

Advantech SE Technical Share Document

Date	2019 / 09 / 25	Related Product	WebAccess/SCADA, OPCDA	
Category	■ FAQ □ SOP □ Driver Tech Note			
Abstract	Setting DCOM for OPC under Windows 7 (32 / 64 bit)			
Keyword	WebAccess, OPCDA Server, OPCDA Client, DCOM			
Related OS	N/A			
Revision History				
Date	Version	Author	Reviewer	Description
2019/05/20	V1.0	Eden.Sun		Update

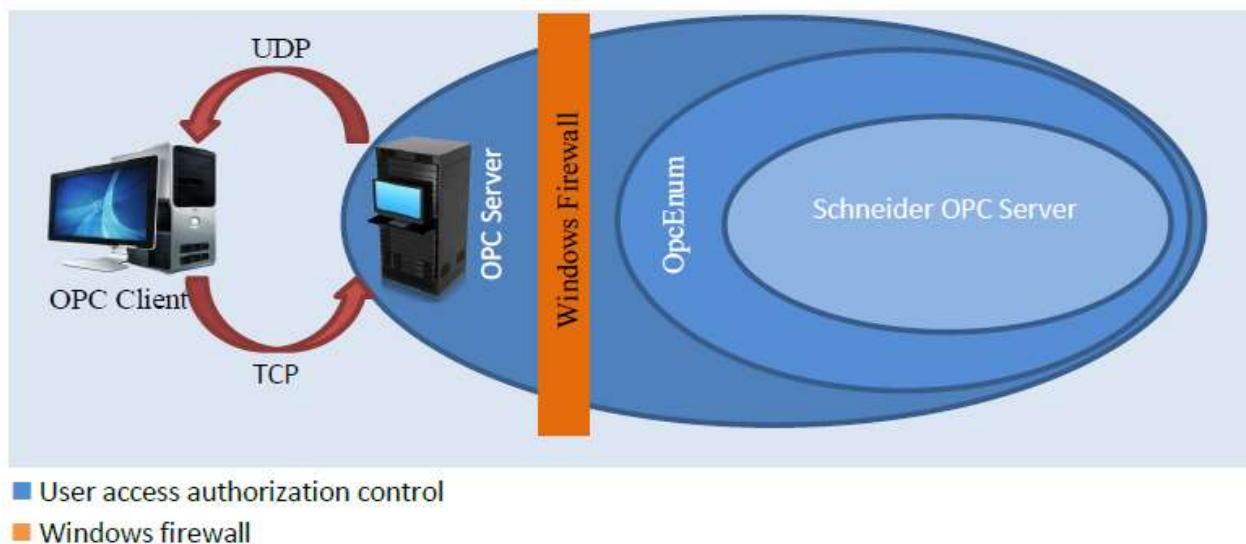
■ Problem Description & Architecture:

Setting DCOM for OPC under Windows 7 (32 / 64 bit)

■ Brief Solution - Step by Step:

1. Windows 7 (32 / 64 bit) configuration overview

This tutorial walks through the DCOM configuration and security settings under Windows 7 to configure an OPC server



The precondition is opc server and client computers need to have **the same Windows System login account**.

The steps to securely configure the OPC Server are: first of all, setting the wide DCOM protocol security authorizations for the computer access (MyComputer) then create some exceptions on the firewall so the OPC client can access the OpcEnum which gives the list of the OPC servers running on the machine, and last, configure the DCOM access permissions for OpcEnum and the OPC server.

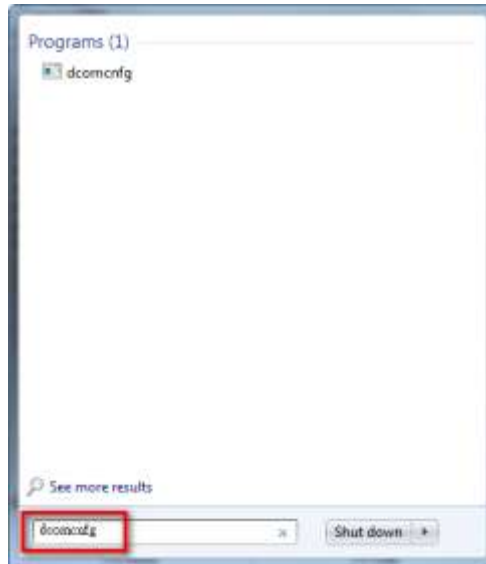
The steps described in this tutorial will not follow this order to make it shorter

2. OPC Server Settings

A. Wide security "MyComputer" settings

- Managing the settings for the general computer access, users and permissions

Press **Win + R** to open the Run menu type "**DCOMCNFG**" on the text area and press **ENTER** to open the Component Services window

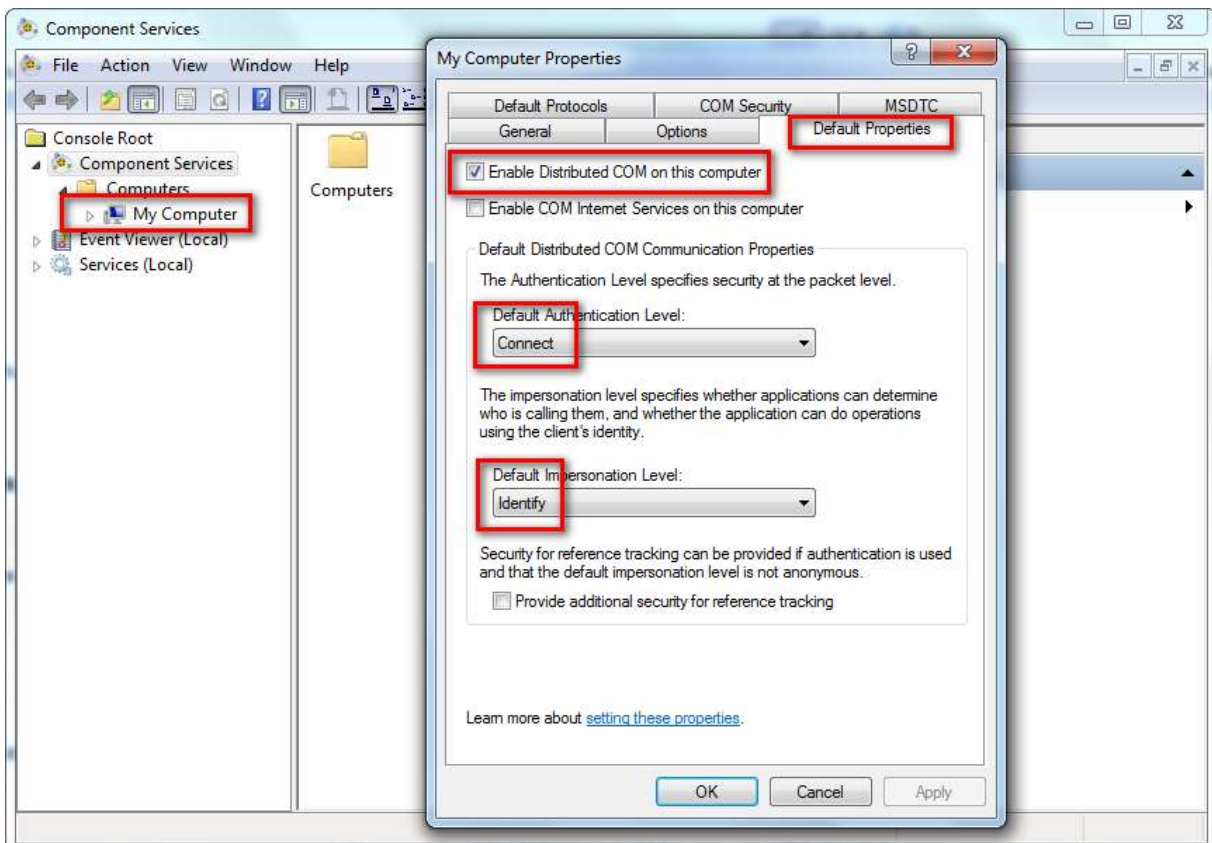


- Under: **Component Services**→**Computers**, Right-click on "**My Computer**" and Choose the "**Properties**" from the menu.
- Click the "**Default Properties**" Tab and configure as follow:

Enable Distributed COM on this computer checked.

Default Authentication Level **Connect**

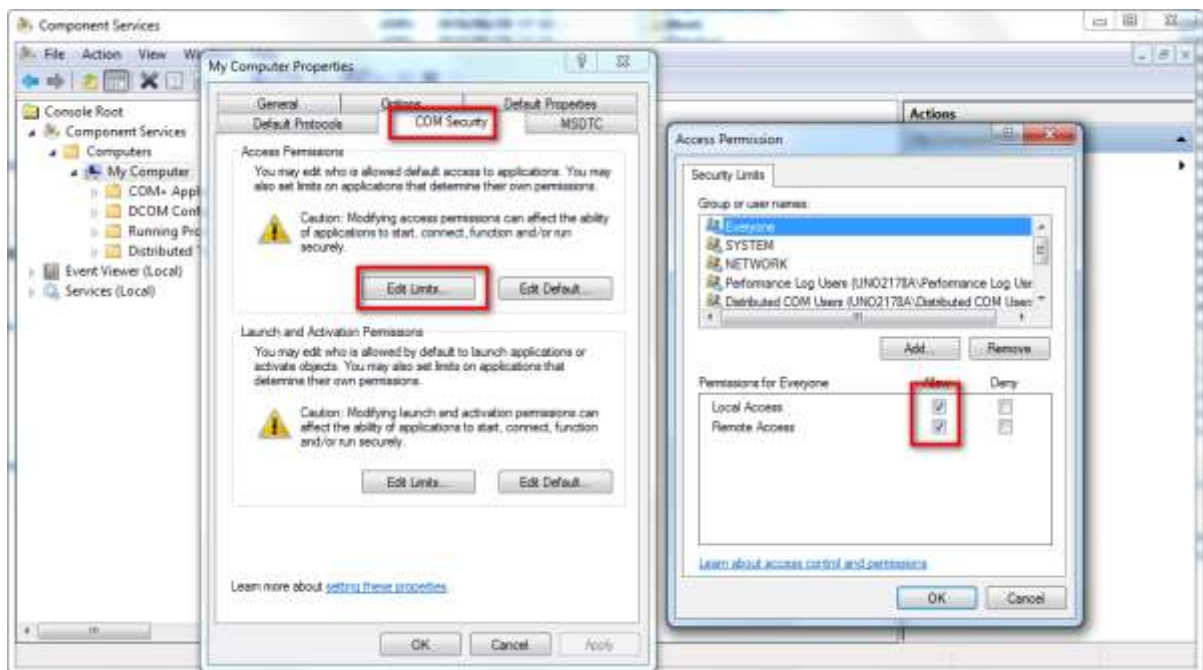
Default Impersonation Level **Identify**



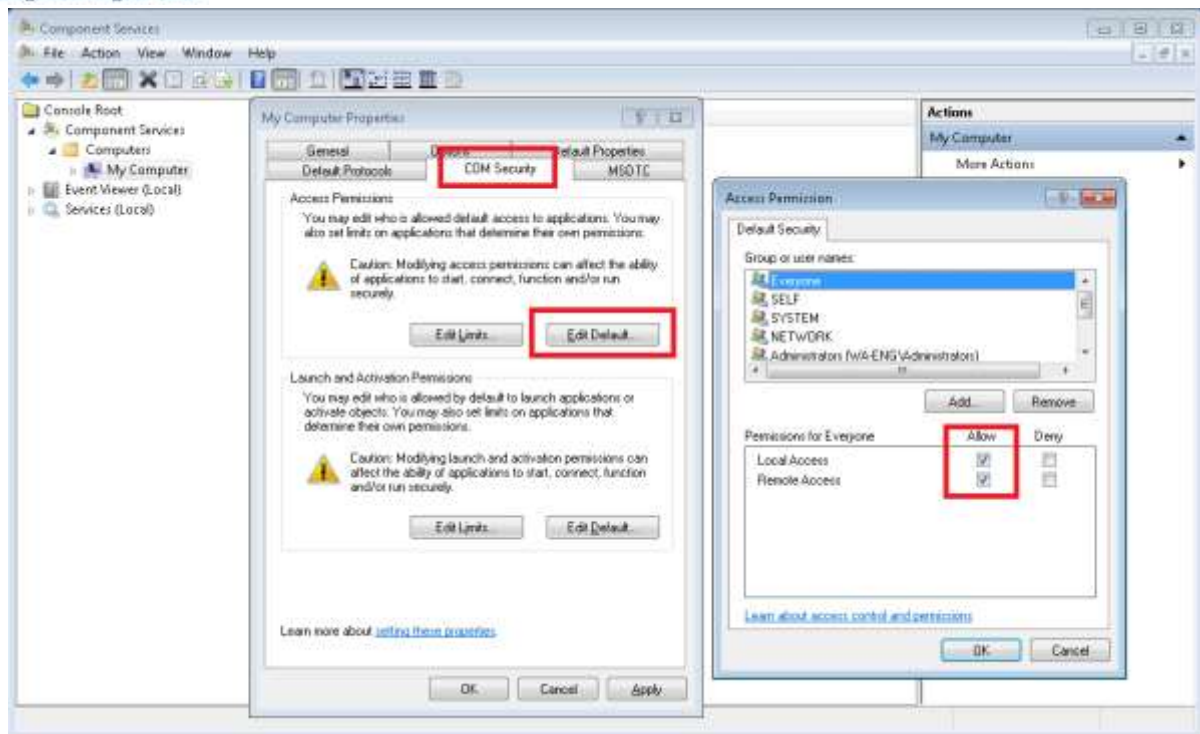
- Click on the "**COM Security**" tab

For the "**Access Permissions**", we need to check **user accounts** are exist and give that local and remote access, it is necessary to request user account information, also add the users accounts and/or groups who should be able to access the COM service in this machine.

- Click "**Edit Limits**" button within the "**Access Permissions**" Hit **Add** enter the object name (**8 users account are below.**) Hit OK Check local access and remote access boxes Click OK.
Hit **Add** enter the users accounts and/or groups wanted. ("**Administrators**", "**ANONYMOUS LOGON**", "**SYSTEM**", "**INTERACTIVE**", "**NETWORK**", "**Everyone**", "**Performance Log Users**" and "**Distributed COM Users**")
Repeat the operations until completed.

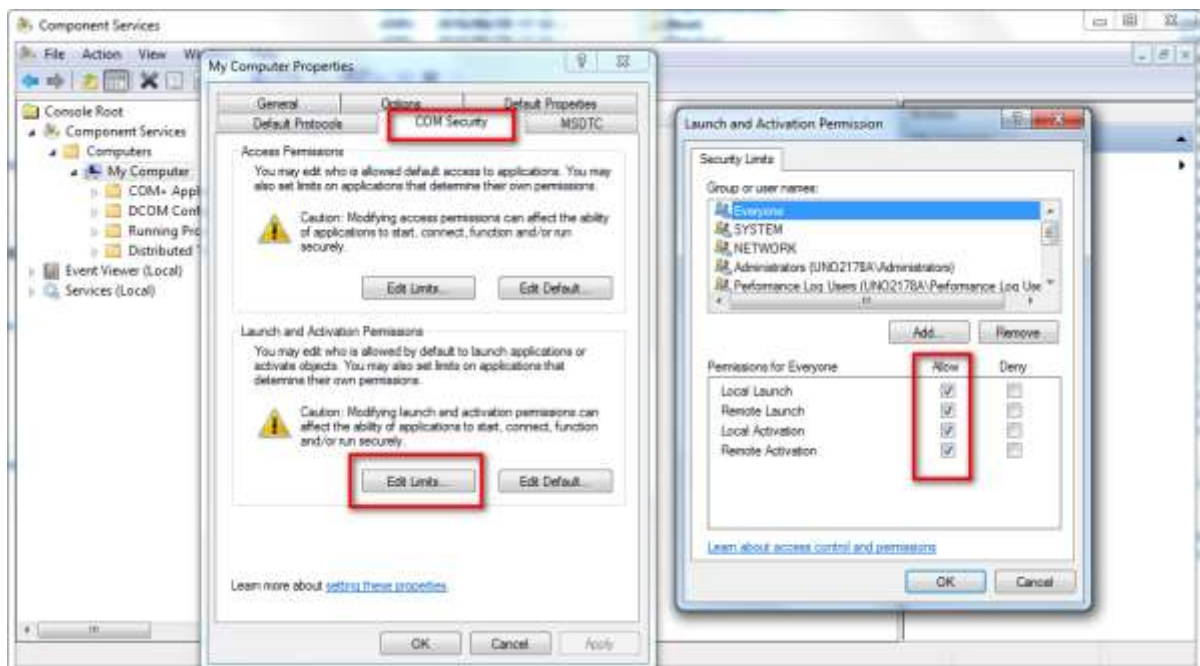


- Click "**Edit Default**" button within the "**Access Permissions**" Hit **Add** enter the object name (**7 users account are below.**) Hit OK Check local access and remote access boxes Click OK.
Hit **Add** enter the users accounts and/or groups wanted. ("**Administrators**", "**ANONYMOUS LOGON**", "**SYSTEM**", "**INTERACTIVE**", "**NETWORK**", "**Everyone**" and "**SELF**")
Repeat the operations until completed.



For the “**Launch and Activation Permissions**” configure as needed, adding only permissions to the users and/or groups who should be able to access the COM service in this machine, setting the permissions. To assign permissions to a special group or user, add it and check the desired boxes.

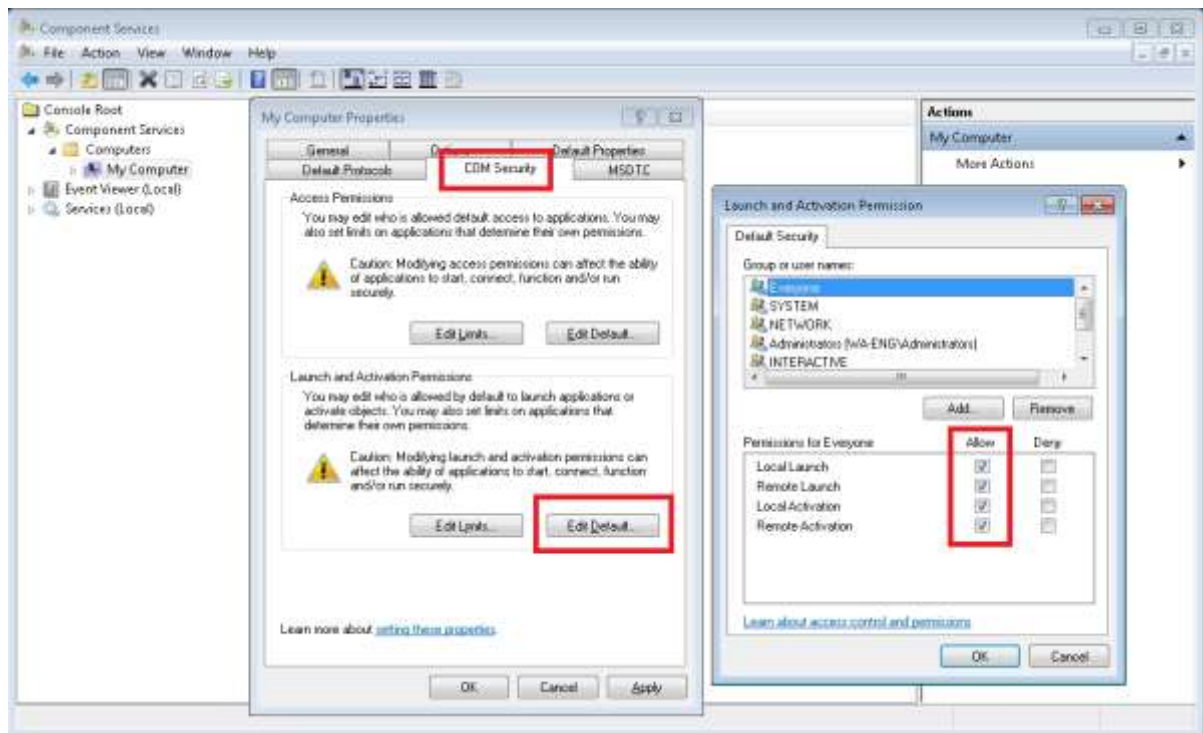
- Click “**Edit Limits**” button within the “**Launch and activation Permissions**” Hit **Add** enter the object name (**8 users account are below.**) hit OK check the desired allow or deny boxes click OK.
Hit **Add** enter the users accounts and/or groups wanted. (“**Administrators**”, “**ANONYMOUS LOGON**”, “**SYSTEM**”, “**INTERACTIVE**”, “**NETWORK**”, “**Everyone**”, “**Performance Log Users**” and “**Distributed COM Users**”)
Repeat the operations until completed.



- Click “**Edit Default**” button within the “**Access Permissions**” Hit **Add** enter the object name (**6 users account are below.**) hit OK check the desired allow or deny boxes click OK.
Hit **Add** enter the users accounts and/or groups wanted. (“**Administrators**”, “**ANONYMOUS LOGON**”, “**SYSTEM**”,

"INTERACTIVE", "NETWORK" and "Everyone")

Repeat the operations until completed.

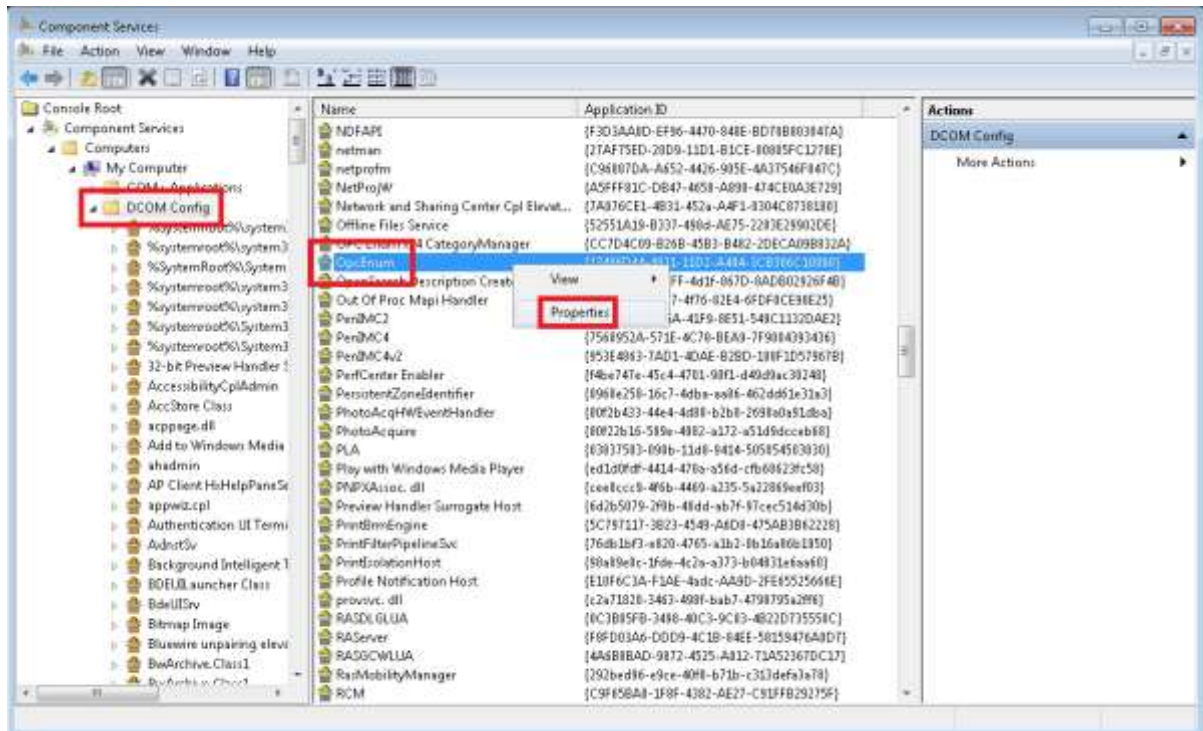


Press OK at end to save settings.

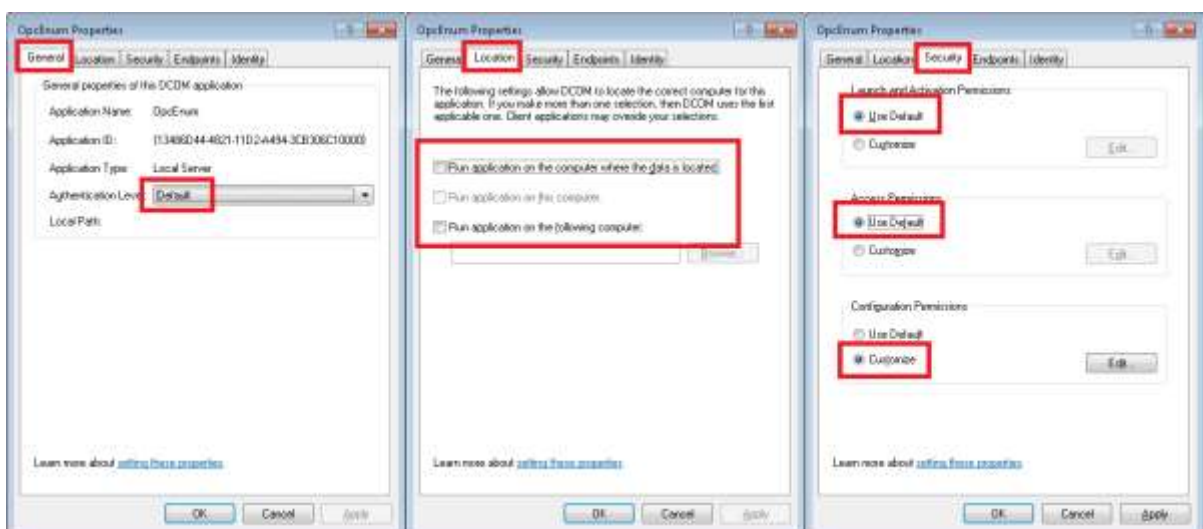
B. "OpcEnum" Settings

Manage the users/groups that should be able to see the existing OPC servers running on the machine (It is possible to give authorisation to many users/groups to see the existing OPC servers running but authorise different users/groups to access to different servers. See: 4. Permissions settings)

- Under: **Component Services**→**Computers**→**My Computer**→**DCOM Config**, find "**OpcEnum**" on the list **right click** on it and Choose "**Properties**" from the menu.



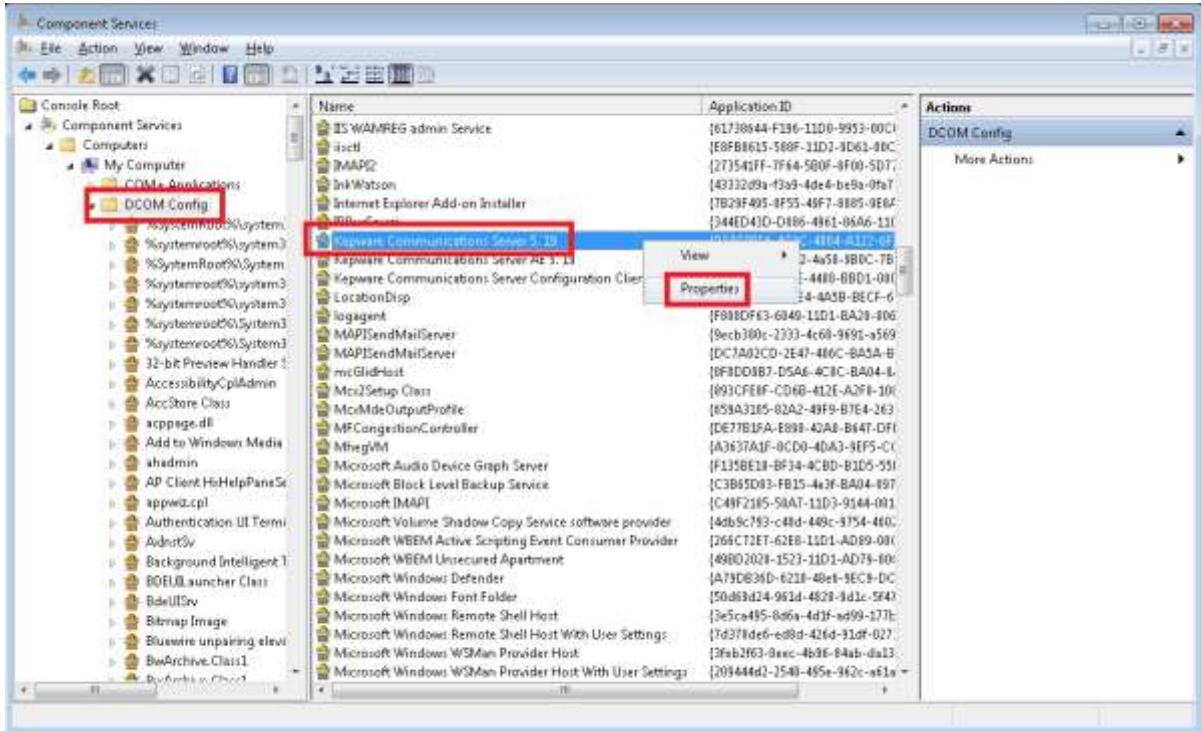
- On the tab "General", Authentication Level chooses the "**Default**".
- On the tab "Location", check the box "**Run application on this computer**" (If it can use.).
- On the tab "Security", Launch and Activation Permissions choose the "**Use Default**", and Configuration Permissions choose the "**Customize**".



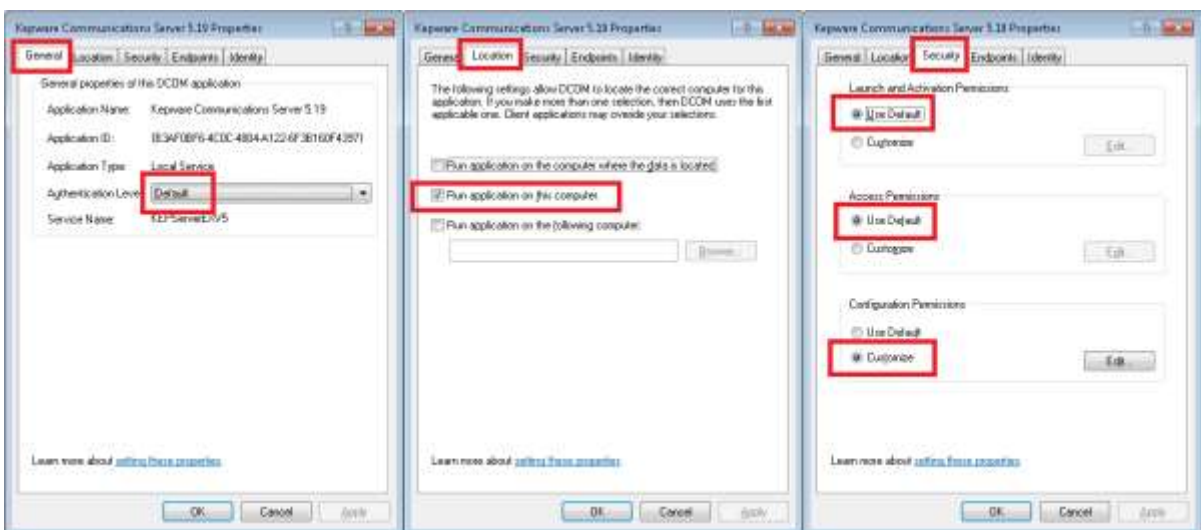
C. “Kepware Communication Server X.XX” Settings

Manage the users/groups that should be able to see the existing OPC servers running on the machine (It is possible to give authorisation to many users/groups to see the existing OPC servers running but authorise different users/groups to access to different servers. See: 4. Permissions settings)

- Under: **Component Services**→**Computers**→**My Computer**→**DCOM Config**, find “**Kepware Communication Server X.XX**” on the list **right click** on it and Choose “**Properties**” from the menu.

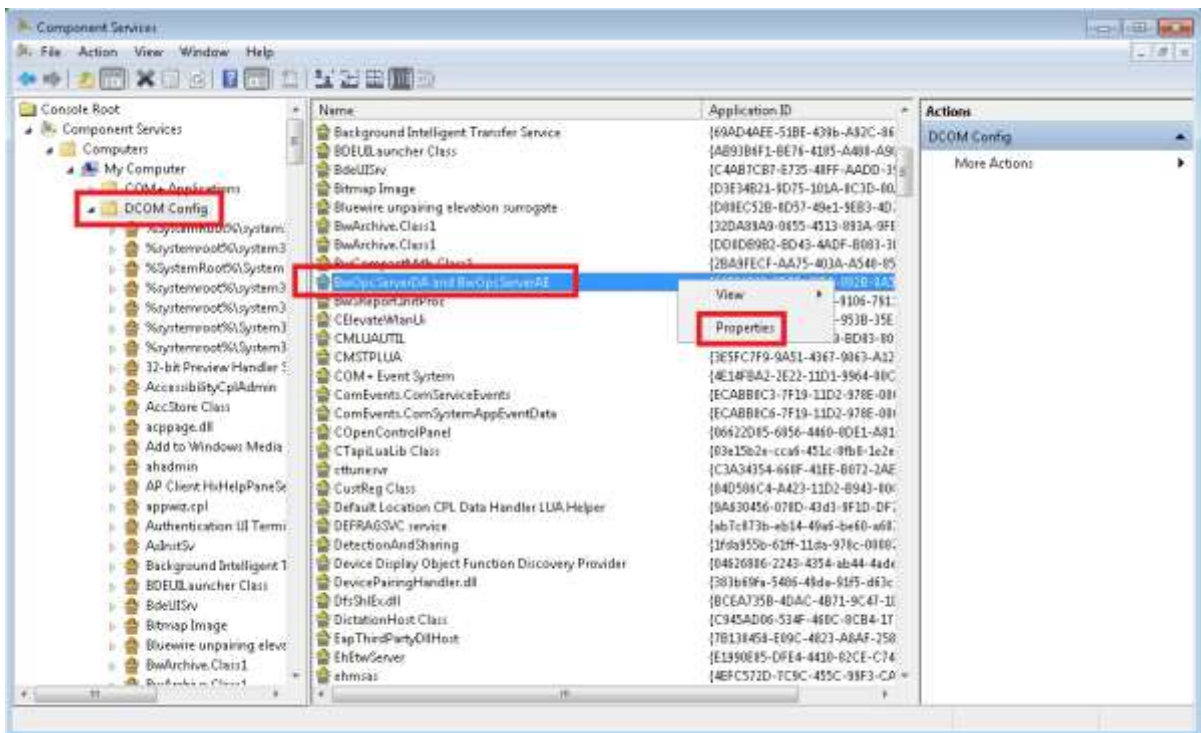


- On the tab “General”, Authentication Level chooses the “**Default**”.
- On the tab “Location”, check the box “**Run application on this computer**”(If it can use.).
- On the tab “Security”, Launch and Activation Permissions and Access Permissions choose the “**Use Default**”, and Configuration Permissions choose the “**Customize**”.

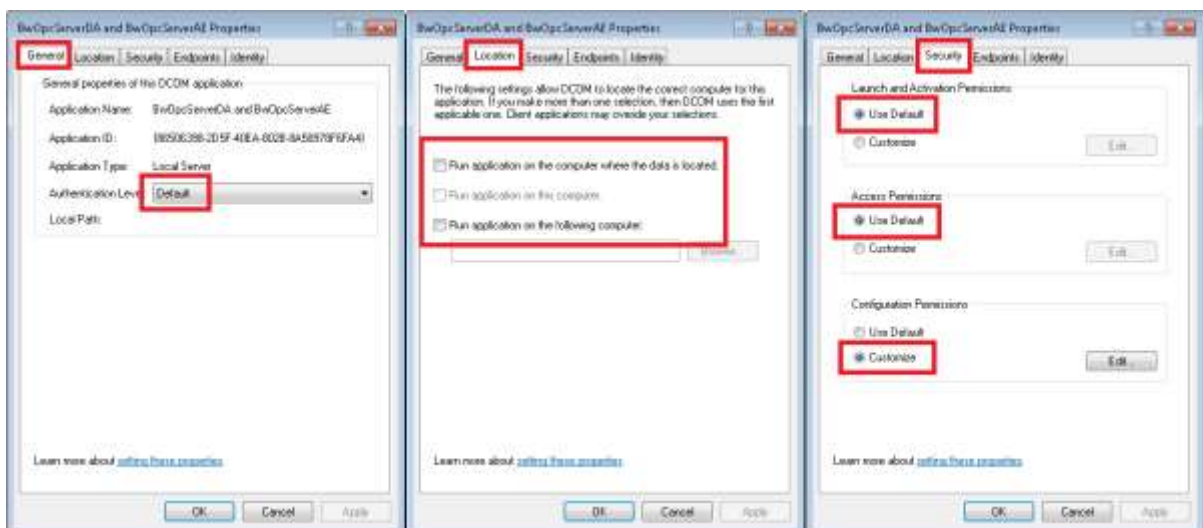


D. OPC Server process Settings

Under: **Component Services**→**Computers**→**My Computer**→**DCOM Config**, find OPC process on the list for this example we install the “**BwOpcServerDA and BwOpc ServerAE**”, right click on it and Choose “**Properties**” from the menu.



- On the tab “General”, Authentication Level chooses the “**Default**”.
- On the tab “Location”, check the box “**Run application on this computer**”(If it can use.).
- On the tab “Security”, Launch and Activation Permissions and Access Permissions choose the “**Use Default**”, and Configuration Permissions choose the “**Customize**”.

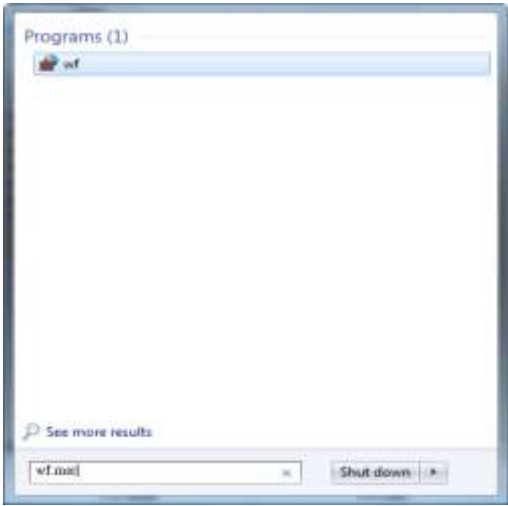


Exit the DCOMCNFG

3. Server Firewall Settings

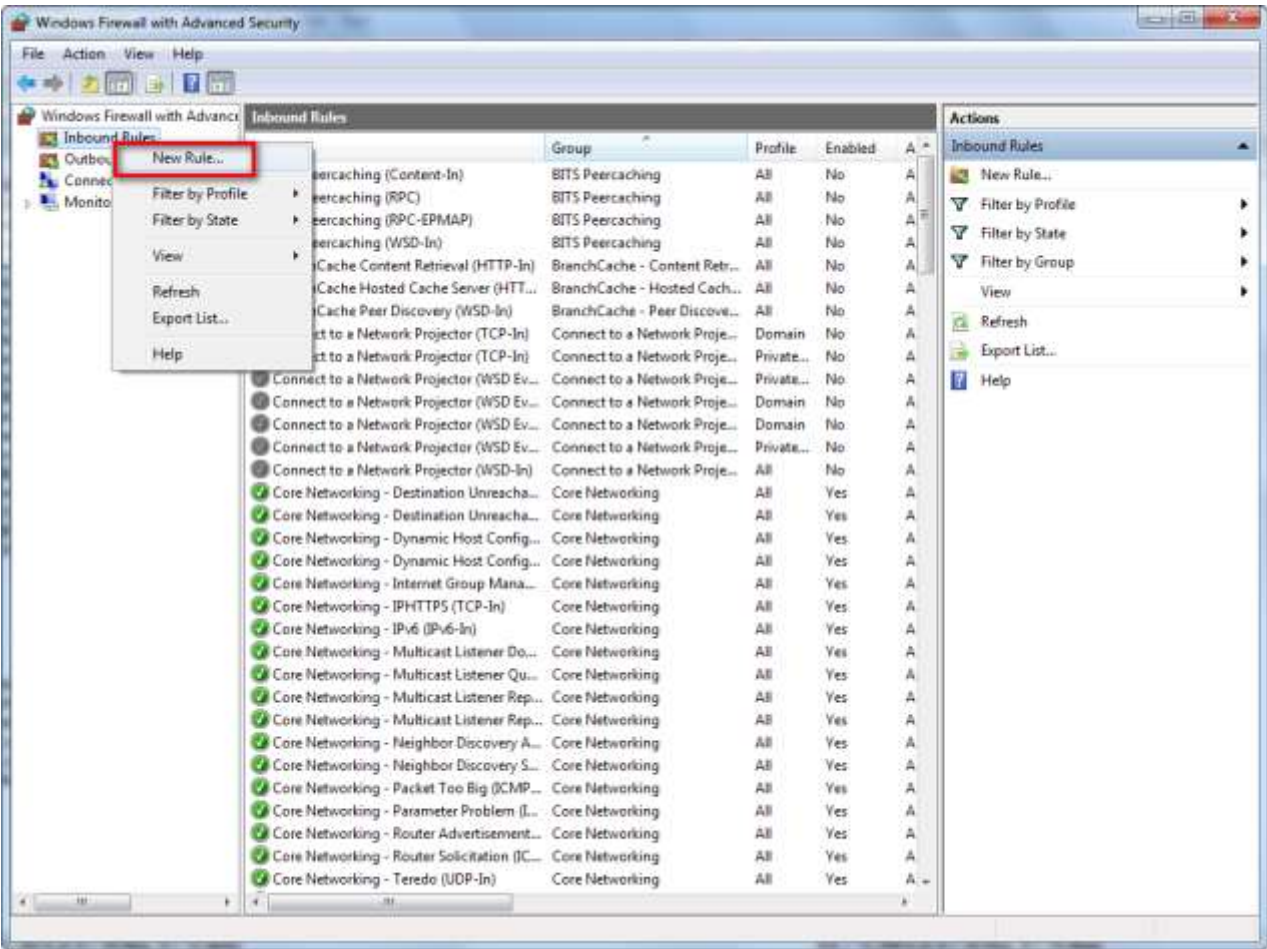
Configure the firewall exceptions

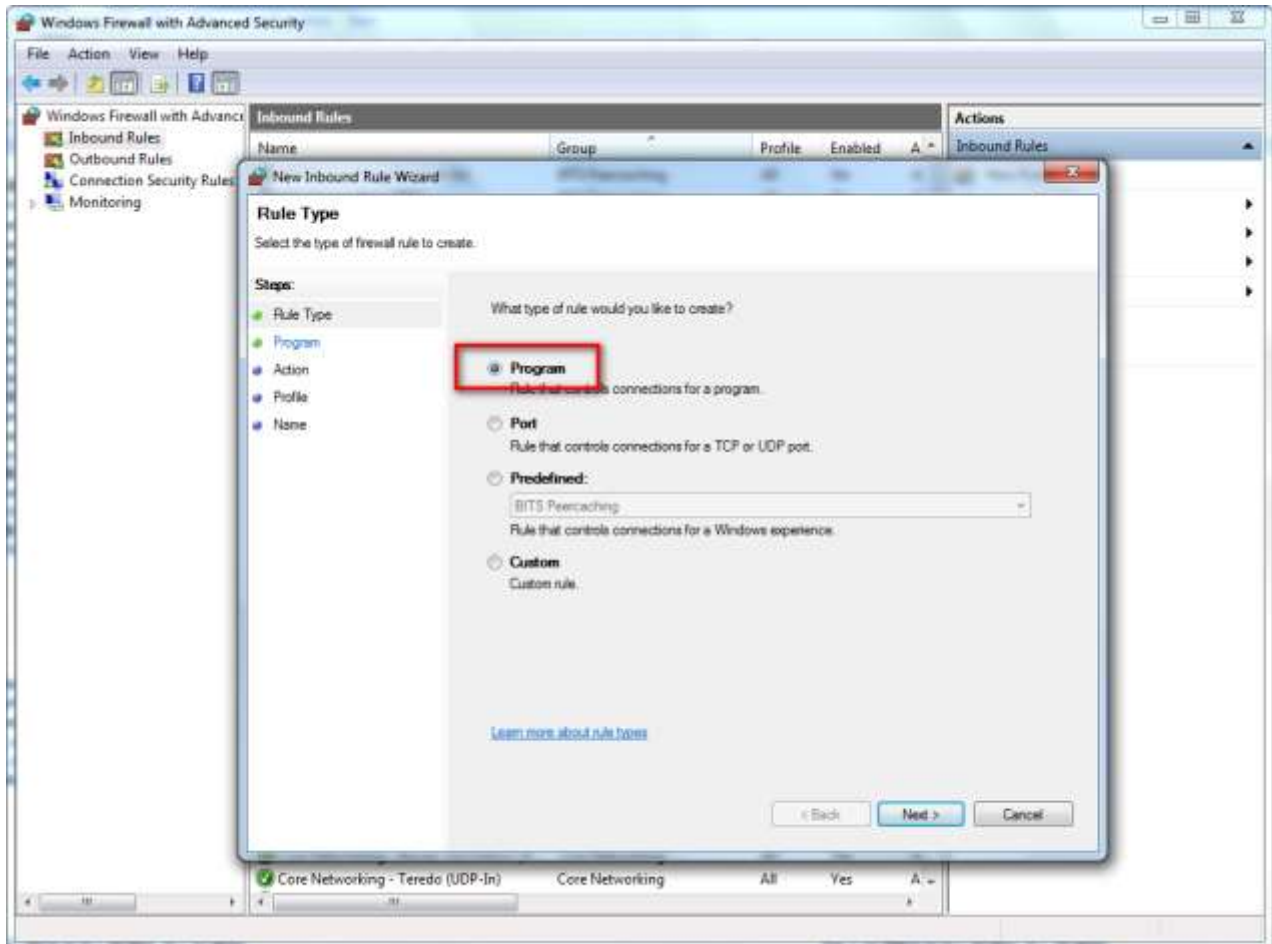
Press **Win + R** to open the Run menu type "**wf.msc**" on the text area and press **ENTER** to open the Component Services window



A. OPC Server Enumerator exception

Right click **Inbound Rules** and choose **New Rule** from the drop down menu, the Inbound Rules wizard will appear





- Go to inbound rules and add to the exceptions list **Chose program** and **hit next>**
- chose **This program path**, hit **Brows** find **opcenum.exe** double click it and **hit next>** (the path should be: Windows7 32 bit machine → c:\windows\system32\opcenum.exe Windows7 64 bit machine and Windows Server 2008 R2 → C:\Windows\SysWOW64\opcenum.exe)
- Chose **Allow the connection** and hit **Next>**
- Check the desired boxes (in our example we only check Domain) hit **Next>**
- Give a name to the connection rule and a description if you desire to then **hit Finish**.

B. OPC Server exception

- **Right click Inbound Rules** and choose **New Rule** from the drop down menu, the Inbound Rules wizard will appear
- **Chose program** and **hit next>**
- chose **This program path**, hit **Brows** find **your OPC server executable** double click it and **hit next>**
- Chose **Allow the connection** and hit **Next>**
- Check the desired boxes hit **Next>**
- Give a name to the connection rule and a description if you desire to, then **hit Finish**.

Exit the firewall configuration window

Restart windows

4. Permissions settings

The server permissions can be managed according to the level of access we want to give, for example if we have a workgroup (WG) how can access a server and we want user A (UA) to be able to access OPCserverA and user B (UB) to be able to access only OPCserverB, we should set. permissions as follow:

OpcEnum → WG

OPCserverA → WG\UA

OPCserverB → WG\UB

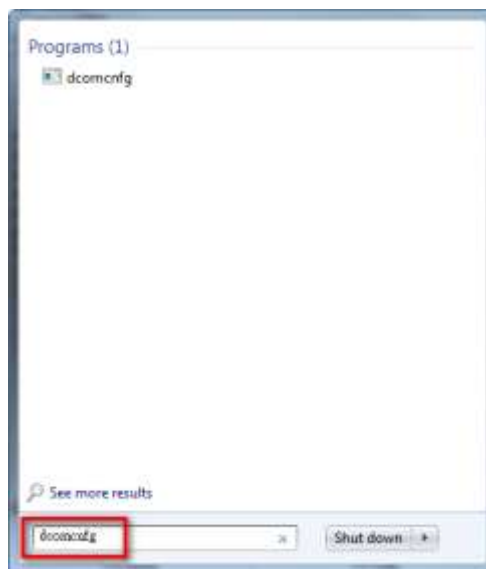
And allow remote and/or local operations for each one of them.

5. OPC Client Settings (Same like OPC server Setting)

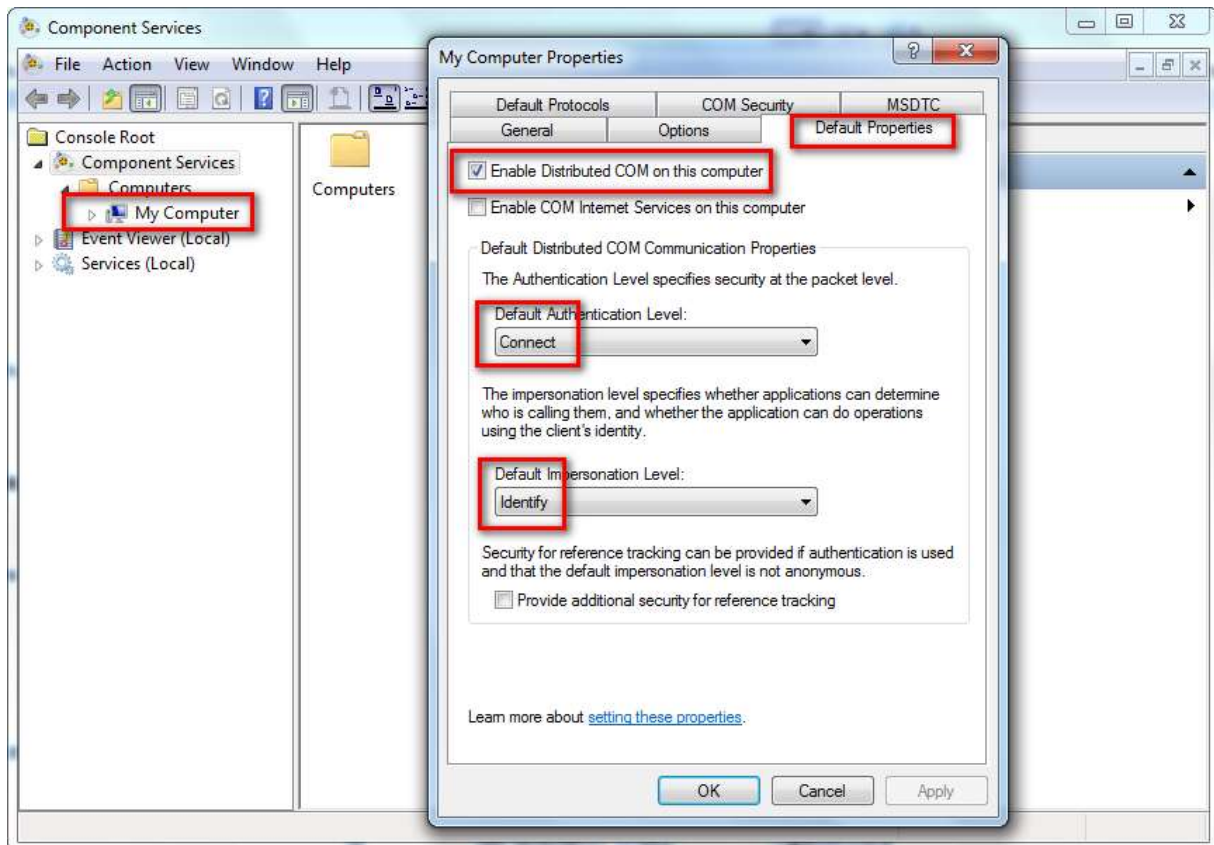
A. Wide security "MyComputer" settings

- Managing the settings for the general computer access, users and permissions

Press **Win + R** to open the Run menu type "DCCOMCNFG" on the text area and press **ENTER** to open the Component Services window



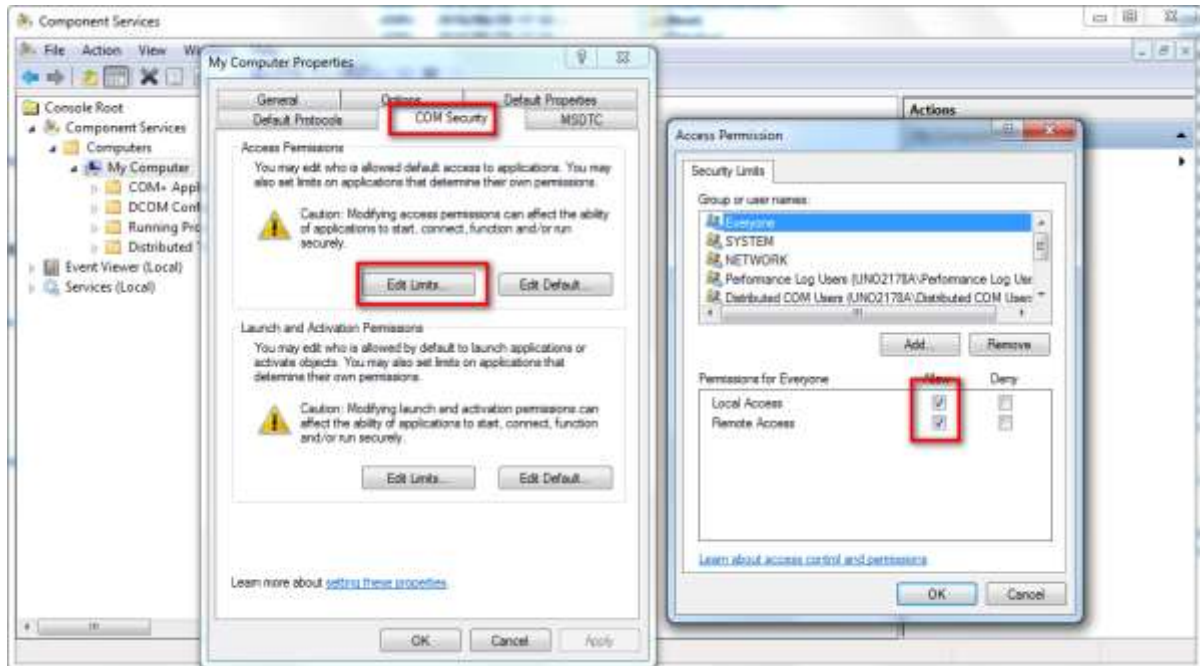
- Under: **Component Services**→**Computers**, Right-click on "**My Computer**" and Choose the "**Properties**" from the menu.
- Click the "**Default Properties**" Tab and configure as follow:
Enable Distributed COM on this computer checked.
 Default Authentication Level **Connect**
 Default Impersonation Level **Identify**



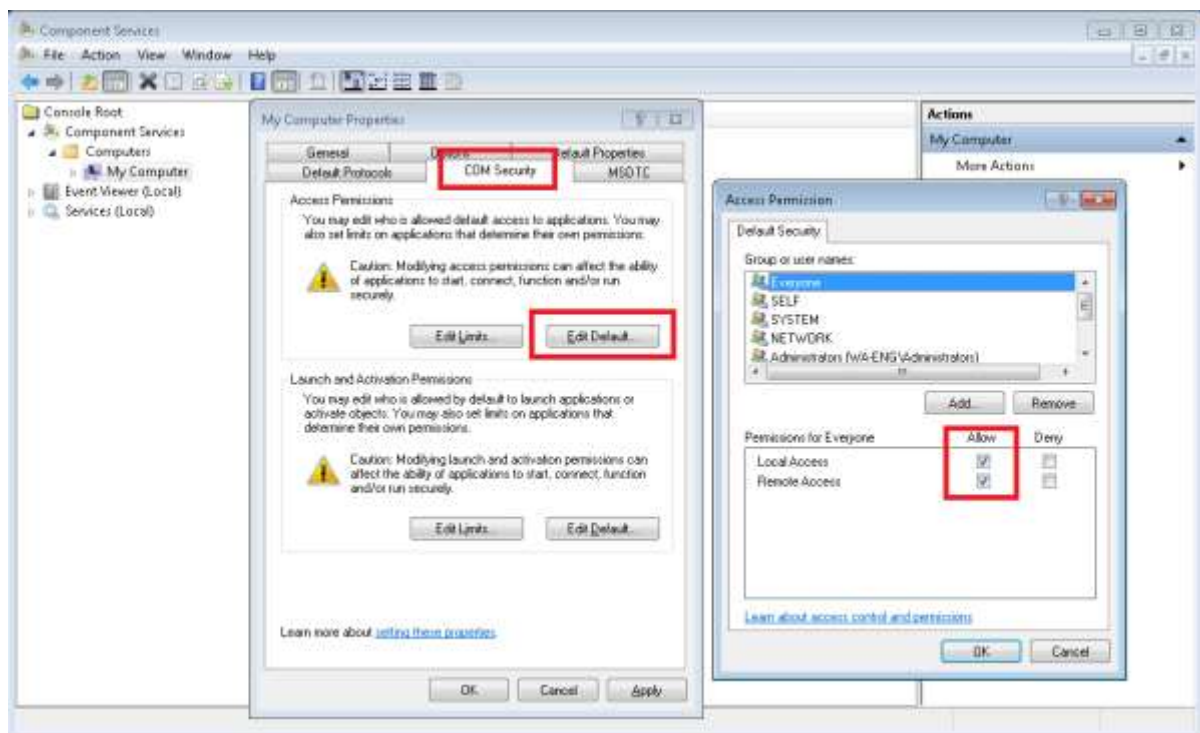
- Click on the **"COM Security"** tab

For the **"Access Permissions"**, we need to check **user accounts** are exist and give that local and remote access, it is necessary to request user account information, also add the users accounts and/or groups who should be able to access the COM service in this machine.

- Click **"Edit Limits"** button within the **"Access Permissions"** Hit **Add** enter the object name (**8 users account are below.**) Hit OK Check local access and remote access boxes Click OK.
Hit **Add** enter the users accounts and/or groups wanted. (**"Administrators", "ANONYMOUS LOGON", "SYSTEM", "INTERACTIVE", "NETWORK", "Everyone", "Performance Log Users" and "Distributed COM Users"**)
Repeat the operations until completed.



- Click "Edit Default" button within the "Access Permissions" Hit Add enter the object name (**7 users account are below.**) Hit OK Check local access and remote access boxes Click OK.
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Repeat the operations until completed.

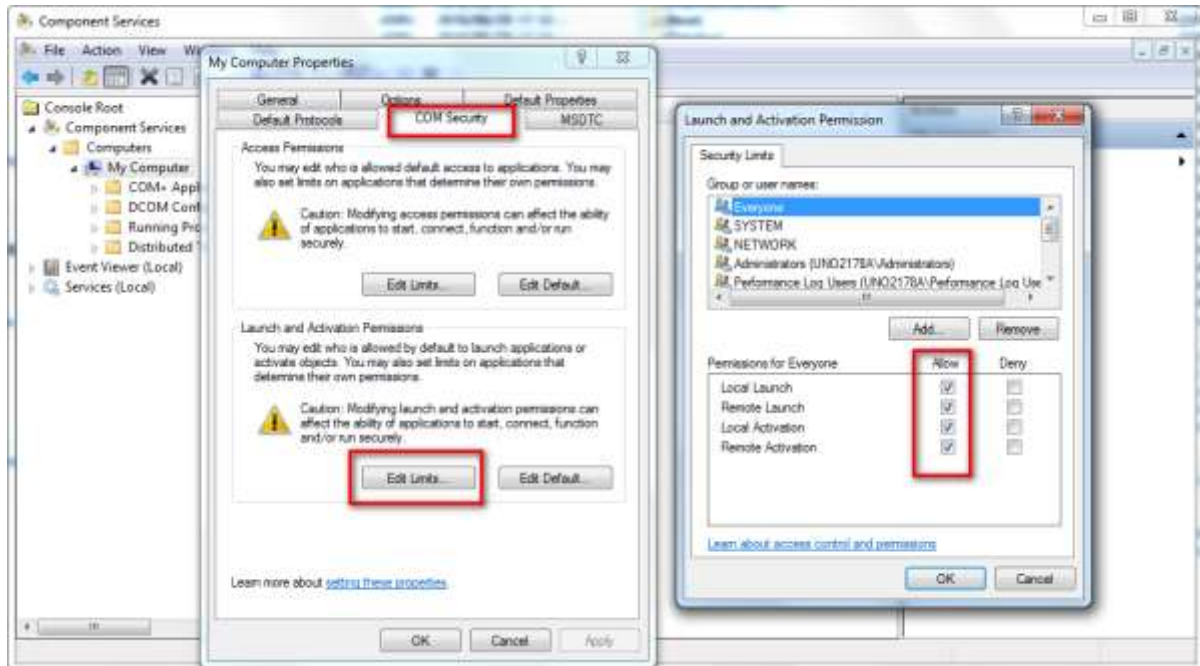


For the "Launch and Activation Permissions" configure as needed, adding only permissions to the users and/or groups who should be able to access the COM service in this machine, setting the permissions. To assign permissions to a special group or user, add it and check the desired boxes.

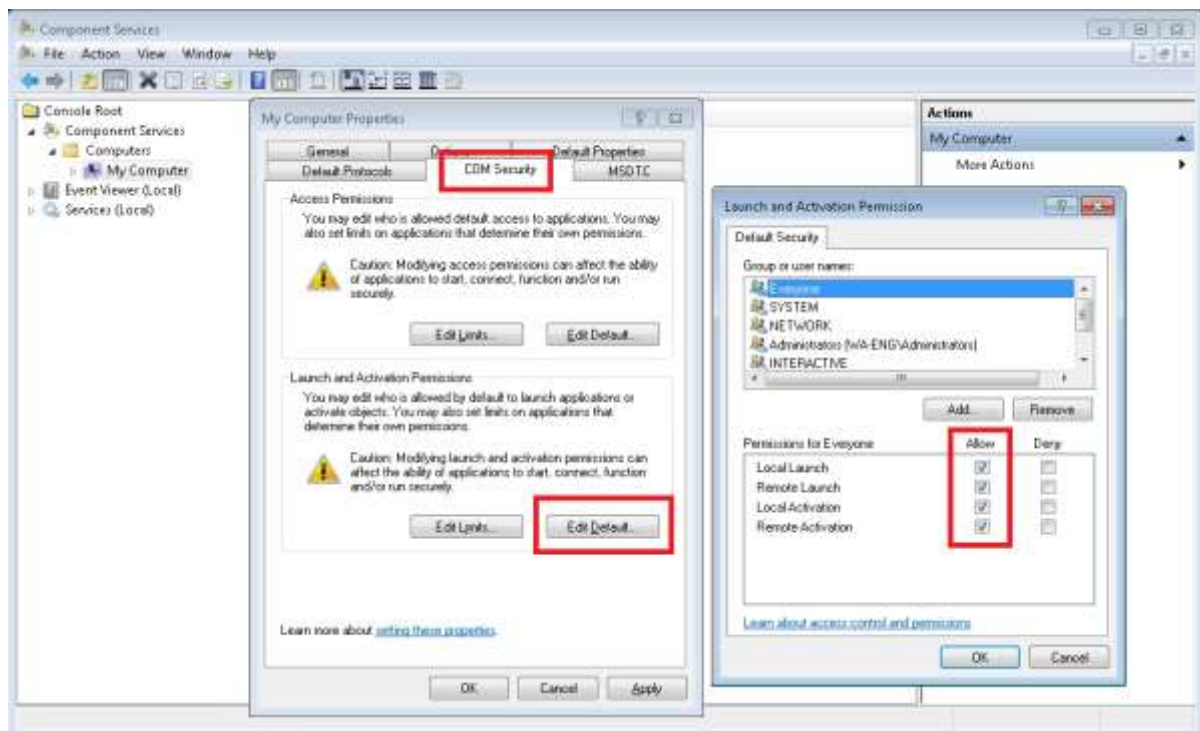
- Click "Edit Limits" button within the "Launch and activation Permissions " Hit Add enter the object name (**8 users account are below.**) hit OK check the desired allow or deny boxes click OK.
Hit Add enter the users accounts and/or groups wanted. ("**Administrators**", "**ANONYMOUS LOGON**", "**SYSTEM**",

"INTERACTIVE", "NETWORK", "Everyone", "Performance Log Users" and "Distributed COM Users")

Repeat the operations until completed.



- Click "Edit Default" button within the "Access Permissions" Hit Add enter the object name (**6 users account are below.**) hit OK check the desired allow or deny boxes click OK.
Hit Add enter the users accounts and/or groups wanted. ("Administrators", "ANONYMOUS LOGON", "SYSTEM", "INTERACTIVE", "NETWORK" and "Everyone")
Repeat the operations until completed.



Press OK at end to save settings.

■ **Pin Definition (in case of serial connection):**

■ **Reference:**