

Release Notes

OPC Server

6.01

Revision: -

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# Overview

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## Description

This document provides information about the new features, corrected problems, and installation of the latest IRC5 OPC Server.

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## Product Overview

The IRC5 OPC Server exposes information in the IRC5 controller to OPC clients.

The product consists of two components:

- A server is running in the background and transfers information to and from the connected IRC5 controllers.
- A user interface lets you configure which controllers that the server shall connect to.

You also need one or more OPC clients to get use of the information that the OPC Server exposes. For example a SCADA system, or a HMI device.

**Note:** The IRC5 OPC Server does not include any OPC clients.

Please read the RobotWare Release Notes and documentation for general information on your robot and networking the controller.

To get started, or to learn more, visit our Developer Center:

<http://developercenter.robotstudio.com>

Here you will also find the User Forum, where developers discuss software problems and solutions online:

<http://forums.robotstudio.com>

More information about the OPC specification, related tools and libraries, can be found at the OPC Foundation web site:

<http://www.opcfoundation.org>

# 1 Release Information

## 1.1 General

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### Release Name

The release name is IRC5 OPC Server 6.01 and the build number is 6.01.6409.0123  
It is available for download from <http://developercenter.robotstudio.com>.

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### Release Date

The release date is April 29<sup>th</sup>, 2015.

## 1.2 Contents

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### ABB IRC5 OPC Configuration

User interface for configuring the IRC5 OPC Server.  
It can be launched from the Windows Start Menu.  
Programs > ABB Industrial IT > Robotics IT > IRC5 OPC Server

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### Server component

Windows process running in the background and connecting to IRC5 controllers.  
It can be started and stopped using the ABB IRC5 OPC Configuration user interface.

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### Robot Communication Runtime

Component used by the server component for communication with IRC5 controllers over a network.

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### Documentation

ABB IRC5 OPC Server Help – Operating Manual.  
It can be launched from the Windows Start Menu;  
Programs > ABB Industrial IT > Robotics IT > IRC5 OPC Server

## **2 Late-breaking information**

### **2.1 Overview**

This section contains late-breaking information that will be included in the appropriate documents in the subsequent releases.

Nothing in this release.

## 3 Corrections

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### Overview

This section describes the corrections to IRC5 OPC Server 6.01

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### Corrected problems in IRC5 OPC Server 6.01

PDD2427 : [Add a remote controller which is present in the another subnet is not working.](#)  
This has now been fixed!

## 4 Known Limitations

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### Overview

This section describes known limitations in IRC5 OPC Server.

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### Virtual Controller Eventlog messages are empty on French language

When connected to a virtual controller and having French language selected in the OPC Server configuration tool, the AE events representing controller Eventlog messages does not contain a description.

*Workaround:* Select English language.

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### It is not possible to collect data from a controller on another subnet

The OPC Server can only collect data from IRC5 controllers on the same subnet.

*Workaround:* Please refer to the User Forum

<http://forums.robotstudio.com/discussion/8353/how-to-let-networkscanner-discover-controllers-on-another-subnet>

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### Exception when starting the OPC Configuration tool

When starting the OPC configuration tool for the first time, after it has been installed, you may get an error message with the following text, “*Unexpected Exception. Exception while constructing NetScanList*”, and no controllers are displayed in the user interface.

*Workaround:* Close the OPC configuration tool and start it again.

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### OPC client may fail to connect, logging DCOM error 18213 in EventViewer

On Windows 7 64-bit, an OPC client on the same machine as the IRC5 OPC Server may fail to connect to the server because of invalid Access Control Entries in the DCOM configuration settings.

*Workaround:* Add the user Everyone to the Access Control Entries for IRC5 OPC Server, by following those steps.

1. Go to Start-> Administrative Tools -> Component Services.
2. Go to Console Root -> Component Services -> Computers -> My Computer -> DCOM Config.
3. In the DCOM Config list find the entry ABB IRC5 OPC Server AE.
4. Right-click on it and select Properties.
5. Go to Security tab.
6. Set Launch and Activation Permissions to Customize and press Edit.
7. Add the user Everyone. Click OK to close the Launch Permission window.
8. Set Launch and Activation Permissions back to Use Default.
9. Set Access Permissions to Customize and press Edit.
10. Add the user Everyone. Click OK to close the Access Permissions window.
11. Set Access Permissions back to Use Default.
12. Apply Click OK to close the properties window.
13. Repeat the steps 3-12 but for the ABB IRC5 OPC Server DA.



## 5 Installation Information

### 5.1 Prerequisites

#### Before you install...

Before you begin installing IRC5 OPC Server make sure you have Administrator privileges.

On Windows 8.1 you need to install the .NET Framework 3.5 according to this Microsoft instruction: <http://msdn.microsoft.com/en-us/library/hh506443>

#### Licensing

IRC5 OPC Server can be used free of charge.

The RobotWare Option "PC Interface" is required on every IRC5 controller that you want to connect to the OPC Server over LAN.

### 5.2 System requirements

#### PC software requirements

Operating System	Edition	Remark
Microsoft Windows 7 SP1	32-bit edition	
Microsoft Windows 7 SP1	64-bit edition	
Microsoft Windows 8.1	64-bit edition	Recommended

#### RobotWare software requirements

RobotWare option "PC Interface" for communication with the IRC5 controller.

### 5.3 Installation instructions

#### Keeping settings from a previous version

	Action
1	Make a backup copy of the file OPCConfig.xml. It is located in the C:\ProgramData\ABB Industrial IT\Robotics IT\IRC5 OPC.
2	Install the IRC5 OPC Server 6.00. See below.
3	Paste the copy of OPCConfig.xml back to C:\ProgramData\ABB Industrial IT\Robotics IT\IRC5 OPC.
4	Double click setup.exe in the extracted folder to start the installation procedure.

#### Installing

	Action
1	Browse to <a href="http://developercenter.robotstudio.com/">http://developercenter.robotstudio.com/</a> and select Robot Communication and then Download.
2	Download the file <b>IRC5OPCServer.6.00.exe</b> to a folder on your computer.
3	Double click <b>IRC5OPCServer.6.00.exe</b> to extract the installation files.

4	Double click <b>setup.exe</b> in the extracted folder to start the installation procedure.
5	Check the option Configure DCOM permissions if you to connect to the IRC5 OPC Server from an OPC client on another computer.

## 6 Product Support

For product support please turn to your local ABB office.

<http://www.abb.com/contacts>

For help, advice and the latest updates visit the User Forum.

<http://forums.robotstudio.com>

## 7 FAQ

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### **Why do some of the IRC5 I/O signals show BAD quality when first connected, even though the OPC client shows that the connection was successful?**

When using the IRC5 OPC Server DA to view the I/O signals, only enabled signals will show GOOD quality. The disabled I/O signals will all have BAD quality. This means that if using a single-robot IRC5 controller, i.e. a controller that only has one drive module - for example DRV1, only the signals for DRV1 will have GOOD quality. I/O signals whose names start with DRV2, DRV3 and DRV4 will all show BAD quality, since they are disabled in that case.

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### **How many OPC clients can be used per IRC5 OPC Server?**

The maximum number of OPC clients connected to the IRC5 OPC Server strongly depends on performance of the PC where OPC Server is running. IRC5 OPC Server uses so-called report mode for the event-driven OPC tags (including all RAPID variables and I/O signals), meaning that the value changes (if there are any) will be reported to the OPC clients at the requested update-rate cycles. The higher PC performance, the faster all OPC clients will be updated with new values.

Our tests have shown that increasing the number of OPC Clients only marginally increased the load on the IRC5 OPC Server.

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### **How many IRC5 controllers can one IRC5 OPC Server handle?**

In theory, an unlimited number of robot controllers can be handled from the same OPC Server instance. In reality, however, the maximum number of controllers that one IRC5 OPC Server can monitor is normally limited by various circumstances. The most important factors are usually:

- PC performance
- The number of OPC tags that the OPC client is subscribing to for each IRC5 controller
- The number and the frequency of changes that occur in the subscribed OPC tags
- The network traffic between the PC and the controllers

All of these parameters must be taken into consideration when configuring and dimensioning the IRC5 OPC Server.

Rules of thumb for dimensioning the IRC5 OPC Server:

- Up to 30 IRC5 controllers connected to a single PC running the IRC5 OPC Server.
- Up to 4000 I/O signals used as tags for all connected controllers.
- The maximum number of RAPID variables that can be used as tags is 200 PERS variables per controller.
- A maximum of 300 of the I/O signals or RAPID variables to be changed within 4 seconds.

Please note that these approximations are valid given that no other application communicates with the same IRC5 controller nor runs on the same PC as the IRC5 OPC Server.

**What is the fastest OPC client update rate supported by the IRC5 OPC Server?**

Normally, a change will be received by the IRC5 OPC Server and delivered to the client within 150-300 ms, but this time cannot be guaranteed by the controller nor the network. Dimensioning for 1000 ms is a better option where possible.

There are some limitations, however, on how fast a value change on the IRC5 controller results in a value change on the IRC5 OPC Server. This depends on what other higher priority tasks are executing on the IRC5 controller at the moment, the number and frequency of value changes, as well as the speed of the local network.

The IRC5 OPC Server uses so-called report mode for the event-driven OPC tags such as RAPID variables and I/O. When a variable or signal value is changed it will be reported to the OPC clients at the requested update-rate cycles. If no changes occur, no reporting will be done. This feature allows the OPC clients to set their update rate as fast as 0 ms, which means that the OPC Server will report the change as soon as possible. Note that in this case it is the client that becomes the bottleneck for handling changes and not the OPC Server.