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# Visualization of the PH server state on a PCS 7 Operator Station

SIMATIC PCS 7 and Process Historian 2014 SP2



<https://support.industry.siemens.com/cs/ww/en/view/66579062>

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# 1 Visualization of the PH server state on a PCS 7 operator station

The OS server state works only on PCS 7 V8.2 operator stations and PH 2014 SP2, because it is a functionality of WinCC.

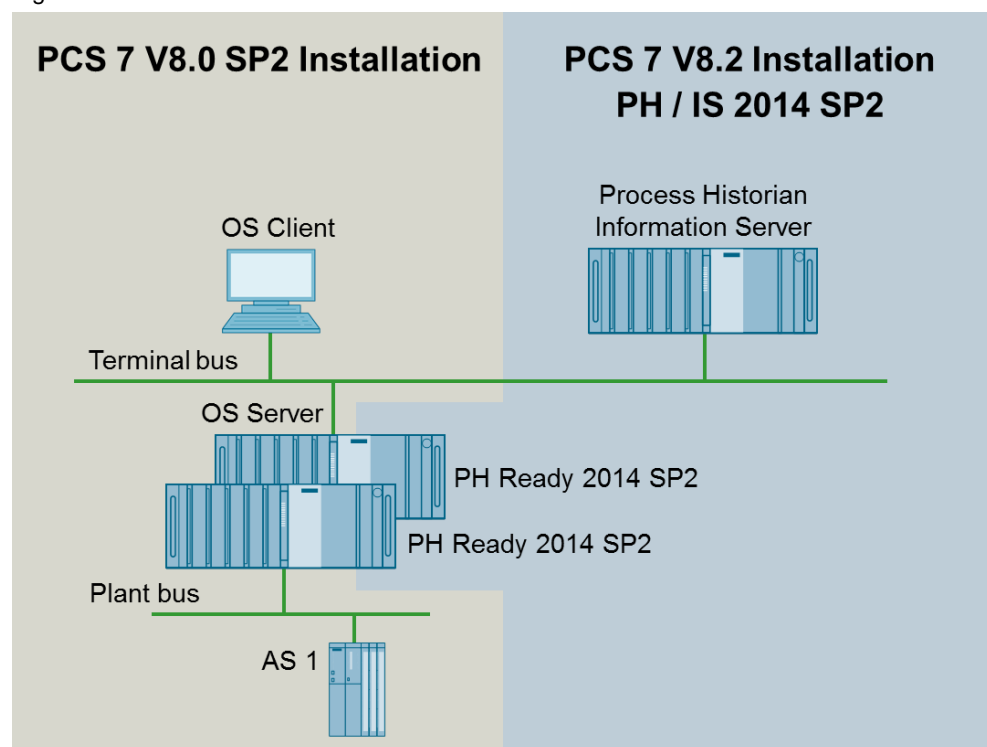
The server state is only displayed on OS clients, not on OS single stations and OS servers itself.

This is a description how to display the PH server state on OS single stations, OS servers and OS clients of PCS 7 V8.0 SP2 and V8.1.

## 1.1 Configuration the operator station of PCS 7 V8.0 SP2

The following setup has been used for the creation of the application example:

Figure 1-1



## 1.2 Validity

This application example is valid for PCS 7 V8.0 SP2 in combination with the Process Historian 2014 SP2.

In principle the server state can be visualized in the same manner in the following versions:

- PCS 7 V8.1
- PCS 7 V8.1 SP1
- PCS 7 V8.2

### 1.3 Internal OS server state tags

Table 1-1

Tag name	Description
@PHServer_Mirror_Details	Internal tag for PH mirror details. XML structure containing computer name; role > for instance standalone; status > for instance OK
@PHServer_Mirror_State	Internal tag for PH mirror state. 1=connection good, 0 = connection bad
@PHServer_Principal_Details	Internal tag for PH principal details. XML structure containing computer name; role > for instance standalone; status > for instance OK
@PHServer_Principal_State	Internal tag for PH principal state. 1=connection good, 0 = connection bad

### 1.4 Creating necessary internal tags manually

On a PCS 7 V8.2 operator station the Process Historian internal tags are created automatically using the OS project editor.

For operator stations smaller PCS 7 OS V8.2 the variables are not created. If one creates the variables manually, the variables are used from PH Ready 2014 SP2.

PH Ready is only running on an OS server and an OS single station. Therefore, the following internal tags must be created on an OS server and an OS single station, not on an OS client. It is necessary to create a group "ProcessHistorian" and create the variables @PHServer\_Mirror\_Details, @PHServer\_Mirror\_State, @PHServer\_Principal\_Details, @PHServer\_Principal\_State in that group.

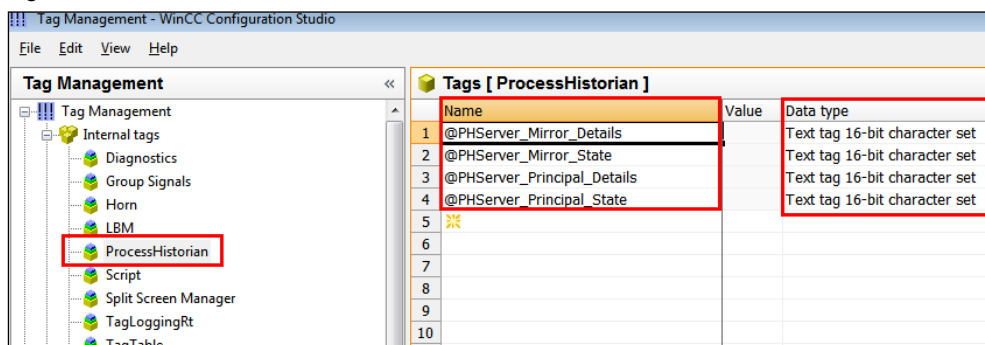
**NOTE**

The tags must be written case-sensitively; otherwise the tags cannot be used by PH Ready.

Even if the PH is non redundant, you need to create the internal tags for the PH mirror.

**Example**

Figure 1-2



Synchronization should be activated.

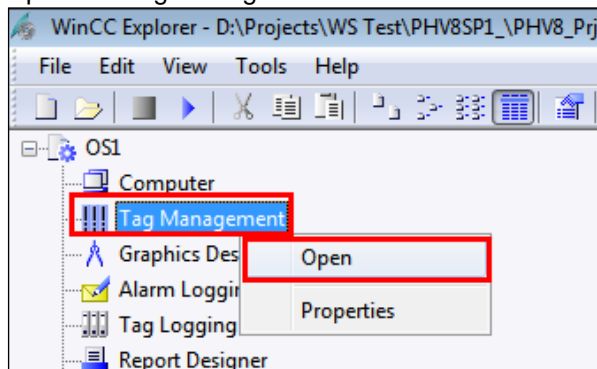
Figure 1-3

	Name	Substitute val	Substitute value on cc	Computer-local	Synchronization	...
1	@PHServer_Mirror_Details	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	...
2	@PHServer_Mirror_State	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	...
3	@PHServer_Principal_Details	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	...
4	@PHServer_Principal_State	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	...
5						...
6						...

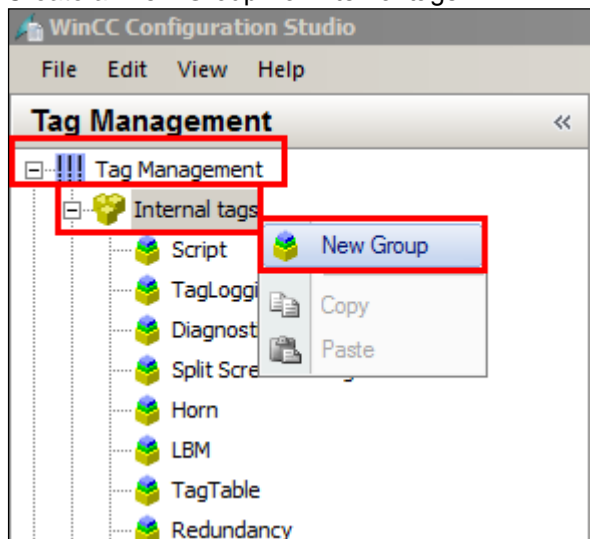
These internal variables can be used to display the PH server state on the OS system.

## 1.5 Procedure of creation internal OS tags

1. Open the OS project in the WinCC editor.
2. Perform a right mouse click on the object "Tag Management".
3. Open the Tag Management.



4. Perform a right mouse click on the object "Internal tags".
5. Create a "New Group" for internal tags.



6. Define the group name "ProcessHistorian"
7. Create the following internal tags:
  - @PHServer\_Mirror\_Details
  - @PHServer\_Mirror\_State

# 1 Visualization of the PH server state on a PCS 7 operator station

- @PHServer\_Principal\_Details
- @PHServer\_Principal\_State

The screenshot shows the WinCC Configuration Studio interface. On the left, the 'Tag Management' tree is expanded to 'Internal tags', with 'ProcessHistorian' selected. On the right, the 'ProcessHistorian' table is displayed with the following data:

	Name	Data Type	Length	For/Connection	Group
1	@PHServer_Mirror_Details	Text tag 16-bit character set	255	Internal tags	ProcessHistorian
2	@PHServer_Mirror_State	Text tag 16-bit character set	255	Internal tags	ProcessHistorian
3	@PHServer_Principal_Details	Text tag 16-bit character set	255	Internal tags	ProcessHistorian
4	@PHServer_Principal_State	Text tag 16-bit character set	255	Internal tags	ProcessHistorian
5					
6					
7					
8					
9					
10					
11					
12					

8. Set the checkbox for synchronization of each parameter

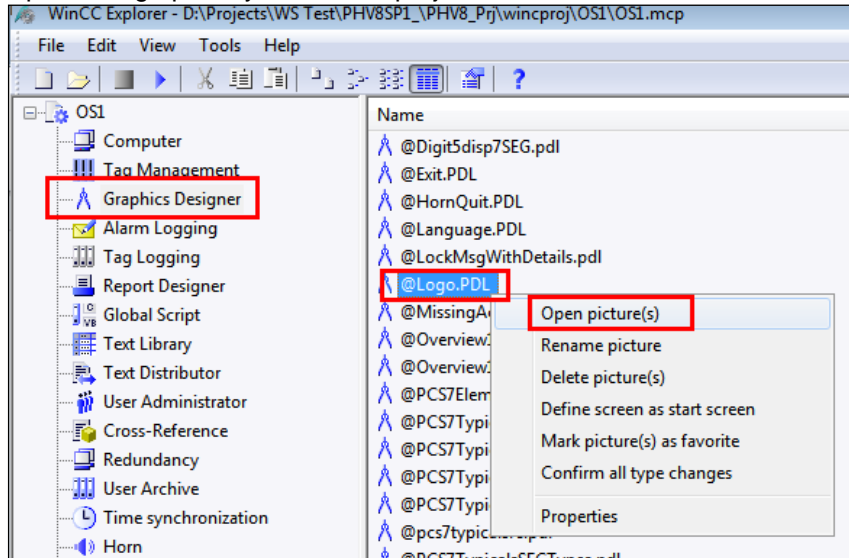
The screenshot shows a 'Synchronization' form with four rows, each containing a checked checkbox:

Synchronization
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>

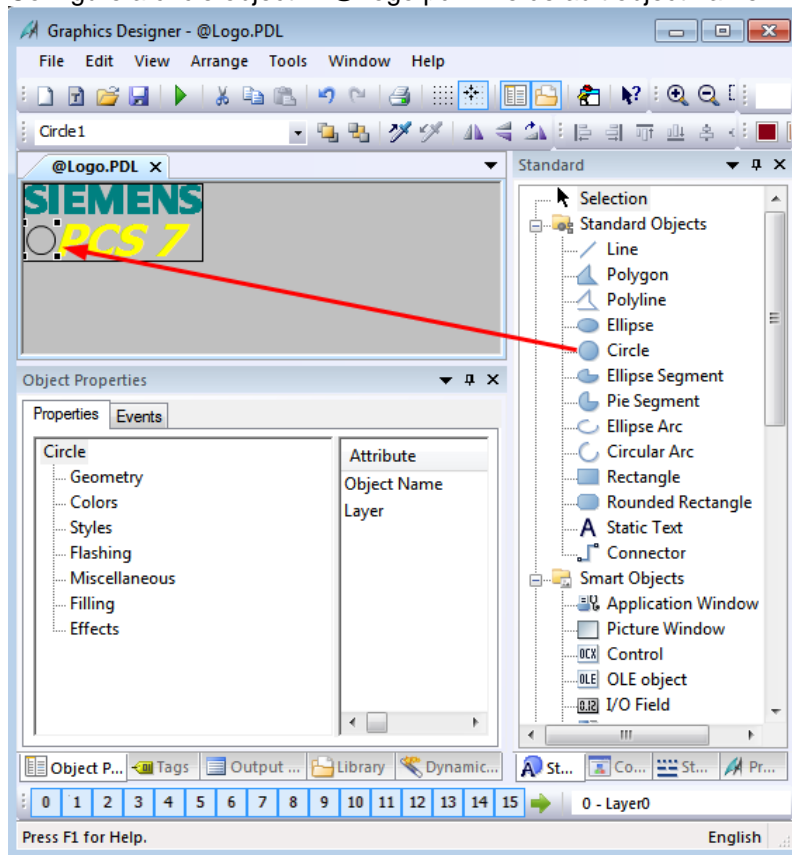
## 1.6 Example configuration of a circle object in order to display the PH server state

In this example we are using the @Logo.pdl WinCC picture to display the OS server state. The changed @Logo.pdl can be found as an example in this application example.

1. Open @Logo.pdl of your WinCC project

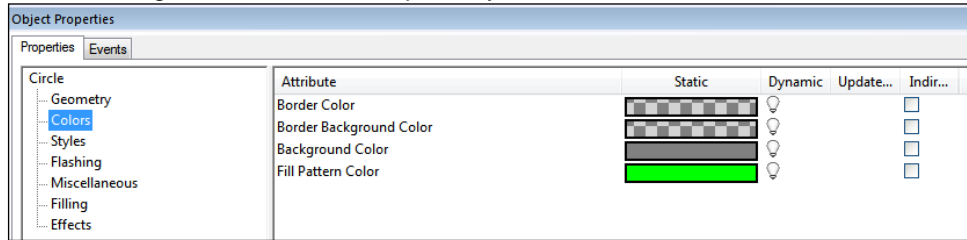


2. Configure a circle object in @Logo.pdl. The default object name will be Circle1.

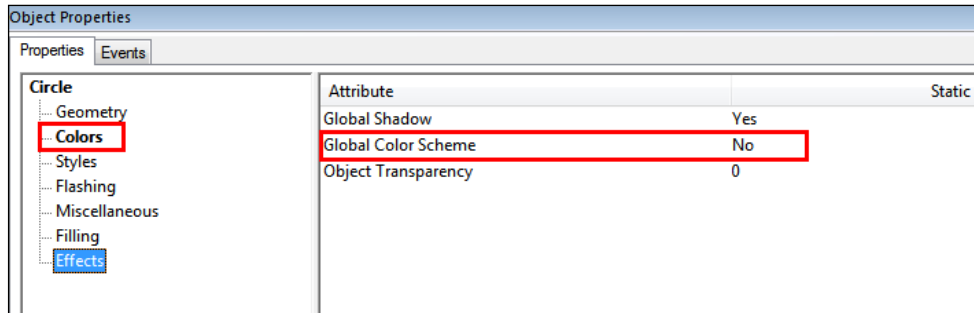




- Configure the following circle object properties  
border color > transparency = 100 %  
Border Background Color > Transparency = 100 %



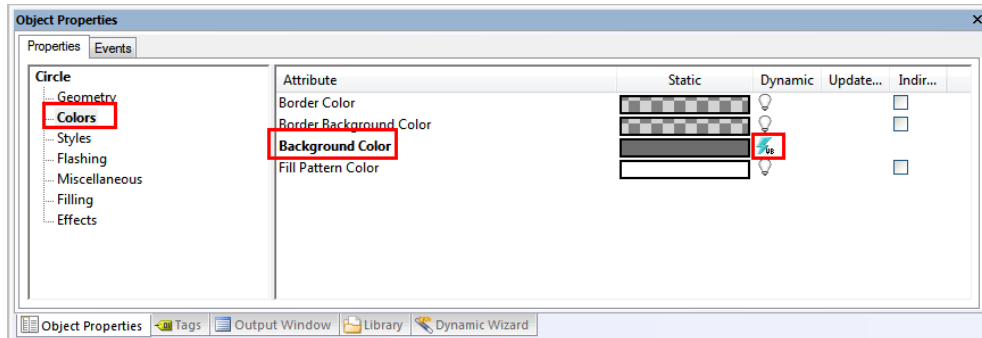
- Set Global Color Schema = No



## 1.7 Example configuration of changing the “Background Color“ with a VB script

In order to change the background color of the server state object, it is necessary to implement a dynamic VB script on the property “Background Color”.

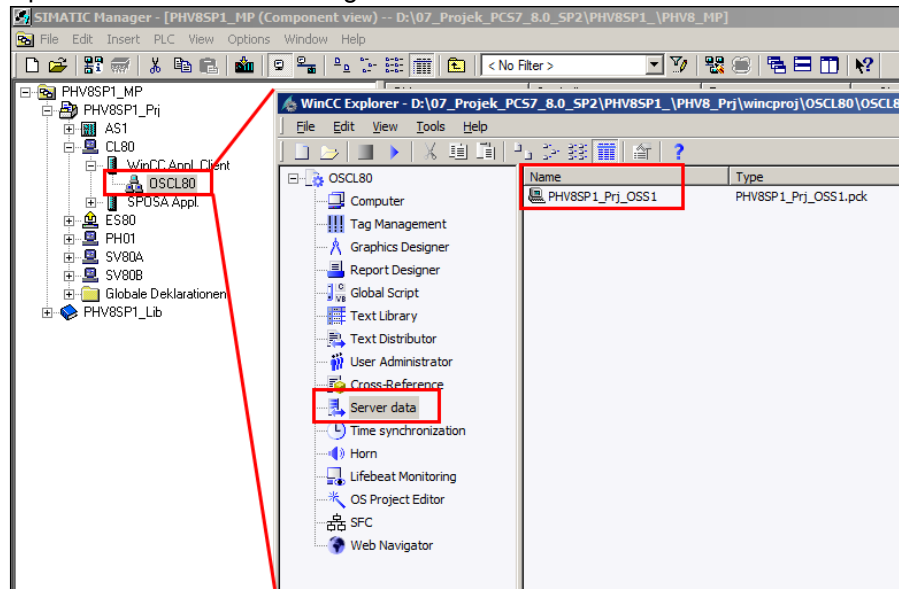
Figure 1-4



### 1.7.1 Evaluating the OS server package name

- Open the SIMATIC Manager
- Open the PCS 7 project
- Open the OS client project

4. Open the "Server data" dialog



The OS server package name = PHV8SP1\_Prj\_OSS1

## 1.7.2 Script for @Logo picture in order to display the server state on an OS single station

**NOTE** In order to evaluate the PH server state on an OS single station it is **not** necessary to use an OS server package in the VB script.

```
Function BackColor_Trigger(Byval Item)
' PHServer_Principal_State, Computername=1 -> PH connection OK
' PHServer_Principal_State, Computername=0 -> PH connection not OK
Dim objPHServer_Principal_State
Dim strMyState
Dim objCircle
strMyState = "0"

'Read Server State variable on OS Single Station, Server State
Variable will be red from local OS System.
Set objPHServer_Principal_State =
HMIRuntime.Tags("@PHServer_Principal_State")
strMyState = objPHServer_Principal_State.Read(1)

strMyState = Right(strMyState, 1)

'Set object colour to green = PH connection good
If strMyState = "1" Then
Set objCircle =
HMIRuntime.Screens("@screen.@win11:@OVERVIEW1.PictureWindow1:@Logo")
.ScreenItems("Circle1")
objCircle.BackColor = RGB(0,255,0)

'Set object colour to red = PH connection not good
Elseif strMyState = "0" Then
Set objCircle =
HMIRuntime.Screens("@screen.@win11:@OVERVIEW1.PictureWindow1:@Logo")
.ScreenItems("Circle1")
objCircle.BackColor = RGB(255,0,0)

'Set object colour to blue = PH Server State variable not
initialized
Else
Set objCircle =
HMIRuntime.Screens("@screen.@win11:@OVERVIEW1.PictureWindow1:@Logo")
.ScreenItems("Circle1")
objCircle.BackColor = RGB(0,0,255)

End If

End Function
```

### 1.7.3 Script for @Logo picture in order to display the server state on an OS server / OS client

**NOTE** In order to evaluate the PH server state on an OS single station it is necessary to use an OS server package in the VB script.

```
Function BackColor_Trigger(Byval Item)
' PHServer_Principal_State, Computername=1 -> PH connection OK
' PHServer_Principal_State, Computername=0 -> PH connection not OK
Dim objPHServer_Principal_State
Dim strMyState
Dim objCircle
strMyState = "0"

' Read Server State variable on OS Client from OS Server with help
of the OS Server Package Name
' Example: Package Name = PHV8SP1_Prj_OSS1
Set objPHServer_Principal_State =
HMIRuntime.Tags("PHV8SP1_Prj_OSS1::@PHServer_Principal_State")
strMyState = objPHServer_Principal_State.Read(1)

strMyState = Right(strMyState, 1)

'Set object colour to green = PH connection good
If strMyState = "1" Then
Set objCircle =
HMIRuntime.Screens("@screen.@win11:@OVERVIEW1.PictureWindow1:@Logo")
.ScreenItems("Circle1")
objCircle.BackColor = RGB(0,255,0)

'Set object colour to red = PH connection not good
Elseif strMyState = "0" Then
Set objCircle =
HMIRuntime.Screens("@screen.@win11:@OVERVIEW1.PictureWindow1:@Logo")
.ScreenItems("Circle1")
objCircle.BackColor = RGB(255,0,0)

'Set object colour to blue = PH Server State variable not
initialized
Else
Set objCircle =
HMIRuntime.Screens("@screen.@win11:@OVERVIEW1.PictureWindow1:@Logo")
.ScreenItems("Circle1")
objCircle.BackColor = RGB(0,0,255)

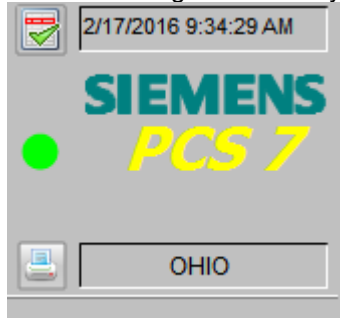
End If

End Function
```

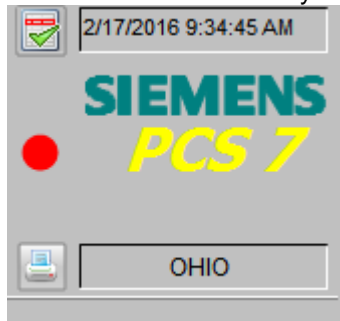
**NOTE** In this application example we are using one OS server system. If there is more than one OS server, the VB script must be adapted to evaluate a "@PHServer\_Principal\_State tag" for each OS server.

## 1.8 Result on OS runtime

1. Circle color = green > OS system connected to the Process Historian.



2. Circle color = red > OS system not connected to the Process Historian.



3. Circle color = blue > Internal tag "@PHServer\_Principal\_State" has never been written by PH Ready.
  - Check if PH Ready 2014 SP2 is installed and configured on the OS system.
  - Check if the necessary internal tags are created on the OS system.
  - Check if the internal tags are written correctly.

## 1.9 Test

In order to test the PH server state visualization on OS runtime, you need to unplug the terminal bus cable on the Process Historian.

Don't unplug the terminal bus cable on the operator station. This can cause trouble during plant operation.

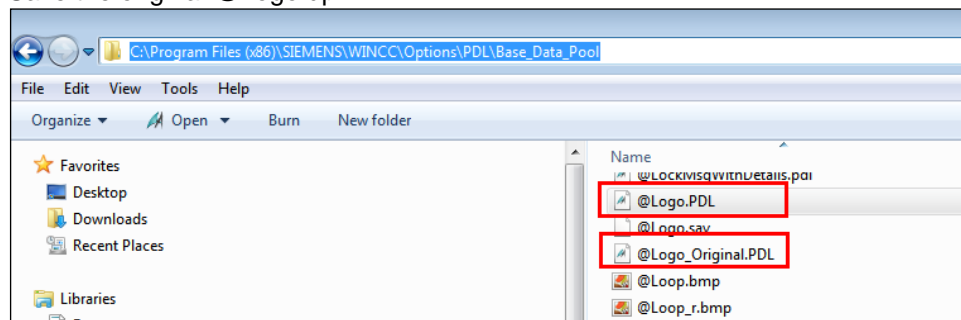
**NOTE** The reaction time needed to change the PH server state from "connection good" to "connection bad" can be up to 2 minutes.

## 1.10 Change @Logo.pdl in installation path

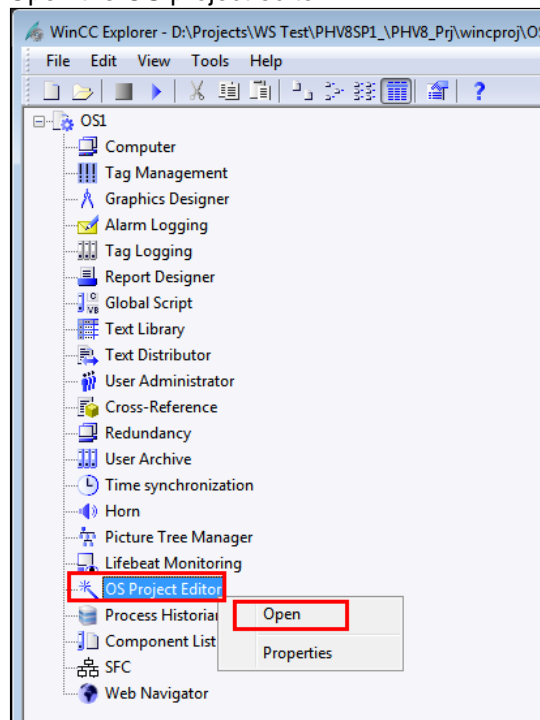
If one is using the @Logo.pdl in the OS project path in order to display the OS server state, the changes are gone if the OS project editor will be executed with exchange of @Logo.pdl. In this case the original @Logo.pdl will be copied from the installation path into the project path. To avoid this, the @Logo.pdl changes must be done in the OS installation path of the engineering system.

In case of a distributed client server system, the changes must be downloaded to the target OS server / OS client machine.

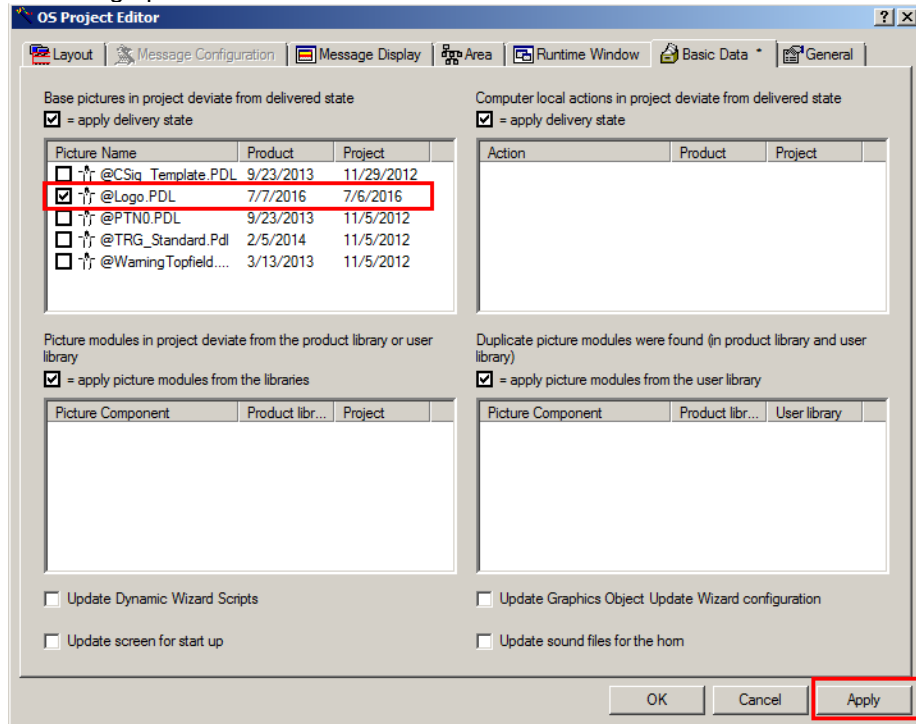
1. Rename the original @Logo.pdl into @Logo\_Original.pdl in the WinCC installation path "C:\Program Files (x86)\SIEMENS\WINCC\Options\PDL\Base\_Data\_Pool"
2. Copy the FAQ provided @Logo.pdl into the WinCC installation path "C:\Program Files (x86)\SIEMENS\WINCC\Options\PDL\Base\_Data\_Pool". Save the original @Logo.dpl.



3. Open the OS project editor



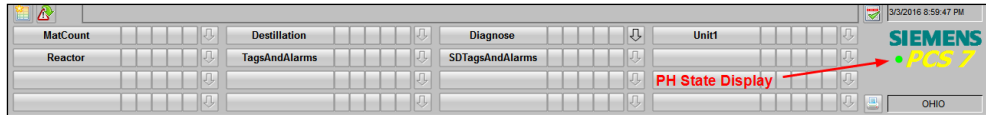
- Change into the "Basic Data" tab and set the checkbox in order to exchange the @Logo.pdl.



- Click on the "Apply" button in order to run the WinCC project editor

## Result

The PH server state will be displayed in OS runtime.



## 2 Appendix

### 2.1 Service and Support

#### Industry Online Support

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- Spare parts services
- Repair services
- On-site and maintenance services
- Retrofitting and modernization services
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<https://support.industry.siemens.com/cs/ww/en/sc/2067>



## 2.2 Links and Literature

Table 2-1

	Topic
\1\	Siemens Industry Online Support <a href="https://support.industry.siemens.com">https://support.industry.siemens.com</a>
\2\	Download page of this entry <a href="https://support.industry.siemens.com/cs/ww/en/view/66579062">https://support.industry.siemens.com/cs/ww/en/view/66579062</a>
\3\	

## 2.3 Change documentation

Table 2-2

Version	Date	Modifications
V1.0	07/2016	First version
V1.1	11/2016	Validity for PCS 7 V8.1 added