



Connectivity Guide

Connecting to a B&R Device with OPC UA

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Table of Contents

- 1. Introduction1
- 2. Ensure Access to a B&R Device Containing a UA Server1
- 3. Configure the B&R Device to Expose UA Tags1
 - 3.1 Activate the OPC UA Server1
 - 3.2 Add an OPC UA Default View2
- 4. Configure ThingWorx Kepware Server® to Communicate with UA Server3

⚙️ *This document utilizes content from B&R Automation’s Automation Studio V4.2.10. It is subject to change at any time and is not in PTC control. For questions around programming and settings in a B&R device, contact [B&R Automation](#).*

1. Introduction

Bernecker + Rainer Industrie-Elektronik GmbH, B&R®, is the largest independent provider focused on product- and software-based, open-architecture solutions for machine and factory automation worldwide. They were founded in 1979 and acquired by ABB in 2017. B&R has an install base of over 4.5M industrial PCs, motor drives, and PLCs. In Europe, B&R is second to Siemens with significant penetration in plastics, food and beverage, and packaging industries.

The OPC Unified Architecture (UA), released in 2008, is a platform-independent service-oriented architecture that integrates all the functionality of the individual OPC classic specifications into one extensible framework.

This multi-layered approach accomplishes the original design specification goals of:

- **Functional equivalence:** all COM OPC Classic specifications are mapped to UA
- **Platform independence:** from an embedded micro-controller to cloud-based infrastructure
- **Secure:** encryption, authentication, and auditing
- **Extensible:** ability to add new features without affecting existing applications
- **Comprehensive information modeling:** for defining complex information

2. Ensure Access to a B&R Device Containing a UA Server

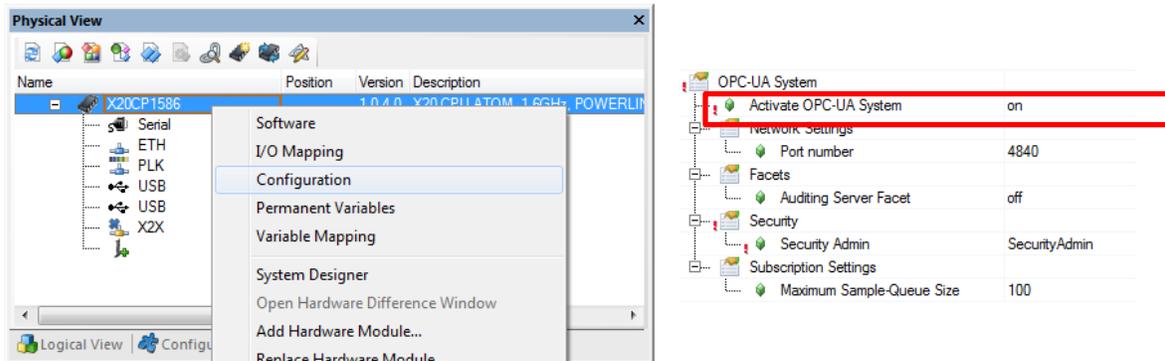
In general, any controller that supports the minimum Automation Runtime (AR) B4.04 also supports OPC UA. For older B&R controllers, there is also an embedded OPC DA server that can be used for connectivity. Although similar, this process is not highlighted in this document.

🔗 Contact [B&R Automation](#) for further assistance determining what firmware a controller is running and what feature set it supports.

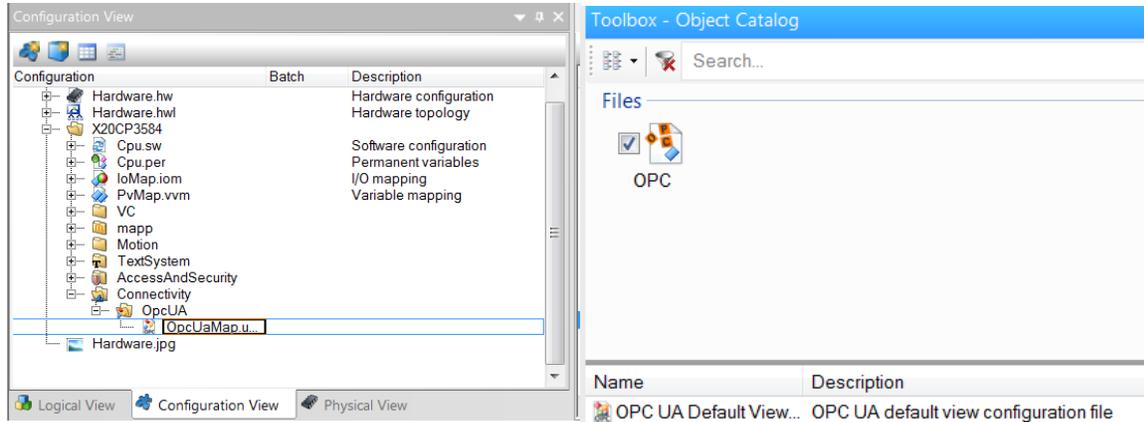
3. Configure the B&R Device to Expose UA Tags

The Automation Studio help clearly shows the steps required. In general, the following steps should be followed:

3.1 Activate the OPC UA Server

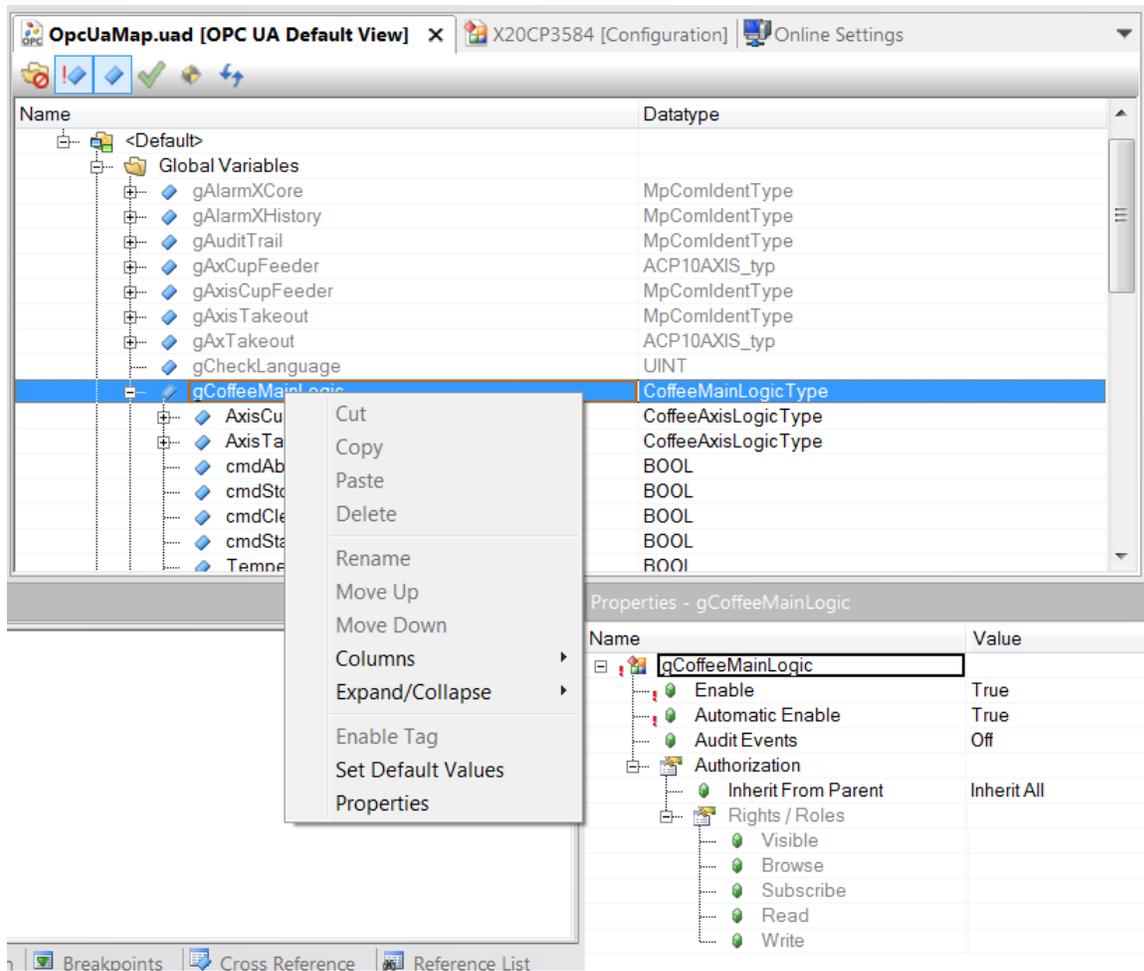


3.2 Add an OPC UA Default View

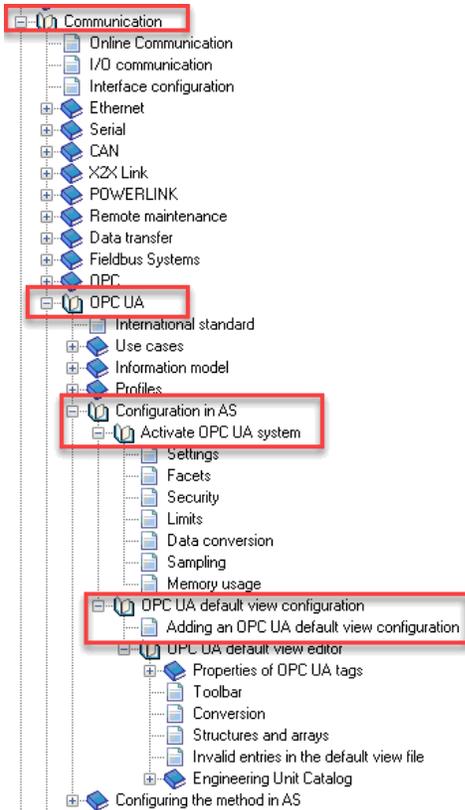


Enable tags in the UA server by right-clicking on variables of interest in the OpcUaMap. This exposes data from the controller to the UA server.

Note: Setting Automatic Enable to True in properties for any tag group (top level of a tag hierarchy) enables all of the children of that parent group.



The help path in Automation Studio:



4. Configure ThingWorx® Kepware® Server to Communicate with UA Server

To consume data from the UA server on the B&R device, a UA client needs to be configured using the [OPC UA Client driver](#). Thorough documentation on these settings can be found in the help documentation in [OPC UA Client driver help documentation](#). In general, the following steps should be followed:

- Add a UA Client driver channel to ThingWorx Kepware Server.
- Configure the UA endpoint set in the B&R device (e.g. opc.tcp://10.10.114.63:4840).
- Add a device to the new channel and select the tags to import from the B&R OPC UA server into ThingWorx Kepware Server.

