

# Integration Objects' Toolkit for OPC UA Client Applications Development

OPC UA Client Toolkit Version 2.0 Rev.1

**QUICK USER GUIDE** 

OPC UA Client Toolkit Quick User Guide Version 2.0 Rev 1 Published August 2024 Copyright © 2018-2024 Integration Objects. All rights reserved.





# **ABOUT THIS USER GUIDE**

This guide is a quick step by step guide on how to install, configure and run OPC UA Client Toolkit.

# **INSTALLATION PRE-REQUISITES**

In order to properly run any OPC UA Client developed using the OPC UA Client Toolkit, install the following software components on the target system:

- .NET Framework 4.6.1 or higher
- .Net Core 3.1 Runtime or higher

# **INSTALLING OPC UA CLIENT TOOLKIT**

To install the OPC UA Client Toolkit, run the installation executable using an administrator account and the wizard will take you through the different installation steps.

If you are evaluating the OPC UA Client Toolkit, make sure to select demo version in the select features dialog. Otherwise, select full version. The evaluation license allows you to use the toolkit for 30 days and limits the runtime to 2 hours.

# **COMPILING AND LINKING APPLICATIONS**

This section provides the steps on how to compile and correctly link applications to develop a custom OPC UA clients using Integration Objects' OPC UA Client Toolkit with Microsoft Visual Studio 2019.

For users who have to build the application in a **32-bit** machine, the target platform has to be **x86** as illustrated in the screenshot below.



#### OPC UA Client Toolkit Quick User Guide

Application Build	Configuration: Active (Release) V Platform: x86 V
Build Events	General
Debug	Conditional compilation symbols:
Resources	Define DEBUG constant
Services	☑ Define TRACE constant
Settings	Platform target: ×86 ×
Reference Paths	Prefer 32-bit
Signing	Allow unsafe code
Security	
Publish	
Code Analysis	Errors and warnings
	Warning level: 4
	Suppress warnings:
	Treat warnings as errors
	None
	O Specific warnings:

Figure 1: Platform Target for 32-bit Machine

For users who have to build the application in a **64-bit** machine, the target platform has to be **Any CPU** as illustrated in the screenshot below.

Application Build	Configuration: Active (Release) V Platform: x64 V
Build Events Debug Resources Services Settings Reference Paths Signing Security Publish	General         Conditional compilation symbols:         Define DEBUG constant         Ø Define TRACE constant         Platform target:       x64         Prefer 32-bit         Allow unsafe code         Ø Optimize code
Code Analysis	Errors and warnings Warning level: 4 Suppress warnings: Treat warnings as errors  None All Specific warnings:

Figure 2: Platform Target for 64-bit Machine



• WINDOWS FORM APPLICATIONS USING .NET FRAMEWORK:

To build a .Net framework OPC UA Client application, follow the steps below:

1. Start Visual Studio 2019 and choose **New Project**. The following window will be displayed.

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Project name			
WindowsFormsApp1			
Location			
C:\Users\documents		-	
Solution name 🚺			
WindowsFormsApp1			
Place solution and project in the	same directory		
Framework			
.NET Framework 4.6.1		-	

Figure 3: New Windows Form Project

Choose Visual C# Windows Forms Application Project and then click OK.
 A project named WindowsFormsApplication1 with a form called Form1 will be automatically created.



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Figure 4: Windows Forms Project Template

3. Right click on References then click Add Reference... from the displayed menu.



## OPC UA Client Toolkit Quick User Guide

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Figure 5: Solution Explorer

- 4. Select Browse tab from the displayed Add Reference window.
- 5. Select the following files located under ".:\Program Files (x86)\Integration Objects\Integration Objects' OPC UA Client Toolkit\bin":
- IntegrationObjects.OpcUaNetClientToolkit.dll
- IntegrationObjects.Opc.Ua.Core.dll
- IntegrationObjects.Logger.SDK.dll
- BouncyCastle.Crypto.dll
- System.ServiceModel.Primitives.dll



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Figure 6: Choosing a Reference

- Copy the UA XML configuration file "XXXX.Config.xml" file located under ".:\Program Files (x86)\Integration Objects\Integration Objects' OPC UA Client Toolkit\bin" and paste it in the output project.
- Copy the "license.dll" file located under ".:\Program Files (x86)\Integration
   Objects\Integration Objects' OPC UA Client Toolkit\bin\x64" and paste it in the output
   project.

Make sure to choose the "license.dll" file located under ".:\Program Files (x86)\Integration Objects\Integration Objects' OPC UA Client Toolkit\bin\x86" if you are using the 32-bit version.



## • A CONSOLE APPLICATION USING .NET CORE:

To build a .Net Core OPC UA Client application, follow the steps below:

1. Start Visual Studio 2019 and choose **New Project**. The following window will be displayed.

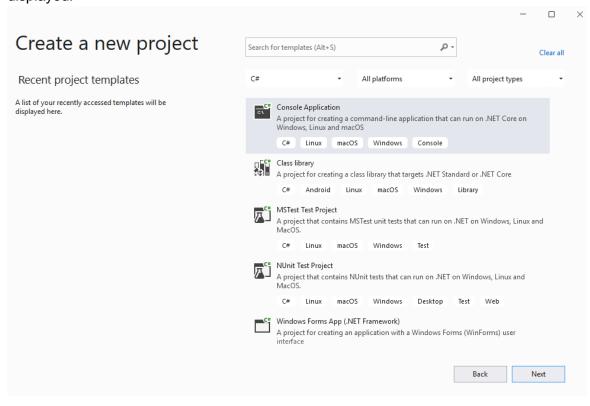


Figure 7: New Console Application Project

- 2. Choose Visual C# Console Application Project and then click Next.
- 3. From Additional information, select the .Net Core version you need to build with your application project and click Create.



# Additional information Console Application C# Linux macOS Windows Console Target Framework () .NET Core 3.1 (Out of support) .NET S.0 (Out of support)

#### Figure 8: New Console Application Project

A project named ConsoleApp1 will be automatically created.

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5	class Program	Imaneworks     Microsoft.NETCore.App	
6	{	C# Program.cs	
	0 references		
7	<pre>static void Main(string[] args)</pre>		
8	{		
9	<pre>Console.WriteLine("Hello World!");</pre>		
10	}		
11			
12	}		
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		Project Folder	C:\Users\Administrator\source\repos\ConsoleApp1\Consol

Figure 9: Console Application Project Template

4. Right click on **Dependencies** then click Add Project Reference... from the displayed menu.



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Figure 10: Solution Explorer

- 5. Select Browse tab from the displayed Add Reference window.
- 6. Select the following files located under ".:\Program Files (x86)\Integration Objects\Integration Objects' OPC UA Client Toolkit\bin":
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- IntegrationObjects.Opc.Ua.Core.dll
- IntegrationObjects.Logger.SDK.dll
- BouncyCastle.Crypto.dll
- System.ServiceModel.Primitives.dll



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Figure 11: Choosing a Reference

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Make sure to choose the "license.dll" file located under ".:\Program Files (x86)\Integration Objects\Integration Objects' OPC UA Client Toolkit\bin\x86" if you are using the 32-bit version.



## **DEPLOYING A RUNTIME DISTRIBUTION**

In order to deploy the client application from the development machine to the runtime machine, follow the steps below:

- 1. Create a new folder
- 2. Copy the following files to this new folder:
  - Config.json
  - IntegrationObjects.OpcUaNetClientToolkit.dll
  - IntegrationObjects.Opc.Ua.Core.dll
  - IntegrationObjects.Logger.SDK.dll
  - License.dll
  - The application executable and any other custom depending assembly
  - The UA XML configuration file (XXXX.Config.xml, where XXXX is the name of your OPC UA client application)
  - BouncyCastle.Crypto.dll
  - System.ServiceModel.Primitives.dll
  - ConnectionConfig.json (when using the OPC UA .Net Core Toolkit)
- 3. Move the folder to the runtime machine



Make sure that OPC UA Client Toolkit is not installed in the runtime machine and that the path of the application folder does not include the words "Debug" or "Release".



For additional information on this guide, questions or problems to report, please contact:

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