

**OMC System Software**






**High-performanceHMI**

**OPC Server User Manual**

**IM41S82-E**

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Symbol Definition	
	<b>WARNING:</b> Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	<b>RISK OF ELECTRICAL SHOCK:</b> Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	<b>ESD HAZARD:</b> Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	<b>ATTENTION:</b> Identifies information that requires special consideration.
	<b>TIP:</b> Identifies advice or hints for the user.

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# OPC Server

## Section 1 Overview

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High-performance HMI system software supports two types of OPC servers: VFOPCSvr and VFOPCAEServer. VFOPCSvr sends the real-time tag values of OMC master and slave computers to the OPC client.

- VFOPCSvr and VFOPCAEServer respectively provides data to up to 30 clients.
- VFOPCAEServer is used to transmit the process alarms in the local domain and crossed domain, system alarms, SOE and operation logs of OMC to OPC clients. In which, the process alarms include the field tag alarm in OMC, added alarms of field tags and domain variable tags of JX-300XP/ECS-100.

By VFOPCSvr, tag's information will be transmitted to OPC client. And the tag's information includes:

- Analogy tag provides tag's type, value, timestamp, access right, scan rate, unit and range.
- Digital tag provides tag's type, value, timestamp, access right, scan rate.

Tag's access right can be configured in VFOPCSvr, for details refer to "2.2.2 Configure Writing Tag".

## Section 2 OPC Server

This section describes OPC server's usage including application and instruction.

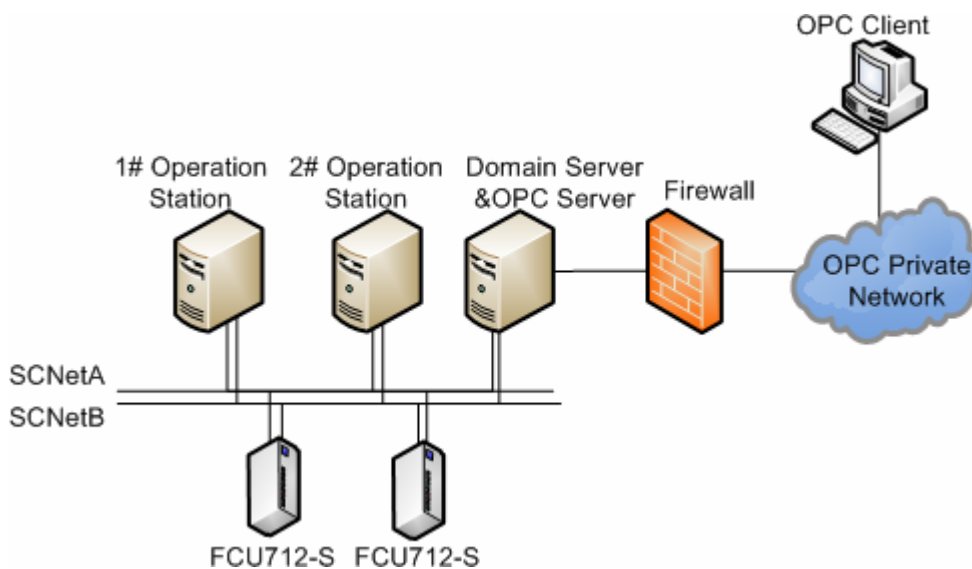
### 2.1 Application of OPC Server

OPC server can be applied in independent project and joint project.

- In independent project (the project without inter-domain), OPC server acquires the tag information in the current project and sends to the OPC client.
- In joint project (the project with inter-domain), OPC server acquires the tag information in the current project and referenced domain and sends to OPC client.

#### 2.1.1 Apply VFOPCSvr in Independent Project

Figure 2-1 shows the typical application of OPC server in independent project.



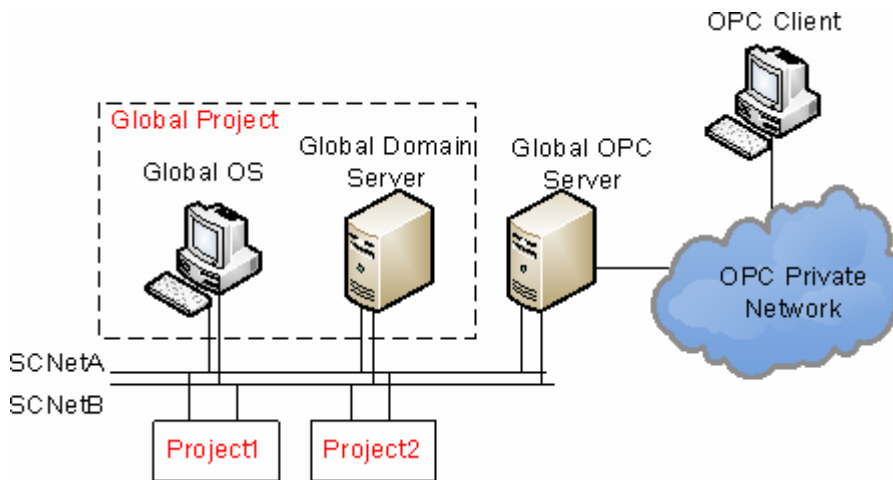
**Figure 2-1 Typical application of OPC Server (not inter-domain)**

In the figure above, basic flow to send tag information via OPC protocol is:

- Collect OPC tag information  
Domain server & OPC server run OPC server software and collect tag information from controller via SCnetA/B network.
- Receive and apply OPC tag information  
OPC Client run standard OPC client (such as OPC Client) and receive tag information of control station and its domain variable information collected by OPC server via OPC private network.

### 2.1.2 Apply VFOPCSvr in Joint Project

The network figure when applying OPC server in joint project is shown below.



**Figure 2-2 Typical Application of OPC Server (inter-domain)**



**Tip:**

"Project 1" and "Project 2" in above figure both apply the network architecture in Figure 2-1. The work process is shown in 2.1.1 Apply VFOPCSvr in Independent Project.

In the application above, the basic flow to send tag information via OPC protocol is:

- As the referenced domains, operation domains of project 1 and project 2 are referenced by operation domain of global project, thus the global domain server can get all the information of tags in every project.
- Global OPC server gets tag information of referenced domain from global domain server, and exchanges the information of tags in the referenced domain with OPC client(running standard OPC client).

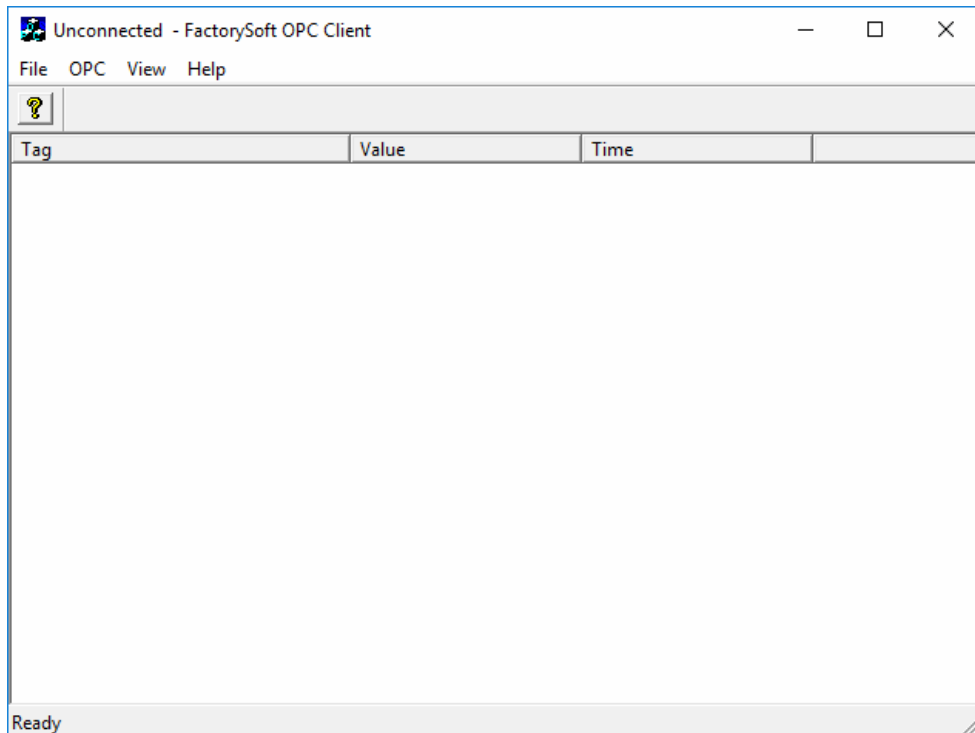
## 2.2 Data Management by VFOPCSvr

This part mainly introduces the configuration of VFOPCSvr connecting to OPC client.

### 2.2.1 Connect VFOPCSvr by Standard OPC Client

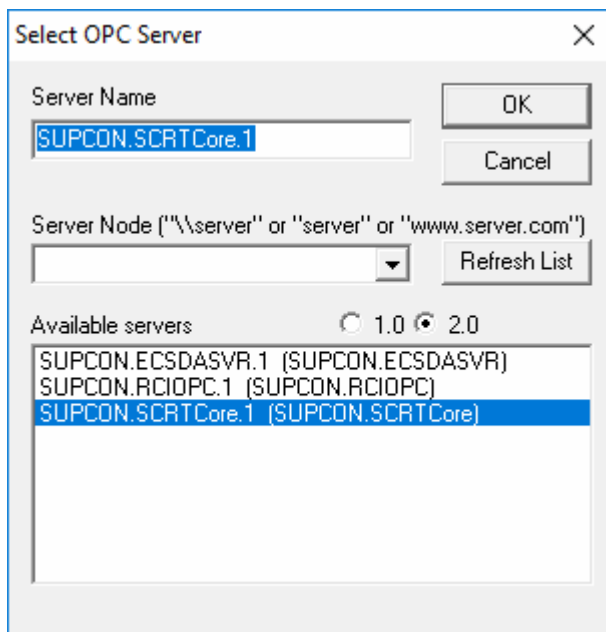
Here takes OPC Client as an example to introduce the connection VFOPCSvr by standard OPC client.

1. Open OPC Client and the initial interface shown below pops up.



**Figure 2-3 Initial interface of OPC Client**

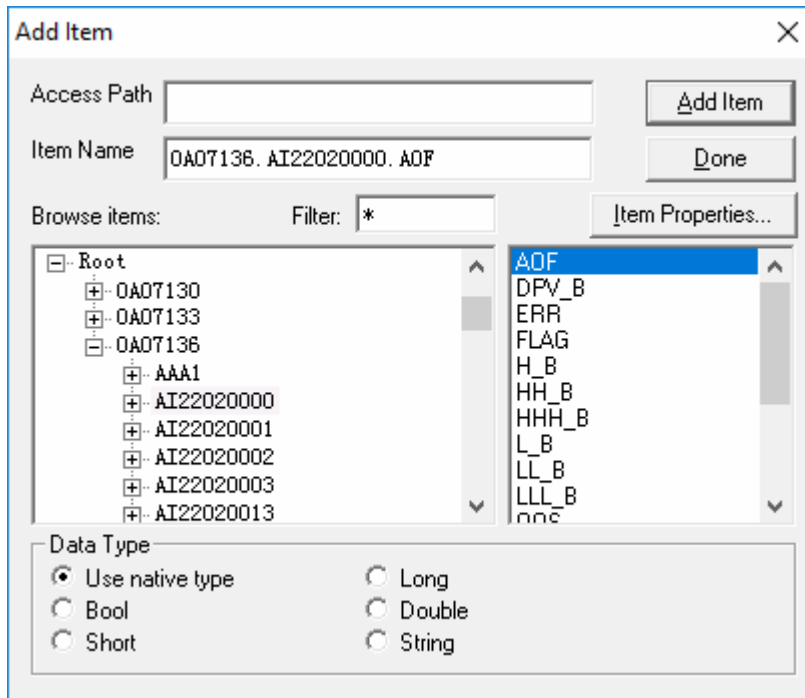
2. Select **OPC/ Connect** in menu bar to pop up the following dialog.



**Figure 2-4 Select OPC Server**

Current available OPC servers are shown in "Available servers" above. "SUPCON.SCRTCore" is the VFOPCSvr server comes with High-performanceHMI software installation package.

3. Select "SUPCON. SCRTCore" in "Available servers" and click **OK** to back to the main interface of OPC Client.
4. Select **OPC/ Add Item** in menu bar to pop up the following dialog.

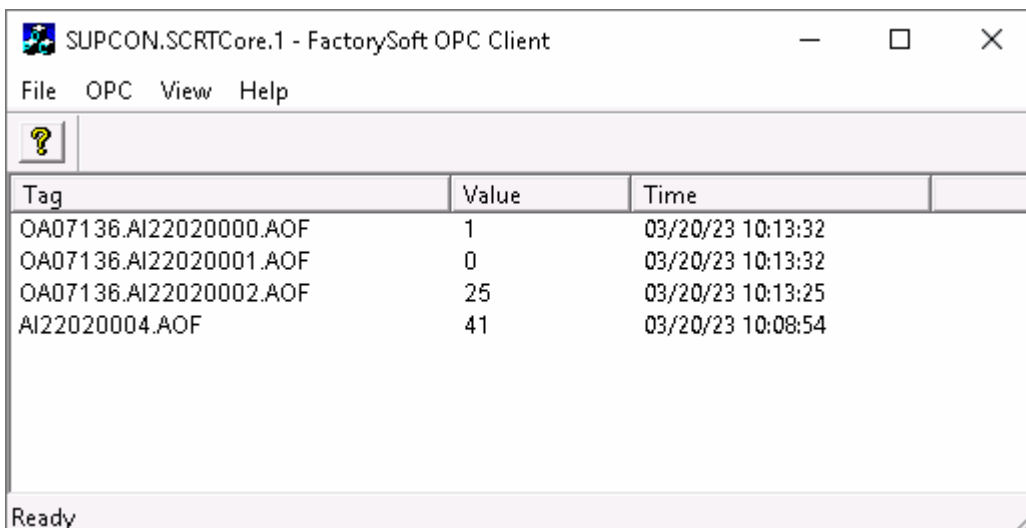


**Figure 2-5 Add Item**

As shown in the figure above, the tag of "Item Name" is "OA07136.AI22020000.AOF", i.e. the tag is in the reference domain. "OA07136" is the reference domain alias.

5. Select the tag in tag list and its field in the right pane, and click "Add Item".
6. Repeat step 5 to add tags to be subscribed one after another. Click "Done" to complete the operation.

Subscribed tag will be added to the tag list in main interface of OPC Client, as shown below.



**Figure 2-6 Tags shown in OPC client**

According to the OPC client configuration, OPC can sent the data automatically or the data changed to the OPC client.

- Sent the data after changed



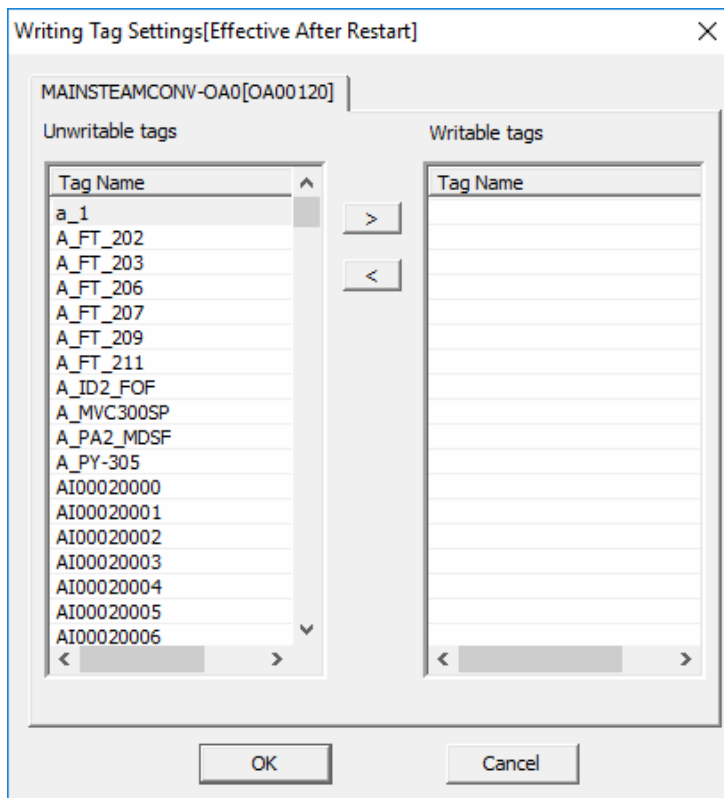
When the controller's data changed, the OPC will send the data to the OPC client.

- Sent the data automatically  
The OPC send the data to the OPC client automatically. And the default cycle of data sent is 200ms.

### 2.2.2 Configure Writing Tag



OPC server supports configuring whether tag's can be written or not. After OPC server running, that will be shown in system tray. By following steps, tag's writable can be configured.

1. Click VFOPCServer in system tray and select the command " Writing Tag Settings", popup the dialog shown as below.



**Figure 2-7 Writing Tag Settings Dialog Box**

2. Configure the tags can be written by OPC DA client by following steps:
  - "Unwritable Tags" list the tags only can be read.
  - "Writable Tags" list the tags can be written.

In addition, by the button  and  tags can be moved between "Unwritable Tags" and "writable Tags".

3. Click "OK" to save the current configuration.

### 2.2.3 Diagnostic Tag Illustration

VFOPCSvr supports the transfer of diagnostic data of controllers, operation stations, IO connection modules and IO modules.

## Controller diagnostic tags

In the High-performanceHMI system, the format of the diagnostic tag of the controller is “diagnostic name+domain address+station address+property name”. For example, “\_CS\_017\_002.SCNETA”, where: \_CS means the tag is the controller diagnostic tag, 017 means No.17 domain, 002 means No. 2 control station, and SCNETA means the communication status of the control A network.

In the table below, the controller diagnostic tags that can be transferred by VFOPCSvr are listed.

**Table 2-1 Diagnostic tags of controllers**

Diagnostic Type	Property Name	type of data	Description	Diagnostic value
Controller communication status	COMMU	BOOL	Controller communication status	ON: fault OFF: normal
Controller working / standby status	WORK	BOOL	Work standby state	ON: work OFF: Standby
Whether the AO/DO tag is in a fault state	TAGFS	BOOL	There is an AO/DO tag in the output readback state	ON: fault OFF: normal
Whether the I/O tag number is in OOS state	IOTAGFB	BOOL	There are I/O tags in the prohibited state	ON: fault OFF: normal
Whether the I/O tag is in a forced state	IOTAGFC	BOOL	There is an I/O tag in a forced state	ON: fault OFF: normal
Whether the analog quantity number exceeds the range	ATAGOVR	BOOL	There is an analog number over the range	ON: fault OFF: normal
Whether there is DI tag jitter	DITAGDIT	BOOL	With DI tag jitter	ON: fault OFF: normal
Control CPU software version	CCPUVER	STR	Control CPU software version	
Control network communication CPU software version	SCCPUVER	STR	Control network communication CPU software version	
IO communication CPU software version	IOCPUVER	STR	IO communication CPU software version	
(The status of the fault light in the card picture )	HARDERRF	BOOL	Controller hardware error overall flag	ON: fault OFF: normal
Memory status	MEMSTATU	BOOL	Hardware failure ( FLASH failure) Hardware failure ( SRAM failure) Hardware failure ( SDRAM failure) Hardware failure ( SCnet DPRAM failure) Hardware failure ( SCBUS DPRAM failure)	ON: fault OFF: normal
Control station clock	CSTIME	STR	local time Format: 1970-01-01 00:00:00	
Controller hardware status	CSHARDF	BOOL	Hardware failure (cycle sync line error) Hardware failure (redundant channel hardware error) Hardware failure ( CPU pin voltage failure) Hardware failure ( CPU core voltage failure) Hardware failure ( failed to interact with the control network communication CPU ) Hardware failure ( Failed to interact with I/O communication CPU ) Hardware failure (address line error) Hardware failure (data line error) Hardware failure (real-time clock error)	ON: fault OFF: normal

Diagnostic Type	Property Name	type of data	Description	Diagnostic value
Controller temperature	TEMP	FLOAT	Controller temperature	
User program running status	USPROGD	BOOL	Configuration failure (user program is shielded)	ON: fault OFF: normal
Configuration status flag	CFGSTATU	BOOL	Configuration failure (no configuration) Configuration failure (hardware configuration error) Configuration failure (tag configuration error) Configuration failure (error in the user program) Configuration failure (other configuration errors) Configuration failure (caused by power-on redundancy) Configuration failure (working / standby inconsistency)	ON: fault OFF: normal
Configuration data status	CFGDATA	BOOL	Configuration failure (configuration data error)	ON: fault OFF: normal
Configuration buffer data status	CFGBUFD	BOOL	Configuration failure (error in configuration buffer data)	ON: fault OFF: normal
Temporary data status of user program	USPROGR E	BOOL	User program running error	ON: fault OFF: normal
Communication module configuration status	DTCFG	BOOL	Configuration failure (node configuration error)	ON: fault OFF: normal
IO module configuration status	IOCFG	BOOL	Configuration failure ( error in IO module configuration)	ON: fault OFF: normal
Tag configuration status	TAGCFG S	BOOL	Configuration failure ( DI tag) Configuration failure ( AI tag ) Configuration failure ( DO tag ) Configuration failure ( AO tag ) Configuration failure (multicast switch number) Configuration failure (multicast analog quantity tag) Configuration failure (multicast integer tag number) Configuration failure (Interactive switch number between pages) Configuration failure (interactive analog quantity tag number between pages) Configuration failure (interactive integer number between pages)	ON: fault OFF: normal
User program schedule status	USERSCHE	BOOL	Configuration failure (error in user program schedule)	ON: fault OFF: normal
System function block library status	SYSFBLIB	BOOL	Configuration failure (system function block library error)	ON: fault OFF: normal
Industry function block library status	INDFBLIB	BOOL	Configuration failure (industry function block library error)	ON: fault OFF: normal
User function block library status	USEFBLIB	BOOL	Configuration failure (error in user function block library)	ON: fault OFF: normal
Redundant state	REDUSTAT	BOOL	Redundancy failure (power-on redundancy failure) Redundancy failure (real-time redundancy failure in this cycle) Redundancy failure (real-time redundant buffer overflow) Redundancy failure (cycle synchronization status failure)	ON: fault OFF: normal

Diagnostic Type	Property Name	type of data	Description	Diagnostic value
IP address conflict status	IPCFLICT	BOOL	IP address conflict	ON: fault OFF: normal
Control network A network port clock synchronization	SNTPA	BOOL	Clock synchronization failure	ON: fault OFF: normal
Control network B network port clock synchronization	SNTPB	BOOL	Clock synchronization failure	ON: fault OFF: normal
Control network A communication status	SCNETAF	BOOL	SCnet A network port failure SCnet A network port is not connected Control network A failure (reserved) The communication between the controller and the current operating station SCnet A network is interrupted SCnet A network is overloaded	ON: fault OFF: normal
Control network B communication status	SCNETBF	BOOL	SCnet B network port failure SCnet B network port is not connected Control network B failure (reserved) The communication between the controller and the current operating station SCnet B network is interrupted SCnet B network is overloaded	ON: fault OFF: normal
Controller diagnostic data communication status	LOST	BOOL	Controller is missing	ON: fault OFF: normal
Controller type	CFGDIFF	BOOL	Controller type is inconsistent with configuration	ON: fault OFF: normal
Controller load status	OVERLOAD	BOOL	Controller program is blocked Controller overload	ON: fault OFF: normal
Second pulse synchronization status	PPS	BOOL	Second pulse synchronization failure Second pulse synchronization is not enabled	ON: fault OFF: normal

### Operation station diagnostic tag

In the High-performanceHMI system, the format of the diagnostic tag of the operation station is "diagnostic name + third digit IP address + fourth digit IP address + attribute name". For example, "\_OS\_001\_166.SCNETA", where: \_OS means the tag is the operator station diagnostic tag 001\_166 means the last two digits of the IP are the 1.166 operator station, and SCNETA means the operator A network communication.

In the table below, the operator station diagnostic tags that can be transmitted by VFOPCSvr are listed.

**Table 2-2 Diagnostic tags of operation stations**

Diagnosis content	Diagnostic tag name	Types of	Diagnostic item	Diagnostic value
Control A network communication	NET20	BOOL	Operation station SCnet A network communication failure ( no 20 network report failure )	ON: fault OFF: normal
Control B network communication	NET21	BOOL	Operation station SCnet B network communication failure ( no 21 network report failure )	ON: fault OFF: normal

Diagnosis content	Diagnostic tag name	Types of	Diagnostic item	Diagnostic value
Operating station lost	LOST	BOOL	Operating station lost	ON: fault OFF: normal
operating system	WINVER	STR	Operating system version	-
Package version	VFVER	STR	High-performanceHMI version	-
CPU usage (%)	CPU	FLOAT	Operation station CPU	-
All physical memory (M)	TOTALMEM	DINT	All physical memory	-
Use physical memory (M)	USEMEM	DINT	Operating station memory	-
Configuration disk free space (M)	FREEDISK	DINT	The remaining space of the disk where the configuration is located	-
Information A Network Communication	NET30	BOOL	Operation station SOnet A network communication failure ( no 30 network report failure )	ON: fault OFF: normal
Information B network communication	NET31	BOOL	Operation station SOnet B network communication failure ( no 31 network report failure )	ON: fault OFF: normal
Time synchronization between upper and lower computers	TIMED	BOOL	The operating station clock is not synchronized with the controller	ON: fault OFF: normal
Consistency with configuration server configuration	CFGUP	BOOL	The configuration of the operating station is inconsistent with the configuration server	ON: fault OFF: normal
Consistency with lower computer configuration	CFGDOWN	BOOL	The operating station configuration is inconsistent with the control station	ON: fault OFF: normal

#### IO connection module diagnostic tag

In the High-performanceHMI system, the format of the diagnostic tag number of the IO connection module is "diagnostic name + domain address + station address + IO connection module address + attribute name", such as "\_CM\_017\_002\_000.WORK", where: CM indicates that the tag is IO connection module diagnostic tag, 017 represents the 17th domain, 002 represents the No. 2 control station, 000 represents the IO connection module address, and WORK represents the working status of the module.

In the table below, the diagnostic tags of the IO connection module that can be passed by VFOPCSvr are listed.

**Table 2-3 Diagnostic tags of IO connection modules**

Diagnosis content	Diagnostic tag name	Types of	Diagnostic item	Diagnostic value
Address conflict	ADDRC	BOOL	Node address conflict	ON: fault OFF: normal
Request communication	REQCOM	BOOL	Request communication	ON: fault OFF: normal
Configuration status	CFGST	BOOL	Configuration status	ON: fault OFF: normal

Diagnosis content	Diagnostic tag name	Types of	Diagnostic item	Diagnostic value
Start state	BOOT	BOOL	Start state	ON: fault OFF: normal
Redundant state	REDUST	BOOL	Redundant state	ON: Redundant OFF: stand-alone
24Va state	24VPAL	BOOL	24V A power supply failure on the left	ON: fault OFF: normal
	24VPAR	BOOL	24V A power supply failure on the right	ON: fault OFF: normal
24Vb status	24VPBL	BOOL	24V B power supply failure on the left	ON: fault OFF: normal
	24VPBR	BOOL	24V B power supply failure on the right	ON: fault OFF: normal
E-BUS A network communication status	NETAL	BOOL	E-BUS A network failure on the left	ON: fault OFF: normal
	NETAR	BOOL	E-BUS A network failure on the right	ON: fault OFF: normal
E-BUS B network communication status	NETBL	BOOL	E-BUS B network failure on the left	ON: fault OFF: normal
	NETBR	BOOL	E-BUS B network fault on the right	ON: fault OFF: normal
0#1# Rack L-BUS A communication status	CAN01AL	BOOL	L-BUS A failure of the left 0#1# frame	ON: fault OFF: normal
	CAN01AR	BOOL	Right 0 # 1 # rack L-BUS A fault	ON: fault OFF: normal
2#3# Rack L-BUS A communication status	CAN23AL	BOOL	L-BUS A failure of the left 2#3# frame	ON: fault OFF: normal
	CAN23AR	BOOL	Right side 2#3# rack L-BUS A failure	ON: fault OFF: normal
0#1# Rack L-BUS B communication status	CAN01BL	BOOL	L-BUS B failure of the left 0#1# frame	ON: fault OFF: normal
	CAN01BR	BOOL	Right 0 # 1 # rack L-BUS B fault	ON: fault OFF: normal
2#3# Rack L-BUS B communication status	CAN23BL	BOOL	L-BUS B failure of 2#3# rack on the left	ON: fault OFF: normal
	CAN23BR	BOOL	Right side 2#3# rack L-BUS B failure	ON: fault OFF: normal
Auxiliary power supply 1	ASSIPOW1	BOOL	Cabinet auxiliary power supply 1 alarm	ON: fault OFF: normal
Auxiliary power supply 2	ASSIPOW2	BOOL	Cabinet auxiliary power supply 2 alarm	ON: fault OFF: normal
System power 1	SYSPOW1	BOOL	Cabinet system power supply 1 alarm	ON: fault OFF: normal
System power 2	SYSPOW2	BOOL	Cabinet system power supply 2 alarm	ON: fault OFF: normal
Fan quality 1	CABFAN1	BOOL	Cabinet fan 1 failure	ON: fault OFF: normal
Fan quality 2	CABFAN2	BOOL	Cabinet fan 2 failure	ON: fault OFF: normal
Fan quality 3	CABFAN3	BOOL	Cabinet fan 3 failure	ON: fault OFF: normal
Fan quality 4	CABFAN4	BOOL	Cabinet fan 4 is faulty	ON: fault OFF: normal
Cabinet temperature	TEMP	DINT	Cabinet temperature	-

## IO module diagnostic tag

In the High-performanceHMI system, the format of the diagnostic tag of the IO connection module is "diagnostic name + domain address + station address + IO connection module address + rack address + IO module address + attribute name". For example, "\_IO\_017\_002\_003\_000\_001.MATCH", where: \_IO means the tag is the diagnostic tag of the IO module, 017 means the 17th domain, 002 means the No. 2 control station, 003 means the IO connection module address, 000 means the rack address, 001 means IO Module address, MATCH means the IO card matches.

In the following table, the diagnostic tags of the IO modules that can be transferred by VFOPCSvr are listed.

**Table 2-4 IO module diagnostic tag**

Diagnosis content	Diagnostic tag name	Types of	Diagnostic item	Diagnostic value
Module work / standby	WORK	BOOL	IO module working status	ON: work OFF: Standby
Module failure level	SERIOUSE	BOOL	IO module serious failure	ON: fault OFF: normal
	LIGHTE	BOOL	IO module minor failure	ON: fault OFF: normal
Module auxiliary power	ASSIPOW	BOOL	IO module auxiliary power detection	ON: fault OFF: normal
Module connection detection	LOST	BOOL	IO module is missing	ON: fault OFF: normal
Module address detection	ADDRRC	BOOL	IO module address conflict	ON: fault OFF: normal
Module B bus	BUSAERR	BOOL	B bus failure	ON: fault OFF: normal
Module A bus	BUSBERR	BOOL	A bus failure	ON: fault OFF: normal
Module type detection	MATCH	BOOL	Type does not match	ON: fault OFF: normal
Module configuration verification	CFG	BOOL	Configuration check is inconsistent	ON: fault OFF: normal
Channel status	CHNUSTAT	BOOL	IO module channel diagnosis	ON: fault OFF: Normal <sup>Note 1</sup>

Note: channel faults are combined as one diagnosis to output.

## 2.3 Alarm Management by VFOPCAEServer

The OPC server collects and delivers alarm events to client via VFOPCAEServer.

### 2.3.1 Connect VFOPCAEServer by OPC Client

Here takes AlarmClient as an example to introduce how OPC client connects to VFOPCAEServer.

- 1) Run AlarmClient and select "OPC > Connect" in the menu and the OPC Alarm Server dialog will pop up.
- 2) Enter the server node address in "Server Node" field and click "Refresh List", select VFOPCAEServer in the "Available servers" list (SUPCON.VFOPCAEServer.1 as shown in figure below), and click "OK".

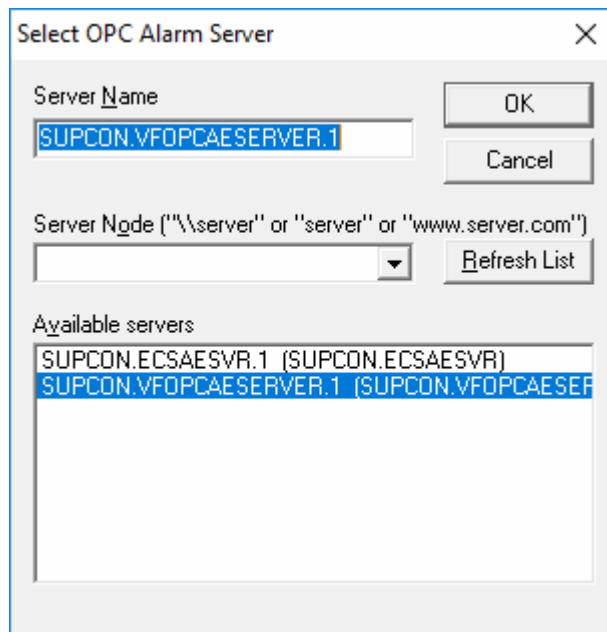


Figure 2-8 Connect VFOPCAEServer by Alarm Client

- 3) After the connection is successful, the alarm information provided by the VFOPCAEServer server is displayed on main interface of AlarmClient, which includes the source and time of alarm.

SUPCON.VFOPCAESERVER.1 - FactorySoft AlarmClient

File OPC View Help

Source	Date	Time	Message	Severity	Condition	Subcondition
Control Domain0/Control Station_172_20_0_2/AI05020113	03/20/23	13:55:07	standby	30	LL	LL
Control Domain0/Control Station_172_20_0_2/AI05020108	03/20/23	13:55:07	standby	30	HH	HH
Control Domain0/Control Station_172_20_0_2/AI05020097	03/20/23	13:55:07	standby	30	L	L
Control Domain0/Control Station_172_20_0_2/AI05020097	03/20/23	13:55:07	standby	30	H	H
Control Domain0/Control Station_172_20_0_2/AI05020088	03/20/23	13:55:07	standby	30	LL	LL
Control Domain0/Control Station_172_20_0_2/AI05020072	03/20/23	13:55:07	standby	30	L	L
Control Domain0/Control Station_172_20_0_2/AI05020072	03/20/23	13:55:07	standby	30	H	H
Control Domain0/Control Station_172_20_0_2/AO05020061	03/20/23	13:55:07	standby	30	OUTL	OUTL
Control Domain0/Control Station_172_20_0_2/AI12100045	03/20/23	13:55:07	Standby	30	LL	LL
Control Domain0/Control Station_172_20_0_2/TI_2002	03/20/23	13:55:07	Reactor R2002 temperature	30	HH	HH
Control Domain0/Control Station_172_20_0_2/TV_8002A	03/20/23	13:55:07	R8002 adjustment valve A	30	OUTL	OUTL
Control Domain0/Control Station_172_20_0_2/AI12100025	03/20/23	13:55:07	Standby	30	HH	HH
Control Domain0/Control Station_172_20_0_2/AI12100020	03/20/23	13:55:07	Standby	30	LL	LL
Control Domain0/Control Station_172_20_0_2/AO12100009	03/20/23	13:55:07	Standby	30	OUTH	OUTH
Control Domain of Operation Station/Tag group0/A001	03/20/23	13:55:07		30	L	L
Control Domain0/Control Station_172_20_0_2/AI05020100	03/20/23	13:55:06	standby	30	HH	HH
Control Domain0/Control Station_172_20_0_2/AI05020095	03/20/23	13:55:06	standby	30	LL	LL
Control Domain0/Control Station_172_20_0_2/TI_9001	03/20/23	13:55:06	R9001	30	HH	HH
Control Domain0/Control Station_172_20_0_2/AI05020070	03/20/23	13:55:06	standby	30	LL	LL
Control Domain0/Control Station_172_20_0_2/AO05020059	03/20/23	13:55:06		30	OUTH	OUTH
Control Domain0/Control Station_172_20_0_2/WT_8008	03/20/23	13:55:06	R8008	30	H	H

Figure 2-9 Alarm information list



### 2.3.2 Alarm Display Description

After connecting to VFOPCAEServer, OPC client displays various types of alarm information and events from the client synchronization. The alarm information includes attributes control domain address, control station address, and so on. The following shows the display form of various types of alarm information and events.

- Process alarm is displayed as "domain alias\control domain\ control station\ tag name".
- Domain variable alarm is displayed as "domain alias\upper computer control domain\tag group\tag name".
- System alarm is displayed as "domain alias\operation domain\operation node\PC" or "alias name\operation domain\server\PC".
- When the "Property" operation is performed on the alarm information, the information in property is shown in following table.

Name	Data Type	Description
PROC_ATTR_AREAADDR	short	Control domain
PROC_ATTR_CSADDR	short	Control station
PROC_ATTR_PRJNAME	STRING	Project name
PROC_ATTR_GROUPNAME	short	Alarm group
PROC_ATTR_REGINNAME	short	Alarm zones
PROC_ATTR_TAG_TYPE	STR	Tag Type
PROC_ATTR_SUPPRESSION	BOOL	Alarm suppression
PROC_ATTR_AOF	BOOL	Alarm AOF
PROC_ATTR_UNIT	STRING	Unit



**Tip:**

Only alias name is enabled in VFOPCAEServer, can alias name be displayed on each alarm and event information.

### OPC A&E Category

The table below lists 4 items OPC A&E can record.

Property Value	Description
1	Process Alarm
2	System Alarm
3	SOE
4	Operation Log

### OPC A&E Event Type

The table below lists 3 event items OPC A&E supports.

Property Value	Description
0x01	Simple Event
0x02	Track Event
0x04	Condition Event

### OPC A&E and High-performanceHMI Alarm Level

The table below lists the relationships between OPC A&E and High-performanceHMI level.


OPC A&E Level	VF Process Alarm Level
1	0
30	1
60	2
90	3
120	4
150	5
180	6
210	7
240	8
270	9
300	10
330	11
360	12
390	13
420	14
450	15
480	16
510	17
540	18
570	19
600	20
640	21
680	22
720	23
760	24
800	25
840	26
880	27
920	28
960	29
980	30
990	31

## Corresponding Table of OPC A&E, High-performanceHMI System Alarm, High-performanceHMI Operation Log and SOE

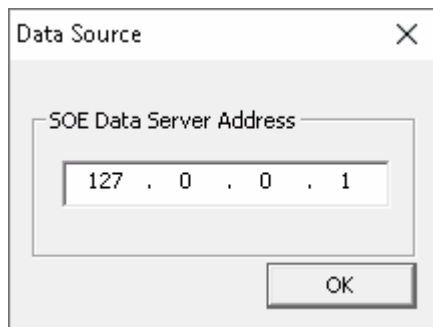
The following table lists the corresponding of OPC A&E, High-performanceHMI System Alarm, High-performanceHMI Operation Log and SOE.

OPC A&E Level	High-performanceHMI Alarm and Event	
30	1-level system alarm	OMC operation log
60	2-level system alarm	OMC SOE
120	3-level system alarm	ECS-900 SOE

### 2.3.3 Other Operation

After running VFOPCAESvr, it will be displayed as the button  at the system tray. Click the button and the VFOPCAESvr operation menu pops up.

- Data Source Configuration**  
 Use OPC client to connect with VFOPCAESvr and start VFOPCAESvr. Select the right-click menu "Data Source Configuration" in the system tray after VFOPCAESvr starts, to bring up the dialog shown below. User can configure the SOE data server address in dialog. After the configuration is successful, the SOE information in VFOPCAESvr will be obtained from the server.



**Figure 2-10 Data source configuration**

- Reload Configuration**  
 When High-performanceHMI is configured and released, VFOPCAESvr will acquire configuration information synchronously and obtain alarms based on the configuration information. When the configuration in VFOPCAESvr is inconsistent with High-performanceHMI, user can select the right-click menu "Reload Configuration" of VFOPCAESvr to synchronize the latest High-performanceHMI configuration.
- Push or not push suppress alarms**

In the High-performanceHMI system, it is supported to pre-process the nuisance alarm by suppressing the alarm, so as to avoid the influence of the nuisance alarm on the system. When VFOPCAESvr pushes alarms to the OPC client, you can choose to push or not push suppressed alarms.

By default, VFOPCAESvr pushes suppressed alarms to the OPC client.

If you do not need to push to suppress alarms, you can right-click VFOPCAESvr in the

system tray and uncheck "Push to suppress alarms" in its pop-up menu.

- Display the domain alias

Select the right-click command "Operation Domain Alias" of VFOPCAESvr and the domain alias of event source will be included in the event information of the OPC client, such as "OA0420" shown in the figure below.

Source	Date	Time	Message	Severity	Condition	Subcondition
OA0420/Control Domain of Operation Station/Tag Group 0/A001	03/21/23	09:50:25		30	HH	HH
OA0/Control Domain of Operation Station/Tag group3/A001	03/20/23	19:51:09		30	L	L
OA0/Control Domain of Operation Station/Tag group3/A001	03/20/23	19:51:08		30	L	L
OA0/Control Domain of Operation Station/Tag group3/D001	03/20/23	19:51:03		30	OFF	OFF

**Figure 2-11 Example of operation domain alias**

- Server Status

Select the right-click menu "Server Status" of VFOPCAESvr to view the running information of VFOPCAESvr, as shown in the figure below.

Computer Name:	DESKTOP-EJUOBBH
Server Name:	SUPCON.VFOPCAEServer.1
Config Info.:	D:\ECSRun\testdemo
Running Status:	Running
Client Num:	1
Server Version:	2.0.1
Startup Time:	2023-03-20 18:10:19
Running Time:	1.8 H ( 0.07 D )
Authz:	VFOPCAEServer

**Figure 2-12 System information**



**Tips:**

- When the High-performanceHMI configuration is released, VFOPCAEServer will

update the alarm information in this domain and operation domain simultaneously.

- After changing the configuration of "Display Domain Alias" and "Push Suppress Alarm", the new configuration will take effect after the configuration is reloaded.

## 2.4 Cross-Domain Application

As the interface providing system data to outside, OPC data server should provide inter-domain real-time data, and makes sure that the OPC data server is same with High-performanceHMI system. VFOPCSvr provides data according to the authority shown in the following table.

**Table 2-5 Instruction of VFOPCSvr authority**

Authority Instruction	Icon Color	Interface Change
With DA authority With multi-project connection authority	Dark green	Support real-time tags in the current domain or inter-domain. Tag number has no limit (at least 100000 points). Support to enumerate and add tags in the current domain or inter-domain.
With DA authority Without multi-project connection authority	Green	Support real-time tags in the current domain. Tag number has no limit (at least 20000 points). Support to enumerate and add tags in the current domain, but not in inter-domain.
Without DA authority With multi-project connection authority	Yellow	Support the current domain and inter-domain data of 10 points, exit in 2 hours.
Without DA authority Without multi-project connection authority	Yellow	Support the current domain tag of 10 points, exit in 2 hours.



**Tip:**

**VFOPCSvr server supports 10 clients to access simultaneously.**

## Section 3 Revision

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### *Retrofit list of the version*

Document Version	Model	Remarks
V1.0 (20230301)	OMC High-performanceHMI V4.70.00.00	First release
V1.1 (20230830)	OMC High-performanceHMI V5.10.00.00-M	Updated screenshots.