DCOM Configuration on Windows

This chapter describes how to configure NaturalX applications on Windows. All settings are applied with the tool *DCOMCNFG.EXE* or Component Services. The dialog examples shown in the following sections appear as with Component Services under Windows XP.

This chapter covers the following topics:

- Configuring NaturalX Servers
- Configuring NaturalX Clients

Configuring NaturalX Servers

To configure NaturalX servers

1. Invoke Component Services.

| le Component Services | | |
|--|--|--|
| ➢ File Action View Window ← → ▲ → | Help Help := :::::::::::::::::::::::::::::::::: | |
| Component Services Computers My Computer COM+ Applications DCOM Config Dostributed Transact Running Processes Event Viewer (Local) Services (Local) | Name COM+ Applications DCOM Config Distributed Transaction Coordinator Running Processes | |
| | | |

2. In the **Properties** dialog of **My Computer**, select the **Default Properties** tab and activate the check box **Enable Distributed COM on this computer**.

3. Set Default Authentication Level to Default and Default Impersonation Level to Identify.

| My Computer Properties | ? 🔀 | | | |
|--|----------------------|--|--|--|
| Default Protocols MSDTC | Default COM Security | | | |
| General Options | Default Properties | | | |
| Enable Distributed COM on this computer | | | | |
| Enable COM Internet Services on this compute | er | | | |
| - Default Distributed COM Communication Prope | rties | | | |
| The Authentication Level specifies security at the | ne packet level. | | | |
| Default Authentication Level: | | | | |
| Default | • | | | |
| The impersonation level specifies whether applications can determine who is calling them, and whether the application can do operations using the client's identity. | | | | |
| Identify. | • | | | |
| Security for reference tracking can be provided if authentication is used and that the default impersonation level is not anonymous. | | | | |
| OK | Cancel Apply | | | |

This allows NaturalX servers to retrieve the client's user ID. Before executing a request, the server will then move the client's user ID into the Natural system variable *USER in order to let Natural Security checks run against this user ID.

4. Now set up the default security configuration.

| My Computer Properties | 28 |
|--|--|
| General Options Default Protocols MSDTC | Default Properties Default COM Security |
| Access Permissions You may edit who is allowed to access appendic their own settings. | olications that do not provide Edit Default |
| Launch Permissions You may edit who is allowed to launch app their own settings. | lications that do not provide |
| | Edit Default |
| | |
| | |
| 1 | |
| ОК | Cancel Apply |

In the Default COM Security tab, choose Edit Default in the Access Permissions group box.

The Access Permission dialog box appears.

5. Use the Add button to define which users and groups may access NaturalX servers.

Note:

You must allow access at least to the account "SYSTEM".

In most cases you will define a group of all users to whom you want to allow access and enter this group here. In the example, the built-in group "Everyone" is entered. This allows access to every user that is defined on the server machine. If the built-in account "Guest" is enabled in the User Manager, this setting allows access to users not defined on the server machine (guests) as well.

| Access Permission | | ? 🔀 |
|--------------------------|-------|--------|
| Default Security | | |
| Group or user names: | | |
| SYSTEM | | |
| | | |
| | | |
| | Add 1 | Bamara |
| 1990 - 20 Mar - Mar 1990 | Add | |
| Permissions for Everyone | Allow | Deny |
| Access Permission | | |
| | | |
| | | |
| | | |
| 1 | | |
| | | |
| | ОК | Cancel |

6. In the **Default COM Security** tab, choose **Edit Default** in the **Launch Permission** group box.

The Launch Permissions dialog box appears.

| aunch Permission | | ? |
|---------------------------|----------------|--------|
| Default Security | | |
| Group or user names: | | |
| Administrators (PCTSH2\Ad | dministrators) | |
| | | |
| Vertical - | | |
| | | |
| 2 | Add | Remove |
| Permissions for SYSTEM | Allow | Denv |
| Launch Permission | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | 7 |
| | OK | Cancel |

Note:

You must allow launch at least to the accounts "SYSTEM" and "INTERACTIVE" and the group "Administrators".

- 7. Now set up the configuration for a specific NaturalX server. Select the node **DCOM Config** and locate your NaturalX server in the **DCOM Config** list box (in the example "Natural classes for Employees server").
- 8. Select your server and choose **Properties**.

| Somponent Services | | |
|---|--|---|
| 🅭 File Action View Window | Help | - B× |
| ← → È I × 🗗 🖉 🔮 | " · · · · · · · · · · · · · · · · · · · | |
| 🚞 Console Root | DCOM Config | |
| 🖻 🚱 Component Services | Name | Application ID |
| Computers My Computer OCM+ Applications OCOM Config Olistributed Transact Running Processes Olistributed Transact O | Natural Classes for caga server Natural Classes for class2 server Natural Classes for dcomserv server Natural Classes for Default server Natural Classes for dynam server Natural Classes for esidyn server Natural Classes for natural classes for natural server Natural Classes for natural classes for natate classes for natural classes for natural classes for natu | {716E4590-D900 {56BF933F-BCC3- {99AF3BB4-0012- {936BD501-BFCD {56FF10BB-136D- {5CAD965E-86DA {A36EE16B-EA2D {0FE0CC28-BEBE- {D8DB2337-2EAB {F9626B3C-984E- {3493255B-54F6- {64047123-6D61- {83A454D8-FF62- {3ED6B671-41E0 {8D8D6F83-7C70 {8A3BBEAF-7B16- ❤ |
| | | |

9. In the **Location** tab, activate the check box **Run application on this computer**.

| Natural C | lasses fo | or Emplo | oyees serv | er Properties 🛛 🛛 🛛 🔀 |
|--------------------------------|--|--------------------------------------|--|---|
| General | Location | Security | Endpoints | Identity |
| The foll applica applica | owing setti tion. If you ble one. Cl | ngs allow make mor ient applic | DCOM to loc e than one s cations may | ate the correct computer for this election, then DCOM uses the first overide your selections. |
| 🗖 Run | applicatio | n on the c | omputer whe | re the data is located. |
| 🔽 Run | applicatio | n on this c | omputer. | |
| E Bun | applicatio | n on the fo | llowing com | nuter |
| | applicatio | in on the le | noming com | Browse |
| | | | | |
| | | | | |
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| | | | | |
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| | | | | |
| | | | | |
| | | | | Cancel Apply |

- 10. In the **Security** tab, make sure that **Access Permissions** is set to **Use Default** and **Launch Permissions** is set to **Customize**.
- 11. Choose **Edit** in the **Launch Permissions** group box to modify the application-specific launch permissions.

| latural Classes f | or Emplo | yees serv | er Prop | oerties | | ?× |
|-------------------|-----------------------|-----------|----------|---------|------|-------|
| General Location | Security | Endpoints | Identity | | | |
| Launch Perm | issions — ult e | | | | Edit | |
| Access Perm | issions — ult e | | | | Edit | |
| Configuration | Permissio ult e | ns | | | Edit | |
| .1. <u>.</u> | | ОК | | Cancel | | Apply |

The list **LaunchPermission** will contain at least the accounts "SYSTEM" and "INTERACTIVE" and the group "Administrators".

12. Add the users and groups to be allowed to launch your NaturalX server. In most cases, you will define a group of all users to whom you want to allow launch and enter this group here. In the example, the built-in group "Everyone" is entered. This allows launch to every user that is defined on the server machine. If the built-in account "Guest" is enabled in the User Manager, this setting allows launch to users not defined on the server machine (guests) as well.

| Launch Permission | | ? 🔀 |
|---------------------------------|---------|--------|
| Security | | |
| Group or user names: | | |
| Administrators (PCTSH2\Administ | rators) | |
| | | |
| | Add | Remove |
| Permissions for Everyone | Allow | Deny |
| Launch Permission | | |
| | | |
| | ОК | Cancel |

- 13. In the **Identity** tab, define the account under which the NaturalX server will be launched.
 - If you select **The launching user**, a server process will be launched for each client. The server process will be launched under the account of the client user.
 - If you select **The interactive user**, only one server process will be launched for all clients.

Note:

This is true only for classes that have been registered in Natural as "ExternalMultiple". If a class is registered as "ExternalSingle", a server process is created for each object of this class that is created.

The server process will be launched under the account of the user that is interactively logged in on the server machine. If no user is currently logged in on the server machine, this setting behaves like **The launching user**.

• If you select **This user** and select a specific user account, only one server process will be launched for all clients.

Note:

This is true only for classes that have been registered in Natural as "ExternalMultiple". If a class is registered as "ExternalSingle", a server process is created for each object of this class that is created.

The server process will be launched under the specified user account.

| Natural Classes for Employees server Properties | ? 🔀 |
|--|--------|
| General Location Security Endpoints Identity | |
| Which user account do you want to use to run this application? | |
| C The interactive user. | |
| The launching user. | |
| C This user. | |
| User | Browse |
| Password: | |
| Confirm password: | |
| C The system account (services only). | |
| | |
| | |
| | |
| OK Cancel | Apply |

Configuring NaturalX Clients

To configure NaturalX clients

1. Invoke Component Services.

| Component Services | | |
|---|---|------------|
| File Action View Window ← → € III × 🗗 2 2 2 | Help 🗅 🏊 🏣 🏢 🚎 🚇 | <u>-8×</u> |
| Console Root Component Services Computers My Computer COM+ Applications DCOM Config Distributed Transact Running Processes Elevent Viewer (Local) Services (Local) | My Computer 4 object(s) Name COM+ Applications DCOM Config Distributed Transaction Coordinator Running Processes | |
| | | |

2. In the **Properties** dialog of **My Computer**, select the **Default Properties** tab and activate the check box **Enable Distributed COM on this computer**.

Set Default Authentication Level to Default and Default Impersonation Level to Identify.

| My Computer Proper | ties | ? 🔀 | | | |
|--|--|----------------------|--|--|--|
| Default Protocols | MSDTC | Default COM Security | | | |
| General | Options | Default Properties | | | |
| Enable Distributed Enable COM Intern | COM on this computer net Services on this compu | ter | | | |
| - Default Distributed C | OM Communication Prope | erties | | | |
| The Authentication L | _evel specifies security at | the packet level. | | | |
| Default | MION LEVEI. | | | | |
| The impersonation l is calling them, and client's identity. Default Impersona | The impersonation level specifies whether applications can determine who is calling them, and whether the application can do operations using the client's identity. | | | | |
| Identity. | | | | | |
| Security for reference tracking can be provided if authentication is used and that the default impersonation level is not anonymous. | | | | | |
| | ОК | Cancel Apply | | | |

This allows NaturalX servers to retrieve the client's user ID. Before executing a request, the server will then move the client's user ID into the Natural system variable *USER in order to let Natural Security checks run against this user ID.

3. Now set up the configuration to access a specific NaturalX server.

Select the node **DCOM Config** and locate your NaturalX server in the **DCOM Config** list box (in the example **Natural classes for Employees server**).

Select your server and choose Properties.

| le Component Services | | | | | | | | |
|---|--|--|--|--|--|--|--|--|
| 🚱 File Action View Window | <u></u> | | | | | | | |
| | | | | | | | | |
| Console Root Component Services My Computer COM+ Applications COM+ Applications COM+ Applications COM+ Config Component COM+ Applications COM+ Config COM+ COM+ CONFIC COM+ COM+ COM+ CONFIC COM+ COM+ COM+ CONFIC COM+ COM+ COM+ COM+ COM+ COM+ COM+ COM+ | DCOM Config | | | | | | | |
| | Name | Application ID 🛛 🔥 | | | | | | |
| | Natural Classes for caga server Natural Classes for class2 server Natural Classes for dcomserv server Natural Classes for Default server Natural Classes for dynamic server Natural Classes for esidyn server Natural Classes for natthis server | {716E4590-D900 {56BF933F-BCC3- {99AF3BB4-0012- {936BD501-BFCD {56FF10BB-136D- {56FF10BB-136D- {5CAD965E-86DA {A36EE16B-EA2D {0FE0CC28-BEBE- {D8DB2337-2EAB {F9626B3C-984E- {3493255B-54F6- {64047123-6D61- {83A454D8-FF62- {3ED6B671-41E0 {8D8D6F83-7C70 {8A3BBEAF-7B16- | | | | | | |
| | | | | | | | | |

4. In the **Location** tab, activate the check box **Run application on the following computer**. Enter the name of the remote machine on which the NaturalX server is installed.

| Natural Classes fo | or Emplo | yees serv | er Properties | | ?× | |
|---|----------|-----------|---------------|--------|-----|--|
| General Location | Security | Endpoints | Identity | | | |
| The following settings allow DCOM to locate the correct computer for this application. If you make more than one selection, then DCOM uses the first applicable one. Client applications may overide your selections. | | | | | | |
| Run application on the computer where the data is located. | | | | | | |
| Run application on this computer. | | | | | | |
| Run application on the following computer: | | | | | | |
| volcano.icela | nd.com | | | Browse | 1 | |
| 1 | | | | | - | |
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