Getting Started with OPC UA

Pyry Grönholm, Prosys OPC Ltd
Getting started - Learn

VIDEOS

• OPC Foundation youtube channel
  • https://www.youtube.com/user/TheOPCFoundation/videos
  • Especially “Getting started”, “Tech Intro” and “Certification and Compliance” videos
  • Also videos about SAP, Azure connectivity, FLC etc.

• Finnish Society of Automation youtube channel
  • https://www.youtube.com/channel/UCzkP4miVM9-vmDotXb7IfxQ/videos
  • You can find videos of the presentations held at the previous OPC Day Finland events
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LITERATURE

• There are a couple of books available in eg. Amazon. Especially ones to recommend are:
  – OPC Unified Architecture by Mahnke, Leitner and Damm
  – OPC: From Data Access to Unified Architecture by Lange, Iwanitz and Burke
  – OPC UA: The Basics by Rinaldi

• A lot of further information including white papers, case studies and OPC UA SPECIFICATIONS are available at OPC Foundation website RESOURCES section. www.opcfoundation.org
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WORKSHOPS & TRAINING

• The real quick start for OPC UA is participating to OPC UA Workshops.

• There are multiple companies arranging regularly open workshop. For example:
  – Prosys OPC
  – Unified Automation

• Companies that arrange public workshops typically also offer customized customer specific workshops as well

• OPC Foundation has listed credited experts on the Expert section of their web site. Training providers (TR) are marked separately
  – https://opcfoundation.org/about/opc-foundation/experts/
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SOFTWARE & HARDWARE WITH OPC UA SUPPORT

OPC Foundation product catalog

• The first place to check for OPC UA products both certified and non-certified is the OPC Foundation website products catalog.
• Use search tool to find relevant products
• Check the supported profiles and facets from vendor before buying.
  – https://apps.opcfoundation.org/ProfileReporting/
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FREE TEST TOOLS

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

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CONVERTING BROWNFIELD TO OPC UA

Vendor specific protocol converters

OPC Classic to OPC UA Wrappers

OPC UA Aggregation Server

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I/O

OPC UA Server
OPC SW & HW

Vendor Server

I/O

OPC DA Server

OPC UA Server
OPC SW & HW

OPC DA Client

OPC UA Server
OPC SW & HW

OPC UA Client

OPC UA Server
I/O

OPC UA Server
I/O

OPC UA Server
I/O

Solutions e.g. offered by

SIEMENS

kepware

PROSYS OPC

Matrikon

BECKHOFF

Unified Automation

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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
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OPC UA 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

• SDK vendors provide their own stacks for Java and AnsiC

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Commercial OPC UA SDK

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