

# Tech Note 1

## Setup Standard Test Cases using Validate Script Wizard – Data Access

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### Introduction

Using scripting to setup standard test cases has several advantages. First and foremost, it is a prerequisite to setting up a fully automatic testing and report notification procedure. In the least, it simplifies the steps necessary to configure the OPC server before testing begins. The Validate Script Wizard allows users to select the type of test case tree to be generated, the interfaces that will be tested, and other tedious configuration parameters. The wizard will generate a script based on user selection and show it the Script view. The basic script created by the wizard may then be modified to generate a truly customized testing procedure. The main role of the Validate Script Wizard is to generate a setup script that connects OPC server and its data, and then configures the test case parameters. Once the basic script is generated, it may be used as-is, or it may be modified to fully automate testing, generate reports, and notify developers of the test results.

### Platform Requirements

Visual OPCTest® Client 8.0.0000 or later.

Examples used in this Tech Note are based on the OPC Foundation sample servers. In order to successfully follow all the procedures outlined in this Tech Note, please download the OPC Foundation's Data Access sample server and the latest Visual OPCTest Client application. If the OPC Foundation sample server is not available, please substitute with another Data Access server and its tag definition. The substitution of server and tag definition in the sample code should be self-explanatory.

### Basic Steps

There are two basic steps in using the Validate Script Wizard: (1) Connect to the OPC Data Access Server and (2) Follow Wizard Steps. Once connection to the server is established, Validate Script Wizard may be executed against the selected OPC server. Wizard will allow the user to perform server specific tasks, such as browsing server's address space, selecting testing options, and selecting interfaces to test.

#### Step 1 - Connect to the OPC Data Access Server

Run the Client and select *Server | Connect to Server* main menu item. *OPC Server List* dialog will appear. For simplicity, select "OPC Data Access Servers Version 3.0" under LOCAL/ComputerName branch, then select "OPCSample.OpcDaServer.1" server. Click on the *Connect Server* button, then on the *Close* button. Of course, you may select a different server on either local or remote computer. Once we successfully connect to this server, there should be a server listed in the Workspace View with an entry such as "DA1\\LOCAL\\OPCSample.OpcDaServer.1" (this entry will be different based on your server location and name).

#### Step 2 – Run Validate Script Wizard

Right-click on "DA1\\LOCAL\\OPCSample.OpcDaServer.1" in the Workspace View, and select *Validate Script Wizard* from the popup menu.

The “Test Type Selection” wizard screen appears; keep default settings and click the *Next* button. Normally, we accept the default settings, as they allow the execution of standard and custom test cases under one test case tree.

The “Interface Test Selection” screen appears next. These options are useful when disabling interfaces not implemented by the server or interfaces that have not yet been implemented during development cycle. By deselecting the interface entry, wizard will add code to the script to disable test cases for that interface. Select interfaces of interest, disable others, and click on the *Next* button.

The “Test Group Selection” wizard screen appears next. Specifies the different groups that the script will create and are necessary for testing, such as private or public, active or inactive, connected or not connected groups. All these groups are needed for Client to obtain predefined test case data for the standard test cases. Since the demo OPC Server does not support Advise Sink, deselect all options with Advise Sink (4, 5, and 6 from top), click on the *Next* button.

The “Test Item Selection” wizard screen appears. All the selected tags in this screen will be added to the groups defined in the previous wizard screen. Click on the *Browse* button to see the server’s address space. Double click on the following tags to select them:

- "Analog Types/Double"
- "Analog Types/Int"
- "Enumerated Types/Fellowship"
- "Limited Access/Read Only 1"
- "Limited Access/Write Only 1"
- "Simple Types/Float"
- "Simple Types/Int"

Click the *OK* button, then click the *Next* button.

The “Finish – Generate Script” wizard screen appears last. Accept the defaults and click on the *Finish* button. Our wizard-generated script appears in the Script view. Save the script before continuing. Select from the main menu *File | Save As Script*, type the filename, and click on the *Save* button.

## Testing the Wizard Generated Script

To test the wizard generated script; save it first, then select *Script | Run Script* from the main menu. If no errors are found in the script, and server connection was established along with all the groups and items, then the script is ready for further modification. If the Wizard generated script is used as-is, run the script then right-click on the server entry “Validate DA1\LOCAL\OPCSample.OpcDaServer.1” in the *Validate* screen, then select *Execute All Test Cases* from the popup menu.

## Analyzing Wizard Generated Script

*Variable definitions used in the script, most of scripting functions require handle to the server, group, or item*

```
DIM ServerID
DIM GroupID
DIM ItemID
```

*Disconnect from all OPC server before running our test and wait 2 seconds before doing anything else*

```
OPC.DisconnectAllServers
OPC.Wait 2000
```

*Set up flags so we do not stop script execution when test case status is set to fail or warning,*

*Also, none of the logical test cases will be enabled*

```
OPC.StopExecutionOnFail FALSE
OPC.StopExecutionOnWarning FALSE
OPC.EnableLogicalOnStartup FALSE
```

*Connect to the server that will be tested. If the returned ServerID handle is 0, then we did not connect to the server. Please refer to on-line help for description of script function parameters.*

*The function parameters may be different if your server is located on a networked computer.*

```
ServerID = OPC.ConnectServer("OPCSample.OpcDaServer.1", FALSE, "ALL",
"")
if ServerID=0 then Exit Sub
```

*Once the DA server is connected, we can setup the standard test case tree*

```
OPC.SetupDATestCases ServerID
```

*This is how you disable all the test cases for a given interface. Interfaces are enabled by default. Selection from the "Interface Test Selection" wizard screen*

```
OPC.DisableInterface ServerID, "IOPCSecurityNT"
OPC.DisableInterface ServerID, "IOPCSecurityPrivate"
```

*For each of the different group types, group is created and items are added*

```
GroupID = OPC.AddGroup(ServerID, "Group_PCPA1", TRUE, 1000, 2)
ItemID = OPC.AddItem( GroupID, "Analog Types/Double", "")
ItemID = OPC.AddItem( GroupID, "Analog Types/Int", "")
ItemID = OPC.AddItem( GroupID, "Enumerated Types/Fellowship", "")
ItemID = OPC.AddItem( GroupID, "Limited Access/Read Only 1", "")
ItemID = OPC.AddItem( GroupID, "Limited Access/Write Only 1", "")
ItemID = OPC.AddItem( GroupID, "Simple Types/Float", "")
ItemID = OPC.AddItem( GroupID, "Simple Types/Int", "")
```

## Conclusion

Running the Validate Script Wizard generates a basic script for setting up OPC server data. Once the server is connected and all the data is configured, such as groups and items, then the test case tree is created. Subsequently, test cases may be executed manually using the application's main menu. However, a fully automatic test execution and data collection may be achieved by modifying and extending the Wizard generated script.

## Contact

Contact Terravic with any questions regarding Visual OPCTest Client. Please let us know your concerns, desired improvements, or current issues with our software. We pride ourselves in making changes quickly based on your input. Please contact us at [support@terravic.com](mailto:support@terravic.com).

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