Getting Started with OPC UA

End User Products and Developer Tools

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Prosys OPC

Getting Started with OPC UA

#1 Free Test Applications

#2 End User Products
- ◦ Profiles
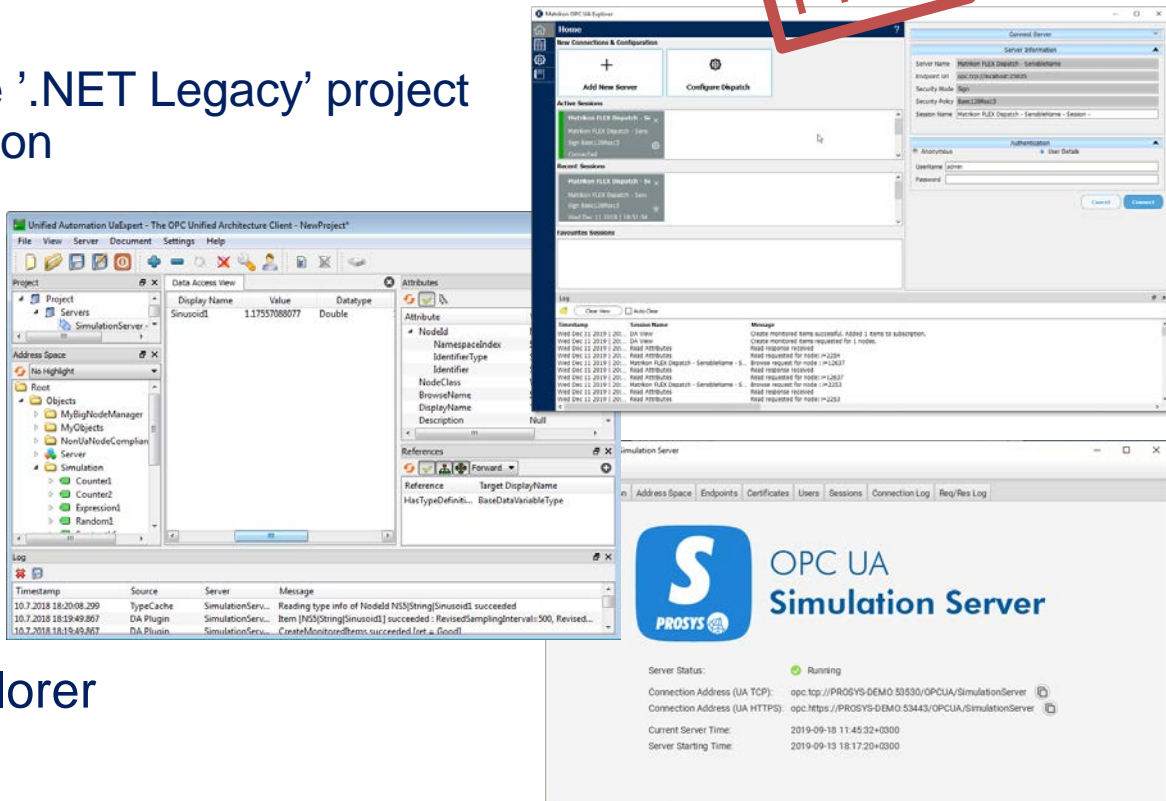- ◦ Certification
- ◦ Product Catalog

#3 Developer Tools
- ◦ Stacks
- ◦ SDKs

#1 Free Test Applications

Free

- **OPC Foundation**
  - Samples included in the '.NET Legacy' project
  - Github.com/opcfoundation
- **Unified Automation**
  - UaExpert
  - Demo Servers
  - unified-automation.com
- **Prosys OPC**
  - UA Browser
  - UA Simulation Server
  - prosysopc.com
- **Matrikon**
  - Matrikon OPC UA Explorer
  - matrikon.com

#2 End User Products

▶ Select an Off-the-Shelf OPC UA Product for Your Needs
  ◦ Standalone or Embedded?
  ◦ Client or Server?
  ◦ Supported OPC UA Profiles?
  ◦ Certified?

OPC
FOUNDATION

OPC UA Profiles

- Subsets of Functionality
- Target for Certification

OPC UA Profiles

Following are the currently defined profiles, arranged according to their application category.

- Server Category
  - Facets
    - Core Characteristics
    - Data Access
    - Event Access
    - Alarm & Condition
    - Generic Features
    - Redundancy
    - Historical Access
    - Aggregates
    - Programs Model
    - Query
  - FullFeatured
    - Nano Embedded Device Server Profile [dep
    - Nano Embedded Device 2017 Server Profile
    - Micro Embedded Device Server Profile [dep
    - Micro Embedded Device 2017 Server Profile
    - Embedded UA Server Profile [deprecated]
    - Embedded 2017 UA Server Profile
    - Standard UA Server Profile [deprecated]
    - Standard 2017 UA Server Profile
- Client Category
  - Facets
    - Core Characteristics
    - Data Access
    - Event Access
    - Alarm & Condition
    - Generic Features
    - Redundancy
    - Historical Access
    - Aggregates
    - Programs Model
    - Query
  - FullFeatured
    - Minimum UA Client Profile
    - Standard UA Client Profile [deprecated]
    - Standard UA Client 2017 Profile

apps.opcfoundation.org/profilereporting/

Welcome to the OPC Foundation Unified Architecture Profile Reporting Visualization Tool. This is the master database and primary source for all profile information and is used to generate the OPC UA Part 7 Profiles specification

Terminology used in this application:

- **Profile** - a full-featured definition of functionality that must be supported; consumer of other *Profiles*, *Facets*, *Conformance Groups*, and *Conformance Units*.
- **Facet** - a definition of partial functionality; consumder
- **Conformance Group** - a collection of *Conformance Units*
- **Conformance Unit** - specific functionality, e.g. Read an Array type etc.

Please refer to the OPC Unified Architecture Part 7 Specification.

Instructions

- Use the TreeView (left) to select a *Profile* or *Facet*
- The list of *Conformance Units* will appear here
- In the *Conformance Units* page you can filter the list using options at the top of the page.

Product Certification
End-User Focused

- Value Proposition
  - Proven reliability and interoperability
  - Faster configuration and start-up with fewer support calls
  - Minimal integration risks
- Target: Plug-and-play

Product Catalog

Product Catalog

Products » Find Certified Products

Find Certified Products

The OPC Foundation's Certification Program ensures that products meet OPC Foundation requirements for interoperability, reliability and minimum performance. End-users can reduce their system integration costs when deploying OPC-based systems by purchasing OPC Certified products such as those listed here.

🔍 modbus

	Member ▲	Products	Certified Profiles
+	Cyberlogic Technologies, Inc.	(1)	
+	Open Automation Software	(1)	
−	Prosys OPC Ltd	(1)	
		Prosys OPC UA Modbus Server	UA 1.02 Standard Server
+	Utthunga Technologies	(1)	

Showing 1 to 4 of 4 entries

← Previous   1   Next →

BECOME A MEMBER

👤 Newest Members

Cisco Systems, Inc.
CoNet
VDW Verein deutscher Werkzeugmaschinenfabriken e.V.
iData Inc.
CoreTigo

📄 Certified Products

Cyberlogic OPC Server
Omron NX1 Machine Automation Controller
Puerto UaMonitor for Excel
TSI Facility Monitoring System (FMS)

🐦 Twitter Feed

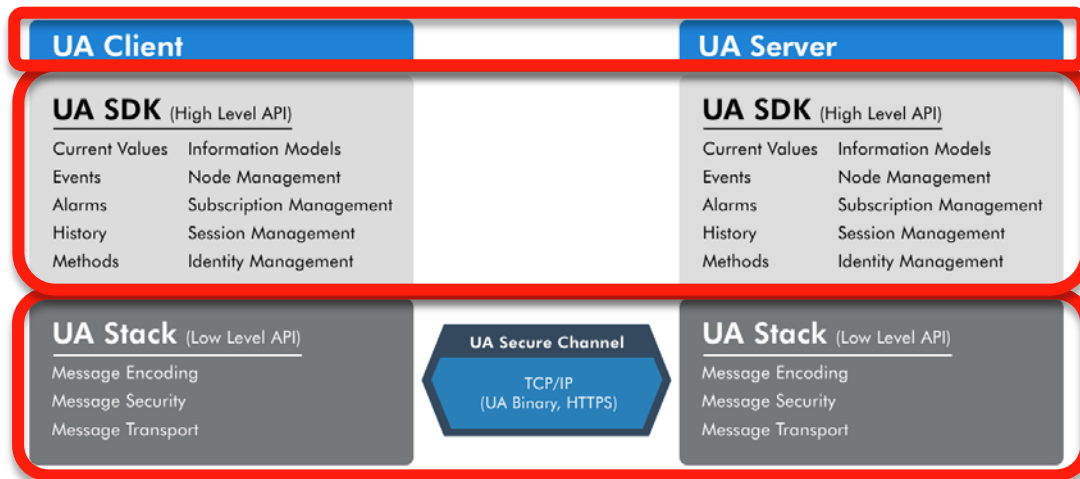Thanks @samsung for great hospitality hosting the @OPCFoundation Seminar Day Seoul

#3 Developer Tools

▸ OPC UA Programming Model
- Stacks provide interoperable OPC UA communication
- Software Development Kits (SDKs) provide standard implementation of OPC UA functionality
- Your application code comes on top

UA Client		UA Server	
UA SDK (High Level API)		**UA SDK** (High Level API)	
Current Values	Information Models	Current Values	Information Models
Events	Node Management	Events	Node Management
Alarms	Subscription Management	Alarms	Subscription Management
History	Session Management	History	Session Management
Methods	Identity Management	Methods	Identity Management

UA Stack (Low Level API)	**UA Secure Channel** TCP/IP (UA Binary, HTTPS)	**UA Stack** (Low Level API)
Message Encoding		Message Encoding
Message Security		Message Security
Message Transport		Message Transport

OPC Foundation Stacks

- github.com/opcfoundation
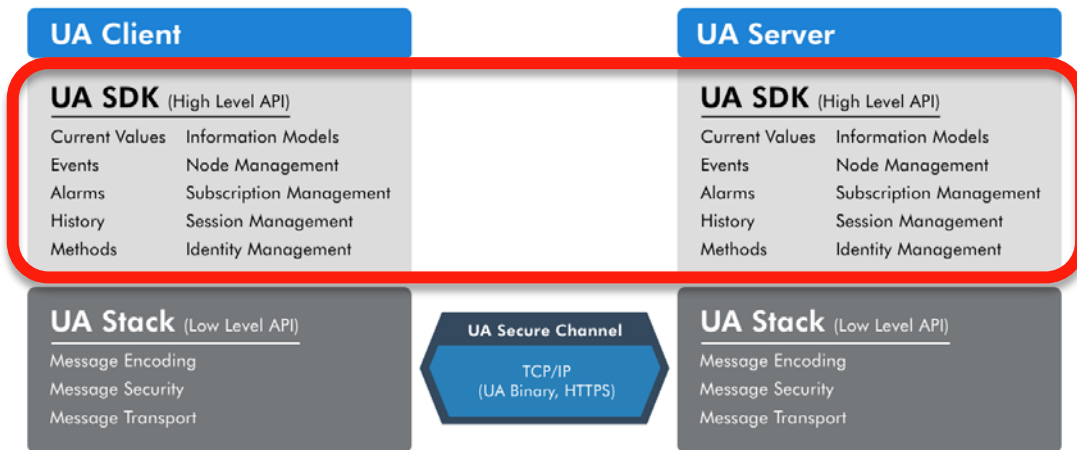 - .NET Standard
  - .NET Legacy
  - Java Legacy
  - AnsiC Legacy

- Dual License:
  - GPL (GNU Public License) v2: non-commercial use
  - RCL (Reciprocal Community License): commercial use
    - OPC Foundation members
    - SDK customers
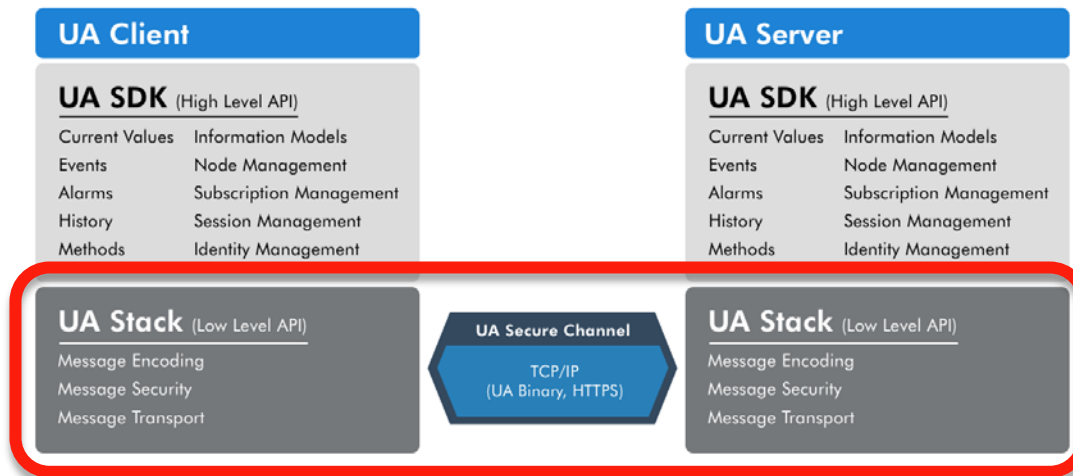
Commercial OPC UA SDKs

- Java
  - Prosys OPC
- .NET
  - Unified Automation
  - Softing
  - OPC Labs (Client)
- C/C++
  - Unified Automation
  - Softing
  - Matrikon OPC (Server)

usability.

All Products

Certified Products

This product catalog features OPC Se___ ___ces from OPC Foundation members.

🔍 sdk

VDW Verein deutscher
Werkzeugmaschinenfabriken
e.V.
iData Inc.
CoreTigo
Beijing Blueprint Technology Co.,
ltd.

Name	Member	Description
.NET Client Development Toolkits	Advosol Inc.	.NET based client development toolkits for all OPC specifications. Ad...
Embedded OPC UA Stack	EUROS Embedded Systems GmbH	Communication standards, implemented in the form of high level interfa...
MatrikonOPC UA Embedded Server SDK	MatrikonOPC	The OPC UA Embedded Server SDK from MatrikonOPC is a software developm...
MatrikonOPC UA Device Server HDK	MatrikonOPC	The OPC UA Device Server Hardware Development Kit is the easiest way t...
Modigm OPC UA Client ToolKit	Modigm Inc.	Modigm OPC UA Client ToolKit is the easy and stable SDK for OPC U...
.NET And COM Client Toolkit: QuickOPC	OPC Labs	QuickOPC is a set of COM and .NET OPC components that simplify the tas...
StreamInsight Option for QuickOPC	OPC Labs	The StreamInsight Option for QuickOPC allows you to bring in streaming...
Apis OPC UA Software Development Kit	Prediktor AS	The APIS Embedded OPC UA Software Development Kit is an easy and fast ...
Prosys OPC UA Java SDK / Toolkit	Prosys OPC Ltd	Develop once, deploy anywhere Build OPC UA clients, servers and com...
Prosys OPC UA Client	Prosys OPC Ltd	Prosys OPC UA Client is a generic OPC UA client developed with Prosys ...

Certified Products

Cyberlogic OPC Server
Omron NX1 Machine Automation
Controller
Puerto UaMonitor for Excel
TSI Facility Monitoring System
(FMS)

🐦 **Twitter Feed**

Thanks @samsung for great
hospitality hosting the
@OPCFoundation Seminar Day Seoul
today and your continues commitm...
https://t.co/yJJfliqIIz

@samsung Opc Day Seoul: Dr. Park
giving a great commitment to
@opcfoundation and #opcua
https://t.co/Sw2JvOIAv9

@samsung Seoul hosting the OPC
seminar day today. 107 registered
attendees listing to impact of #opcua
for... https://t.co/b4yYB9et9J

Commercial SDK Benefits

▸ Professional quality for industrial use

▸ Documentation

▸ Support for the full OPC UA feature set

▸ Constantly improved and updated

▸ Product maintenance and support

▸ Product warranty and liability

▸ Certified solutions

▸ <u>Faster time to market</u>

▸ <u>Long-term solution</u>

About ▾ | Membership ▾ | Products ▾ | Certification ▾ | Markets & Collaboration | Resources ▾ | News & Events ▾

Overview & Benefits
How to Certify
Specifications
Test Tools
Purchase Test Tool

Certification » Overview & Benefits

Overview & Benefits

The OPC Foundation recommends the use of products ce... ...edited Certification Test Labs!

What is Certification?

The OPC Foundation's Certification and Compliance program exists to help members develop and deliver high quality products that meet minimum operability requirements. OPC Certified products are:

- **Compliant** with the OPC specifications
- **Interoperable** with other OPC products from other vendors
- **Robust**, reliable and able to recover from lost communications, etc.
- **Usable**, by following universally accepted best-practices
- **Efficient** in managing resources (CPU, memory, disk space etc.)

The Certification program is under the jurisdiction of the Compliance Working Group, a working group of volunteers responsible for:

- The rules of the certification program
- Definition of test cases and test-procedures for compliance to OPC UA Profiles (Profiles available here)
- Guidelines for the OPC Foundation Certification Labs
- Continued development and refinement of the certification program

What is Certifiable?

Any OPC UA Client or OPC UA Server or OPC Classic (DCOM/COM) product can be certified by an OPC Foundation accredited Certification Test Lab. These products may be software based (running on Windows, Linux, etc.) or hardware based (in PLCs, or embedded controllers, etc.). They may implement the current release of the OPC Foundation specification or one of the prior releases. The following releases are supported for certification:

15

Profiles available here)

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VDW Verein deutscher Werkzeugmaschinenfabriken e.V.
iData Inc.
CoreTigo
Beijing Blueprint Technology Co., ltd.

📄 **Certified Products**

Cyberlogic OPC Server
Omron NX1 Machine Automation Controller
Puerto UaMonitor for Excel
TSI Facility Monitoring System (FMS)

🐦 **Twitter Feed**

Veronika Schmid-Lutz @SAP Elected Chair of @OPCFoundation Board of Directors. Congrats!
https://t.co/LsXHc6uZI2 …
https://t.co/cG9s1CJ8oa
Industrial #interoperability based on #opcua explained by Peter Seeberg, @softing at @vdi congress in Baden-Baden,... https://t.co/4ew5mrVEkx
OPC Seminar Day Singapore on July

One more thing: OPC UA with OPC Classic

▸ UA Proxy & Wrapper components enable communications between UA and DCOM versions of OPC applications

| COM Client | UA Proxy | ◀ UA ▶ | UA Wrapper | COM Server |
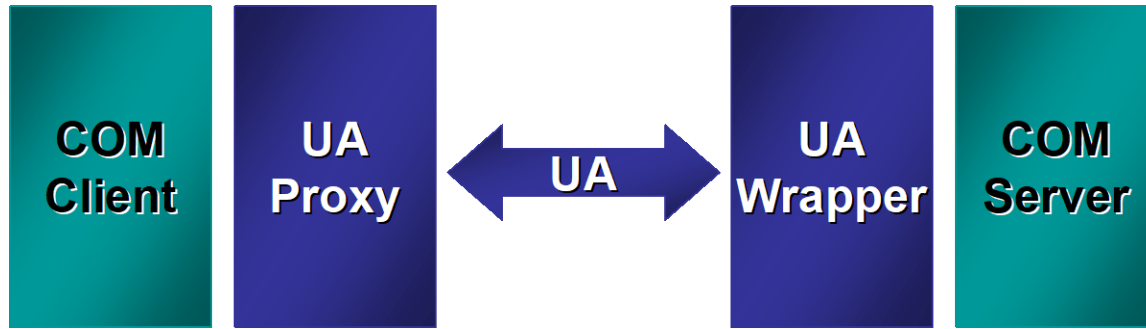
▸ Where to get?
- OPC Foundation '.NET Legacy' project (free sample)
- Commercial products available (recommended)

Thanks!

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