



CAN-OPC-Server

OPC DA Server for the Controller Area Network (CAN)

The screenshot shows the ESDCanSvr application window. The title bar reads 'ESDCanSvr [C:\Programme\esd\OPC-DA CAN Server\Config\example.csv]'. The menu bar includes 'File', 'Settings', 'Trace', 'View', and 'Help'. Below the menu bar is a toolbar with a question mark icon and a printer icon. The main area contains a table with the following data:

Value	Statistic	
Sample Period (ms)	1000	
Num Clients	1	
Num Groups	2	
Num Items	6	
Num Reads Last Sample Period	0	
Num Writes Last Sample Period	0	
Num Change Notifications Last Sample Period	0	
Num Logons	0	

At the bottom right of the window, there is a 'NUM' button and a small icon.

Software Manual

to Product C.1103.01



NOTE

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Document History

The changes in the document listed below affect changes in the hardware as well as changes in the description of the facts, only.

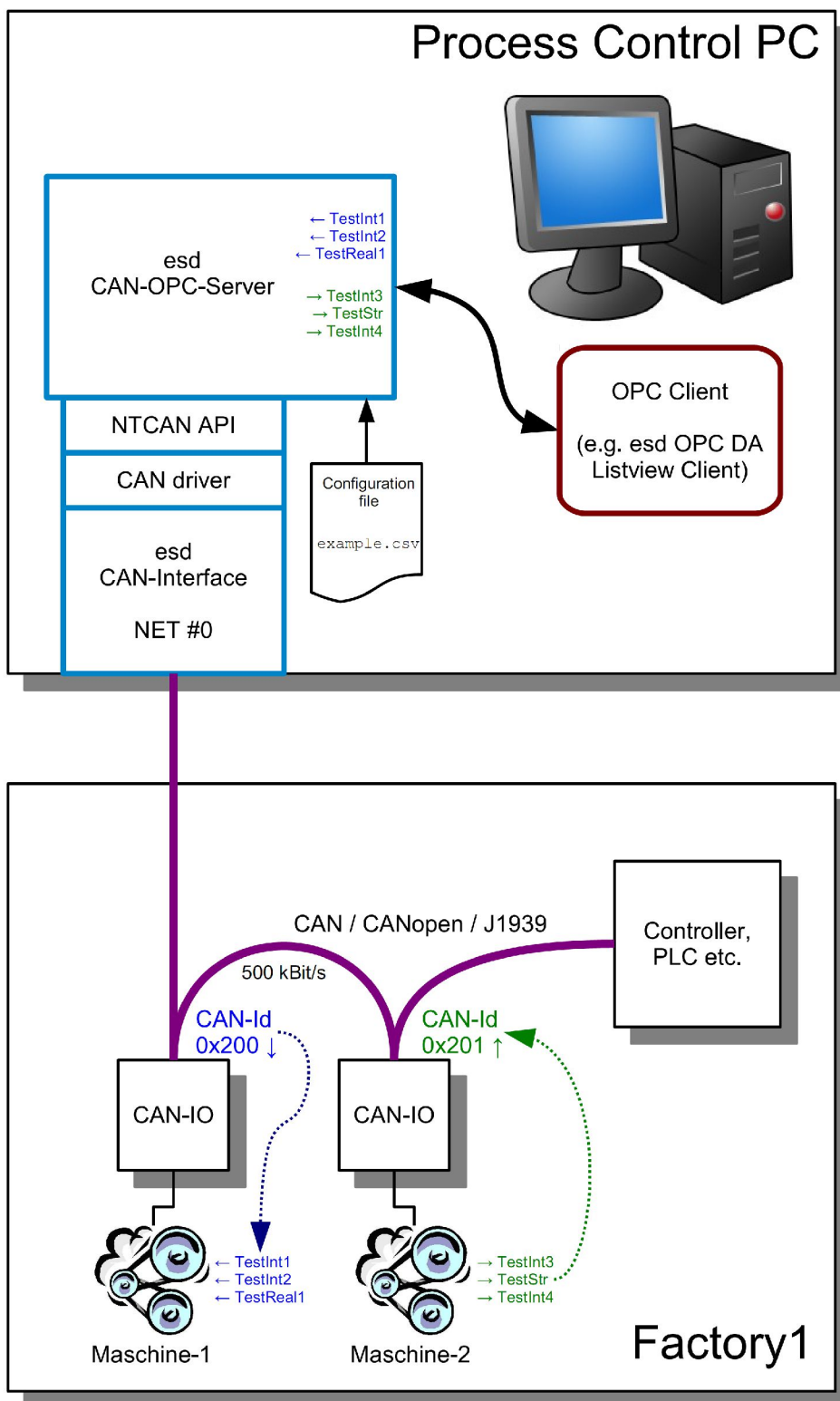
Revision	Chapter	Changes versus previous version	Date
1.0	all	First version	2009-08-06
1.0a	-	Order no. corrected.	2010-01-18
1.1	4.3	Document released after screenshot modification	2010-01-21
1.1a	3.3	Remark about special chars/dots in names	2010-05-06
1.2	-	Released version	2010-05-14
1.3	1.	Added Illustration	2012-07-03
	2.1	Elaborated requirements	
	6.	Added chapter "Order Information"	
	all	Renamed "OPC DA CAN Server" to "CAN-OPC-Server"	

Technical details are subject to change without further notice.

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1. Overview



The CAN-OPC-Server allows to offer data on the CAN bus as OPC Items.

- Supports reading and writing
- Standard OPC data types (e.g. VT_UI2, VT_R8, ...)
- Data position in CAN frame can be configured bit-exact (e.g. "start at bit 3, length = 20 bit, as VT_UI4")

2. Installation

2.1 Requirements

Operating system:	Windows XP® or higher
Disk space:	Approx. 6 MB (including Sample OPC Client)
Memory:	As recommended for operating system
CAN:	esd's CAN Hardware supporting/including esd's "NTCAN-API" Software
OPC-Clients:	All OPC Data Access Clients supporting version 3.0, 2.05a, 2.0 or 1.0a
OPC Demo-Client:	Requires .NET™ Framework 2.0

2.2 Setup

Setup is done via executing the setup file. This is usually named "CAN-OPC-Server Setup.exe".

Note that administrator rights are needed to execute this file successfully.

2.2.1 OPC Demo-Client

It is automatically installed and removed with the CAN-OPC-Server. Not installed when .NET Framework not found.

2.3 Removal

CAN-OPC-Server can be removed by Windows "Software" page (Start → Settings → System) or the "Uninstall" link in the Start menu (default: Start → Programs → esd).

3. Configuration

3.1 Configuration file (.csv)

Configuration via .csv file is done with different types of text lines. The items within a line must be separated by a semicolon.

See application's "Config" directory for examples. There are also template .ods/.xls files to create such file with a spreadsheet application.

3.1.1 Text line to configure a CAN net

Format:

NET;<CAN Net Number>;<Name>;<Baudrate>

CAN Net Number: Logical CAN net number, usually starts at 0.

Name: Custom ASCII Text, every net's name should be unique.

Baudrate: CAN baudrate in kBit/s.

Example:

NET; 0; MyNet; 500

3.1.2 Text line to configure a process variable

Format:

VAR; <CAN Net>;<Node>;<Name>;<Access>;<Id>;<29-Bit>;<Var Type>;<Pos>;<Len>

CAN Net: Same as used to configure CAN net

Node: Custom ASCII Text

Name: Custom ASCII Text, should be unique

Access: Either "In" or "Out":

"In" Value is read from CAN frame (Read-Only OPC-Item)

"Out" Value is written to CAN frame (R/W OPC-Item)

Id: CAN-Id which contains that data

29-Bit: Either "1" or "0".

"1" Id is 29 Bit

"0" Id is 11 Bit

Var Type: One of:

"VT_BOOL" One bit ("true/false", "on/off", etc.)

"VT_I1" One byte Integer

"VT_UI1" One byte Integer, unsigned

"VT_I2" Two byte Integer

"VT_UI2" Two byte Integer, unsigned

Configuration

"VT_I4"	Four byte Integer
"VT_UI4"	Four byte Integer, unsigned
"VT_R4"	Four byte float (IEEE)
"VT_R8"	Eight byte float (IEEE)
"VT_BSTR"	String

Pos: Position in CAN frame's data in bit

Len: Length in bit

3.1.3 Example

VAR; 0; Machine-2; TestInt; In; 0x200; 0; VT_I2; 0; 16; LittleEndian

With given net example this will lead to this OPC variable:

"MyNet.Machine-2.TestInt" which is read as 16 bit integer from CAN-Id 0x200's data, etc.

3.2 Configuration file (.xml)

This is an alternative to the .csv format. Currently **not supported**. See File "example.xml" (in application's "Config" directory) if you want to use it anyway.

3.3 Configuration remarks

- All identifiers are case-sensitive. ("Vt_i4" instead of "VT_I4" will not be recognized!)
- The OPC variable's name (created by net name, node name and variable name itself) must be unique.
- Net, node and variable name must not contain dots. Other special characters might also lead to problems, so it's recommended to keep these names simple.
- VT_BSTR: bit position and size must be a multiple of 8 (full bytes only)
- Bit position plus bit size must not be larger than 64 (wouldn't fit into can frame's data...)
- VT_R4: Bit size has to be 32
- VT_R8: Bit size has to be 64
- All other variable's bit sizes must not be larger than their type: e.g. length 17 is not allowed for VT_UI2 etc.
- When bit size is smaller than type, e.g. 3 bits for VT_I1, additional bits are ignored on write. (No adjustment is made to set it to max. possible value for that number of bits)

4. Running CAN-OPC-Server

4.1 Start

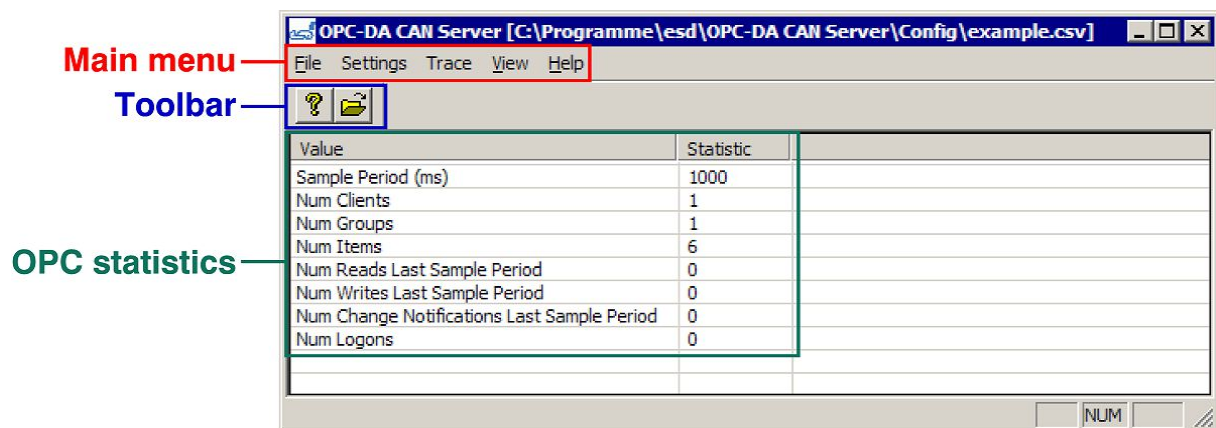
Usually the OPC-Server does not have to be started manually, it will start automatically when an OPC-Client connects to it (name is “esd.OPCDACANServer”).

To start it manually, go to the “start menu” (by default in “Start → Programs → esd”) and select “Start CAN-OPC-Server”

4.2 First Start

On first start you need to open a configuration file. See chapter “Configuration“ for details how to create that file.

4.3 Interface



4.3.1 Main menu

Important items:

- “File → Open Configuration File”: Use this to open another configuration. This new configuration will become the default configuration until you choose another one.
- “Settings → Minimize to tray on start”: Use this to hide the interface window on start. Use the tray icon (an esd icon, usually next to the clock in the lower right corner of your desktop) to show the window then.
- “Help → About CAN-OPC-Server“: Use this to see version information. Always include this information when you contact esd

4.3.2 Toolbar

Offers some main menu items for easier access.

-  equals main menu “File → Open Configuration File”

4.3.3 OPC statistics

Shows some information about connected OPC clients. Usually only needed to see whether server is in use or not.

5. Additional information

See file "3rd_party_licensor_notice.pdf" in application's directory for information about 3rd Party License Notices.

6. Order Information

Type	Properties	Order No.
CAN-OPC-Server	OPC DA Server for the Controller Area Network (CAN)	C.1103.01

Table 1: Order information

PDF Manuals

Manuals are available in English and usually in German as well. For availability of English manuals see table below.

Please download the manuals as PDF documents from our esd website www.esd.eu for free.

Manuals	Order No.
CAN-OPC-Server-ME	Hardware manual in English (This manual) C.1103.21

Table 2: Available manuals

Printed Manuals

If you need a printout of the manual additionally, please contact our sales team: sales@esd.eu for a quotation. Printed manuals may be ordered for a fee.