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SpectraLiveServer

Using OPC via DCOM

with

Microsoft Windows XP Service Pack 2

SpectraLive® Server
Using OPC via DCOM with Microsoft Windows XP Service Pack 2

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Introduction

SpectraLiveServer application use DCOM to communicate over a network. When Windows XP with Service Pack 2 is installed with its default configuration settings, OPC communication will cease to work. This paper describes the settings necessary to establish a correct communication between **SpectraLiveClient** and **SpectraLiveServer**.

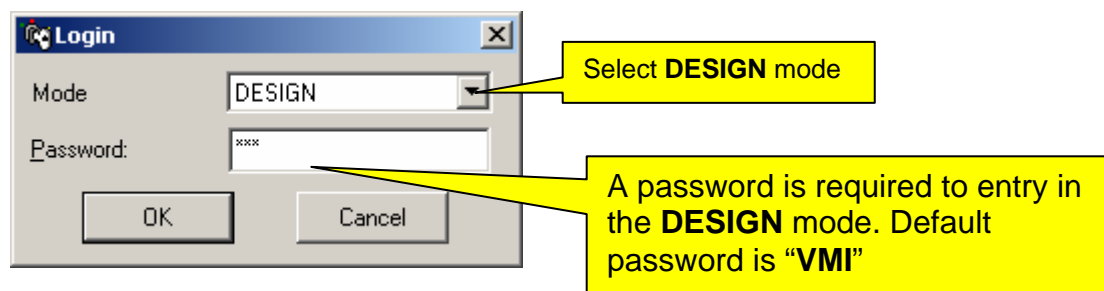
1 Windows Firewall

The Windows Firewall allows traffic across the network interface when initiated locally, but stops any incoming traffic. This firewall is exception based, meaning that the administrator can specify applications and ports that are exceptions to the rule and respond to unsolicited request.

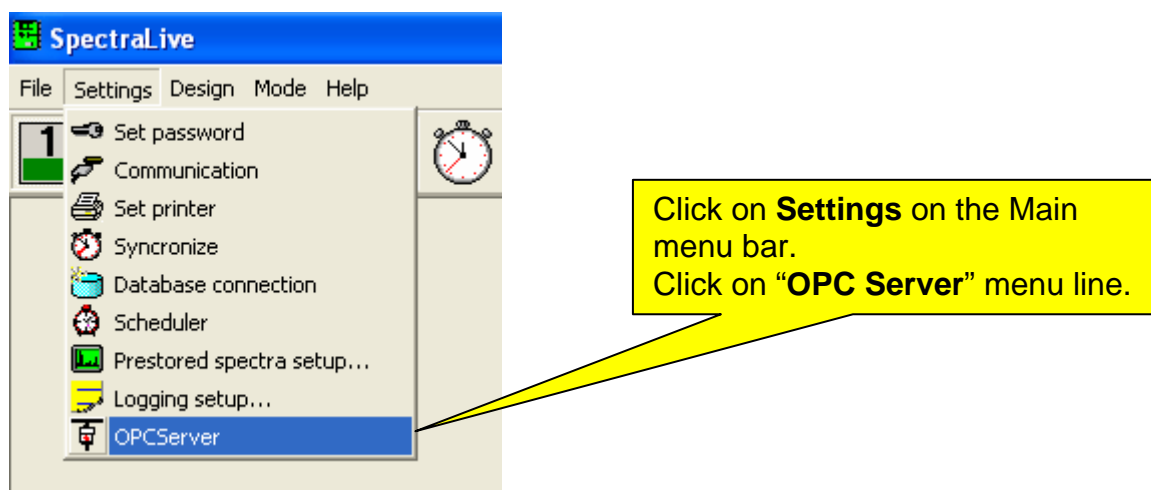
The firewall exceptions can be specified at two main levels, the application level and the port and protocol level. The application level is where you specify which applications are able to respond to unsolicited requests and the port and protocol level where you can specify the firewall to allow or deny traffic on a specific port for either TCP and UDP traffic. To make any OPC client/server application to work via DCOM, changes need to be made on both levels.

2 SpectraLiveServer Registration

- Run for first time the SpectraLiveServer application.
- Entry in "Design" Mode!

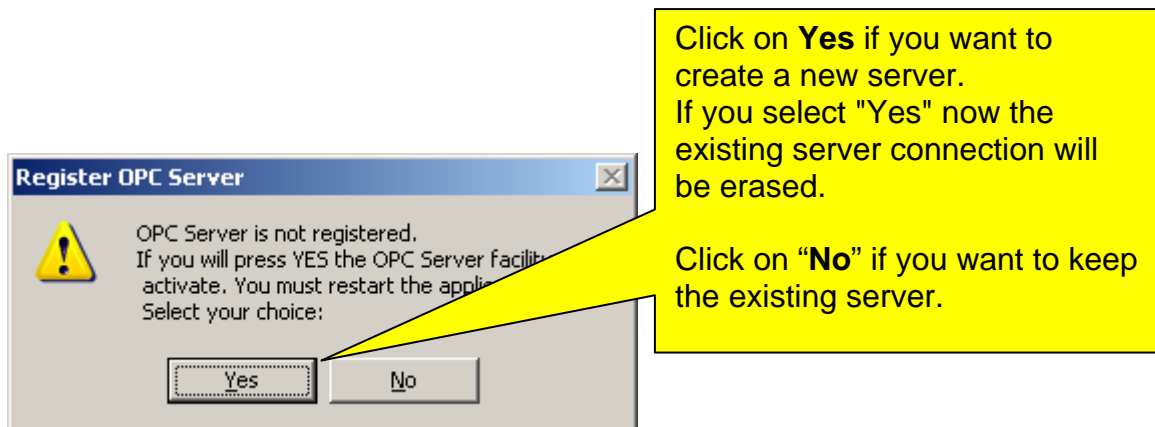


- Entry in "Design" Mode and from **Main Menu->Settings** click on "OPC Server" menu line.



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The following attention message will appear:



The OPC Server option will be enabled and the "SpectraLiveOPC" server will be automatically registered into the operation system. The application will be closed down.

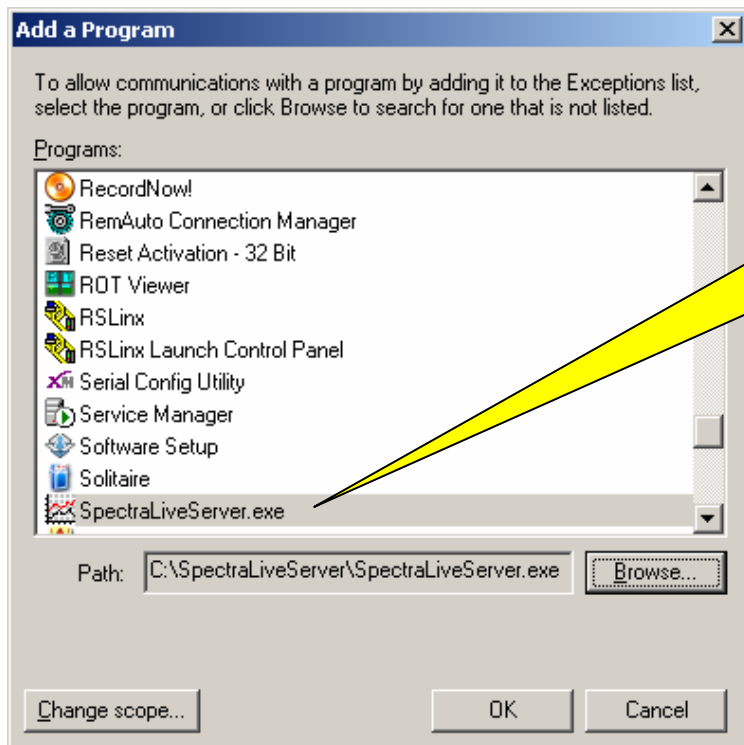
Note. Once registered, the "SpectraLive® OPC" will remain active. Do not use the command again, because this action will un-register the "SpectraLiveOPC" server. Do this only if you intend to move the "SpectraLiveOPC" to another computer.

3 Configuring the Firewall

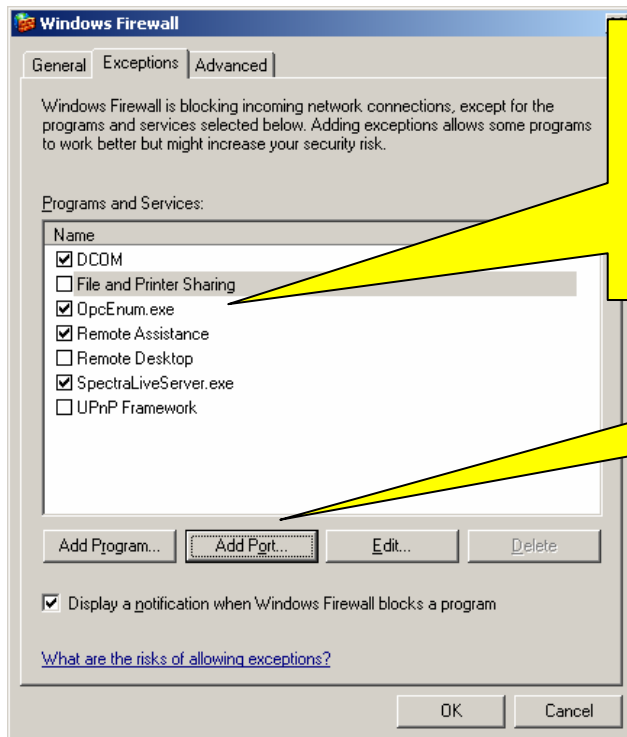
By default the Windows firewall is set to “On”. This setting is recommended by Microsoft and by OPC to give your machine the highest possible protection.

The image shows a sequence of three Windows Firewall configuration windows with yellow callout boxes providing instructions:

- Windows Firewall (General tab):** A callout box points to the "Exceptions" tab, stating "Click **Exceptions**."
- Windows Firewall (Exceptions tab):** A callout box lists programs to be added: "SpectraLiveServer", "Microsoft Management Console (mmc)", "OpcEnum", and "DCOM". Another callout box points to the "Add Program..." button, stating "Click **Add Program**."
- Add a Program:** A callout box points to the "Browse" button, stating "Try to find SpectraLiveServer in the list or use the **Browse** button."
- Browse:** A callout box points to the file selection process, stating "Search for and select the **SpectraLiveServer.exe** in the SpectraLiveServer directory and click on the **Open** button."



Now the SpectraLiveServer.exe is available in the list. Select this program and click on the **Ok** button.

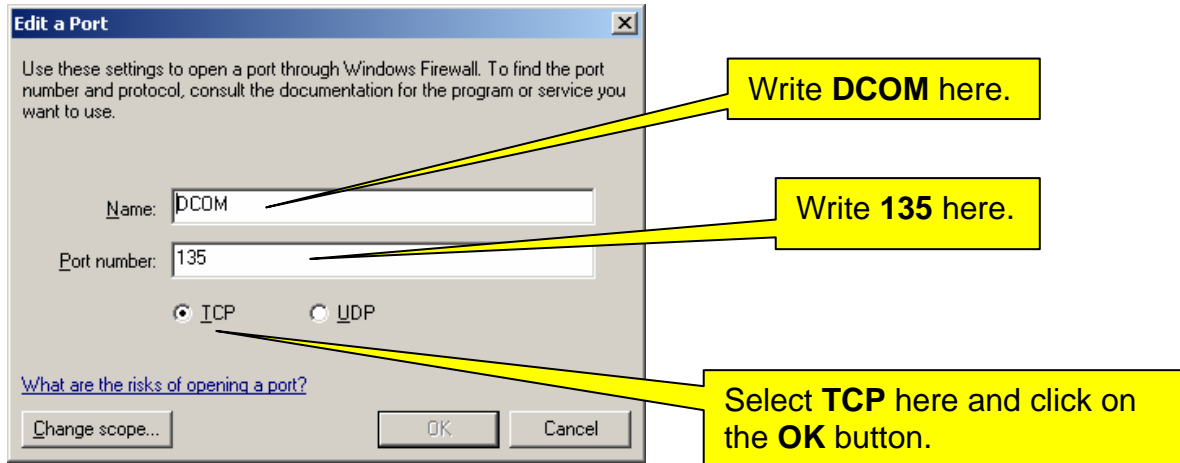


Check that **OpcEnum.exe** and **Microsoft Management Console.exe** (mmc.exe) exists in the list, otherwise add this program in the same way as described above. Look for the files in **C:\Windows\System32**

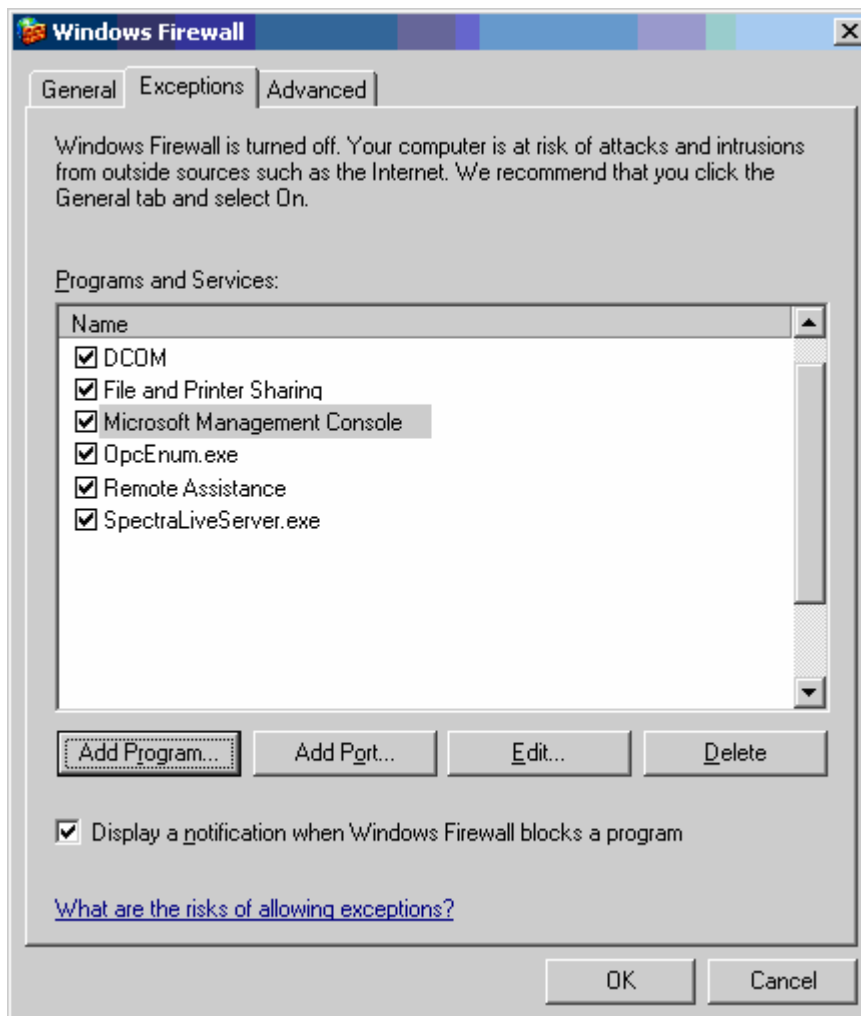
Check that **DCOM** exists in the list if not click on the **Add Port** button and follow the instructions below.

Note: Only EXE files are added to the exception list.

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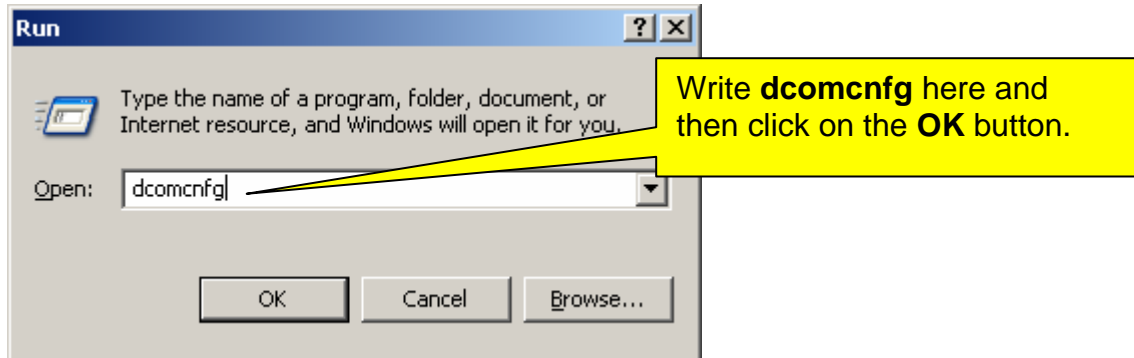
The final screen must include following files and they must be ticked:



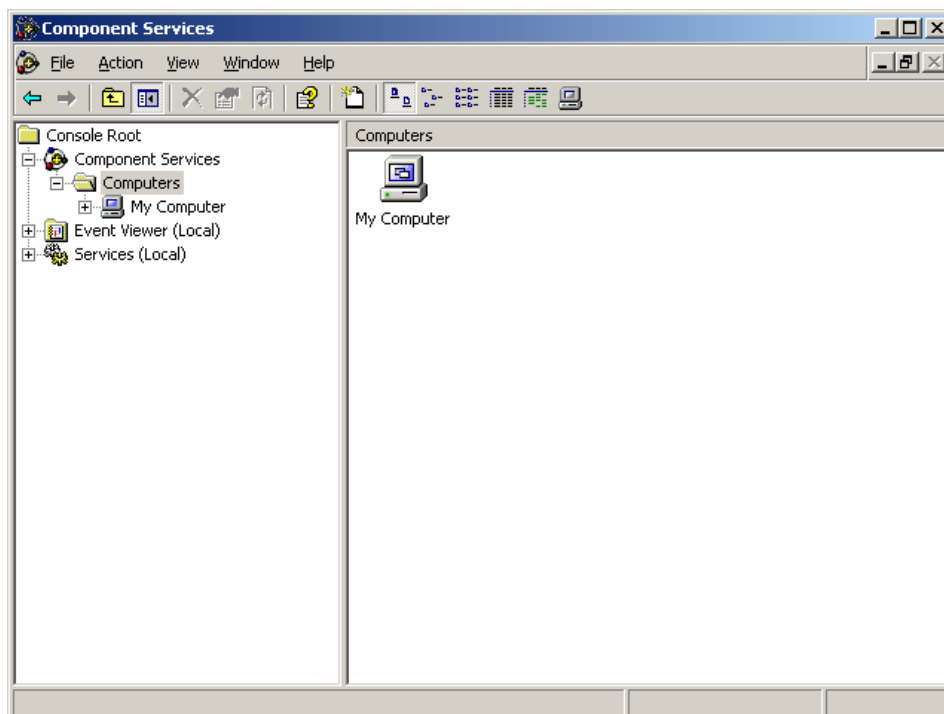
4 Configuring DCOM

Follow these steps to configure DCOM for OPC Communication using Windows XP Service Pack 2:

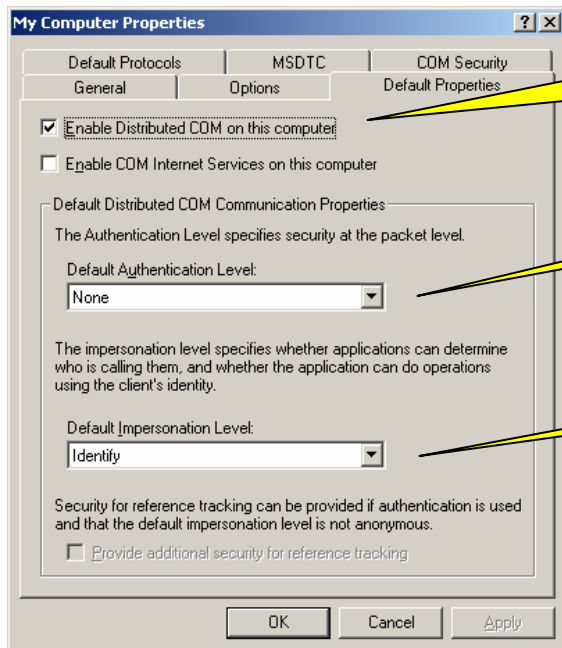
1. Go to Start -> Run and type **DCOMCnfg** and click OK.



2. Click on **Component Services** under the Console Root to expand it.
3. Click on **Computers** under Component Services to expand it.
4. Right click on **My Computer** in the pane on the right and select **Properties**



5. Go to **Default Properties** tab and do the following:



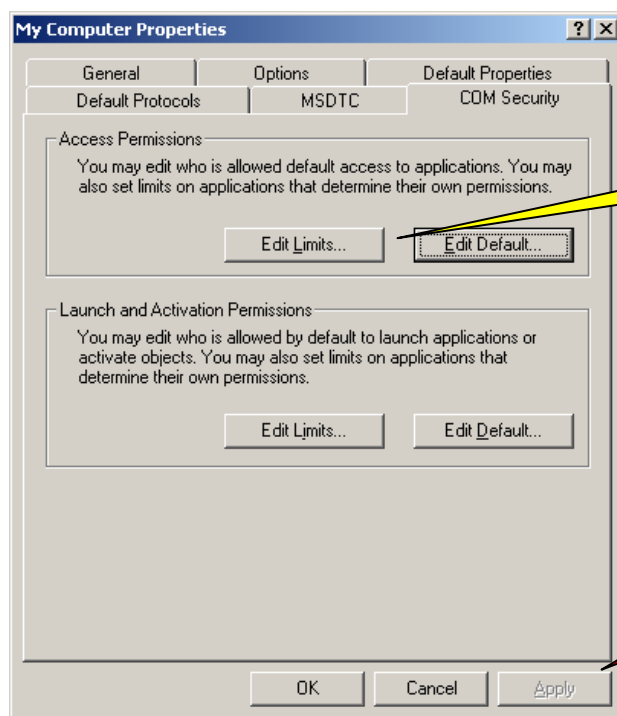
Make sure that function is activated.

Select **None** here.

Select **Identify** here click on the **Apply** button.

6. Go to **COM Security** tab and note that there are four permissions to be configured. All of these must be edited:

- Access Permissions – Edit Limits
- Access Permissions – Edit Default
- Launch and Activation Permission – Edit Limits
- Launch and Activation Permission – Edit Default

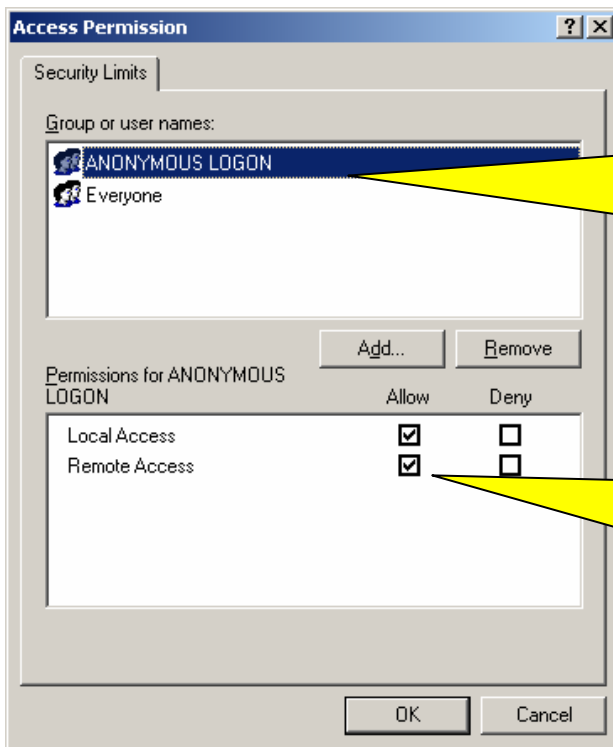


Click on the **Edit Limits** button.

Note!

Do not forget to click on the **Apply** button each time you want to save your changes.

7. Click on Edit Limits in the Access Permissions part.



Both **ANONYMOUS LOGON** and **Everyone** must be configured as in the picture.

If "ANONYMOUS LOGON" or "Everyone" doesn't exist in the list click on **Add**.

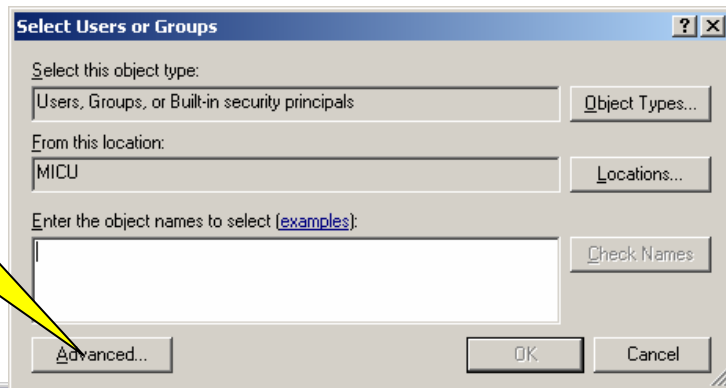
Tick the squares to allow both **Local and Remote Access**, then click on the **OK** button.

Repeat this process for **Everyone**.

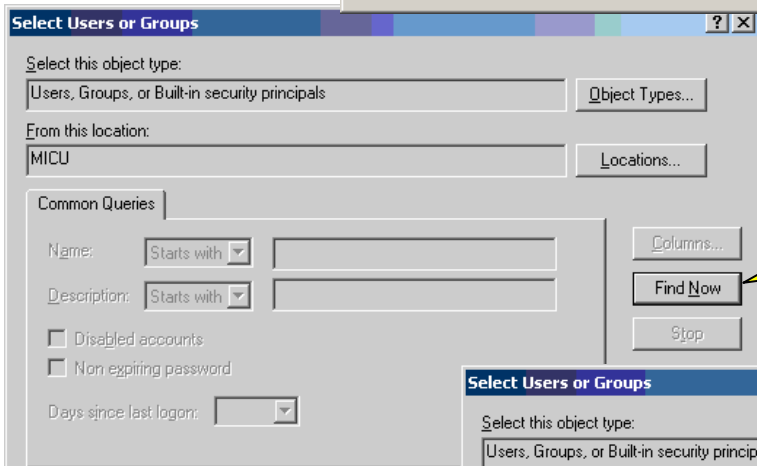
8. If "ANONYMOUS LOGON" and "Everyone" exist in the list go directly to step 10.

9.

Click on the **Advanced** button.

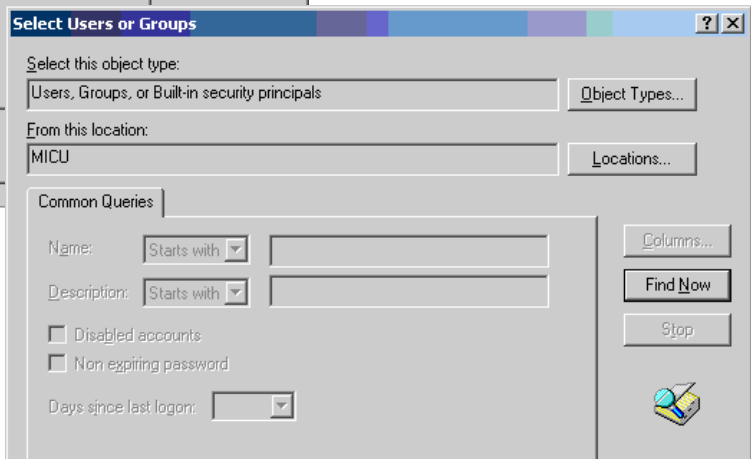


Click on the **Find Now** button and a list will appear.

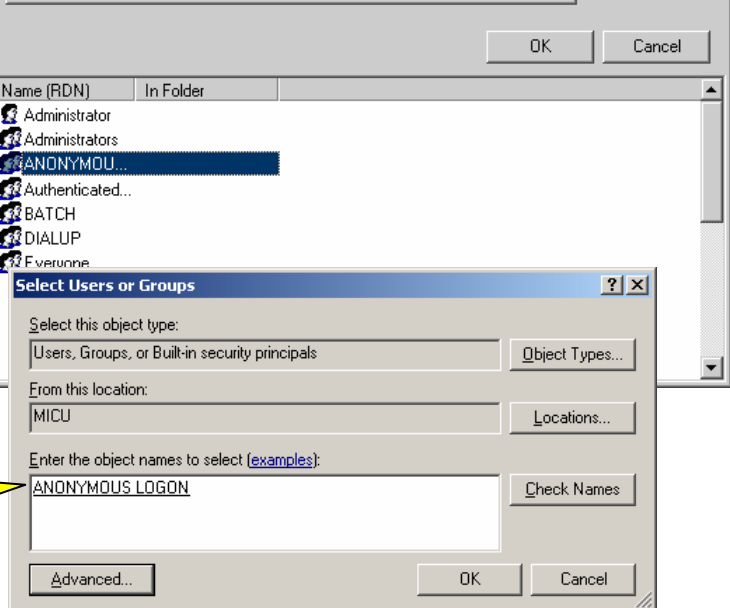


Select the item you want from the list and click on the **OK** button.

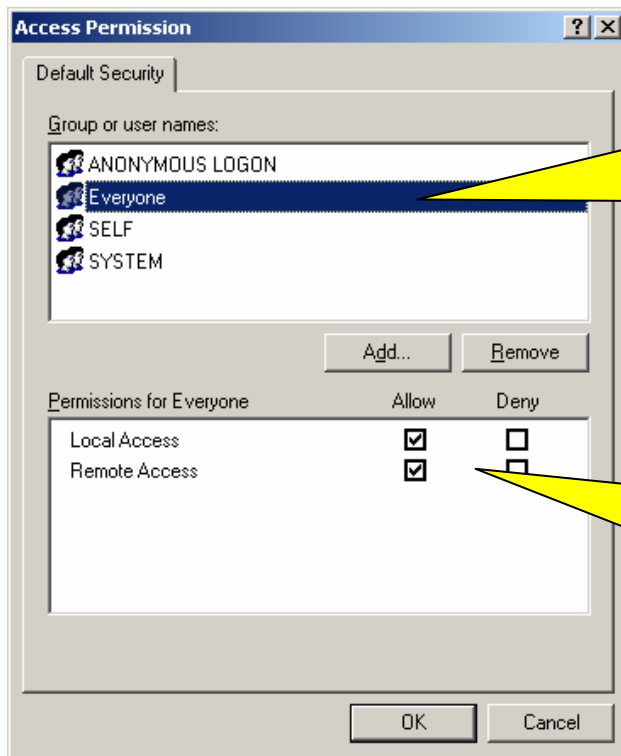
Repeat this process for each new user group you want to add.



Now you will have the selected user group in this window. Click on the **OK** button.



10. Click on **Edit Default** in the Access Permissions part.



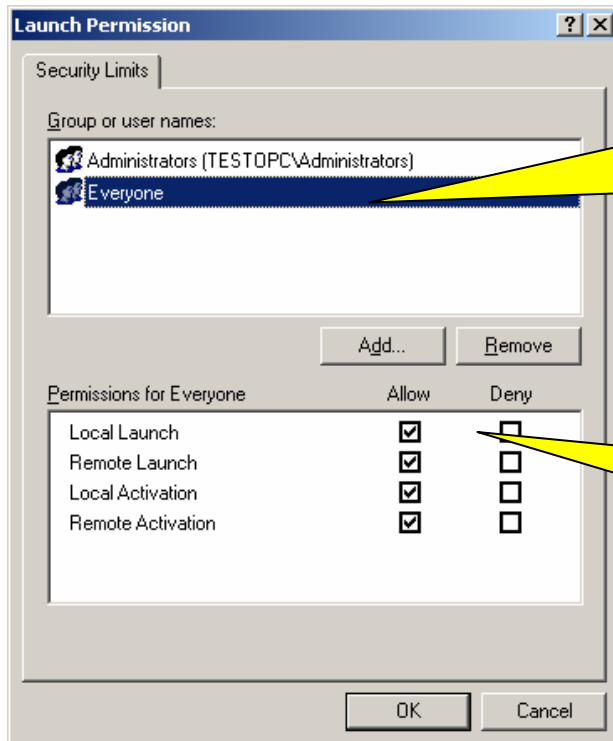
Both **ANONYMOUS LOGON** and **Everyone** must be configured as in the picture.

If "ANONYMOUS LOGON" or "Everyone" doesn't exist in the list click on **Add** and follow the steps described above.

Tick the squares to allow both **Local** and **Remote Access**, then click on the **OK** button.

Repeat this process for **Everyone**.

11. Click on **Edit Limits** in the Launch and Activation Permission part.

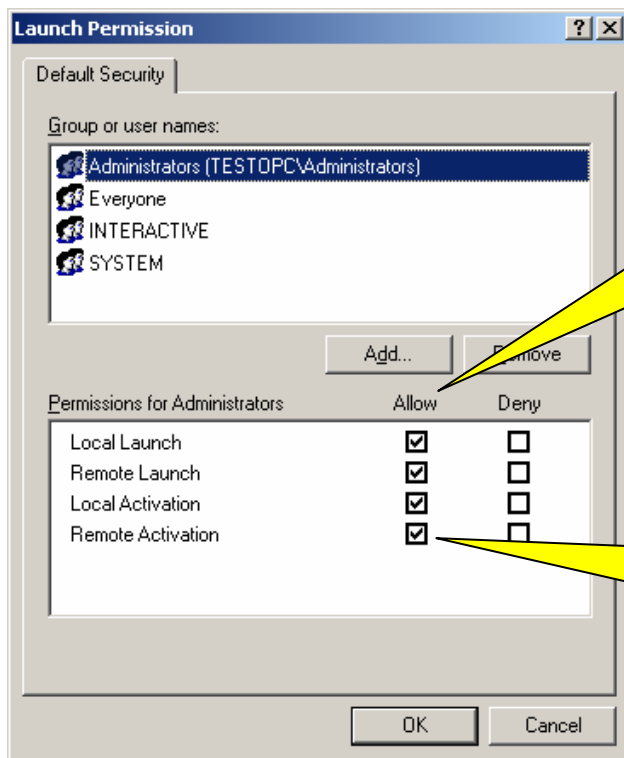


Everyone must be configured as in the picture.

If "Everyone" doesn't exist in the list click on **Add** and follow the steps described above.

Tick **all the squares** to allow both Local and Remote Launch and Local and Remote Activation then click on the **OK** button.

12.

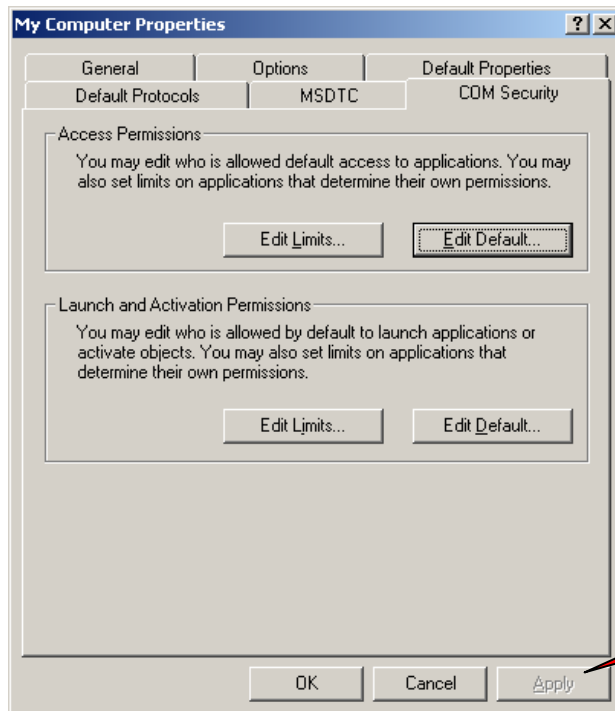


Everyone must be configured as in the picture.

If "Everyone" doesn't exist in the list click on **Add** and follow the steps described above.

Tick **all the squares** to allow both Local and Remote Launch and Local and Remote Activation then click on the **OK** button.

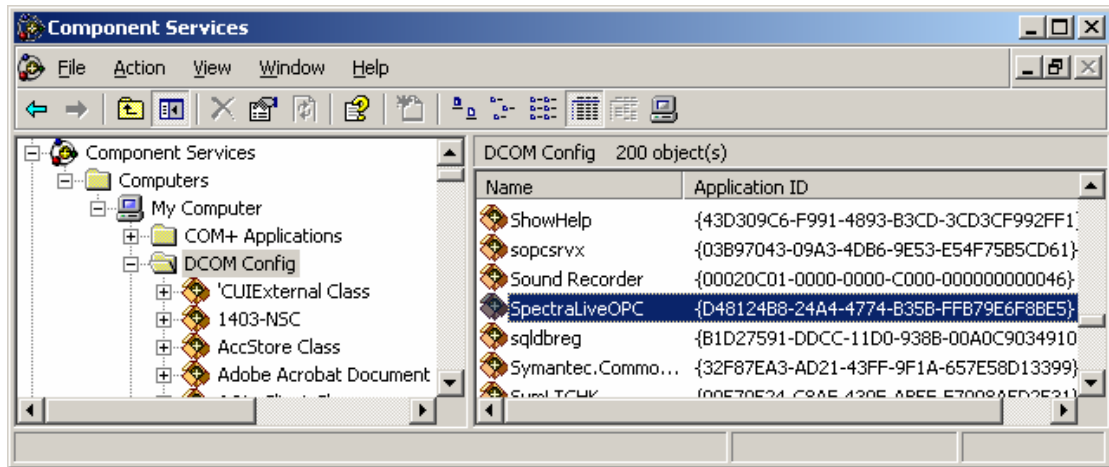
13.



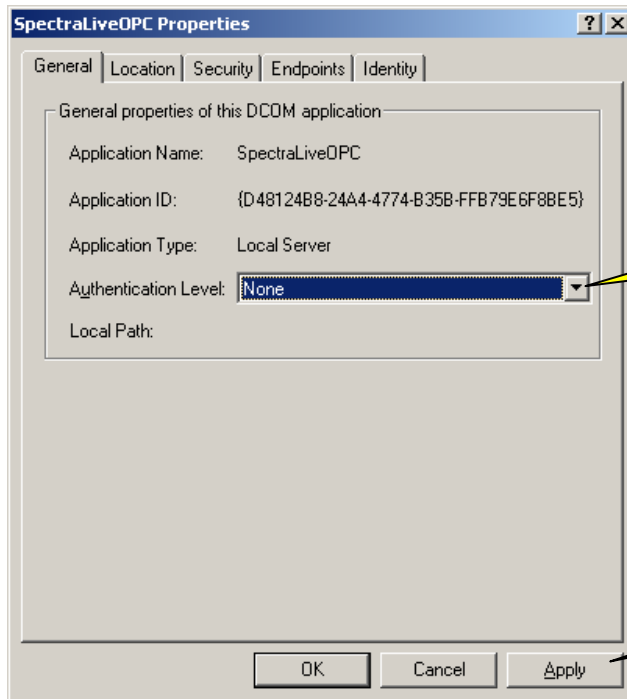
When you have finished the settings do not forget to click on the **Apply** button before leaving this window otherwise the settings might not be saved.

Click then on the **OK** button.

14. From **MyComputer->DCOM Config** tree select the “**SpectraLiveOPC**” item and right-click to select **Properties**.



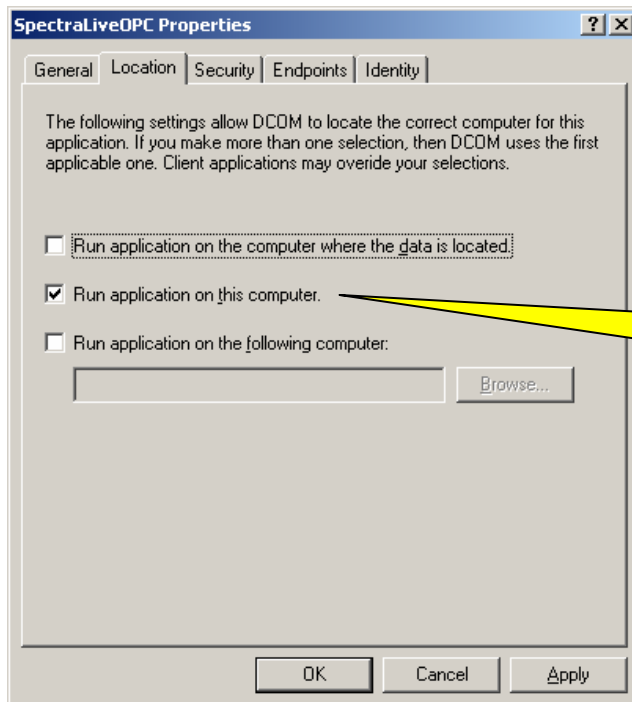
- 15.



Select **None** and press the **Apply** button.

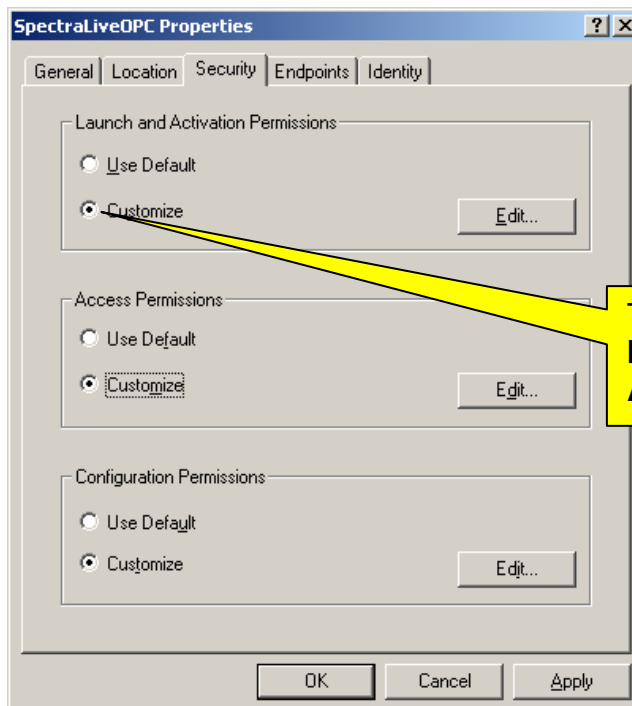
Don't forget to press the **Apply** button, when you have make changes

16. On **Location** tab verify if the **Run application on this computer** check box is checked.



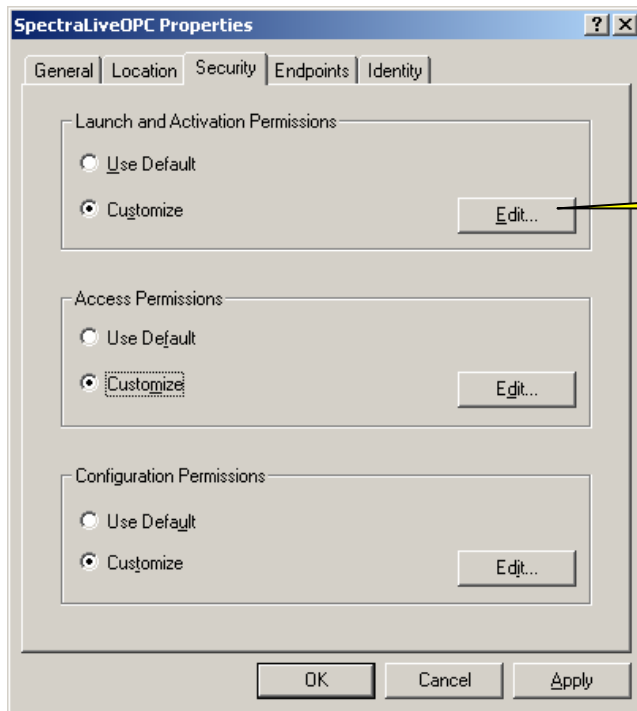
Tick the square for **Run application on this computer** then click on the **Apply** button.

17. On **Security** tab on both Launch and Activation Permissions and Access Permission groups select **Customize**.



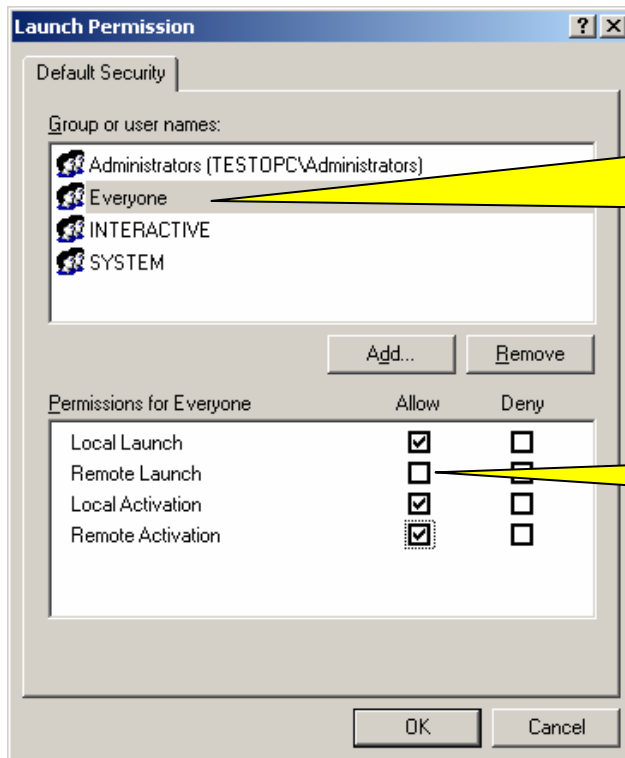
Tick all the **Customize buttons** and then click on the **Apply** button.

18. On Launch and Activation Permissions group press Edit



Press the **Edit** button.

19.

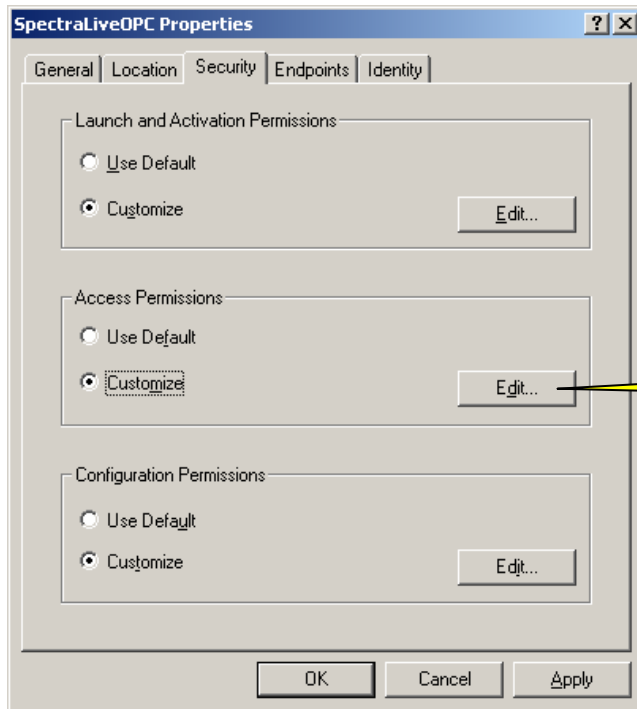


Everyone must be configured as in the picture.

If "Everyone" doesn't exist in the list click on **Add** and follow the steps described above.

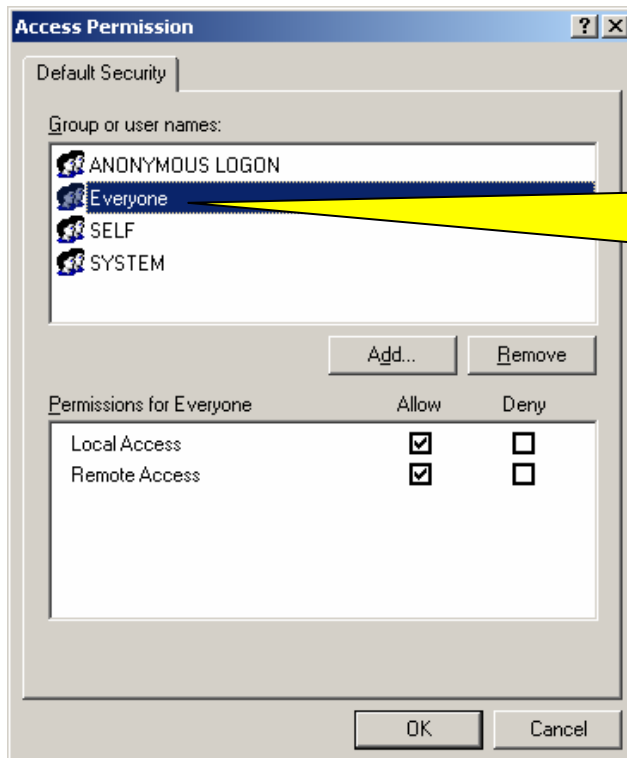
Tick all the squares **except** the **Remote Launch** and then click on the **OK** button.

20. On **Access Permissions** group press **Edit**.



Press the **Edit** button.

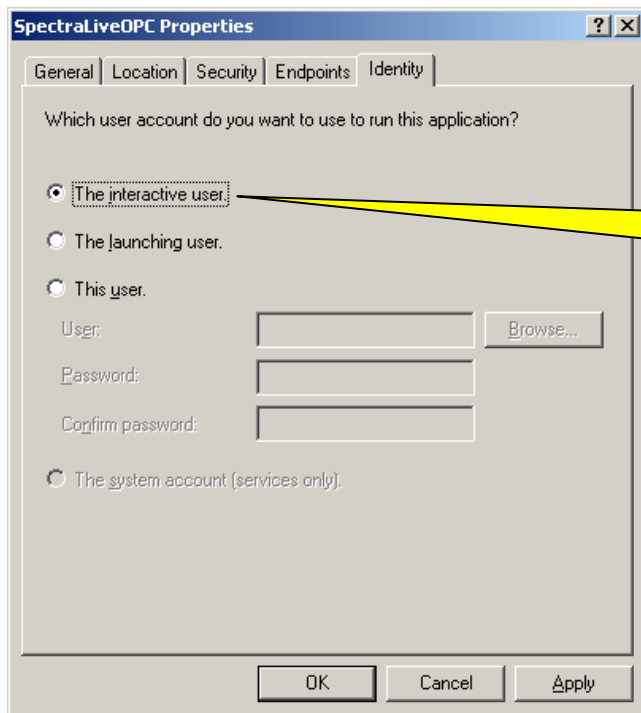
21.



Everyone must be configured as in the picture.

If "Everyone" doesn't exist in the list click on **Add** and follow the steps described above.

22. On **Identity** tab select the **interactive** user radio button.



Select **The interactive user** item and then click on the **Apply** button.

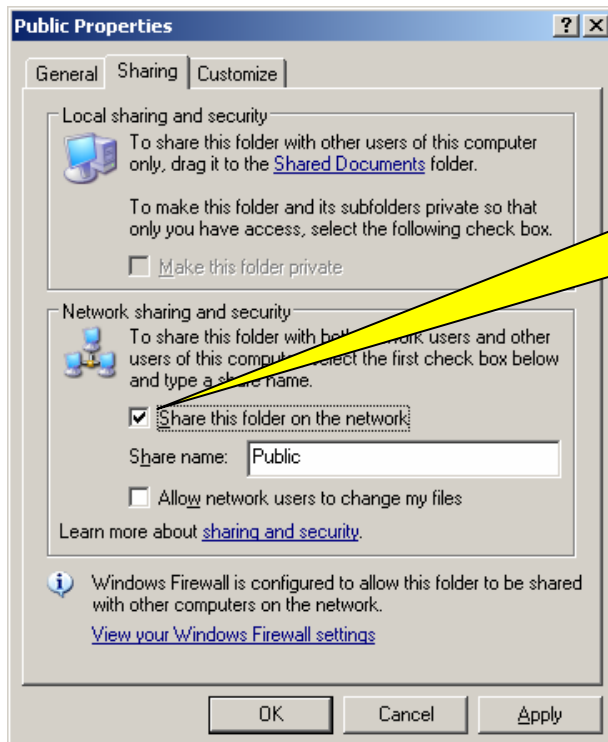
23. Close the Component Services window.

To enable some RPC Services that are required, enable File sharing Service for at list one folder.

24. Make a folder on your hard disk and name it Public.

25. Click on this folder with the right mouse button and select Sharing and Security item.

26.



Tick on **this square** and then click on the **Apply** button.

Then click on the **OK** button

Note! Use this setup procedure as a baseline for establishing client/server interactions. Then you can proceed to a "tighten" DCOM security settings.

NOTE!: For Windows Server 2003 supplementary settings are also required.
All above settings are almost identically.

For beginning, do the followings:

- From "Administrative tools" select "Local Security Policy".
- From the tree select "Local Policies\Security Options"
- In the list from the right side of the window select "Network Access: Let Everyone Permissions apply" to ANONYMOUS Users.
- Click right -> "Select Properties" and click on the ENABLED radio button.
- Click OK to finish