How to configure CIMON-SCADA OPC Server for Windows 7 and 8?

CIMON-SCADA OPC Server function is available only with WEB SERVER USB Dongle (Keylock).

These are conditions that should be met in order to properly configure and use OPC Server in SCADA:

• USB Dongle (Keylock) should be **CM04-SCADA 1-E or above** as shown in the below image. In this example, UltimateAccess V3.03 is used for the FAQ manual.

| | UltimateAccess (S/W license) | | | | | | | |
|--------------|------------------------------|-----------------|--|--|--|--|--|--|
| • WEB SERVER | | | | | | | | |
| NO | Model | Туре | Description | | | | | |
| 1 | CM04-SCADA 1-E | 1 User | Development+Server+Mobile, Web & Network Clients | | | | | |
| 2 | CM04-SCADA 5-E | 2-5 Users | Development+Server+Mobile,Web & Network Clients | | | | | |
| 3 | CM04-SCADA 10-E | 6-10 Users | Development+Server+Mobile,Web & Network Clients | | | | | |
| 4 | CM04-SCADA UNL-E | Unlimited Users | Development+Server+Mobile,Web & Network Clients | | | | | |

UltimateAccess (CIMON-SCADA) OPC Server Configurations

Α

1. Go to Computer → Local Disk (C:) → CIMON → UltimateAccess → CIMON SCADA And change the file name from "CmHOpcsvr.exe" to "CmHOpcsvr_B.exe."

| CmChartEditor.dll | 5/28/2015 11:53 AM | Application extens | 643 KB |
|-------------------|--------------------|--------------------|--------|
| CmHOpcSvr_B | 4/13/2015 9:47 PM | Application | 51 KB |
| S CmnCnet.dll | 3/12/2014 11:48 AM | Application extens | 67 KB |
| ScmnCnetS.dll | 6/8/2015 10:56 AM | Application extens | 40 KB |

2. Download and unzip "OPC Server Components" from CIMON website.





3. Copy and paste the "CmHOpcSvr" file from the [OPC Server Components] folder to the CIMON SCADA UltimateAccess installation folder. (This file is different from the existing file in the UltimateAccess installation folder).

| CmChartEditor.dll | 5/28/2015 11:53 AM | Application extens | 643 KB | |
|-------------------|--------------------|--------------------|--------|--|
| 🛃 CmHOpcSvr | 5/9/2013 4:41 PM | Application | 803 KB | |
| CmHOpcSvr_B | 4/13/2015 9:47 PM | Application | 51 KB | |
| 🚳 CmnCnet.dll | 3/12/2014 11:48 AM | Application extens | 67 KB | |

Click and open the "AddOn.lst" file in the UltimateAccess installation folder.
 Type the below information in red to the "AddOn.lst" file.



5. Or you can just copy and paste ",OpcRun, orn, OpcRun.dll,," from AddOn.lst file from the OPC Server Components folder to the AddOn.lst file in the UltimateAccess folder.





6. Copy and paste the three files (opccfg.dat, OpcRun.dll, OpcTag.ini) from the OPC Server Components folder to the UltimateAccess installation folder.

| J SCADA | OPC Server > OPC Server Manual > O | PC Server Components |
|--------------------|------------------------------------|----------------------|
| Organize 🔻 🛛 🜔 Ope | n New folder | |
| ☆ Favorites | Name | Date modified |
| 📃 Desktop | AddOn | 10/13/2015 5:42 P |
| \rm Downloads | CmHOpcSvr | 5/9/2013 4:41 PM |
| 📃 Recent Places | 📅 OPC Client Toolkit | 9/30/2015 1:54 PM |
| | 🛃 OPC Client1 | 8/31/2015 8:15 PM |
| 🥽 Libraries | 👪 opccfg | 11/30/2012 11:58 |
| Documents | S OpcRun.dll | 5/9/2013 4:39 PM |
| J Music | DpcTag | 5/30/2013 9:25 AM |

7. The three files are now located in the UltimateAccess installation folder.

| 🕞 🕞 🚽 🕨 Compu | ter 	► Local Disk (C:) 	► CIMON 	► UltimateAcc | ess 🕨 CIMON SCADA 🕨 |
|------------------|--|---------------------|
| Organize 🔻 🚺 Ope | n New folder | |
| 😭 Favorites | Name | Date modified |
| Desktop | 👪 opccfg | 11/30/2012 11:5 |
| Downloads | S OpcClient.dll | 3/12/2014 11:54 |
| Recent Places | OpcClient_DA.dll | 9/17/2014 9:11 |
| | S OPCClient3.dll | 10/27/2014 1:57 |
| 🔚 Libraries | OpcRun.bsc | 7/28/2014 11:15 |
| Documents | S OpcRun.dll | 5/9/2013 4:39 P |
| J Music | DpcTag | 5/30/2013 9:25 |

*This is the end of the UltimateAccess (CIMON-SCADA) OPC Server configurations. Now, we're going to learn how to configure DCOM and Firewall in Windows 7 and 8.



Windows DCOM and Firewall Configurations

The configurations for Vista / Windows 7 / Windows 8 are as follows.

- If your PC is Windows 8, these additional settings must be done prior to the step 2. The step 1 only applies to Windows 8.
- Press [Windows button + R] and run "regedit."

| | Run | | | | | |
|---------------|---|---|--|--|--|--|
| | Type the name of a program, folder, document, or Internet resource, and Windows will open it for you. | : | | | | |
| <u>O</u> pen: | regedit | • | | | | |
| | OK Cancel <u>B</u> rowse | | | | | |

• In the Registry Editor dialog, go to Edit \rightarrow and click "Find" (Shortcut keys: Ctrl + F).

| Ŵ | | | | | | F | Registry Editor | - - × |
|-------------|---------------|---------|--------------|---------|------|----------------|-----------------|---|
| File | Edit | View | Favorites | Help | | | | |
| | New | | | • | ^ | Name | Туре | Data |
| | Permissio | ns | | | | ab (Default) | REG_SZ | (value not set) |
| | | | | | | ab DisplayName | REG_SZ | @msmouse.inf,%sermouse.SvcDesc%;Serial Mous |
| | Delete | | D | el | | BrrorControl | REG_DWORD | 0x0000001 (1) |
| | Rename | | | | | ab) Group | REG_SZ | Pointer Port |
| | Copy Key | Name | | | | ab ImagePath | REG_EXPAND_SZ | \SystemRoot\System32\drivers\sermouse.sys |
| _ | cop) ((c) | | | | | ab) Owners | REG_MULTI_SZ | msmouse.inf |
| | Find | | Ctrl+ | ۰F | | 100 Start | REG_DWORD | 0x00000004 (4) |
| | Find Next | | F | -3 | | 100 Tag | REG_DWORD | 0x0000004 (4) |
| smp | ohost | | | | | 👯 Туре | REG_DWORD | 0x00000001 (1) |
| SMS | SvcHost 3. | .0.0.0 | | | | | | |
| SMS | SvcHost 4 | .0.0.0 | | | | | | |
| SNN | MPTRAP | | | | | | | |
| spa | ceport | | | | | | | |
| Spb | Cx | | | | | | | |
| Spo | oler | | | | | | | |
| spp | SVC | | | | | | | |
| SIV CD/2 | , | | | | | | | |
| SIVE | vet | | | | | | | |
| SSD | PSRV | | | | | | | |
| Sstr | Svc | | | | | | | |
| < | | | | > | ~ | | | |
| Find | s a text st | ring in | a key, value | e, or d | ata. | L | | i. |



• In the Find dialog, search for "EnableLUA."

| Find | × |
|--|-----------------------------|
| Fi <u>n</u> d what: EnableLUA Look at ✓ <u>K</u> eys ✓ Values | <u>Fi</u> nd Next Cancel |
| ☑ Data ☑ Match whole string only | |

- Make sure that the status bar located in the bottom of the Registry Editor displays Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System
 If not, press F3 key and continue to look for a next search until you find it.
- When the search is completed, double-click **EnableLUA**.
- Change the Value data from 1 to 0.
- Close the Registry Editor dialog and restart the computer.

| ₫ | | Registry Editor | | | - 0 × |
|---|------|------------------------------|---------------|-----------------|-------|
| File Edit View Favorites Help | | | | | |
| Management Infrastructure | ^ | Name | Туре | Data | |
| Media Center | | ab (Default) | REG_SZ | (value not set) | |
| ▷ · · · · · · · · · · · · · · · · · · · | | ConsentPromptBehaviorAdmin | REG_DWORD | 0x00000000 (0) | |
| MSSHA | | 8 ConsentPromptBehaviorUser | REG_DWORD | 0x0000003 (3) | |
| NcdAutoSetup | | 100 dontdisplaylastusername | REG_DWORD | 0x00000000 (0) | |
| Netural Carrier | | 8 EnableCursorSuppression | REG_DWORD | 0x00000001 (1) | |
| | | B EnableInstallerDetection | REG_DWORD | 0x00000001 (1) | |
| | | 🐻 EnableLUA | REG_DWORD | 0x00000001 (1) | |
| NIL OOBE | | EnableSecureUIAPaths | REG_DWORD | 0x00000001 (1) | |
| | | EnableUIADesktopToggle | REG_DWORD | 0x00000000 (0) | |
| OptimalLavout | | 80 EnableVirtualization | REG_DWORD | 0x00000001 (1) | |
| Parental Controls | | 🗱 FilterAdministratorToken | REG_DWORD | 0x00000000 (0) | |
| Personalization | | ab legalnoticecaption | REG_SZ | | |
| 🔉 🛺 PhotoManager | | ab legalnoticetext | REG_SZ | | |
| PhotoPropertyHandler | | RepromptOnSecureDesktop | REG_DWORD | 0x00000000 (0) | |
| A 📗 Policies | | 100 scforceoption | REG_DWORD | 0x00000000 (0) | |
| | | 30 shutdownwithoutlogon | REG_DWORD | 0x00000001 (1) | |
| | | 100 undockwithoutlogon | REG_DWORD | 0x00000001 (1) | |
| | | WalidateAdminCodeSignatures | REG_DWORD | 0x00000000 (0) | |
| - NonEnum | | | - | | |
| System | | Edit DWORD (32-b | it) Value 🛛 👗 | | |
| PowerEfficiencyDiagnostics | | | | | |
| PrecisionTouchPad | | value name: | | | |
| Prelaunch | | EnableLUA | | | |
| PreviewHandlers | | Value data: Base | | | |
| Propertysystem | | 0 🖲 He | xadecimal | | |
| Proximity | | | cimal | | |
| Pushivourications | | | | | |
| RenameFiler | | 0 | K Cancel | | |
| Run | | | Gandol | | |
| BunOnce | | | | | |
| SelectiveRemoteWipe | | | | | |
| SettingSync | | | | | |
| Setup | | | | | |
| CharadDI Le | ~ | | | | |
| Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Window | s∖Cu | rrentVersion\Policies\System | | | |
| | | | | | |



- 2. User Account Control Settings
 - Control Panel → User Accounts → Run "User Account Control Settings"
 - Click "Change User Account Control settings."

| 😵 User Account Control Settings | | 3 |
|---|--|---|
| Choose when to be User Account Control he <u>Tell me more about User</u> Always notify | e notified about changes to your computer elps prevent potentially harmful programs from making changes to your computer. r Account Control settings | |
| - [- | Never notify me when: | |
| | Programs try to install software or make changes to my computer I make changes to Windows settings | |
| Never notify | (i) Not recommended. Choose this only if you need to use programs that are not certified for Windows 7 because they do not support User Account Control. | |
| | | |
| | Cancel Cancel | |

- Select the control level as [Never notify] and click [OK].
- Restart your computer to apply the new setting value.
- 3. Create a New Account
 - Control Panel → User Accounts → Add or remove user accounts
 - Create a new account as Administrator type (i.e. "opcserver").
 - Register a password for the new account.
 - In order for the OPC function to work properly, the newly added account must be logged on with the exact same account name and the password for both OPC Server PC and OPC Client PC.
- 4. The installation of the OPC Core Components
 - Go to the [UltimateAccess installation folder] \rightarrow Open the [OpcSvr] folder.
 - Activate the [Setup] file and install the OPC Core Components.





- If the installation does not proceed normally, go to the <u>www.opcfoundation.org</u> website and install the latest version (x86 required).
- 5. Registration of CmHOPCSvr
 - Go to the UltimateAccess installation folder.
 - Right-click the [RegOpc.bat] file and [Run as administrator].



- In the Command Prompt window, move to the CIMON-SCADA installation folder and type in **CmHOpcSvr/regserver** to execute.
- This process registers the OPC Service on Windows.



- 6. DCOM Configurations
 - Click the Windows Start button and type in "dcomcnfg" in the search box.

| Component Services | Component Services | | | | | | |
|--|--------------------|--------------|----------|--|--|--|--|
| <u>File Action View Window</u> | <u>H</u> elp | | _ 8 × | | | | |
| | | | | | | | |
| Console Root | Name | Actions | | | | | |
| Component Services Computers | COM+ Applications | My Computer | ^ | | | | |
| My Computer More Cocal) Services (Local) | Running Processes | More Actions | | | | | |
| | | | | | | | |
| | 1 | | | | | | |

• [Component Services] \rightarrow [Computers] \rightarrow Right-click [My Computer] and select [Properties].

| My Computer Properties | My Computer Properties |
|--|--|
| Default Protocols COM Security MSDTC General Options Default Properties | Default Protocols COM Security MSDTC General Options Default Properties |
| Transaction Timeout Transaction timeout (seconds): | Enable Distributed COM on this computer Enable COM Internet Services on this computer |
| Export Application Proxy <u>R</u> SN: | Default Distributed COM Communication Properties The Authentication Level specifies security at the packet level. Default Authentication Level: Connect |
| Enable partitions Oneck local store when choosing partition for user Leam more about <u>setting these properties</u> . | The impersonation level specifies whether applications can determine who is calling them, and whether the application can do operations using the client's identity. |
| OK Cancel Apply | Identify OK Cancel Apply |

• Set the configurations as above for [Options] and [Default Properties].



| My Computer Properties | | |
|--|---|------------|
| General Options Default Properties | | |
| Default Protocols COM Security MSDTC | | |
| Access Permissions | | |
| also set limits on applications that determine their own permissions. | Launch and Activation Permission | 8 23 |
| Caution: Modifying access permissions can affect the ability of applications to start, connect, function and/or run | Security Limits | |
| securely. | Group or user names: | |
| | & Everyone | <u> </u> |
| Edit Limits Edit Default | SYSTEM | |
| | | (cearver) |
| Launch and Activation Permissions | appcserver2 (CHANHEESONG-PC\o | pcserver2) |
| activate objects. You may also set limits on applications that | • | 4 |
| determine their own permissions. | A | dd Remove |
| Caution: Modifying launch and activation permissions can | | |
| affect the ability of applications to start, connect, function | Permissions for Everyone | Allow Deny |
| and/or fun securely. | Local Launch | |
| Edit Limits Edit Default | Remote Launch | |
| | Local Activation | |
| | Remote Activation | |
| | | |
| | | |
| Learn more about setting these properties. | | |
| | Learn about access control and permission | ons |
| OK Cancel Apply | | OK Cancel |
| | | |

- After moving to the [COM Security] tab, add the new account ("opcserver") along with "Administrator", "Administrators", "Anonymous Logon", "Everyone", "Interactive", "Network", "System" in the [Access Permissions] → [Edit Limits...] and [Launch and Activation Permissions] \rightarrow [Edit Limits...] and select "Allow" for everyone.
- Set the same configurations as above for [Edit Default...]

| Launch and Activation Permission | Rider of | ? <mark>X</mark> | N | My Computer Properti | es | | | ? <mark>×</mark> |
|---|--------------|------------------|---|---|-----------|---------|-------|------------------|
| Default Security | | | | General | | Options | Def | fault Properties |
| Group or user names: | | | | Default Protocols | | COM Sec | urity | MSDTC |
| & Everyone | | ▲ | | Default Coordinator | | • | | |
| SYSTEM | | = | | ✓ Use local coord | linator | | | |
| NEIWORK Opcsepyer (CHANHEESONG-PC\or | ncsen/er) | | | Remote coordinate | or host r | name: | | |
| A opcserver2 (CHANHEESONG-PC\s) | opcserver2) | - | | | | | | |
| < | | - F | | | | | | Select |
| l l | A <u>d</u> d | Remove | | | | | | |
| Permissions for Everyone | Allow | Deny | | | | | | |
| Local Launch | V | | | | | | | |
| Remote Launch | 1 | | | | | | | |
| Local Activation | 1 | | | | | | | |
| Remote Activation | 1 | | | | | | | |
| | | | | | | | | |

• Go to [MSDTC] tab and select "Use local coordinator."



- When the configurations are completed, click [Apply] and then [OK].
- [Component Services] \rightarrow [Computers] \rightarrow [My Computer] \rightarrow [DCOM Config].



Right-click "OpcEnum" and select "Properties."

| OpcEnum Properties | OpcEnum Properties |
|--|--|
| General Location Security Endpoints Identity | General Location Security Endpoints Identity |
| General properties of this DCOM application | The following settings allow DCOM to locate the correct computer for this |
| Application Name: OpcEnum | application. If you make more than one selection, then DCOM uses the first applicable one. Client applications may overide your selections. |
| Application ID: {13486D44-4821-11D2-A494-3CB306C10000} | |
| Application Type: Local Server | Run application on the computer where the data is located. |
| Authentication Level: None | Run application on this computer. |
| Local Path: | Run application on the <u>f</u> ollowing computer: |
| | <u>B</u> rowse |
| Leam more about setting these properties. | Learn more about setting these properties. |
| | |
| OK Cancel Apply | OK Cancel Apply |
| | |

• Select the values as above for [General] and [Location] tabs.



• Select "Use Default" for Permissions in [Security] tab.

| OpcEnum Properties | 2 × |
|--|--------------|
| General Location Security Endpoints Identity | |
| Launch and Activation Permissions | |
| Ise Default ■ | |
| © Cu <u>s</u> tomize | <u>E</u> dit |
| | |
| Access Permissions | |
| Ose Default | |
| © Custo <u>m</u> ize | Edit |
| | |

• Select "The interactive user" in [ID] tab and click [OK].

| OpcEnum Properties |
|--|
| General Location Security Endpoints Identity |
| Which user account do you want to use to run this application? |
| The interactive user. |
| ◎ The launching user. |
| ◎ This <u>u</u> ser. |
| Us <u>e</u> r: |
| Password: |
| Confirm password: |
| The system account (services only). |
| Learn more about <u>setting these properties</u> . |
| OK Cancel Apply |



• Right-click "KDTsystems.CmHOPCSvr", "CimonX.Document" and set the same

configurations as above in the Properties.



• Select "Services (Local)" \rightarrow Right-Click Remote Registry and select Properties.





• Select Startup type as "Automatic" and click the [Start] button to initiate the service.

| Remote Registry Pro | operties (Local Computer) | 3 |
|---|---|---|
| General Log On | Recovery Dependencies | |
| Service name: | RemoteRegistry | |
| Display name: | Remote Registry | |
| Description: | Enables remote users to modify registry settings on this computer. If this service is stopped, the registry | |
| Path to executable C:\Windows\system | e: em32\svchost.exe -k regsvc | |
| Startup type: | Automatic 🔹 | l |
| Help me configure | e service startup options. | |
| Service status: | Started | |
| <u>S</u> tart | Stop Pause Resume | |
| You can specify th from here. | ne start parameters that apply when you start the service | |
| Start parameters: | | |
| | | |
| | OK Cancel Apply | |



7. Firewall configurations



- Control Panel → Windows Firewall
- Select "Allow a program or feature through Windows Firewall

| Add a Progr | am | X | | | * |
|------------------------|---|------------|------------------|------------|---|
| Select the listed, and | program you want to add, or click Browse to find one th then click OK. | nat is not | e/Work (Private) | Public ^ | |
| Programs: | | | | | |
| AVG | | | | | |
| bizmel | ka KTmessenger | | | | |
| | N Downloader | = | | | |
| | N ENG | | | | |
| 📗 👘 СІМОІ | N VIEW | | | | |
| М СІМОІ | | | | | |
| | NX | | | | E |
| 📙 Creat | e a System Repair Disc | | | | |
| DlogU | til | | | | |
| FONT: | SELECT | | | | |
| Google | e Chrome | - | | | |
| Path: | C:\CIMON\UltimateAccess\CIMON SCADA\CiM | owse | Details | Remove | |
| What are th | e risks of unblocking a program? | | Allow anothe | er program | |



Click [Allow another program] to add the file from the path below.
 C:\Windows\System32\OpcEnum.exe (32-bit Operating System)
 C:\Windows\SysWOW64\OpcEnum.exe (64 bit Operating System)

🗑 Browse \bigcirc « Local Disk (C:) Windows SysWOW64 + 44 Search SysWOW64 Q New folder 2 Organize 🔻 . Name Date modified Type 🙀 Favorites ocsetup 7/14/2009 10:14 AM Application 📃 Desktop 🚎 odbcad32 7/14/2009 10:14 AM Application 📕 Downloads odbcconf 7/14/2009 10:14 AM Application 📃 Recent Places OpcEnum 3/7/2007 7:52 AM Application 💷 openfiles 7/14/2009 10:14 AM Application 🔚 Libraries 7/14/2009 10:14 AM OptionalFeatures Application Documents 📟 osk 7/14/2009 10:14 AM Application 🚽 Music PATHPING 7/14/2009 10:14 AM Application Pictures 💷 pcaui 7/14/2009 10:14 AM Application 🛃 Videos perfhost 7/14/2009 10:14 AM Application ш ₹. 📧 Computer File name: OpcEnum Applications (*.exe;*.com;*.icd) Ŧ Open Cancel

C:\CIMON\UltimateAccess\CIMON SCADA\CmHOpcSvr

| VItim | ateAccess 🕨 CIMON SCADA 🕨 | ✓ ✓ Search CIMON SCADA |
|------------------|---------------------------|--------------------------------------|
| Organize 🔻 New f | older | III 🕶 🔟 🔞 |
| ☆ Favorites | A Name | Date modified Type 🖍 |
| Nesktop | 🐌 WebSMS | 7/30/2015 2:15 PM File fol |
| 📜 Downloads | 🚧 CiMonD | 6/8/2015 10:56 AM Applic |
| 🕮 Recent Places | CimonRus | 10/26/2006 2:21 PM Applic |
| | CimonX | 6/8/2015 10:56 AM Applic |
| 詞 Libraries | CmHOpcSvr | 5/9/2013 4:41 PM Applic |
| Documents | SmHOpcSvr_B | 4/13/2015 9:47 PM Applic |
| 👌 Music | CmSysKey | 11/20/2012 1:26 PM Applic |
| Pictures | 🗾 gacutil | 7/30/2008 10:37 PM Applic |
| 💾 Videos | MakeHtm | 4/17/2007 1:44 PM Applic |
| | MultiMonitor | 3/13/2014 9:08 AM Applic 👻 |
| 🛤 Computer | III | 4 |
| Fi | e <u>n</u> ame: CmHOpcSvr | ✓ Applications (*.exe;*.com;*.icd) ▼ |
| | | Open ▼ Cancel |

• When the two programs are added, go back to Windows Firewall and then click [Advanced settings].

| Windows Firewall with Advanced | d Security | - | | • | | | |
|--------------------------------|------------------|-------|---------|---------|--------|---|-------------------|
| <u>File Action View H</u> elp | | | | | | | |
| 🗢 🄿 🔰 🖬 🔒 👔 🖬 | | | | | | | |
| Windows Firewall with Advance | Inbound Rules | | | | | | Actions |
| Inbound Rules | Name | Group | Profile | Enabled | Action | * | Inbound Rules |
| Connection Security Rules | O CICON | | Public | Yes | Allow | | 🗱 New Rule |
| Monitoring | O CICON | | Public | Yes | Allow | | Filter by Profile |
| | CICON | | Public | Yes | Allow | | V Filter by State |
| | CICON | | Public | Yes | Allow | | |
| | CICON Simulator | | Public | Yes | Allow | | ▼ Filter by Group |
| | CICON Simulator | | Public | Yes | Allow | | View 🕨 |
| | CICON Simulator | | Public | Yes | Allow | | Refresh |
| | CICON Simulator | | Public | Yes | Allow | | |
| | CICON Simulator | | Public | Yes | Allow | | Export List |
| | CICON Simulator | | Public | Yes | Allow | | ? Help |
| | CICON Simulator | | Public | Yes | Allow | | |
| | CICON Simulator | | Public | Yes | Allow | | |
| | CICON Simulator | | Public | Yes | Block | | |
| | OCICON Simulator | | Public | Yes | Block | | |
| | 🛛 🕑 CIMON-SCADA | | Public | Yes | Allow | | |
| | 🛛 🕑 CIMON-SCADA | | Public | Yes | Allow | | |
| | SCIMON-SCADA | | Public | Yes | Block | Ŧ | |
| ۰ III ۲ | < | | | | Þ | | |

• Select [Inbound Rules] and register a [New Rule].

| Prev Inbound Rule Wizard | |
|--|---|
| Rule Type Select the type of firewall rule to c | reate. |
| Steps: Rule Type Protocol and Ports Action Profile Name | What type of rule would you like to create? Program Rule that controls connections for a program. Prodefined: BranchCache - Content Retrieval (Uses HTTP) Rule that controls connections for a Windows experience. Qustom Custom rule. |

• Select "Port" for the type of rule and click [Next].



| Mew Inbound Rule Wizard | × |
|------------------------------------|--|
| Protocol and Ports | |
| Specify the protocols and ports to | which this rule applies. |
| Steps: | |
| Rule Type | Does this rule apply to TCP or UDP? |
| Protocol and Ports | <u>о</u> <u>т</u> ср |
| Action | © <u>U</u> DP |
| Profile | |
| Name | Does this rule apply to all local ports or specific local ports? |
| | All local ports |
| | Specific local ports: 135-139 |
| | Example: 80, 443, 5000-5010 |
| | Learn more about protocol and ports |
| | < <u>B</u> ack Next > Cancel |
| | |

Select "TCP" and enter "135-139" for specific local ports. • This opens all ports from 135 to 139. Click [Next].

| Prev Inbound Rule Wizard | | x |
|---|--|----|
| Action Specify the action to be taken wh | en a connection matches the conditions specified in the rule. | |
| Steps: Protocol and Ports Action Profile Name | What action should be taken when a connection matches the specified conditions? Allow the connection This includes connections that are protected with IPsec as well as those are not. Allow the connection if it is secure This includes only connections that have been authenticated by using IPsec. Connections will be secured using the settings in IPsec properties and rules in the Connection Security Rule node. Customize Block the connection Leam more about actions | el |

• Select "Allow the connection" and click [Next].



| Prew Inbound Rule Wizard | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| Profile Specify the profiles for which this rule applies. | | | | | | | | | |
| Steps: Protocol and Ports Action Profile Name | When does this rule apply? ✓ Domain Applies when a computer is connected to its corporate domain. ✓ Private Applies when a computer is connected to a private network location. ✓ Public Applies when a computer is connected to a public network location. ✓ Public Applies when a computer is connected to a public network location. ✓ Public Applies when a computer is connected to a public network location. Lear more about profiles | | | | | | | | |

• Select "Domain", "Private", "Public" and click [Next].

| Prev Inbound Rule Wizard | - | - | Colorege. | - | Ang. | - | × |
|----------------------------------|---------------|---------------------|-----------|---|-------------|-------|----|
| Name | | | | | | | |
| Specify the name and description | of this rule. | | | | | | |
| Steps: | | | | | | | |
| Rule Type | | | | | | | |
| Protocol and Ports | | | | | | | |
| Action | | | _ | | | | |
| Profile | <u>N</u> ame | | | | | | |
| Name | opc | server | | | | | |
| | <u>D</u> esc | ription (optional): | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | < | Back Finish | Cance | el |

• Type in the name for the new inbound rule (i.e. "opc_server") and click [Finish].

*This is the end of the Windows DCOM and Firewall configurations. Now, we're going to see how SCADA (OPC Server) communicates with an OPC Client PC.



UltimateAccess (CIMON-SCADA) OPC Server Communication with an OPC Client PC

- 1. Execute CimonD and open a new project.
- 2. Register a group tag named "A." This group tag name will be identical with OPC tag.
- 3. Go to UltimateAccess installation folder and open "OpcTag.ini" file.

| Organize | er ► Local Disk (C:) ► CIMON ► UltimateAccess ► CIMON ▼ Print New folder | N SCADA 🕨 |
|---|---|--|
| ★ Favorites ■ Desktop ● Downloads ● Recent Places | Name OpcRun.dll OpcTag Mart_editor | Date mor 5/9/2013 10/13/20 5/28/201 |

4. When you first open it, the "OpcTag.ini" file will be displayed as below.



5. Edit the name of the OPC group tag to "A" as previously configured in CimonD.





6. Ensure that the group tag "A" in CimonD is identical with that of OpcTag.ini file.

| ADATABASE [Convert Word to Bit | .dbx] | | | | - 0 |
|--------------------------------|------------|-------------|------------|------------------|--|
| i 🗞 🐎 🗐 🎓 🕢 | | | | | |
| 🖃 🖳 Convert Word to Bit | Name | Туре | I/O device | I/O address | Initial v |
| A | t | | | (m) | |
| | 🚔 WORDDATA | Analog Tag | | OpcTag - Notepad | |
| | BIT00 | Digital Tag | | File Edit I | Format V |
| | BIT01 | Digital Tag | | [BASE] | an a |
| | BIT02 | Digital Tag | | item_siz | e = 1 |
| | BIT03 | Digital Tag | | [OPC1] | |
| | BIT04 | Digital Tag | | type = | group |
| | BIT05 | Digital Tag | | manie - | |

- 7. Save the OpcTag.ini file and run CimonX. CimonX must be running at all times in order to communicate between OPC Server and OPC Client.
- 8. Run "**OPC Client1.exe**" file from the [OPC Server Components] folder downloaded from CIMON website.



9. Go to [OPC] \rightarrow [Connect] and select "KDT systems.CmHOPCSvr" for OPC Server.

| Select OPC Server | × |
|---------------------------------------|--------------------------------------|
| Server Name KDT systems.CmH0PCSvr | Cancel |
| Server Node ("\\server" or "server" o | or "www.server.com") Refresh List |
| | |



10. Go to [OPC] \rightarrow [Add Item] and select the tags that you want to communicate.

| KDTsystems.CmHOPCSvr | - FactorySoft OPC Client | Add Item | x |
|--|---|--|----|
| File OPC View Help Tag A.WORDDATA A.BIT00 A.BIT01 A.BIT02 A.BIT03 A.BIT04 A.BIT05 A.BIT07 | Value 0 Off Off Off Off Off Off Off Off Off | Access Path Add It Item Name A.BIT07 Don Browse items: Filter: * □- Root BIT00 BIT01 BIT02 BIT03 BIT04 BIT05 BIT06 BIT07 BIT08 BIT09 BIT09 PIT10 PIT10 PIT10 | em |
| | | Data Type C Use native type C Bool C Bool C Short C String | |

11. You can write and read data value between (CIMON SCADA) OPC Server and OPC Client program vice versa.

| A DATABASE [CONVERT WORD T | O BIT.DBX] | | | | | | | | |
|----------------------------|--|----------------|-------------|--------|---------|------------------|--------------|---------------|--------------|
| 🗄 🛤 🛞 🛛 💭 🕞 😵 Close | CIMO | DN SC | ADA | (OPC | Serve | er) | | | |
| E- R CONVERT WORD TO BIT | AL AL | | Descript | | Malue . | Status | Alarm | | |
| A 100 | ¥ | WORDDATA | | | 350 | | | | |
| | E C | BIT00 | | | 0 | | | | |
| | Ê | BIT01 | | | 0 | | | | |
| | a | BIT02 | | | 0 | | | | |
| | a | BIT03 | | | 0 | | | | |
| | | BIT04 | | | 0 | | | | |
| | Ē. | BIT05 | | | 0 | | | | |
| | Ē. | BIT06 | | | 0 | | | | |
| | - E | BIT07 | | | 0 | | | | |
| | i i i i i i i i i i i i i i i i i i i | BIT08 | | | 0 | | | | |
| | i i i i i i i i i i i i i i i i i i i | BIT09 | | | 0 | | | | |
| | , in the second se | BIT10 | | | 0 | | | | |
| | | BIT11 | | | 0 | (a) | F 1/1 | | 23 |
| | | BIT12 | | | 0 | Change | lag value | | |
| | | BITIA | | | 0 | Name | 1.00000.171 | Current Value | |
| | | DIT15 | | | 0 | Name | A.WORDDATA | 350 | 101 |
| | | BITIS | | | 0 | Desc. | | | |
| | 4 | - | | 111 | | Time | Victoral Tax | New Value | |
| | 1.55 | | | | | Type | Virtual Tay | 200 | |
| _ | | | _ | _ | _ | Device | | | |
| 2 | KDTsystems.CmH | OPCSvr - Facto | orySoft OPC | Client | | | | | Common State |
| | File OPC View | Help | | | | | | | |
| | POPC C | lient S | Softwa | are | | | | | |
| | Tag | | Value | 2 | T | ime | | | |
| | A.WORDDATA | | 350 | | 1 | 0/13/15 18:16:03 | | | |
| | A.DITO0 | | 0#1 | | 1 | 0/13/15 18:14:33 | | | |
| | A.BIT02 | | Off | 6 | 1 | 0/13/15 18:14:33 | | | |
| | A.BIT03 | | Off | | 1 | 0/13/15 18:14:33 | | | |
| 4 | A.BIT04 | | Off | | 1 | 0/13/15 18:14:33 | | | |
| | A.BIT05 | | Off | | 1 | 0/13/15 18:14:33 | | | |
| | 4.01107 | | UT | | 1 | 0/15/15 10:14:55 | | | |