

OPC Quick Client

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OPC Quick Client

Help version 1.038

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License Agreement

It is recommended that users review the license agreement.


Overview

The OPC Quick Client assists in the testing and development of OPC UA servers. It supports both local and remote OPC server connections.

Client Preparation

For information on how to prepare the client, follow the instructions below.

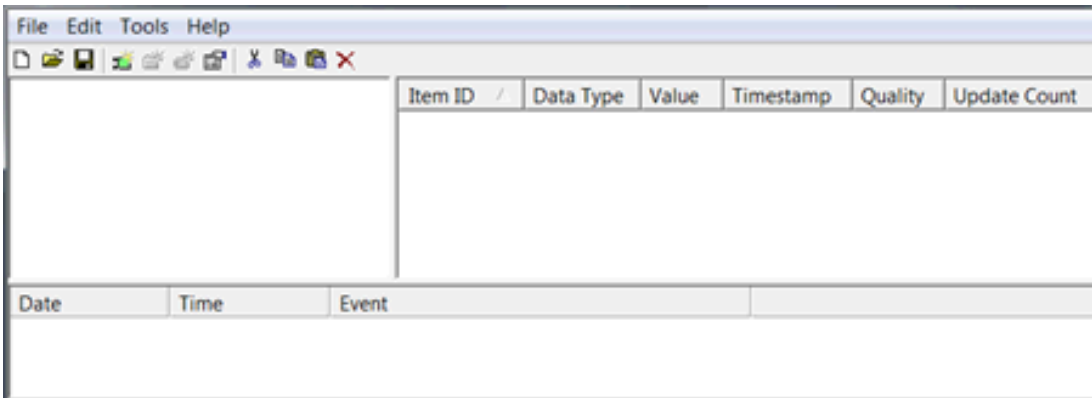
1. To start, create a server connection (which will be used to connect to an OPC UA server).
2. Next, add a group to the connection that contains varying properties (such as keep-alive count, lifetime count, and publishing interval).
3. Add items to the individual groups. The groups contain properties such as a Node ID and initial active state.

 **Note:** Active items automatically receive data change notifications. The current value, quality, and time are displayed in the Item View.

 **See Also:** [Server](#), [Group](#), and [Items](#).

Main Window

The following image is a view of the application.














Title Bar

The Title Bar displays the name of the loaded project file. An asterisk (*) following the name indicates that it has been modified.

Toolbar

Descriptions of the icons are as follows:

-  Creates a new project.
-  Opens an existing project from disk.
-  Saves the current project to disk.
-  Creates a new server connection.
-  Creates a new group.
-  Creates a new item.
-  Edits the properties of the selected server, group, or item.
-  Cuts the current selection to the clipboard.
-  Copies the current selection to the clipboard.
-  Pastes the server, group, or items from the clipboard.
-  Deletes the current selection.

Group Window

The Group window manages a list of server connections along with their group objects. To display a menu of options applicable to the server/group, right-click on it. To display the property sheet for the server/group, double-click on it. For more information, refer to [Server](#) and [Group](#).

Item Window

The Item window displays a list of item information for the selected group. To display a menu of options applicable to the item, right-click on it. To display the properties dialog for the item, double-click on it. For more information, refer to [Items](#).

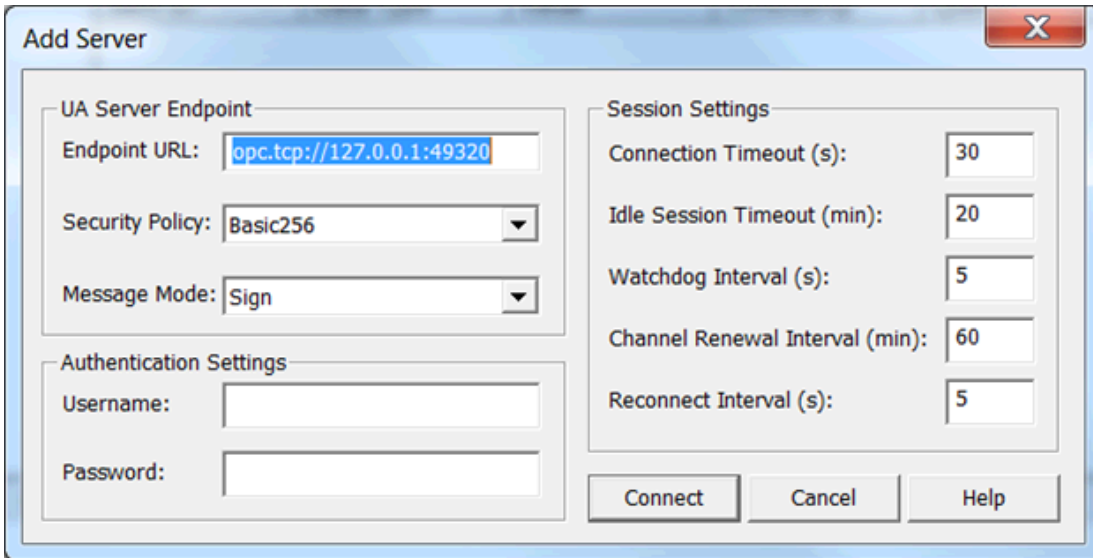
Note: Clicking on the Item ID column heading will cause the item list to be sorted based on the Node ID. To change column widths, click and drag the header for the desired column to the left or right end of the header button until the column is the desired size.

Message Log

The Message Log window logs status messages generated by the application. As with the Item window, the column headers may be resized. This window does not support sorting.

Server Connection

A server connection provides a link between an OPC UA server and this client. Groups are added through this connection. To create a new server connection, click **Edit | New Server Connection**. Alternatively, click the **New Server** toolbar button.



Endpoint URL: Specify the endpoint URL of the OPC UA server to which the client will connect.

Security Policy: Specify the security policy to be used when connecting and communicating with the OPC UA server.

Message Mode: Specify the message mode to be used when connecting and communicating with the OPC UA server.

Username: Specify the username to be used when connecting to the OPC UA server. If both this and the password parameter are left blank, anonymous authentication is used.

Password: Specify the password to be used when connecting to the OPC UA server. If both this and the username parameter are left blank, anonymous authentication is used.

Connection Timeout: Specify the time in seconds to try to connect to a server before timing out. The default is 30 seconds.

Idle Session Timeout: Specify the time in minutes to wait before disconnecting from a server once the connection has been lost. The default is 20 minutes.

Watchdog Interval: Specify the time in seconds to wait between reading the server status.

Channel Renewal Interval: Specify the rate at which the channel reads the remote Server Status node for updates on the server, as well as the timeout period for those reads. The results of this read is used to begin attempting to reconnect if the read fails or times out and handle the case where the server is shutting down.

Reconnect Interval: Specify the rate at which the channel attempts to reconnect if it either fails to connect or becomes disconnected. The valid range is 5 to 600. The default is 5 seconds. The interval between connection attempts is at least the rate specified by Reconnect Interval, but may be longer if the Connection Timeout interval is longer than the Reconnect Interval.




Server Properties

Once the client makes a successful connection to a server, the Server Properties dialog may be invoked by clicking **Edit | Properties**.

● **Note:** The Server Properties dialog is identical to the New Server Connection dialog. If the OPC UA Quick Client is presently connected to the server, the parameters are read-only.

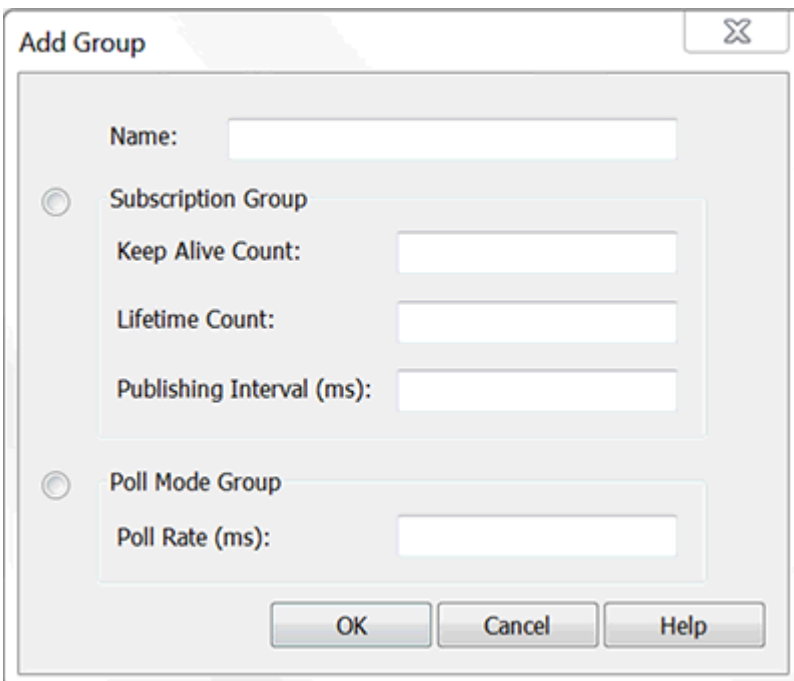
Visual / Operational Changes

When the OPC Quick Client adds, connects, or disconnects a server connection, there will be a change in its appearance. The image that appears to the left of each server connection will change to one of the following:

-  The client is connected to the server.
-  The client is disconnected from the server.
-  The client could not connect to the server (the server may not be properly registered).

Group

A group is used to organize a collection of items with a common set of properties. There are two types of groups: subscription and poll mode groups. Subscription groups specify several properties, such as Keep Alive Count, Lifetime Count, and Publishing Interval. Poll mode groups have only one property, Poll Rate. Both types of groups require a name. To create a new group, select a server in the Server View and click **Edit | New Group**. Alternatively, click **New Group** in the toolbar.



Name: Specify a name to identify the group. If it is left empty, the OPC Quick Client generates a unique name.

Keep Alive Count: When there is no data change, a subscription-mode group will not send updates. Specify the maximum number of ticks a subscription can skip due to data going unchanged before it sends an update anyway.




Lifetime Count: Specify the number of publishing intervals that the server should wait after a publishing request before assuming the client has disconnected and deleting the subscription.

Publishing Interval: Specify the requested interval in milliseconds for item updates.

Poll Rate: Specify the rate at which to poll the server for item updates.

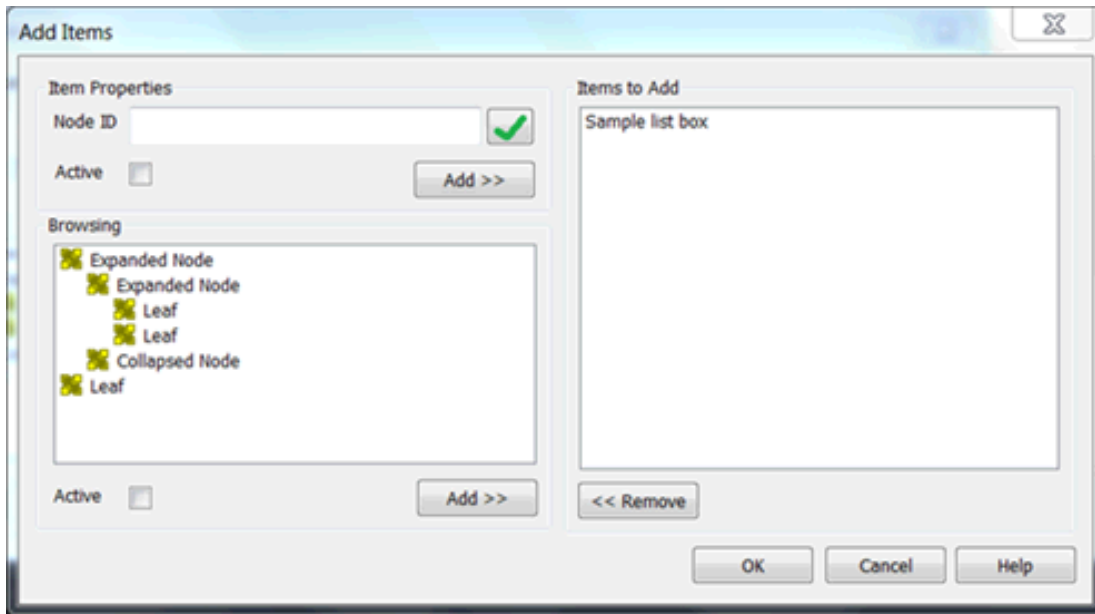
Visual / Operational Changes

When the OPC Quick Client adds, activates, or deactivates a group, the appearance of the folder icon will change to one of the following:

-  The group is active.
-  The group is inactive.
-  The client could not add the specified group to the server connection.

Items


Items represent data that may be accessed via an OPC UA server. An item specifies the following properties: Node ID and active state. To define an item using the Item Editor dialog, click **Edit** | **New Item**. Alternatively, click **New Item** on the toolbar.



Node ID: Specify the OPC UA server item to be used to reference data. To determine valid item names for the location in question, refer to the OPC UA server's help documentation. If the server supports tag browsing, an item can be selected by using the browse controls.

Active: Specify the item's initial active state. It may be changed later. The default setting is enabled.

Button Definitions




The  button validates the current item definition.

Browsing

If the server supports browsing, the browsing views are available for use in searching for selected items. Filters can be applied as needed in order to simplify the search.

Visual / Operational Changes

When the OPC Quick Client adds, activates, or deactivates an item, the appearance of the tag icon will change to one of the following:

-  The item is active.
-  The item is inactive.
-  The client could not add the specified item to the group.

Data Types Description

The OPC Quick Client supports the data types listed in the table below. Their default description is determined by the OPC server.

Native	Description
Boolean	Single bit
Boolean Array	Single bit array
Char	Signed 8-bit value
Char Array	Signed 8-bit value array
Byte	Unsigned 8-bit value
Byte Array	Unsigned 8-bit value array
Short	Signed 16-bit value
Short Array	Signed 16-bit value array
Word	Unsigned 16-bit value.
Word Array	Unsigned 16-bit value array
Long	Signed 32-bit value
Long Array	Signed 32-bit value array
DWord	Unsigned 32-bit value
DWord Array	Unsigned 32-bit value array
LLong	Signed 64-bit value
LLong Array	Signed 64-bit value array
QWord	Unsigned 64-bit value
QWord Array	Unsigned 64-bit value array
Float	Single precision floating-point value (32 bits)*
Float Array	Single precision floating-point value (32 bits) array*
Double	Double precision floating-point value (64 bits)*
Double Array	Double precision floating-point value (64 bits) array*
String	Zero-terminated character array
String Array	Zero-terminated string array
Date	YYYY-MM-DDThh:mm:ss.000

*When a floating-point value is Infinite, Indeterminate, or NaN, the following is displayed in the Value column of its Item Properties:

- 1.#INF
- -1.#INF
- -1.#IND
- 1.#QNAN
- -1.#QNAN

• See Also: [Options](#) and [Items](#).

Operations

The OPC Quick Client performs operations on an OPC server at the Server, Group, and Item level. This allows users to test the functionality of an OPC UA server.

Server Operations

Connect

To establish a connection to the server, click **Tools | Server** and then select **Connect**. All groups and items will be added.

Disconnect

To disconnect from the server, click **Tools | Server** and then select **Disconnect**.

Reconnect

To re-establish a connection to the server, click **Tools | Server** and then select **Reconnect**.

Project Operations

Load / Save

The OPC Quick Client supports the ability to load and save projects. Projects are structured using JSON (JavaScript Object Notation), a human-readable data format. This allows users to open project files in a text editor and inspect all their components at a glance, as well as make edits to the project outside of the OPC Quick Client.

Copy / Paste

Users also have the ability to copy and paste servers, groups, and items in the OPC Quick Client. Following the format of the entire project, each of these objects are serialized to the clipboard using JSON. A server, group, or item may be copied from the application and pasted into a text editor for inspection or modification. Once modified, the JSON text may be copied from the text editor and pasted back into the OPC Quick Client. The application validates the objects being pasted.

Servers, groups, items can be copied by right-clicking the object and clicking **Copy**, clicking **Edit | Copy** or by clicking Ctrl+C. To paste a server, right-click on an empty section of the **Server View** and click **Paste**. To paste a group, right-click the server and click **Paste**. To paste an item, select the group and right-click in the **Item View** and click **Paste**. Additionally, all objects can be pasted by clicking **Edit | Paste** or by clicking Ctrl-V.

```
{
  "ua_server_url": "opc.tcp://127.0.0.1:49320",
  "ua_server_security_policy": "None",
  "ua_server_message_mode": "None",
  "ua_server_username": "",
  "ua_server_password": "",
  "ua_server_connection_timeout_s": 30,
  "ua_server_idle_session_timeout_min": 20,
  "ua_server_watchdog_interval_s": 5,
  "ua_server_channel_renewal_interval_min": 60,
  "ua_server_reconnect_interval_s": 5,
  "ua_server_connected": true,
  "ua_server_groups": []
}
```

Group Operations

Set Group Active

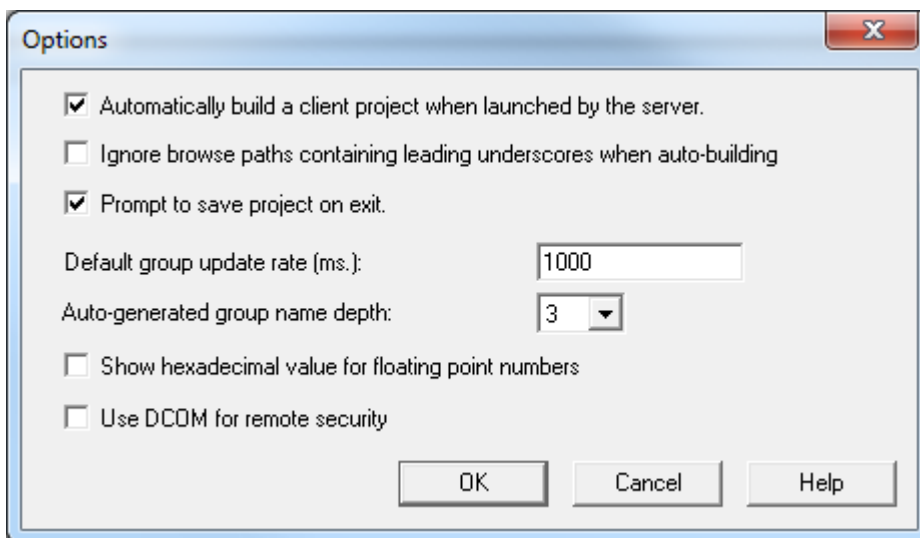
To set a group to active, right-click an inactive group and select **Set Group Active....** Alternatively, select an inactive group and select **Tools | Group** and select **Set Group Active**. When a group is set to active, it is connected to its parent server. If the parent server is disconnected, the connection occurs when the parent server becomes connected.

Set Group Inactive

To set a group to inactive, right-click an active group and select **Set Group Inactive....** Alternatively, select an active group and click **Tools | Group** and select **Set Group Inactive**. When a group is set to inactive, it is disconnected from its parent server. If the parent server is disconnected, the connection occurs when the parent server becomes connected.

Options

The OPC Quick Client is used to configure many settings. To open the Options dialog, click **Tools | Options**.



Descriptions of the parameters are as follows:

- **Automatically Build a Client Project When Launched by the Server:** When checked, the OPC Quick Client will automatically build a client project with all the tags in the OPC server when it is launched from the OPC server. The default setting is checked.
- **Ignore Browse Paths Containing Leading Underscores When Auto-Building:** When checked, items that belong to browse path segments beginning with an underscore will not be included in automatically built projects. These paths may include system or internal device tags. The default setting is unchecked (all available items will be included in the project).
- **Prompt to Save Project on Exit:** When checked, users will be prompted to save the project before exiting the application. The default setting is checked.
- **Default Group Update Rate (ms):** This parameter specifies the default update rate for automatically generated groups. The update rate determines how often the OPC server will provide

updates for changing data. The default setting is 1000 milliseconds. For more information, refer to [Group](#).

- **Auto-Generated Group Name Depth:** This field specifies the depth level for names of automatically generated groups. The default setting is 3. For more information, refer to "Group Name Depth" below.
- **Show hexadecimal value for floating point numbers:** When enabled, this option will affect how floating point numbers are displayed and written.
 - In terms of display, this option causes Float or Double data types to display the floating point number in addition to the hexadecimal value. For example, "12.34 (0X414570A4)".
 - In terms of writing, this option allows hexadecimal values to be written for Float and Double data types. The hexadecimal value should be in the form "0x12345678" for Floats (8 digits) and "0x123456789ABCDEF1" for Doubles (16 digits). Inputs that are not in a hexadecimal format will be treated as normal floating point inputs.
- **Use DCOM for remote security:** When checked, the OPC Quick Client, opens on next launch with system-level DCOM security settings. When unchecked, the OPC Quick Client opens with "wide-open" DCOM security settings. The default is unchecked.

● **Note:** This option will also increase the Floating Point Precision to 17.

Group Name Depth

The higher the group name depth, the more sub-groups that will be created. For example, tags structured like "Channel1.Device1.Tag1" and "Channel1.Device1.Group1.Tag1" in OPC server will be added differently in OPC Quick Client depending on the Group Name depth setting.

Depth Level	Description
1	The group "Channel1" (name depth: 1) will be created. Both tags will be added to this group.
2	The group "Channel1.Device1" (name depth: 2) will be created. Both tags will be added to this group.
3	The group "Channel1.Device1" (name depth: 3. Tag names do not form a part of the group name) will be created. The tag "Channel.Device1.Tag1" will be added to this group. The group "Channel1.Device1.Group1" (name depth: 3) will be created. The tag "Channel.Device1.Group1.Tag1" will be added to this group.

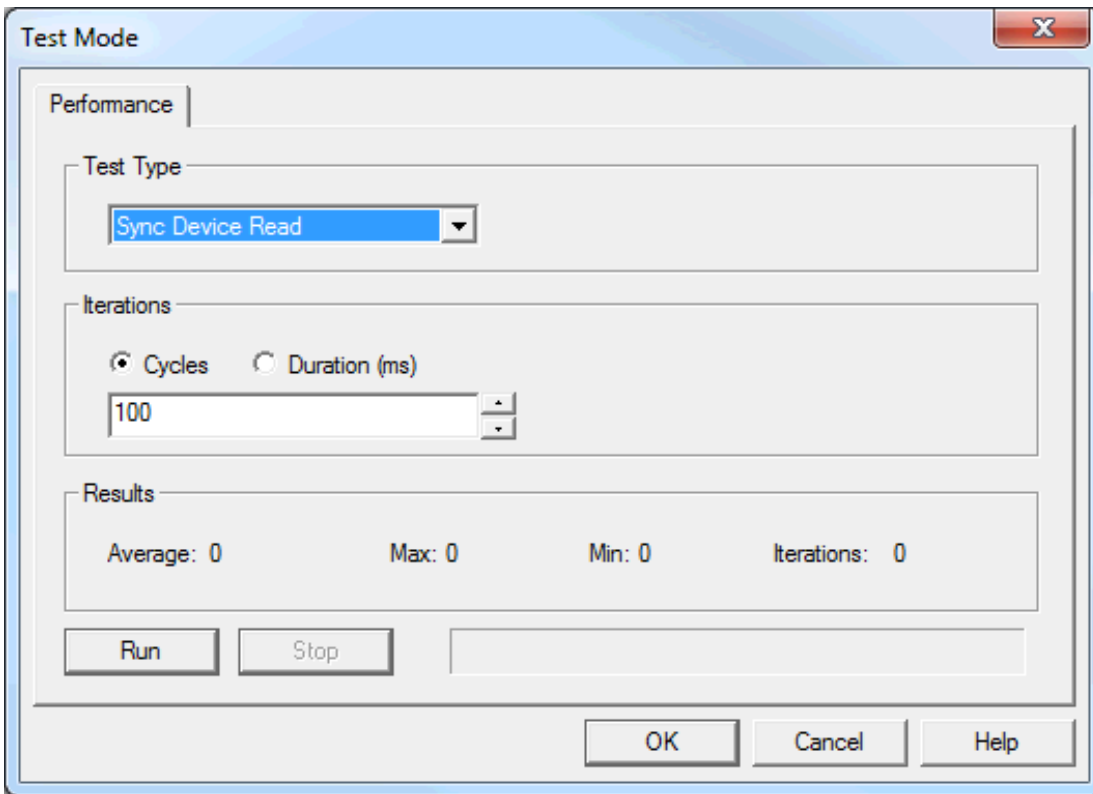
● **Note:** The maximum allowed group name depth is 3. In the example above, if there were any more sub-groups inside Group1, they would be added to the OPC Quick Client group "Channel1.Device1.Group1".

Test Mode

The OPC Quick Client Test Mode includes performance tests to run on projects. Projects must contain at least one server connection with one group that contains one item.

Performance Test

Performance tests measure the amount of time it takes to execute an operation on each item configured in the OPC Quick Client.



Test Type: This parameter specifies the test type. Tests are named after the operation that they perform. Options include Sync Device Read, Sync Cache Read, and Sync Write (which writes a random value to each item). The default setting is Sync Device Read.

Iterations: This parameter specifies the iteration. An iteration is complete when the test has performed once on each item. Options include Cycles and Duration. The default setting is 100 cycles. Descriptions of the options are as follows:

- **Cycles:** The test will iterate for as many times as entered in the field.
- **Duration (ms):** The test will run for as many milliseconds as entered in the field.

Results: This parameter displays the results of the performance test. The following fields will be displayed:

- **Average:** This specifies the median time per iteration in milliseconds.
- **Max:** This specifies the maximum time for an iteration in milliseconds.
- **Min:** This specifies the minimum time for an iteration in milliseconds.
- **Iterations:** This specifies the number of iterations.

Running a Performance Test

For more information, refer to the instructions below.

1. To start, use the drop-down menu to specify the test type.
2. Next, select the type of iteration. Then, specify the amount.
3. Click **Run**.

● **Note:** Users can stop a test at any time by clicking **Stop**. A progress bar will display how far the test has progressed.

License Agreement

License and Warranty

The license and warranty refer to the OPC Quick Client provided with the OPC server. It does not refer to any other software provided by the supplier.

The OPC Quick Client Software accompanying this license agreement is the property of supplier and is protected by copyright law. A user's rights and obligations in its use are described as follows:

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Resources

In addition to this user manual, there are a variety of resources available to assist customers, answer questions, provide more detail about specific implementations, or help with troubleshooting specific issues.

[Knowledge Base](#)

[Whitepapers](#)

[Connectivity Guides](#)

[Technical Notes](#)

[Training Programs](#)

[Training Videos](#)

[Kepware Technical Support](#)

[PTC Technical Support](#)

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