Ping Driver Help

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Ping Driver Help

Help version 1.013

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Overview

The Ping driver plugs into the industrial based communications OPC server in order to monitor any unmanaged devices. It also provides data to OPC Client applications, including HMI, SCADA, Historian, MES, ERP, and countless custom applications. It enables users to monitor the Status of a network device as well as the time that it takes for the ICMP message to reach its destination and return a response (the RoundTripTime).

Channel Setup

Device Discovery

This channel-level dialog is used to specify parameters for locating devices on the network. Once devices are found, they may be added to the channel. The maximum number of devices that can be discovered at once is 65535. For more information on device discovery, refer to the server help file.

Discovery Settings

This dialog is used to specify the discovery parameters.
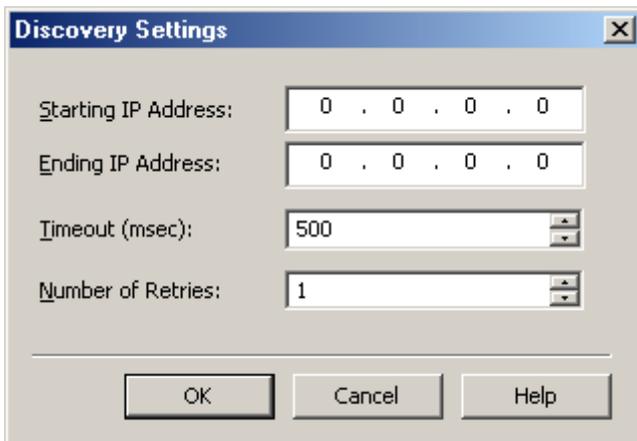
Descriptions of the parameters are as follows:

- **Starting IP Address:** This parameter specifies the starting IP address. The default setting is 0.0.0.0.
- **Ending IP Address:** This parameter specifies the ending IP address. The default setting is 0.0.0.0.
- **Timeout (msec):** This parameter specifies the time that the driver will wait for a connection to be made with a device, as well as the time that the driver will wait on a response from the device before giving up and going on to the next request. The default setting is 500 msec.
- **Number of Retries:** This parameter specifies the number of times the driver will retry a message before giving up and going on to the next message. The default setting is 1.

Device Setup

A device represents a single computer or device that can communicate via TCP/IP.

Connection Timeout

This parameter specifies the amount of time the driver will wait for a connection to be made with a device. Depending on the network load, the connect time may vary with each connection attempt. The default setting is 3 seconds with a valid range from 1 to 30 seconds.

Request Timeout

This parameter specifies the amount of time the driver will wait on a response from the device before giving up and going on to the next request. Longer timeouts only affect performance if a device is not responding. The default setting is 1000 milliseconds with a valid range from 100 to 30000 milliseconds.

Retry Attempts

This parameter specifies the number of times the driver will attempt to get a response from the device before giving up and moving on to the next device. The default setting is 3 retries with a valid range from 1 to 10.

Device IDs

The Ping Driver supports any IPv4 IP address as its Device ID. Domain names can also be used as a Device ID, since these will be converted to an IP Address by the Ping Driver automatically. When using a domain name, do not include the http:// prefix.

Ping Interval

The Ping Interval depends on the type of client application that is connected to the server. Descriptions are as follows:

- **OPC Clients:** OPC Clients' set update rate is used as the interval rate for pinging the device.
- **Non-OPC Clients:** Clients with native interfaces to the server or DDE clients like Excel cannot set an update rate. For these client applications, the tag scan rate or scan override in an alias are used as the ping interval. The default scan rate for a tag is 100 milliseconds.

Note: The device will only be pinged when a client application connected to the server requests updates from the "Status" or "comStatus" tags.

Automatic Tag Database Generation

The Ping driver automatically generates tags for Status and RoundTripTime when a new device is created. Tags will not be automatically generated for devices that already have tags in them.

Data Types Description

Each address that can be accessed must be assigned a data type. The Ping Driver supports two data types: DWord and Long.

Data Type	Description
DWord	Unsigned 32 bit value bit 0 is the low bit bit 31 is the high bit
Long	Signed 32 bit value bit 0 is the low bit bit 30 is the high but bit 31 is the sign bit

Address Descriptions

The Ping Driver supports two types of addresses: **Status** and **RoundTripTime**. Both addresses are Read Only and supply different information about the device. The Status address indicates 1 if the device can be reached or 0 if the Ping driver could not reach the device. The RoundTripTime indicates the amount of time in milliseconds that it took the request to reach its destination and to reply back to the Ping Driver.

Address	Data Type	Access
Status	DWord	Read Only
comStatus	DWord	Read Only
RoundTripTime	Long	Read Only
comTime	Long	Read Only

Note: The 'comStatus' and 'comTime' addresses behave exactly as the Status and RoundTripTime addresses with the exception that they will not be auto generated.

Error Descriptions

The following error/warning messages may be generated. The messages are listed here in alphabetical order.

Device '<address>' is not responding
Device Discovery has exceeded <max devices> maximum allowed devices
The Device ID for '<address>' could not be resolved
Required functionality of icmp.dll is not found
Unable to bind to adapter: '<adapter>'. Connect failed
Unable to generate a tag database for device '<device name>'. Reason: Could not generate tags due to low system resources
Unable to load required file '<file>'. This driver will not be operational
Winsock initialization failed (OS Error = <error>)
Winsock shut down failed (OS Error = <error>)
Winsock V1.1 or higher must be installed to use the Ping Driver

Device '<address>' is not responding

Error Type:
Warning

Possible Cause:
Device may not be connected or the device cannot be reached.

Solution:
1. Ensure that the Ethernet cable is connected properly.
2. Ensure that the Device ID is correct.

Device Discovery has exceeded <max devices> maximum allowed devices

Error Type:
Warning

Possible Cause:
The Device Discovery has exceeded the maximum number of allowed devices.

Solution:
Limit the discovery range and then try again.

The Device ID for '<address>' could not be resolved

Error Type:
Warning

Possible Cause:
The host name entered does not exist or is not currently in use.

Solution:
Check that the host name is spelled correctly and that all network cables are properly connected. If using web based addresses, make sure that the http:// prefix is not included.

Required functionality of icmp.dll is not found

Error Type:
Fatal

Possible Cause:
icmp.dll is corrupted or out of sync with the operating system.

Solution:
Check that the proper version of icmp.dll is in the system folder of the particular operating system.

Unable to bind to adapter: '<adapter>'. Connect failed

Error Type:

Fatal

Possible Cause:

The reason for this error message is that some other device in the driver has already been bound to this adapter/port combination.

Solution:

Wait a few seconds and restart the driver.

Unable to generate a tag database for device '<device name>'. Reason: Could not generate tags due to low system resources

Error Type:

Warning

Possible Cause:

Memory required for database generation could not be allocated. The process is aborted.

Solution:

Close any unused applications and/or increase the amount of virtual memory. Then, try again.

Unable to load required file '<file>'. This driver will not be operational

Error Type:

Fatal

Possible Cause:

The required file is not found.

Solution:

Ensure that the file is in the proper location specified in '<file>'.

Winsock initialization failed (OS Error = <error>)

Error Type:

Fatal

OS Error	Indication	Possible Solution
10091	Indicates that the underlying network subsystem is not ready for network communication.	Wait a few seconds and restart the driver.
10067	Limit on the number of tasks supported by the Windows Sockets implementation has been reached.	Close one or more applications that may be using Winsock and restart the driver.

Winsock shut down failed (OS Error = <error>)

Error Type:

Fatal

OS Error	Indication	Possible Solution
10091	This indicates that there is a problem in the underlying network subsystem that is preventing the Winsock Library from shutting down correctly.	Check to make sure that the version of Winsock installed is 1.1 or higher.

Winsock V1.1 or higher must be installed to use the Ping Driver

Error Type:

Fatal

Possible Cause:

The version number of the Winsock DLL found on the system is less than 1.1.

Solution:

Upgrade Winsock to version 1.1 or higher.

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