

C-Bus OPC installation

C-Bus programming guide

Conventions in this guide

Before you start using this guide, it is important to understand the terms and typographical conventions used in the documentation. For more information on specialised terms used in the documentation, consult the Glossary.

The following kinds of formatting in the text identify special information.

Formatting convention	Type of Information
MENU OPTIONS	Items you must select, such as menu options, command buttons, or items in a list.
<i>Emphasis</i>	Use to emphasise the importance of a point or for variable expressions such as parameters.

Copyright 2010 Schneider Electric. All rights reserved. This material is copyright under Australian and international laws. Except as permitted under the relevant law, no part of this work may be reproduced by any process without prior written permission of and acknowledgement to Schneider Electric.

Clipsal and C-Bus are registered trademarks of Schneider Electric.

All other trademarks are the property of their respective owners.

The information in this document is provided in good faith. While Schneider Electric has endeavoured to ensure the relevance and accuracy of the information, it assumes no responsibility for any loss incurred as a result of its use. Schneider Electric does not warrant that the information is fit for any particular purpose, nor does it endorse its use in applications which are critical to the health or life of any human being. Schneider Electric reserves the right to update the information at any time without notice.

Publication date: Feb 2010

Contents

- 1.0 Overview 1**
- 1.1 What is an OPC?1
 - 1.1.1 OPC data access specification2
 - 1.1.2 Why have a C-Bus OPC Server?.....2
- 1.2 Licensing4
- 1.3 Host computer system requirements6
- 1.4 For more information.....7

- 2.0 Installation 9**
- 2.1 Downloading and installing C-Bus Toolkit.....9
 - 2.1.1 Installed software10
- 2.2 Installing the C-Bus OPC Server dongle.....10
- 2.3 Downloading and installing C-Bus Toolkit.....11

- 3.0 Index 13**

1.0 Overview

The C-Bus OPC Server is a stand-alone software package made available by Clipsal to allow OPC communication between C-Bus networks and building management systems. The OPC Server acts as a gateway for transmitting C-Bus lighting application information to entities such as building management systems, which are capable of handling OPC messages.

1.1 What is an OPC?

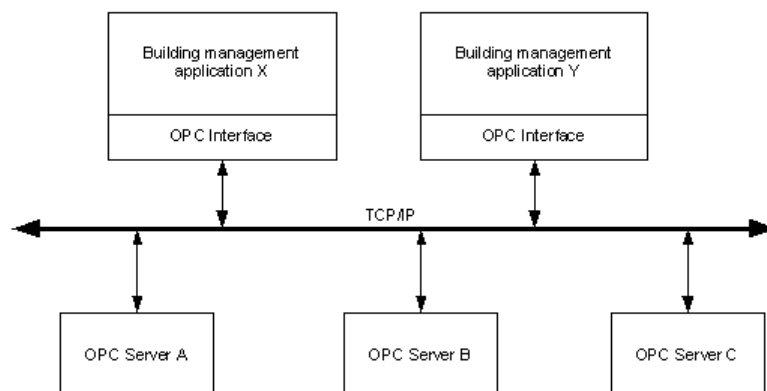
The need for system interoperability for the process control, manufacturing, and building management industry sectors propelled members of these industries to set up an organisation to develop an open communication protocol.

The OPC Foundation was created to develop a Microsoft Windows specification which would make it possible for the development of OPC servers which can transmit process control data to client software applications. The specification was later expanded to include manufacturing and industrial automation.

OPC originally stood for *OLE for Process Control*, which identified a Microsoft Windows based specification for system interoperability within the process control industry.

In building management, OPC interoperability can be utilised to access data across many lighting networks and building automation systems over one or more buildings. The diagram below illustrates how OPC messages travel between applications via an OPC interface and OPC Servers. Each OPC Server transmits data across a TCP/IP network to potential building management applications.

Figure 1: OPC Interoperability



1.1.1 OPC data access specification

The C-Bus OPC Server utilises the OPC data access specification, which defines how OPC clients and servers can transmit to each other. The specification is based around a component object model and takes advantage of Microsoft DCOM (distributed component object model) technology.

Each OPC Server is composed of a server object, one or more group objects, and one or more item objects. The server object maintains information about the server. It also operates as a container for group objects. The group object contains information about itself and serves as a container for item objects.

Group objects provide a way for client applications to structure data. For example, a group object might contain items which relate to a specific operator display or report. Group objects can read and write data. Each item within a group object can communicate with a OPC client.

1.1.2 Why have a C-Bus OPC Server?

An obvious reason for installing and operating a C-Bus OPC Server is because you want to incorporate lighting application data from C-Bus networks as part of a building management solution.

The C-Bus OPC Server makes it possible to transmit lighting type application messaging between a C-Bus network and a OPC Client. The messaging can:

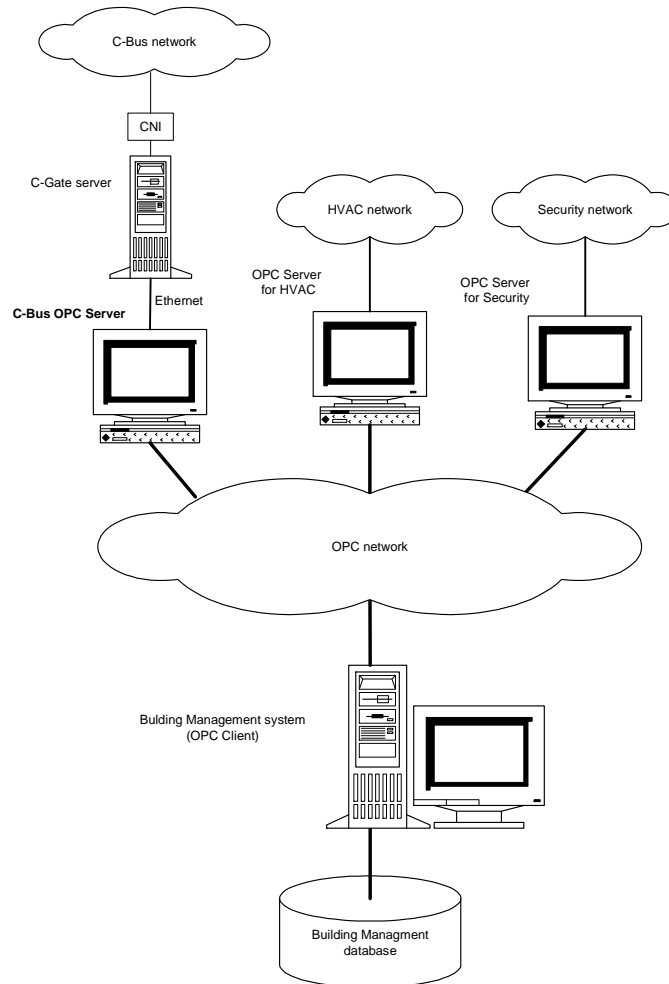
- transmit the lighting status and levels to the OPC Client from a C-Bus network
- control the lighting status and levels by sending lighting commands from the OPC Client to the C-Bus network
- show C-Bus network status, indicating if the status is OK or if there is a problem

OPC Servers perform different tasks. For example, some are responsible for data access, alarm and event handling, and historical data access. The C-Bus OPC Server is an OPC data access server.

C-Bus OPC Server brings C-Bus building management connectivity

The graphic below illustrates how the C-Bus OPC Server can be part of a larger building management system collecting data for C-Bus lighting applications and other subsystems networks such as HVAC and security.

Figure 2: OPC Server brings building management data access



1.2 Licensing

Licensing of the C-Bus OPC Server is divided into three categories: demonstration, Clipsal C-Bus OPC Server, and CITECT licenses.

Demonstration Licensing

If no physical licensing dongle is connected to the USB port of the host computer, then the C-Bus OPC Server operates in *Demo* mode. This means that the C-Bus OPC Server will only run for approximately two hours and cannot operate in *Production* mode. The Demo license has no restrictions on the number of C-Bus networks or OPC items that it can use.

Clipsal C-Bus OPC Server licenses

The Clipsal C-Bus OPC Server include a:

- 2 network license
- 10 network license
- Unlimited network license

A C-Bus OPC Server license is stored onto USB dongles, which can be purchase from any authorised Clipsal dealer. Each USB dongle works on a single C-Bus OPC Server.

A C-Bus network is defined by the number of C-Bus networks that the project has configured, regardless of how many are being used by the C-Bus OPC Server. If you have purchased an unlimited network license, the C-Bus OPC Server is able to operate on all connected networks.

CITECT licenses

The C-Bus OPC Server is able to recognise licenses manufactured by CITECT. The following CITECT products are supported:

- CITECT SCADA
- CITECT SCADA Historian
- CITECT HMI
- CITECT SCADA Facilities
- Vijeo Citect
- Vijeo Citect Lite
- Vijeo Reports
- MX4 Historian
- Power Logix
- Power Logix Lite
- Power Logix Historian
- Power Logix Facilities

Currently only product versions based on the CITECT SCADA Version 7 platform and later are supported.

Licensing for the C-Bus OPC Server, when activated by a CITECT License, is based on the number of configured OPC Items. This is referred to as the point count, and matches the point count of the CITECT License you are using.

Example: If you have CITECT SCADA with a 500 point count license installed you can use the C-Bus OPC Server with up to 500 configured Lighting groups across any number of C-Bus networks.

When using a dongle with just one of the following CITECT products:

- CITECT SCADA Historian
- Vijeo Reports
- MX4 Historian
- Power Logix Historian

the OPC Server operates as an unlimited points count product. If the dongle is a combination SCADA/Facilities and Historian/Reports dongle, the points count is limited to the license level of the SCADA/Facilities points count.

Multiple Licenses

If you have a Clipsal license and a CITECT license installed on the same PC the C-Bus OPC Server will always recognise and use the Clipsal license in preference to the CITECT license.

For more information about CITECT, see www.citect.com
<http://www.citect.com>.

1.3 Host computer system requirements

The C-Bus OPC Server has the following host computer system requirements:

Memory

1024 MB Error correction (ECC) RAM or greater

CPU

Pentium 4 processor, 2.4 GHz or better with 512k on-chip cache. A Core 2 Duo processor E6300 or better is recommended.

Windows operating systems

XP Professional, Windows Server 2003, Vista Business, Vista Ultimate

Hard drive capacity

80 GB disk with 16 MB on-disk cache, 10000 rpm, server grade, UDMA-6 or SATA-2

LAN connection

Network adaptor 100 Mbps preferred (for access from remote clients or CNI)

Back up hardware

A battery backed uninterruptible power supply is preferred.

General hardware requirements when installing and integrating to an OPC Client

For installing and commissioning purposes, the system will require:

- a PC mouse
- Colour display capable of 1024 x 768 resolution or better (for commissioning)
- a single USB port for a license dongle
- a port compatible with communications to C-Gate/C-Bus

1.4 For more information

OPC Foundation website

The *OPC Foundation* <http://www.opcfoundation.org/> is tasked to provide information and support for the development of OPC solutions. Their website contains links to high level documentation about OPC technology.

OPC Programmers Connection website

The *OPC Programmers Connection* <http://www.opcconnect.com/> website provides support for programmers who are developing OPC solutions.

Windows DCOM information

DCOM technology is a Microsoft proprietary technology which is utilised in the OPC specification. Technical information about DCOM is available at the *Microsoft DCOM developer network* <http://msdn2.microsoft.com/en-us/library/ms878122.aspx>.

Clipsal technical support

Clipsal technical support for the C-Bus OPC Server is provided via e-mail. E-mail for technical support: *Clipsal technical support* <mailto:cis.support@clipsal.com.au>.

2.0 Installation

The installation of the C-Bus OPC Server includes the software components described in the software layers in the Overview chapter. It also installs software related to the dongle driver and SmartInspect log viewer.

Before you start

Review the Overview chapter especially the section discussing *licensing* (on page 4)

- You will need access to the Internet to download the C-Bus OPC Server software.
- This installation chapter does not provide information about installation requirements for third party OPC Clients.

2.1 Downloading and installing C-Bus Toolkit

You can obtain the most recent copy of the C-Bus OPC Server software package at the *Clipsal software download* <http://www2.clipsal.com/cis/technical/downloads> page.

- Download the installation package to a temporary directory.
- Double click the installation package to run the installation wizard.
- C-Bus OPC Server software package installs to the C:\Clipsal\CbusOpcServer directory.

2.1.1 Installed software

The installed components reside in the C:\Clipsal\CbusOPCServer directory.

Installed software components

The main components are listed below:

- C-Bus OPC Server software components
- C-Bus OPC Commissioning Application
- C-Bus OPC Monitoring Application
- OPC core components
- SmartInspect components . The SmartInspect components including the SmartInspect Console application and and Help file. Both are installed to C:\Clipsal\CbusOpcServer\SmartInspect.
- DCOMPerm application. Command line Helper for setting DCOM permissions.
- Sentinel driver installer for dongle license

C-Bus OPC Server uninstall program

This program removes the C-Bus OPC Server software from the host computer.

Software applications available in Microsoft Windows Start menu

The following installed applications appear in the *Start > Programs > Clipsal menu* :

- OPC Server Help file
- Commissioning Application
- Install-Remove license dongle driver
- Monitoring Application
- SmartInspect Log Viewer

2.2 Installing the C-Bus OPC Server dongle

Dongles can be purchased from authorised Clipsal dealers. When you receive the C-Bus OPC Server dongle, remove the cap protecting the USB connector then insert the dongle into a convenient USB port. When the dongle is operational, the external tip glows yellow. The license driver is installed onto the host computer by the C-Bus OPC Server software package and the license information is made available to the C-Bus OPC Server.

2.3 Downloading and installing C-Bus Toolkit

You can obtain the most recent copy of C-Bus Toolkit at the *Clipsal software download* <http://www2.clipsal.com/cis/technical/downloads> page.

- 1 Download the installation package to a temporary directory.
- 2 Double click the installation package to run the installation wizard.
- 3 C-Bus Toolkit installs to the C:\Clipsal directory

3.0 Index

B

Back page for OPC Server • 14

C

C-Bus OPC Server brings C-Bus building management connectivity • 3

Conventions in this guide • ii

D

Downloading and installing C-Bus Toolkit • 9, 11

F

For more information • 7

H

Host computer system requirements • 6

I

Installation • 9

Installed software • 10

Installing the C-Bus OPC Server dongle • 10

L

Licensing • 4, 9

O

OPC data access specification • 2

Overview • 1

W

What is an OPC? • 1

Why have a C-Bus OPC Server? • 2

Product of Clipsal Australia Pty Ltd

A member of the Schneider Electric Group

Head Office

33-37 Port Wakefield, Gepps Cross

South Australia 5094

Telephone (08) 8269 0511

Facsimile (08) 8340 1724

Website: www.clipsal.com

E-mail: sales@clipsal.com.au

National Customer Service Enquiries

1300 2025 25

National Customer Service Facimile

1 300 2025 56

International Enquiries

International Sales and Marketing

Telephone + 61 8 8269 0587

Facsimile + 61 8 8340 7350

E-mail: export@clipsal.com.au

New Zealand

Schneider Electric (NZ) Ltd

38 Business Parade South,
Highbrook, East Tamaki, Manukau
2013

Website: www.schneider-electric.co.nz

E-mail: sales@nz.schneider-electric.com

Customer Service (New Zealand)

Free Phone 0800 652 999

Free Fax 0800 101 152

Clipsal Australia Pty Ltd reserves the right to change specifications, modify designs and discontinue items without incurring obligation and while every effort is made to ensure that descriptions, specifications and other information in this document are correct, no warranty is given in respect thereof and the company shall not be liable for any error therein.

© Clipsal Australia Pty Ltd.