

service & SUPPORT

How can you have any number of automation systems addressed one after the other with PC Runtime or a Panel?

SIEMENS

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This entry originates from the Internet site of Siemens AG, Automation and Drives, Service & Support. Go to the following link to download this document.

<http://support.automation.siemens.com/WW/view/en/35508221>

Question

How can you have any number of automation systems addressed one after the other with PC Runtime or a Panel?

Answer

Follow the action commands and notes listed in this document for a detailed answer to the above question.

1 Introduction

1.1 General description

This FAQ describes how you can have a panel or PC-Runtime communicate with any number of devices **one after the other**.

How many simultaneously active controller connections can be configured for a panel is described in Entry ID [15363798](#).

1.2 Which versions of WinCC flexible are supported?

It is possible to change connections as from WinCC flexible 2004.

- WinCC flexible 2004: MPI/PROFIBUS
- WinCC flexible 2005: MPI/PROFIBUS
- WinCC flexible 2007: MPI/PROFIBUS
- WinCC flexible 2008: MPI/ PROFIBUS/ Ethernet

As from WinCC flexible 2008, tags of the data type "String" can also be linked with the address parameter of the "Change Connection" event. This function also permits you to change Ethernet connections.

1.3 Possible uses

- Setup mode for plants
- Reading out the operating data of frequency converters
- Sequential control of subsystems

WARNING

With this type of connection, any number of nodes can be addressed, but only one connection can be active.

This means that only the alarms and error messages of the controller/plant currently connected are displayed.

This procedure is not suitable if you configure a plant for which you need simultaneous display of the error messages of all the controllers.

1.4 Network structure

Figure 1-1

Ethernet connection



MPI connection



PROFIBUS connection



Or ...

Or ...

The network can be configured in different ways. It is possible to use multiple communication drivers (multiple devices). If, for example, you have several plant parts, you can distribute them also over the number connections. If an important CPU is to be permanently online, you can simply configure an additional connection for it. The network can be configured as you wish. If your communication driver is displayed "orange", you will find more information in Entry ID [19436008](#).

2 Configuration in WinCC flexible

2.1 Introduction

Create a WinCC flexible project and select the operator panel. It is useful here to have an overview of the CPUs to be connected and their properties (Address, Slot and Subrack).

2.2 Creating the connections

Under the menu item "Communication > Connection", you create a connection with the desired communication driver and interface.

Figure 2-1



Define the address of your operator panel and select the access point. You can ignore the configuration of the controller.

Note

If you want to be connected automatically with a specific device at Runtime startup, you define its address, expansion slot and rack here. It is only possible to change connections with devices that support the communication driver selected.

2.3 Creating the tags

Create 3 internal tags.

1. address
2. rack
3. expansion slot

Later, the data of the device selected will be written to these 3 internal tags. Upon the command to change the connection, the tag's current value is always taken.

Figure 2-2

Name	Connection	Data type	Address	Array elements	Acquisition cycle
address	<Internal tag>	String	<No address>	1	1 s
expansion_slot	<Internal tag>	Int	<No address>	1	1 s
rack	<Internal tag>	Int	<No address>	1	1 s

The "address" for an Ethernet connection must always be created with the data type "String", because an Ethernet address does not consist exclusively of numbers.

Note

In the case of the "address" tag, you should pay attention to the following in the case of an Ethernet connection. The tag...

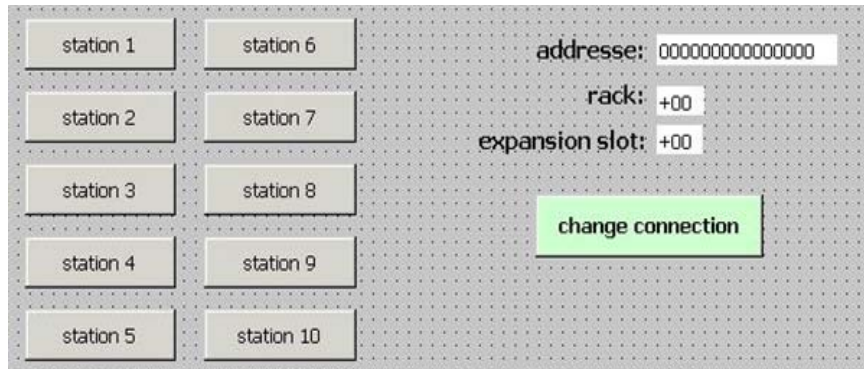
- Must always be created with the data type "String", because an Ethernet address does not consist exclusively of numbers.
- Must have the correct character length (the maximum number of characters for an Ethernet address is 15).

The screenshot shows the configuration for the 'address' tag. In the 'Settings' sub-dialog, the 'Length' field is set to 15, indicating the character length for the Ethernet address.

2.4 Creating a configuration in the picture

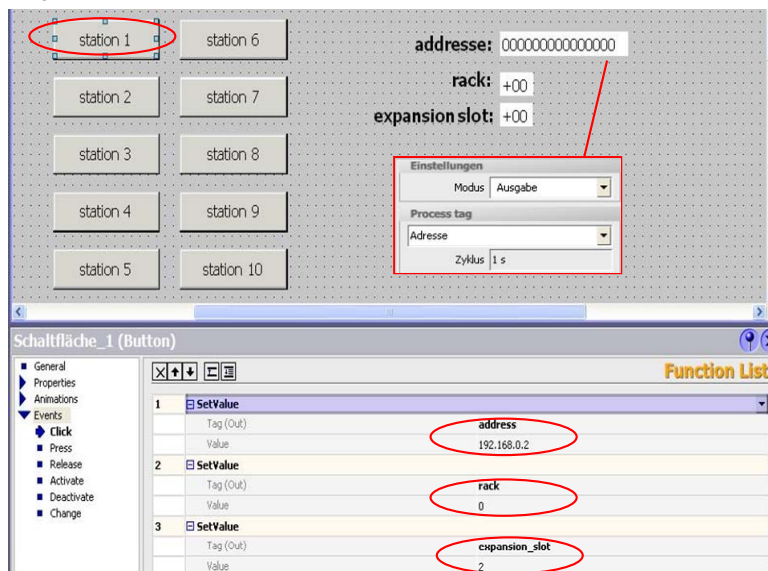
Create a button for each station that the panel is to access. It is recommended here to have an overview of the current values of the tags. For this, you drag and drop the selected tags into the picture.

Figure 2-3



Press the buttons to write the desired values to the tags. Here, you should pay attention to the correct assignment of address, racks and expansion slot.

Figure 2-4



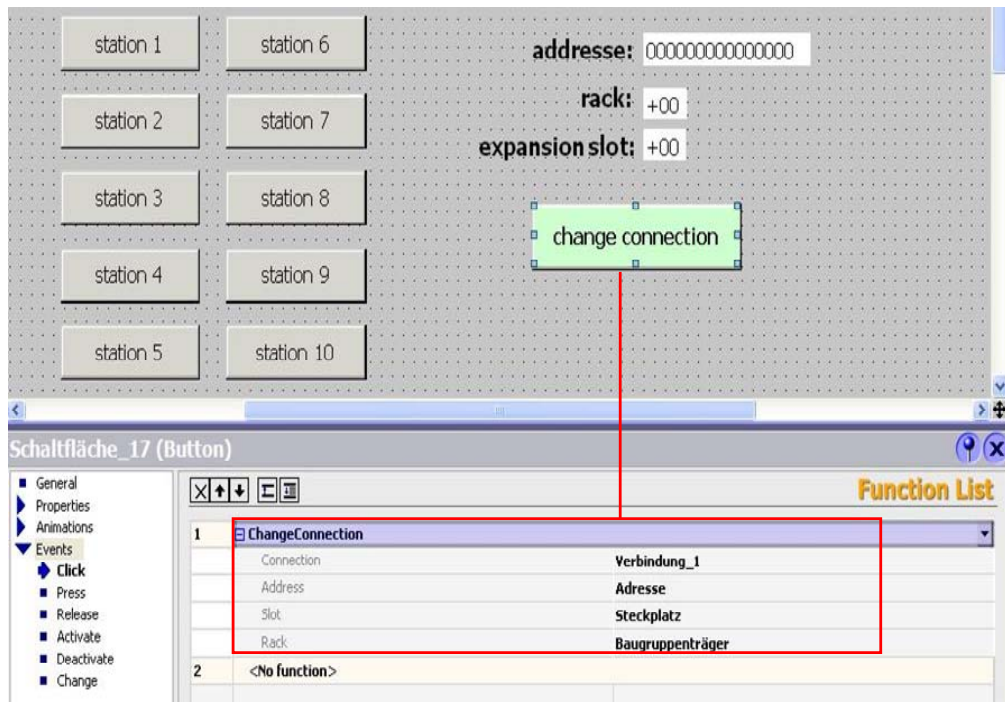
After this step, it is possible to select the CPU concerned and have the current status of the tags displayed.

The "Change Connection" event is used for changing the active connections.

Now you must create a button for this function. Parameterize the "Change Connection" event under Properties > Events > "Desired Action". Here, for

the connection you use the "Connection_1" already created. The properties address, expansion slot and rack are linked to the tags created for them. This procedure ensures that the values of the stations concerned are always in these properties.

Figure 2-5



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Note

You can also apply this procedure for integrated projects. For this, insert an HMI station in STEP 7 and start WinCC flexible ES. The connections have already been created automatically under the menu item "Connections". Delete these connections and install the new one(s) as described.

In this example, the simplest version has been used. In practice, however, you can use the "Change Connection" function in more ways.