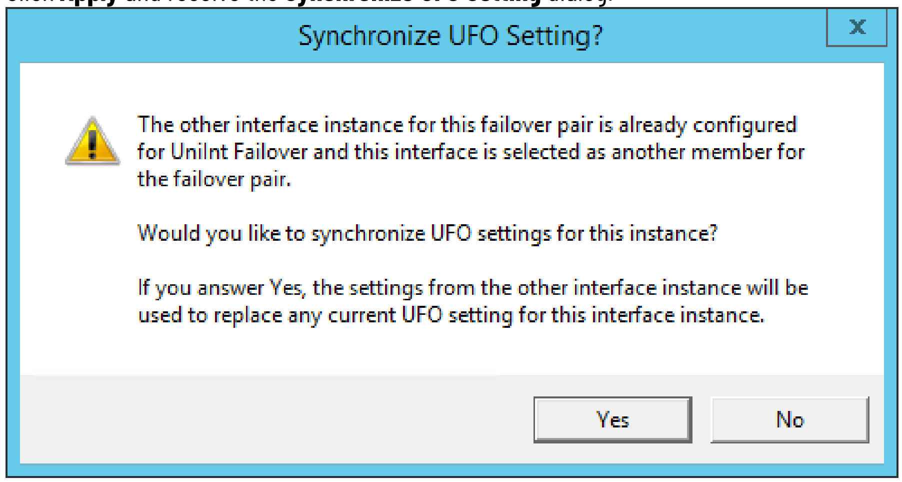
The purpose of this section is to configure failover on the backup Historian FactoryTalk Live Data Interface. If you have an existing backup Historian FactoryTalk Live Data Interface with failover enabled, you can skip this section.

1. Return to the backup interface computer (VHOST05) and the PI Interface Configuration Utility. If you closed the PI Interface Configuration Utility and need to relaunch it, be sure to select **FTLDInt1 -> VHOST02** using the **Interface** dropdown list.
2. Select the **UniInt > Failover** subcategory in the left-hand pane. Configure the dialog as the following screenshot:

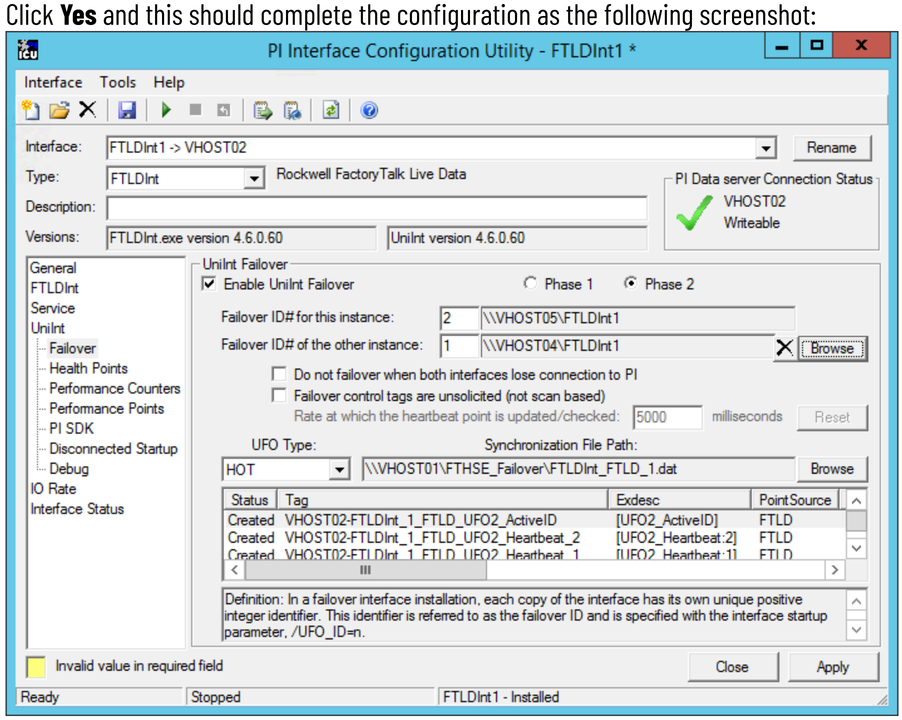


> The status tags have already been created. The status tags apply to both the primary and the backup interface.

3. Click **Apply** and receive the **Synchronize UFO Setting** dialog:



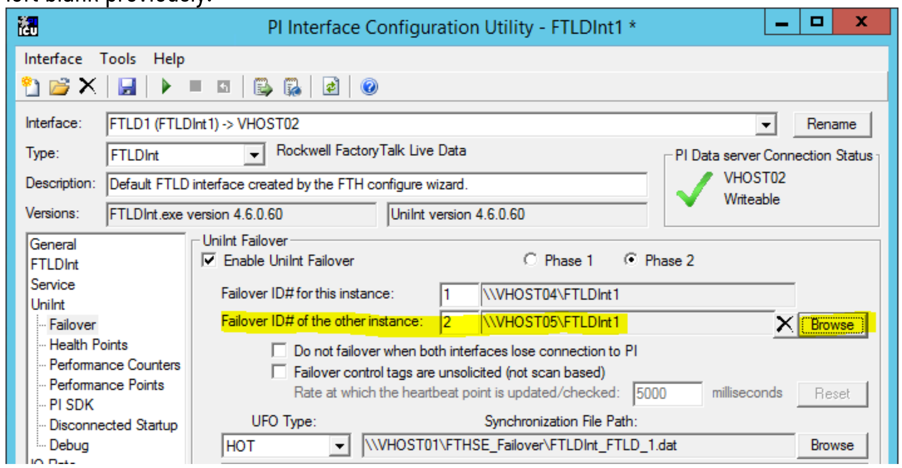
4. Click **Yes** and this should complete the configuration as the following screenshot:



Configure failover on the primary FactoryTalk Live Data Interface - Part 2

The purpose of this section is to complete the failover configuration on the primary Historian FactoryTalk Live Data Interface. If you have an existing primary Historian FactoryTalk Live Data Interface with failover enabled, you can skip this section.

1. Return to the primary interface computer (VHOST04) and the PI Interface Configuration Utility. Using the **Browse** button, configure **Failover ID# or the other instance** that was left blank previously:

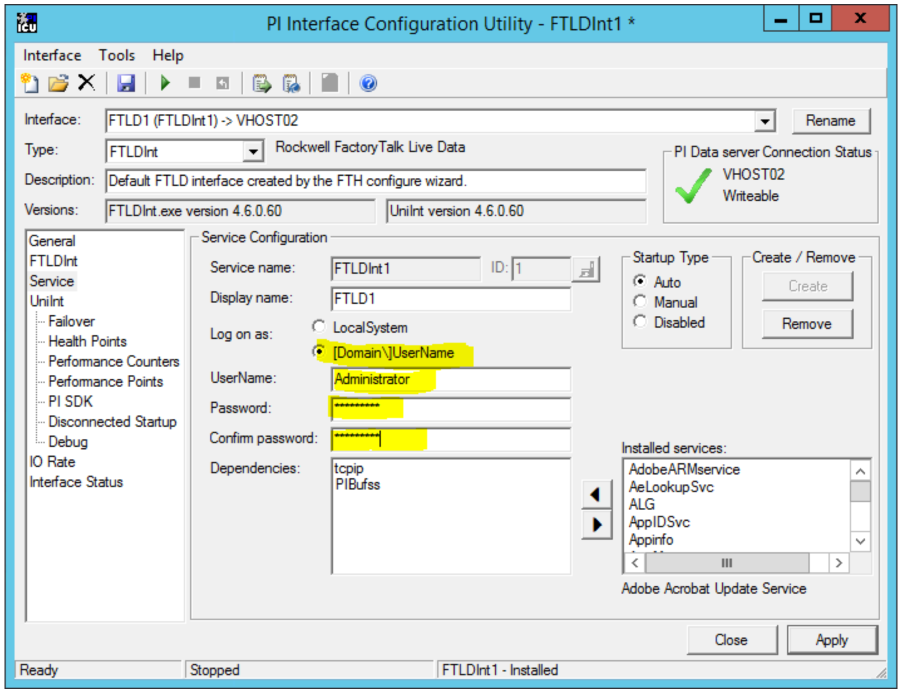


2. Click **Apply** to save the changes.

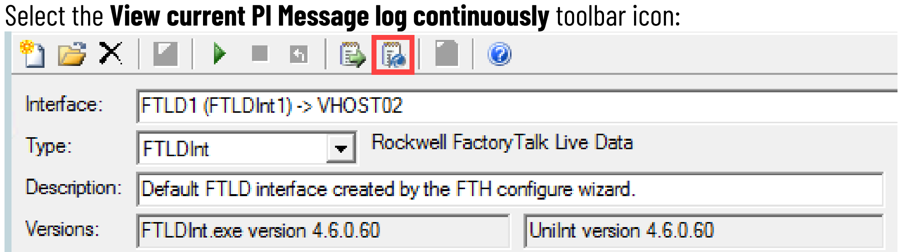
Configure primary FactoryTalk Live Data service properties

The purpose of this section is to configure the primary FTLD1 interface service to sign in with a user account as opposed to the LocalSystem account. This is required for the primary FactoryTalk Live Data Interface service to access the remote share that contains the failover control file.

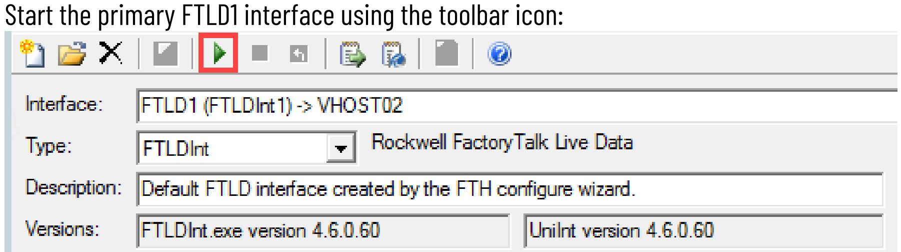
1. Return to the primary interface computer (VHOST04) and the PI Interface Configuration Utility. If you closed the PI Interface Configuration Utility and need to relaunch it, be sure to select **FTLD1 (FTLDInt1) -> VHOST02** using the **Interface** dropdown list.
2. Select the **Service** category in the left-hand pane and enter interactive user credentials that have read and write access to the FTHSE_Failover folder on the Network FactoryTalk Directory (VHOST01):



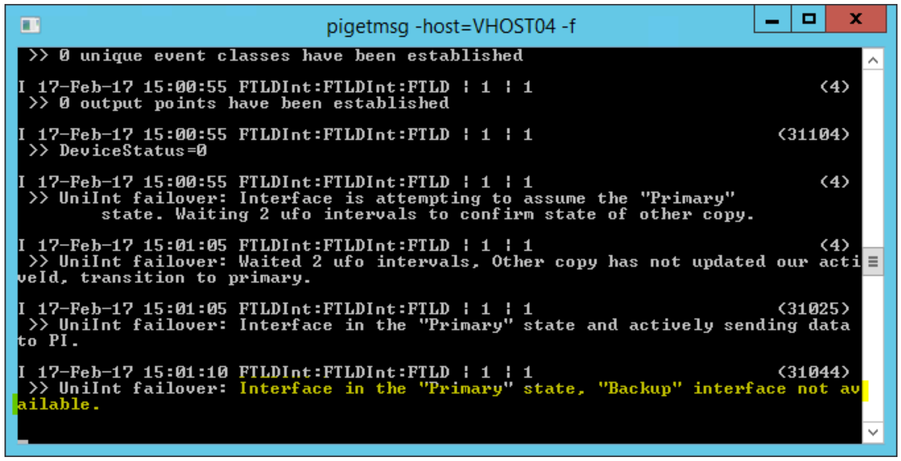
3. Click **Apply** to save the changes. You should receive a confirmation dialog.
4. Select the **View current PI Message log continuously** toolbar icon:



5. Start the primary FTLD1 interface using the toolbar icon:



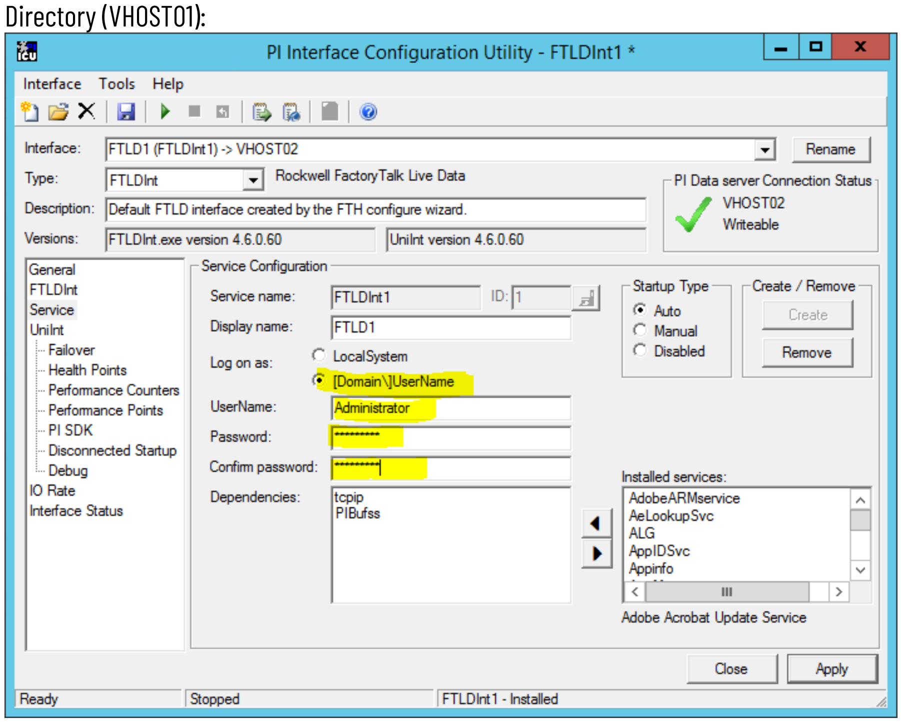
6. The command window should indicate that the UniInt Failover is successfully initialized and that the Primary interface is actively sending data to PI and the Backup interface is not available:



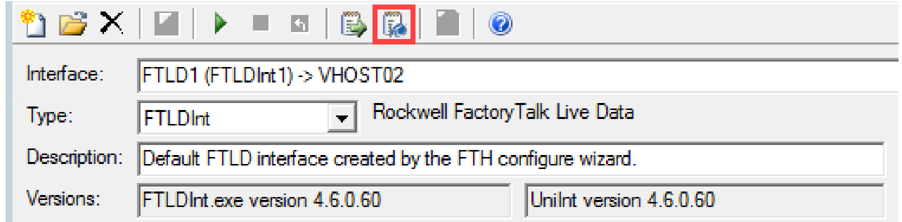
Configure backup FactoryTalk Live Data service properties

The purpose of this section is to configure the backup FTLD1 interface service to sign in with a user account as opposed to the LocalSystem account. This is required for the backup FactoryTalk Live Data Interface service to access the remote share that contains the failover control file.

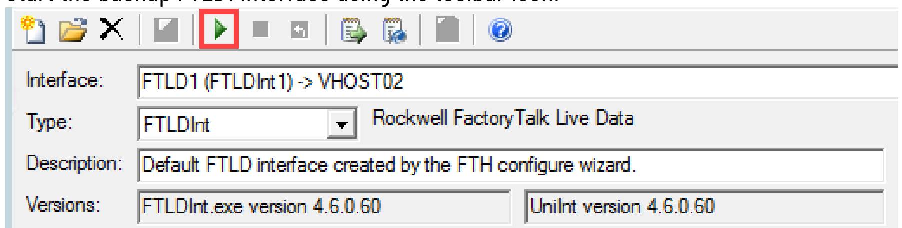
1. Return to the backup interface computer (VHOST05) and the PI Interface Configuration Utility. If you closed the PI Interface Configuration Utility and need to relaunch it, be sure to select **FTLD1 (FTLDInt1) -> VHOST02** using the **Interface** dropdown list.
2. Select the **Service** category in the left-hand pane and enter interactive user credentials that have read and write access to the FTHSE_Failover folder on the Network FactoryTalk Directory (VHOST01):



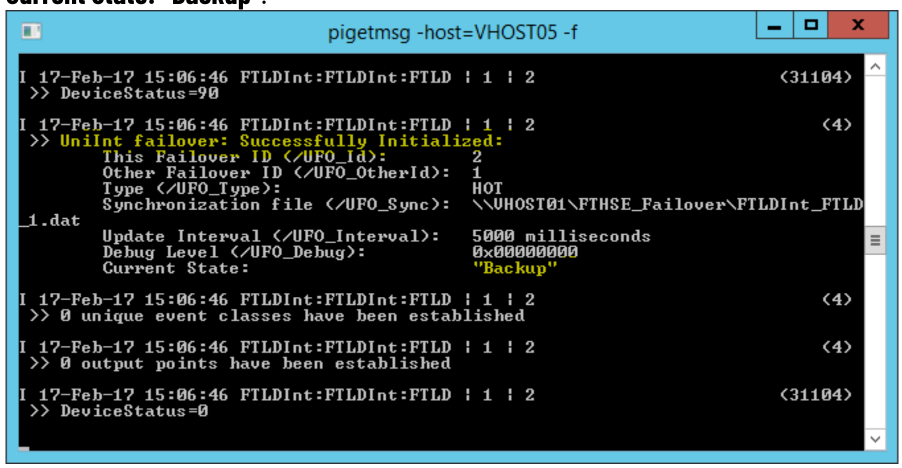
3. Click **Apply** to save the changes. You should receive a confirmation dialog.
4. Select the **View current PI Message log continuously** toolbar icon:



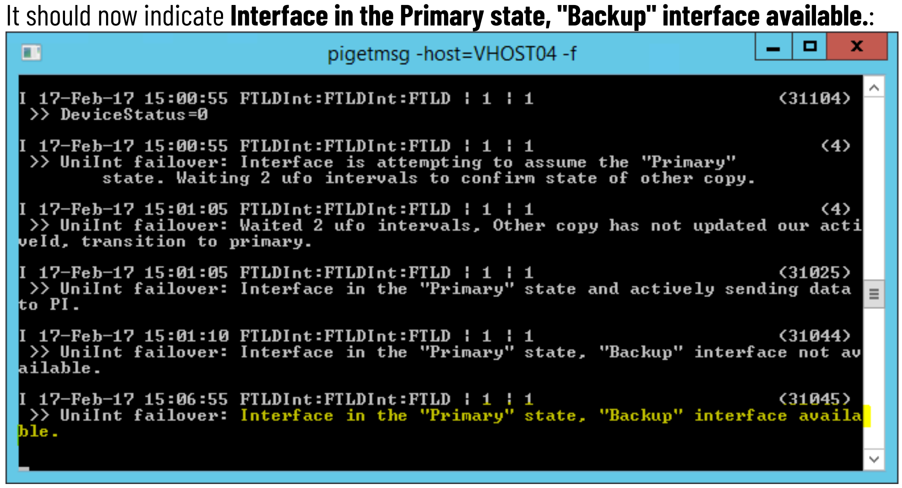
5. Start the backup FTLD1 interface using the toolbar icon:



6. The command window should show **UniInt failover: Successfully Initialized** and **Current State: "Backup"**:



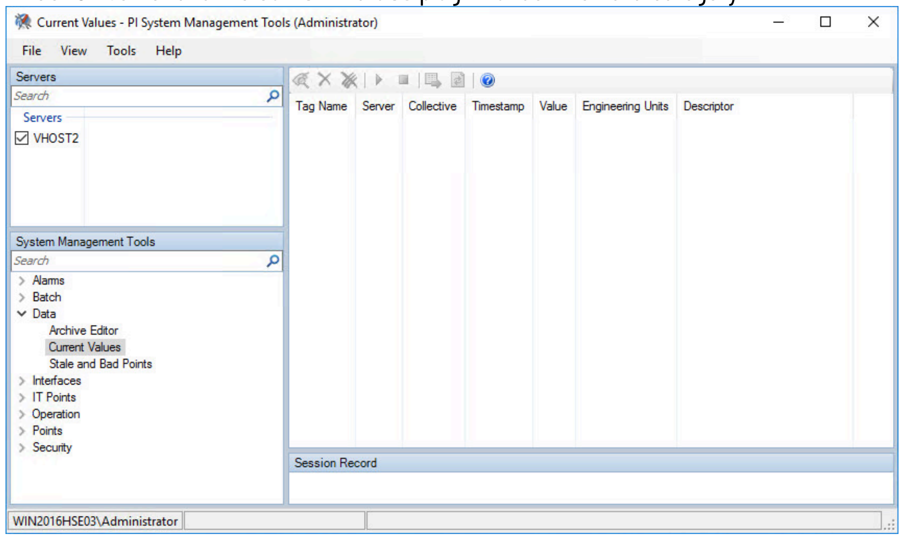
7. Return to the primary interface computer (VHOST04) and observe the command window. It should now indicate **Interface in the Primary state, "Backup" interface available.**:



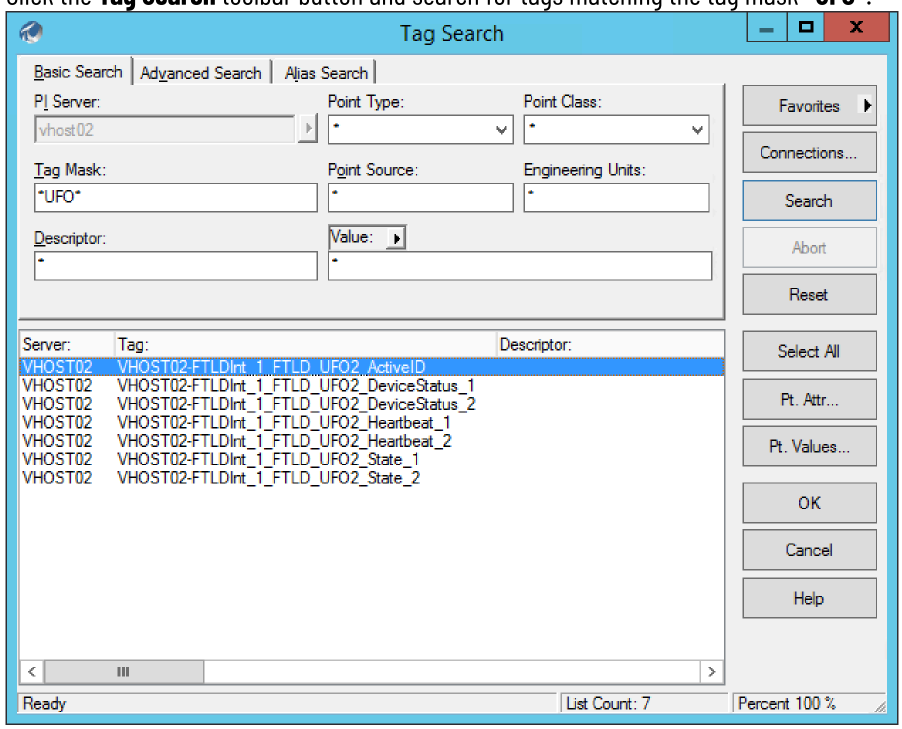
Test and validate

The purpose of this section is to test and validate the redundant interface configuration.

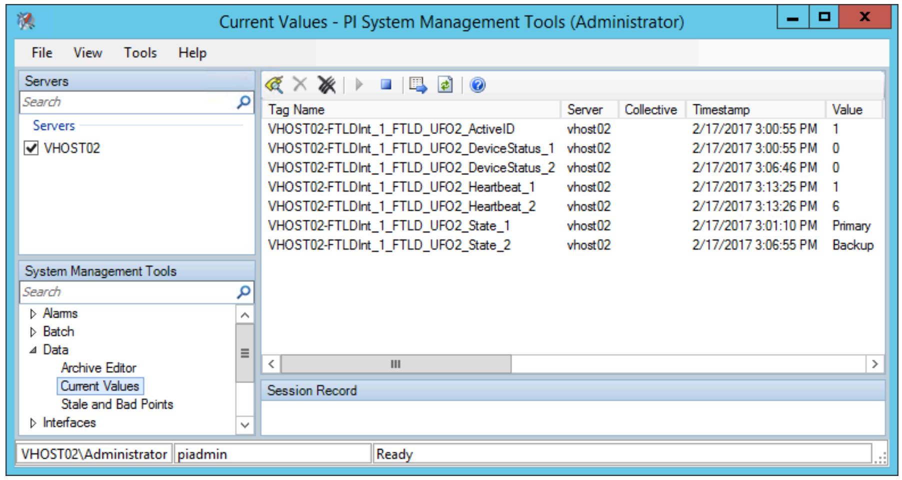
1. Use the server computer (VHOST02) to open the PI System Management Tools. Select the **VHOST02** server and the **Current Values** plug-in under the **Data** category:



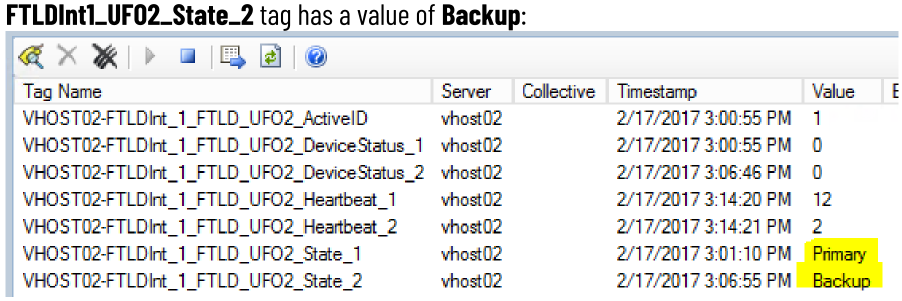
2. Click the **Tag Search** toolbar button and search for tags matching the tag mask ***UFO***:



3. Click **Select All** and **OK** to add the seven status tags to the **Current Values** view:

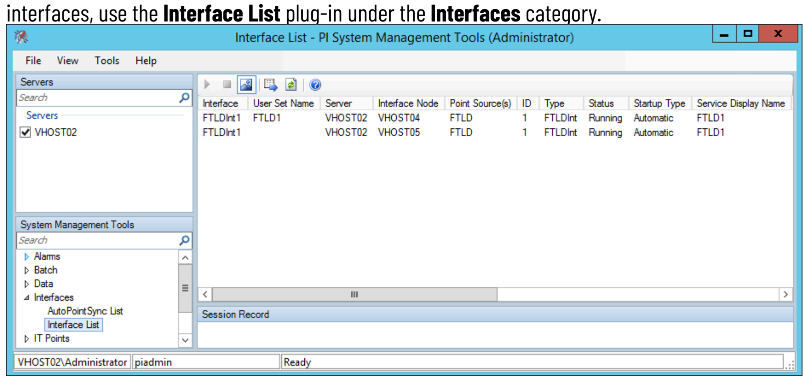


4. Click the toolbar **Start Updating** button to start monitoring the tag values. The **Timestamp** values should begin updating. Note that not all the status tags update at the same rate.
5. Verify that the failover control tags report numeric values as shown and that the **FTLDInt1_UFO2_State_1** tag has a value of **Primary** and that the **FTLDInt1_UFO2_State_2** tag has a value of **Backup**:



6. Create the desired Historian tags using either FactoryTalk Administration Console or the PI System Management Tools add-in for Microsoft® Excel®. Verify that data is collected for these points and that data collection continues after restarting the current primary interface several times.

> To monitor and control the status of both FactoryTalk Live Data interfaces, use the **Interface List** plug-in under the **Interfaces** category.



Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Technical Documentation Center	Quickly access and download technical specifications, installation instructions, and user manuals.	rok.auto/techdocs
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	rok.auto/pcdc

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Waste Electrical and Electronic Equipment (WEEE)

At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental information on its website at rok.auto/pec.

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