

Whitepaper



# OPC Interoperability Workshop (IOP) App

User Guide

*OPC Foundation*

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# 1 Introduction

This document provides an overview of the Interoperability Workshop Management Application (IOP-WS) which allows users to:

- Register for a workshop
- Manage products that will be Tested at the IOP
- Manage test results
- View test results (only available to participants for closed workshops)

Participation in Interoperability Workshops is available only for OPC member companies.

IOP application: <https://www.opcfoundation.org/iopworkshop/>

A login is required (email and password) and an administrator must approve your participation. After login the IOP Start Page will be displayed.

**Note:** The application uses Javascript and a modern browser is required, i.e. IE v11 or newer; Firefox v23 or newer; Chrome v33 or newer.

## 1.1 Confidentiality

All information contained within this application is private. None of this information is available to the general public. All test-results stored within this application are private and available to the Client and Server vendors only.

## 2 Start Page

The Start Page is the entry point to all tasks provided by the IOP Workshop Application. It is sub-divided into various Tabs.



## 3 Accessing the IOP Application (Login)

In the March of 2015 the behavior of this tab was modified so the application uses single-sign-on with the OPC Foundation website. Previously, a separate user login account was needed.

Most of the IOP application is accessible after logging in. The login form is visible on the “Information” tab:

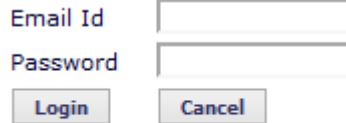
Email Id	<input type="text"/>
Password	<input type="password"/>
<input type="button" value="Login"/>	<input type="button" value="Cancel"/>

[Forgot Password](#)  
[Questions/Help?](#)

The following sub-topics describe how to create an account, logging in, and recovering a forgotten password etc.

### 3.1 Logging in

Simply enter your OPC Foundation website login name and password into the form:



Email Id

Password

[Forgot Password](#)  
[Questions/Help?](#)

Once logged in you will see the following welcome message in the “Information” tab:



**Welcome Nathan!**

## 3.2 Problems Logging in

Forgotten your password? Simply click the link “Forgot Password” in the login form. An email will be sent to you with a new/temporary password.

We recommend immediately changing your password once you login using the temporary password.

## 3.3 Logging out

A “Logout” link is available in the header:



Once logged out, only the “Information” tab will be accessible.

## 4 Information Tab

Provides basic information about the IOP application and options for logging in, or registering a new account etc.

## 5 Registration Tab

In the March of 2015 the behavior of this tab was modified. Registration for IOP events now occurs via the OPC Foundation website events center. Previously, registration occurred via this website.

This tab is only available once you have logged into the IOP app. From here, you can see all IOP workshops that are currently available for registration. For each workshop, you can:

- Register other people within your organization
- View information about other attendees



The screenshot shows a navigation bar with four tabs: 'Information', 'Registration', 'Testing', and 'Re'. The 'Registration' tab is selected and highlighted in dark blue. Below the navigation bar, the main content area displays the following information:

**Workshop: North America 2014**  
Phoenix, AZ  
Apr 21, 2014 - Apr 25, 2014  
Participation Fee: \$500

**Logistic Information**  
No additional information available

**Available Actions**  
~~Register for this workshop~~  
~~Register other users of my company for this workshop~~  
**List** Hotel/Arrival information of all participants

The *Available Actions* will change depending on the status of the registration and the status of the workshop.

## 5.1 Registration

You can view or modify the products to be tested during the workshop, as shown here:



The screenshot shows a navigation bar with five tabs: Information, Registration, Testing, Results, and Profile. The 'Registration' tab is selected. Below the navigation bar, the page displays the following information:

**Workshop: North America 2014**  
Phoenix, AZ  
Apr 21, 2014 - Apr 25, 2014  
Participation Fee: \$500

Registration for Nathan Pocock confirmed

**Logistic Information**  
No additional information available

**Available Actions**

- View / Change** Products
- View / Change** Hotel/Arrival information
- Register other user** of my company for this workshop
- List** Hotel/Arrival information of all participants

## 5.2 Product Configuration, for Testing

Click “View / Change” products to go into the product administration section where you can:

- Add Products to the IOP database
- Specify the OPC interfaces supported (e.g. UA, DA, A&E, HDA, XMLDA etc.) and if a Server or Client.





## 5.2.2 Adding a Product to the Test List

Products that will be tested must be specified in this screen. Products already registered for testing are shown at the top of the screen, which can be removed by clicking the “Delete” button.

**Workshop: North America 2014**  
Phoenix, AZ  
Apr 21, 2014 - Apr 25, 2014  
Participation Fee: \$500

Please specify the products and interfaces you want to test during the workshop.  
Use the "Add Products" dialog to select as many products as necessary.

Your Products			
Company	Product Name	Type	Interfaces
OPC Foundation	OPC Analyzer	<input checked="" type="radio"/> Server <input type="radio"/> Client	<input type="checkbox"/> AE <input type="checkbox"/> DA <input type="checkbox"/> HDA <input type="checkbox"/> XML-DA <input type="checkbox"/> DX <input type="checkbox"/> DA3x <input type="checkbox"/> UA <input type="button" value="Delete"/>

If you want to change the interfaces for a registered product, please [click here!](#)

---

Add Product			
Company	Product Name	Type	Interfaces
<input type="text" value="OPC Foundation"/>	<input type="text" value="OPC Analyzer"/>	<input type="radio"/> Server <input type="radio"/> Client	<input type="checkbox"/> AE <input type="checkbox"/> DA <input type="checkbox"/> HDA <input type="checkbox"/> XML-DA <input type="checkbox"/> DX <input type="checkbox"/> DA3x <input type="checkbox"/> UA <input type="button" value="Add Product"/>

If you are missing a product name, please [click here](#) to add new product names to the database!

[Back to Registration](#)

Choose the product from the list in the “Add Product” section; specify if it will be tested as client or server and which interfaces will be tested. If both client and server will be tested for the same product, two product lines have to be used.

Also note, that the same product can be registered by more than one person (e.g., one will be testing DataAccess, the other one Alarm&Event).

Once added, your products are visible to other users and to the Workshop Organization Committee. You are free to change your registration information (additional products, interfaces) via the “**View / Change**” Products link:

**Available Actions**

- View / Change** Products
- View / Change** Hotel/Arrival information
- Unregister** from this workshop
- Register other user** of my company for this workshop
- List** Hotel/Arrival information of all participants

## 6 Testing

This tab is available once you have logged in. This is where you will configure the technical capabilities of your products and conduct the testing:

### Available Actions

**Configure** products for testing in this workshop.

**Start Testing** products in this workshop.

Each of these options are covered in the following sub-sections.

## 6.1 Product Configuration

The “Configure” link in the “Testing” tab brings you to the product configuration screen where you will specify:

- The name and version of the application, and if the product is ready for testing
- The name of the computer where the product is installed; needed for other people to connect to.
- Technical features that are supported.

The screenshot shows a web-based configuration interface. At the top right, it says "Workshop: North America 2014" with the location "Phoenix, AZ" and dates "Apr 21, 2014 - Apr 25, 2014". On the left, there is a tree view under "Back to IOP-Workshop" with folders for "Client" (containing "GDS Prototype" and "UA CTT (Client Testing)") and "Server" (containing "OPC Analyzer" and "UA CTT"). The main area is titled "Import data from previous workshops" and contains two "Click here" buttons with instructions. Below this are several expandable sections: "Server Information", "Unified Architecture Information", "Other special characteristics", "Supported Profiles", "Supported Facets", "Supported Transports", "Supported SecurityPolicy", "Supported A&C Facets", and "Supported HA Facets". At the bottom, there are "Save" and "Unsupported Test Cases" buttons with a note "to specify unsupported testcases".

All information stored here is available to all other IOP workshop participants.

## 6.1.1 Deactivating Test Cases

It is possible that some of the IOP test-cases do not apply to your product. Removing test-cases will remove them from the screen of the person feeding-back test results.

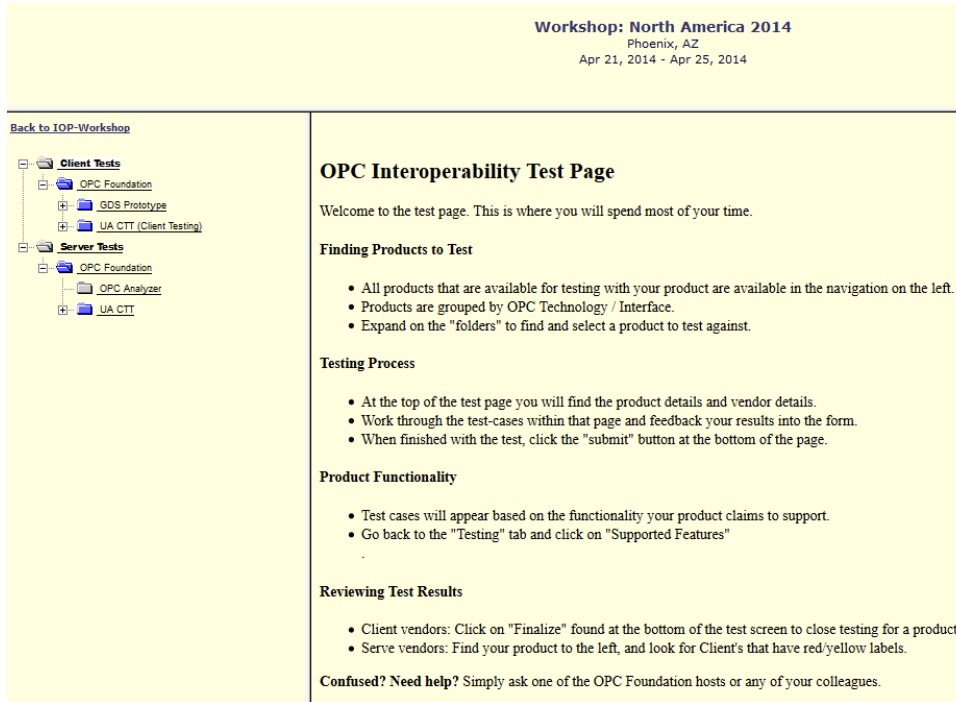
Click on the “Unsupported Test Cases” button to specify which test-cases should be removed from the test-plan, by checking the applicable boxes:

The screenshot shows a web interface for a workshop. At the top, it says "Workshop: North America 2014" in Phoenix, AZ, from April 21 to April 25, 2014. On the left, there is a navigation tree with "Client" (containing "GDS Prototype" and "UA CTT (Client Testing)") and "Server" (containing "OPC Analyzer" and "UA CTT"). A link "Back to IOP-Workshop" is also present. The main area contains the text: "Following is the defined set of IOP testcases. Please mark all testcases that your product does not support." Below this, there are several expandable sections under the heading "Unsupported Unified Architecture testcases": "Discovery", "Session", "View Services", "Attribute Services", "Method Services", and "Information Model". The "Discovery" section is currently expanded, showing four test cases with checkboxes: "Call FindServers() on a remote LDS to get the list of available Server applications. Verify that this list.", "Call GetEndpoints() on the Server application that is the testee.", "Call FindServers() on a remote LDS and specify a ServerURI to get a specific Server application.", and "Call GetEndpoints() on the Server application that is the testee. Specify the desired transport endpoints are returned that include this profile."

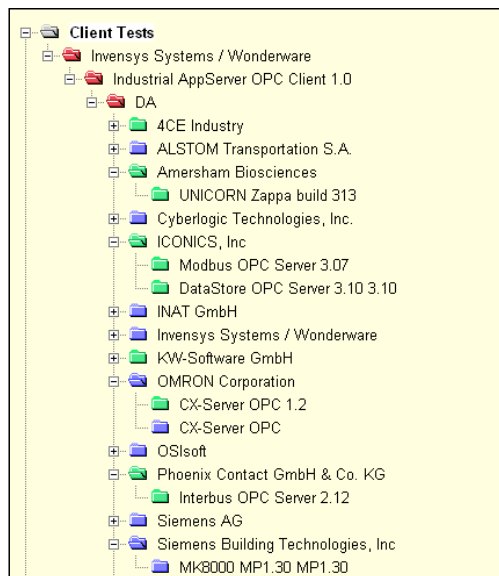
Click “Save & Return” to commit your changes. You can revisit this screen any time.

## 6.2 Test Results Feedback (Start Test)

Click the “Start Testing” link in the “Testing” tab to enter the test console:



Your products are displayed in the left-pane. Expanding the product will reveal the other products that are available to test interoperability with:



Clicking on a product will go to the test details page, visible in the right-pane:

The screenshot shows a software interface for testing OPC servers. On the left is a tree view under 'Client Tests' containing various vendors and their products. The right pane displays details for the selected product, 'DeltaV OPC Servers 7.3'.

**Client:** Software Toolbox, Inc - Instrumentation ActiveX Controls  
**Server:** Emerson Process Management - DeltaV OPC Servers 7.3  
**Interface:** Data Access

**Server Contact Data**

Last Name: Zhou  
 First Name: Joel  
 Address: 8627 N. Mopac, Suite 400  
 Postcode: 78759  
 City: Austin  
 Country: United States  
 Phone: 512-418-7526  
 Fax:  
 Email: joel.zhou@emersonprocess.com

**Server Information**

Product Name: DeltaV OPC Servers  
 Product Version: 7.3  
 Product Status \*:  Release  Development  
 OPC Compliant \*:  Yes  No  
 Server Status: Good  
 Server Ready to Test \*:  Yes  No  
 Present Results On Web Page \*:  Yes  No  
 Machine Name \*: emerson01

Test cases are first grouped by interface and then sub-divided into sections:

The screenshot shows a test case execution grid. The grid is organized into sections: 'Asynchronous Operations', 'Exception-Based Operations', and 'DA V3.0 interfaces'. Each test case is represented by a row with a description and a series of status indicators (circles) for different test runs. The status indicators are color-coded: green for 'passed', yellow for 'warning', red for 'failed', and grey for 'Client do not support' or 'Server do not support'.

Test Case	Run 1	Run 2	Run 3	Run 4	Run 5
use IOPCBrowse to navigate through hierarchy	passed	passed	passed	passed	passed
get properties and their values while browsing	passed	passed	passed	passed	passed
use ItemIO::Read to read from items (all defined datatypes)	passed	passed	passed	passed	passed
use ItemIO::WriteVQT to write to items	passed	passed	passed	passed	passed
SetKeepAlive (e.g. 2 seconds) and verify empty callbacks	passed	passed	passed	passed	passed
SetKeepAlive to 0 (callbacks stop)	passed	warning	passed	passed	passed
Read items using ReadMaxAge	passed	passed	passed	passed	passed
Write item values using (sync pr async) WriteVQT	passed	passed	passed	passed	passed
Write quality and timestamp	passed	warning	passed	passed	passed
Use item-specific deadbands (overwriting group deadband)	passed	passed	passed	passed	passed
Use item-specific sampling rate (overwriting group update rate)	passed	passed	passed	passed	passed
Check if server supports sampling and buffering	passed	passed	passed	passed	passed

Buttons: Finish Test, Save Data, Get Printable Version

Frequent use of **Save Data** is recommended to avoid loss of data.

## 6.2.1 Finishing Tests

Client vendors must click the **Finish Test** button to mark as complete in the database. Test results will be visible to the Server vendor only after either **Save Data** or **Finish Test** has been executed by the client (see below).

Clients should make use of comments as much as possible when they find errors or strange behavior. This will allow servers to detect and possibly fix problems. On request of the server vendor clients should repeat tests and eventually change a result if the server was able to fix the problem.



Once a test has been declared “finished” by the client, the server vendor can “accept” it to mark it unchangeable. After the result has been accepted by the server vendor it cannot be opened again (except by the administrator).

Client and server vendors are encouraged to discuss any issues with each other and other workshop participants.



## 6.2.2 Current Test Status (in tree)

Information is available in the tree to recognize the state of testing:

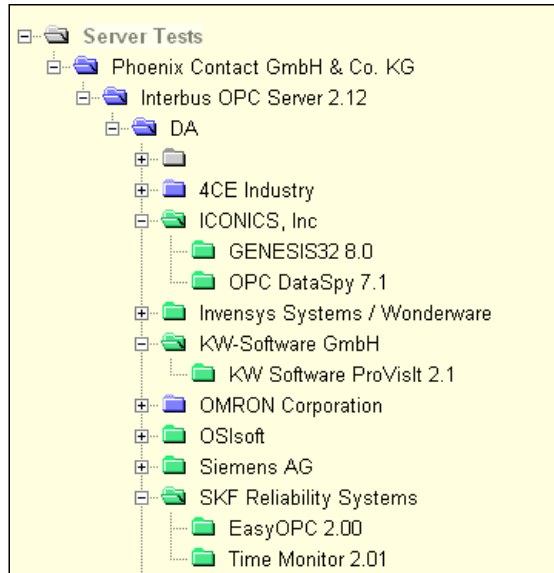


Colors represented mean:

- **Red:** if any of the tests failed
- **Yellow:** some warnings are present, but no errors.
- **Green:** if all possible tests passed, without warning or error.
- **Blue:** is used for servers that have not yet been started.

## 6.3 Viewing/Confirming Test Results

The Test-Management application creates a server tree for each interface of all potential clients:




Selecting one of the clients will open the test page in the right frame. The server can only view results that have been saved or completed.

Once a test page is marked completed and the server vendor accepts the results then it becomes read-only.

## 7 Viewing / Printing Results

The Results page shows all workshops attended by current user and/or company:

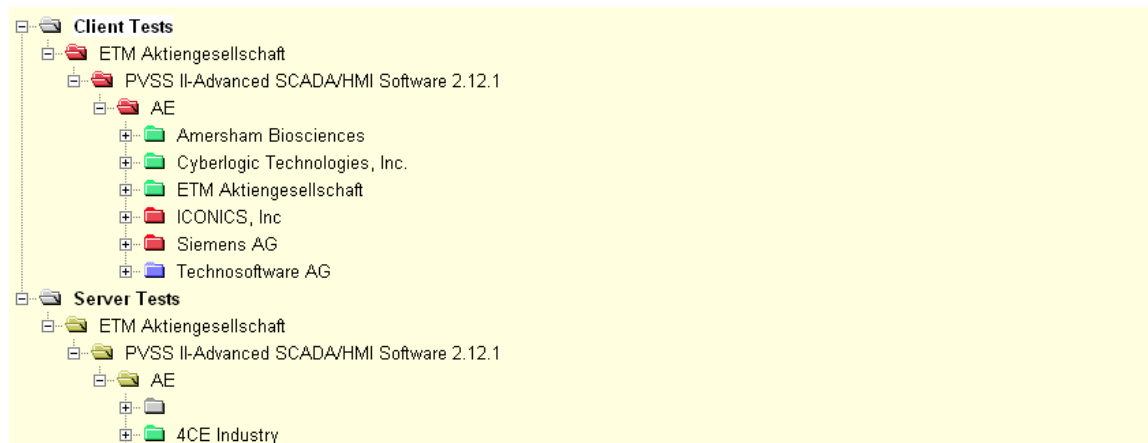


The screenshot shows a web interface with a navigation bar at the top containing tabs for Information, Registration, Testing, Results (which is selected), Profile, and Administration. Below the navigation bar, there is a text block stating: "Users that participated in workshops can view their test-results even after the workshop. If results are available, the respective workshops are listed below." This is followed by the details for a workshop: "Workshop: European IOP Workshop 2003", "Nuremberg", "22.09.2003 - 26.09.2003", and "Participation Fee: EUR 150". Underneath, there is a section titled "Available Actions" with two links: "View Results for this workshop" and "View Results of my company for this workshop".

**View My Results** allows viewing the test results for the user that is currently logged in.

**View Results of <company>** allows viewing results of all products of the user's company that have been tested.

Clicking any of the actions will create a new page with all test combinations just as they were shown during testing.



The screenshot shows a tree view of test results. It is divided into two main categories: "Client Tests" and "Server Tests". Under "Client Tests", there is a folder for "ETM Aktiengesellschaft" which contains a sub-folder "PVSS II-Advanced SCADA/HMI Software 2.12.1". This sub-folder contains a folder "AE" which lists several companies: Amersham Biosciences, Cyberlogic Technologies, Inc., ETM Aktiengesellschaft, ICONICS, Inc, Siemens AG, and Technosoftware AG. Under "Server Tests", there is a folder for "ETM Aktiengesellschaft" which contains a sub-folder "PVSS II-Advanced SCADA/HMI Software 2.12.1". This sub-folder contains a folder "AE" which lists "4CE Industry".

To select a result, click any of the products.

The format of the Test Result pages is optimized for printing. However, they can also be saved and imported into MS-Word. The following screen-shot is a subset of the complete result information:

## European IOP Workshop 2003 Nuremberg 22.09.2003 - 26.09.2003

### OPC Interoperability - Test Results

**Client:** ICONICS, Inc - GENESIS32 8.0  
**Server:** Phoenix Contact GmbH & Co. KG - Interbus OPC Server 2.12  
**Interface:** Data Access

OPC Client Contact Information	
<b>Last Name:</b>	Burian
<b>First Name:</b>	Jan
<b>Address:</b>	Klatovska 22
<b>Postcode:</b>	301 00
<b>City:</b>	Plzen
<b>Country:</b>	Czech Republic
<b>Phone:</b>	+420 377 326 139
<b>Fax:</b>	
<b>Email:</b>	jan@iconics.cz

Interoperability Test Results					
<b>Summary:</b>	Testresult	Passed	Warning	Failed	Not Tested
	<b>Passed</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>

Basic For All Server	Item	Value	Comment
	ability to connect to server	passed	
	get status	passed	
Browsing	Item	Value	Comment
	browse for branches and leafs	passed	

## 8 Profile

Every login has a profile. In this section you can modify your contact details:

[Information](#)
[Registration](#)
[Testing](#)
[Results](#)
[Profile](#)

Profile data is needed for Interoperability Workshops.  
Click EDIT below to enter, view or modify your profile information.

**Available actions:**  
[Edit](#) company contact data

## Contact Information:

OPC Foundation  
16101 N. 82<sup>nd</sup> Street, Suite 3B  
Scottsdale, AZ 85260  
USA

Tel: 480-483-6644

Fax: 480-483-1830

Email: [compliance@opcfoundation.org](mailto:compliance@opcfoundation.org)

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## Revision History

Version	Date	Author	Change
1	2004	OPC	Initial version.
2	Mar-5-2014	NP	Revised document to match the new version of IOP app. Reformatted for new Template.
3	May-8-2015	NP	Removed “Creating an Account” and modified “Logging in” section because behavior now controlled by OPCF website. Removed “Registration” instructions because users now register via the OPCF website.