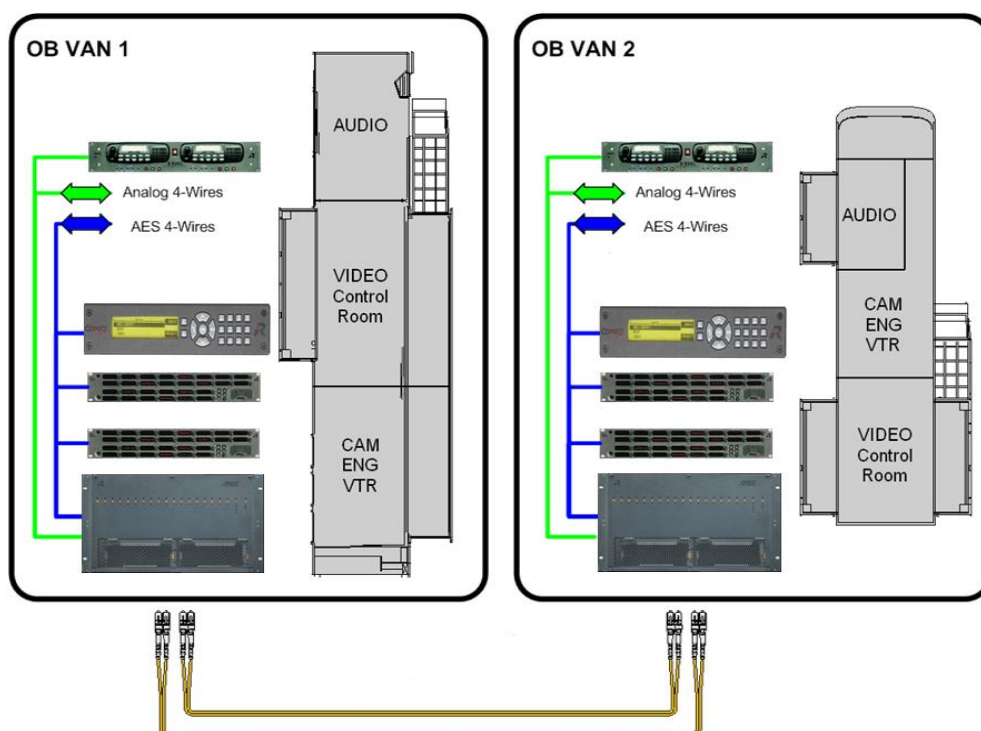


Merging Artist systems

For Artist S, M, 32, 64, 128



Document reference 3.2

S. Franke
10/2012

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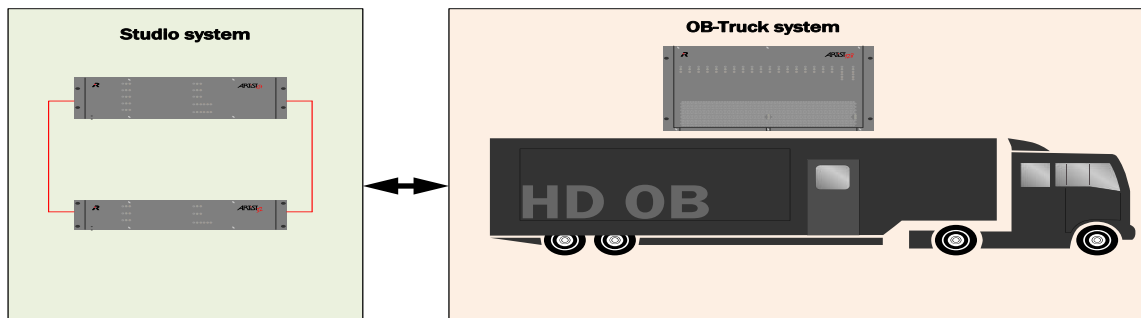
1 PREPARING THE SYSTEMS FOR MERGING

1.1 Requirements

To merge different Artist systems together, check if the following requirements are fulfilled:

- Check the fiber infrastructure of the systems. The connection points between the systems have to use the same Fiber-transceivers types (Single- or Multimode; Data rate)
- If you want to merge an older Artist M frame(s) with the first generation of CPU-cards (CPU128-F/HP) installed to an Artist-S, -32, -64, or -128 network, the Artist M CPUs have to be hardware modified with a "Jitter Patch" for a stable interconnection. This is not necessary if you are using CPU-128F-SD CPU cards in your Artist M. If you are not sure about your Artist M CPUs version, please contact Customerservice@riedel.net.
- When interconnecting Artist M and Artist G2 Frames, 2x SC<>LC fiber adapter cables are required (Single-/Multimode, depending on your used hardware).
- Artist S, Artist 32, Artist 64 and Artist 128 can be merged without any problems.
- It is not possible to merge 2 or more configurations containing configured Master Control Room, or A ons. The add-ons of the imported configuration will be disabled.

In this manual an example of merging a Studio system with 2 Nodes and an OB-Truck with one Node is shown.




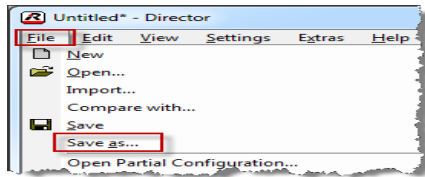
1.2 Backup / preparation of the system configurations

Before you start to merge 2 or more Artist systems together, it is necessary to do some preparations.

1.2.1 Backup system configurations

Before merging configurations, it is strongly recommended to backup the actual configurations from the systems. Therefore you have to be connected directly with the Director-PC via IP-network to one of the Node(s) of each Artist-system.

- Open the Director Software and make sure that the IP-address of the connected Node is set up correctly in "Extras" > "IP address of local Node".
- Press the button  to connect to the system and read out the configuration.
- Log In and save this configuration to your PC into a save folder. Use a definite filename, to identify the system configuration later easier.



Repeat these steps for all systems, you want to merge together.

Hint: For the following merging-procedure it is useful to save the configurations also on an USB-Stick.

1.2.2 Assign new configuration ID

When starting a complete new configuration the Director assigns an internal Configuration-ID to every configuration.

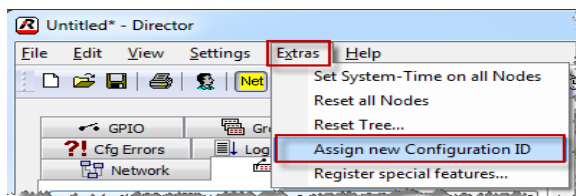
So if you are using the same base-configuration file for example 2 nearly identically OB-Trucks, one Configuration ID have to be changed before merging. This will avoid a collision of doubled IDs in the configurations.

Attention: If you are using Partial Files, already configured partial files will not work anymore! These Partial Files are fix combined with the Configuration-ID of the origin file. So if you change the ID, it is not possible to load these Partial Files anymore!

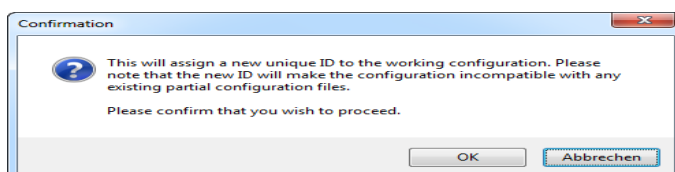
So when you still want to use these Partial Files in a merged system, you have to assign a new ID only to the configuration(s) of the other systems you want to merge . It is not possible to merge 2 or more systems and still using the original partial Files of all systems simultaneously! For this situation the Partial Files needs to be created new.

So if you want to merge 2 systems based on the same configuration, it's ok to assign a new Configuration-ID to only one of the configurations. If you want to merge 3 systems, 2 system configurations needs to get a new Web-ID, ...correspondingly for 4 or more systems.

To assign a new Web-ID, you have to open a configuration (by file or reading out of the system). Now press "Extras" > "Assign new Configuration-ID"



A confirmation window will appear with a warning that partial files belonging to this configuration will not work anymore if you assign a new ID.




If you are not using partial files in this configuration you can now press "OK"

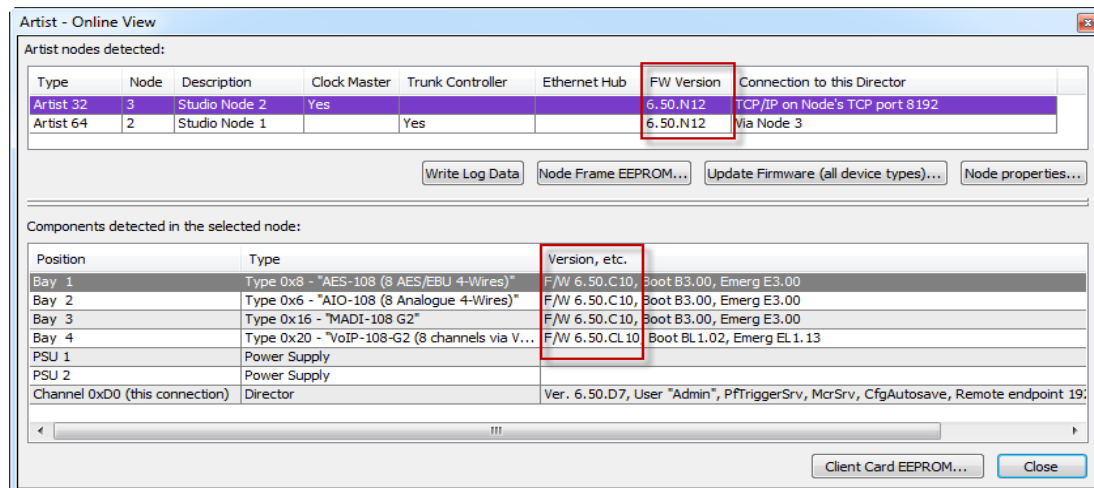
(In this example Studio+OB-Truck It is not necessary to change the Configuration ID, because the systems are based on complete different configurations)

1.3 Verifying the firmware of the systems

When merging different systems together, it is necessary that all cards on all systems are running on the same firmware version.

You can check the firmware versions in the “**Online View**” by pressing the  button.

System #1 (Studio)



Artist - Online View

Artist nodes detected:

Type	Node	Description	Clock Master	Trunk Controller	Ethernet Hub	FW Version	Connection to this Director
Artist 32	3	Studio Node 2	Yes			6.50.N12	TCP/IP on Node's TCP port 8192
Artist 64	2	Studio Node 1		Yes		6.50.N12	Via Node 3

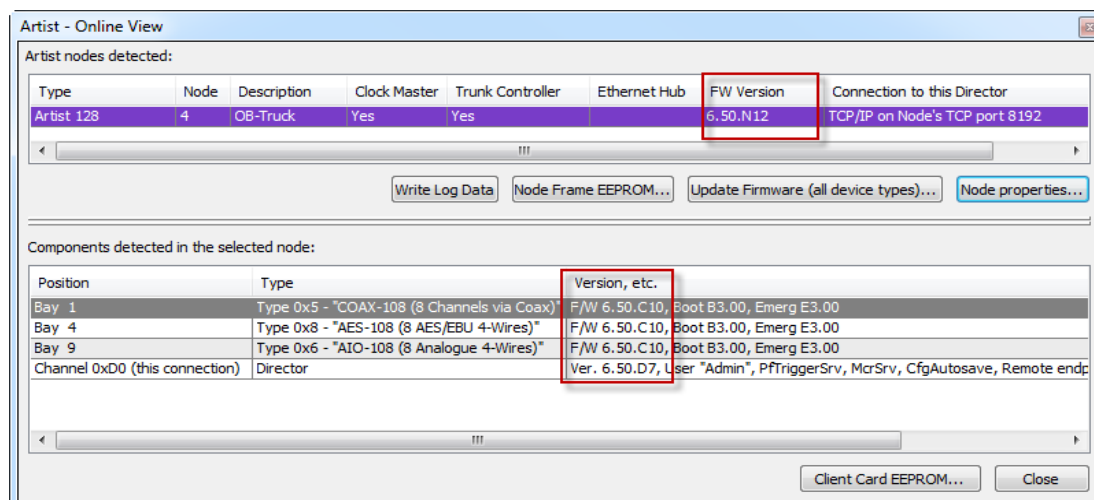
Write Log Data Node Frame EEPROM... Update Firmware (all device types)... Node properties...

Components detected in the selected node:

Position	Type	Version, etc.
Bay 1	Type 0x8 - "AES-108 (8 AES/EBU 4-Wires)"	F/W 6.50.C10, Boot B3.00, Emerg E3.00
Bay 2	Type 0x6 - "AIO-108 (8 Analogue 4-Wires)"	F/W 6.50.C10, Boot B3.00, Emerg E3.00
Bay 3	Type 0x16 - "MADI-108 G2"	F/W 6.50.C10, Boot B3.00, Emerg E3.00
Bay 4	Type 0x20 - "VoIP-108-G2 (8 channels via V...)"	F/W 6.50.CL10, Boot BL1.02, Emerg EL1.13
PSU 1	Power Supply	
PSU 2	Power Supply	
Channel 0xD0 (this connection)	Director	Ver. 6.50.D7, User "Admin", PFTTriggerSrv, McrSrv, CfgAutosave, Remote endpoint 19:

Client Card EEPROM... Close

System #2 (OB-Truck)



Artist - Online View

Artist nodes detected:

Type	Node	Description	Clock Master	Trunk Controller	Ethernet Hub	FW Version	Connection to this Director
Artist 128	4	OB-Truck	Yes	Yes		6.50.N12	TCP/IP on Node's TCP port 8192

Write Log Data Node Frame EEPROM... Update Firmware (all device types)... Node properties...

Components detected in the selected node:

Position	Type	Version, etc.
Bay 1	Type 0x5 - "COAX-108 (8 Channels via Coax)"	F/W 6.50.C10, Boot B3.00, Emerg E3.00
Bay 4	Type 0x8 - "AES-108 (8 AES/EBU 4-Wires)"	F/W 6.50.C10, Boot B3.00, Emerg E3.00
Bay 9	Type 0x6 - "AIO-108 (8 Analogue 4-Wires)"	F/W 6.50.C10, Boot B3.00, Emerg E3.00
Channel 0xD0 (this connection)	Director	Ver. 6.50.D7, User "Admin", PFTTriggerSrv, McrSrv, CfgAutosave, Remote endpoint 19:

Client Card EEPROM... Close


If the systems you want to merge are running on different versions you have 2 possibilities:

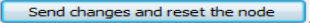
- Connect to every system and update the cards before merging
- Connect systems with different versions via fiber together (make sure that they have different Node addresses, see next chapter) and update the whole system directly from one position after interconnect the systems.

Hint: Also Nodes running on different firmware will see each other to make updates possible.

Please refer the Director- or Update Guide for further information about updating.

1.4 Adjustment of the Node properties

Before connecting Nodes together, it is necessary to check the basic settings of every system. So connect a PC to every system before merging and open the Online View .


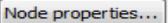
Hint: All following changes in the “Node Properties” window can also be made per Node in one step. So change all the necessary settings and send the changes by pressing . The Node will do a reboot.

1.4.1 IP address

Changing the IP addresses of the Nodes is in most scenarios not necessary. Only if the Nodes connected to the IP-Network have the same IP-address and you also want to connect the LAN infrastructure of the 2 Buildings/Trucks together. This will result in an IP-collision. So you have to change the IP-address in the “Node Properties” > “Set IP address” of one system before to an unused IP address in your network. DHCP is not supported.

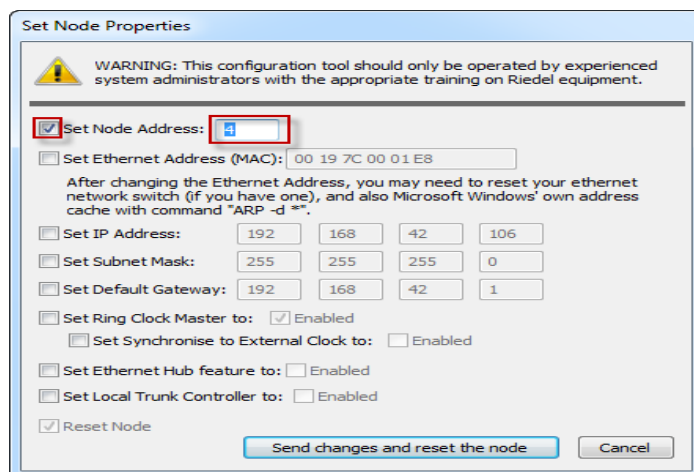
1.4.2 Node address

When merging systems together, it is necessary that every Node is using a unique Node-address. So if you want to merge for example 2 identically OB-Trucks together, you have to change the Node addresses of one Truck.

So connect to the system you need to change the Node-addresses, open the Online View , mark the Node and click the button .

Enable the checkbox “Set Node Address” and enter an address (2-98) that is not used on the other Nodes you want to merge.

(example: changing Node-address of the OB-Truck system to 4, because address 2+3 is already used in the Studio system)



The dialog box titled "Set Node Properties" contains a warning message at the top: "WARNING: This configuration tool should only be operated by experienced system administrators with the appropriate training on Riedel equipment." Below the warning, there are several configuration options:

- ☒ Set Node Address: [4] (highlighted with a red box)
- ☐ Set Ethernet Address (MAC): 00 19 7C 00 01 E8
- After changing the Ethernet Address, you may need to reset your ethernet network switch (if you have one), and also Microsoft Windows' own address cache with command "ARP -d *".
- ☐ Set IP Address: 192 168 42 106
- ☐ Set Subnet Mask: 255 255 255 0
- ☐ Set Default Gateway: 192 168 42 1
- ☐ Set Ring Clock Master to: ☒ Enabled
- ☐ Set Synchronise to External Clock to: ☐ Enabled
- ☐ Set Ethernet Hub feature to: ☐ Enabled
- ☐ Set Local Trunk Controller to: ☐ Enabled
- ☒ Reset Node

At the bottom, there are two buttons: "Send changes and reset the node" and "Cancel".

Press  to apply the changes, or go on...

Hint: It is useful to use generally different Node addresses in the basic configurations of systems that will be merged together from time to time (e.g. 2 OB-Trucks). For example OB2 gets permanently Node- Addr. 2, OB3 gets Addr 3. Then you don't need to take care about addressing anymore when merging the two systems.

1.4.3 Clock Master settings

An Artist system needs one Node that is defined as Ring Clock Master (identifiably on the fast blinking green CPU-LED on the active CPU). So when merging 2 or more systems together, you have to make sure that only one Node is working as the Ring Clock Master.

Before connecting the systems together, you have to decide which system should be the master. So switch off the Master Flag in the Node Properties on all the other systems (they will show a solid green CPU LED).

If you are using digital audio connections like Madi or AES, the system have to be synched to the external Audio clock (word clock). So select the Node with a Sync-Module to be the Ring Clock Master. If both systems are using digital audio connections, it is necessary that the reference clock signal of the Studio and the Truck are synchronized separately.

Enable the checkbox **"Set Ring Clock Master to:"** and disable the checkbox **"Enabled"**

(example: disable Ring Clock Master of OB-Truck system)

Set Node Properties

WARNING: This configuration tool should only be operated by experienced system administrators with the appropriate training on Riedel equipment.

☐ Set Node Address: 4

☐ Set Ethernet Address (MAC): 00 19 7C 00 01 E8

After changing the Ethernet Address, you may need to reset your ethernet network switch (if you have one), and also Microsoft Windows' own address cache with command "ARP -d *".

☐ Set IP Address: 192 168 42 106

☐ Set Subnet Mask: 255 255 255 0

☐ Set Default Gateway: 192 168 42 1

☒ Set Ring Clock Master to: ☐ Enabled

☐ Set Synchronise to External Clock to: ☐ Enabled

☐ Set Ethernet Hub feature to: ☐ Enabled

☐ Set Local Trunk Controller to: ☐ Enabled

☒ Reset Node

Send changes and reset the node Cancel

Press **Send changes and reset the node** to apply the changes, or go on...

1.4.4 Trunk Controller settings

If you are using trunking, it is the same story like the master settings. Only 1 Node can be defined as the local trunk controller. You have to disable all other Trunk Controller flags before merging the systems. So enable the checkbox **"Set Local Trunk Controller to:"** and disable the checkbox **"Enabled"**.

HINT: Trunking can be used later without problems also in a merged system

(example: disable Trunk Controller of OB-Truck system)

Set Node Properties

WARNING: This configuration tool should only be operated by experienced system administrators with the appropriate training on Riedel equipment.

☐ Set Node Address: 4

☐ Set Ethernet Address (MAC): 00 19 7C 00 01 E8

After changing the Ethernet Address, you may need to reset your ethernet network switch (if you have one), and also Microsoft Windows' own address cache with command "ARP -d *".

☐ Set IP Address: 192 168 42 106

☐ Set Subnet Mask: 255 255 255 0

☐ Set Default Gateway: 192 168 42 1

☐ Set Ring Clock Master to: ☒ Enabled

☐ Set Synchronise to External Clock to: ☐ Enabled

☐ Set Ethernet Hub feature to: ☐ Enabled

☒ Set Local Trunk Controller to: ☐ Enabled

☒ Reset Node

Send changes and reset the node Cancel

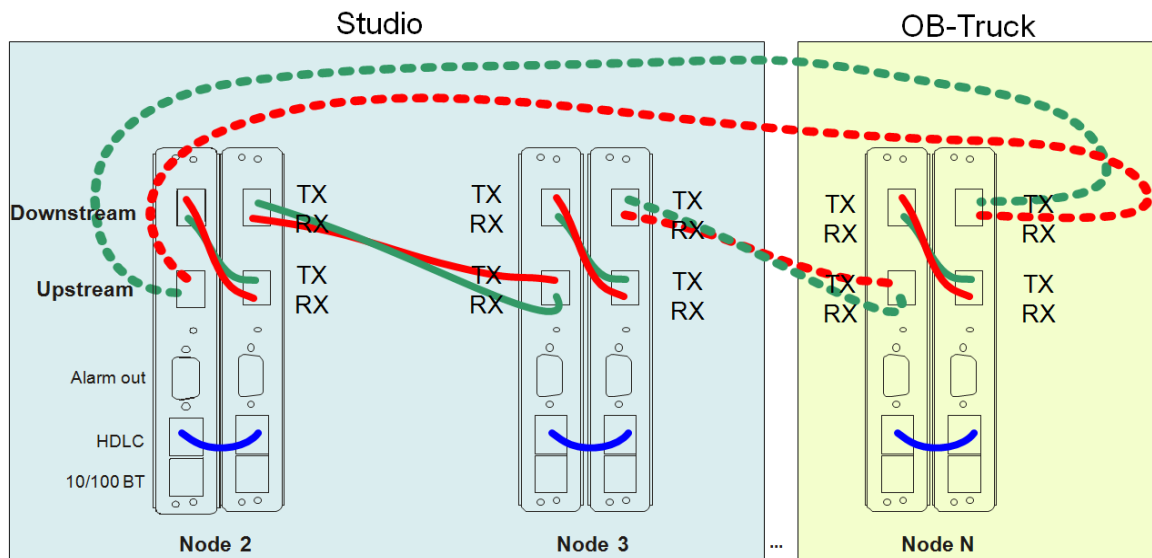
Press **Send changes and reset the node** to apply the changes. The Node will do a reboot.

1.5 Establishing the fiber connections between the systems

Now you can connect the systems together via fiber.

So open the Ring of system 1 and 2 (if these are multiple Node systems) and interconnect the systems like shown in the drawing.

- Make sure to use the correct type of fiber cable (Multimode or Singlemode)
- Always connect Downstream to the Upstream
- And TX to RX



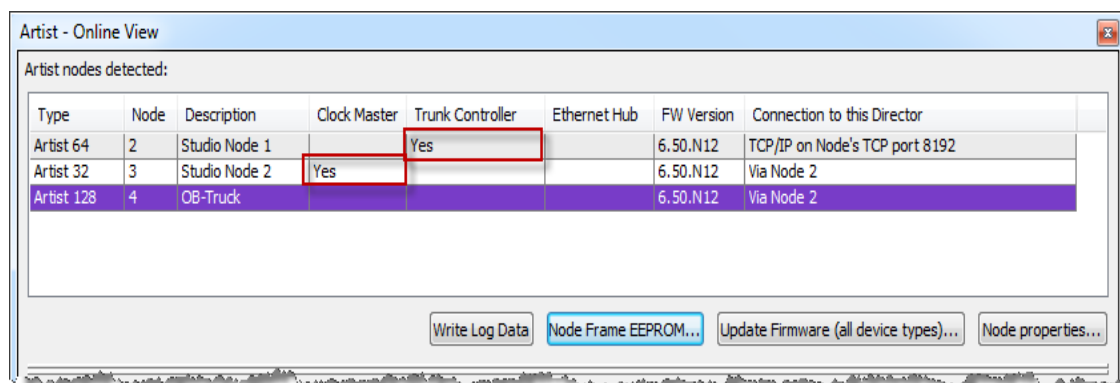
Attention: When you want to interconnect Artist M and Artist G2 -Frames, please pay attention that caused by different mechanics of the Artist M CPU rear cards the position of the Up- and Downstream is reversed. Also you have to use 2x SC-LC duplex adapters.

Now connect a Director-PC to one of the Nodes.

If everything is set up correctly, you should now see all Nodes in the Online View.

Also double check if only one Node is set as Ring Clock Master and only one as Trunk Controller (if Trunking is used).

Hint: One Node can also be Ring Clock Master and Trunk controller at the same time.

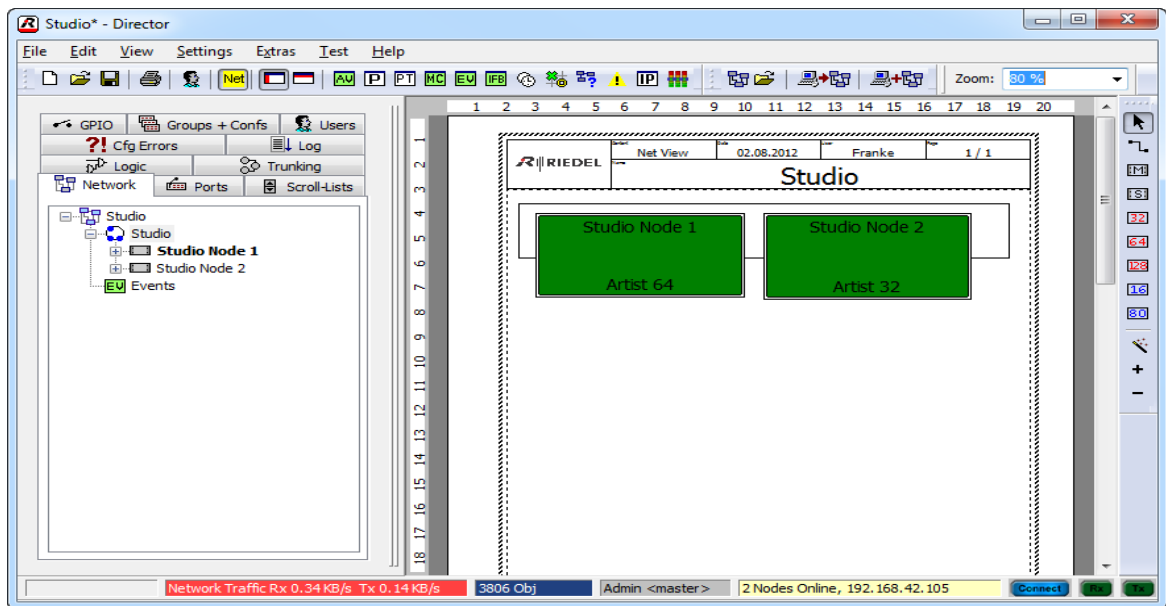


2 IMPORT SYSTEM CONFIGURATION(S)

Now the Hardware setup is completed, so it is time to merge the configurations together. There are 2 different possibilities to do that:

2.1 Import another configuration with a file

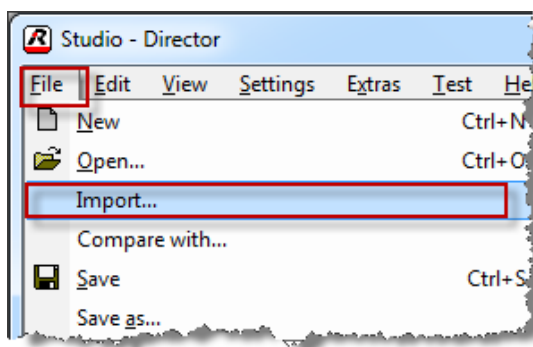
Open the original configuration file of one system in the Director Software (example: *Studio*)



Get the configuration file(s) of the other system(s) you want to merge, at best saved on an USB-Stick before.

(In this example the configuration file of the OB-Truck)

To import this file to the existing configuration, go to **"File" > "Import"**

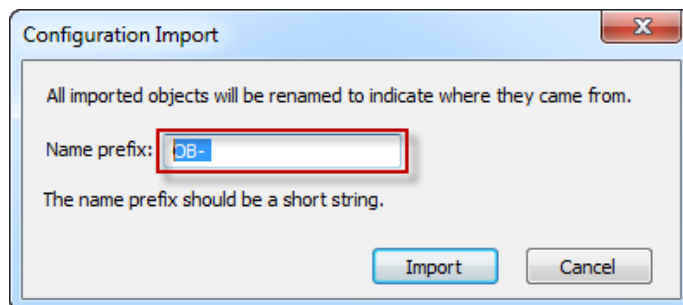


The Director will now ask you, if you want to save the actual opened configuration to a file before importing. So it is up to you...

Now select the previous saved file of the other system (OB-Truck) from the USB-Stick

2.1.1 Placing a Prefix

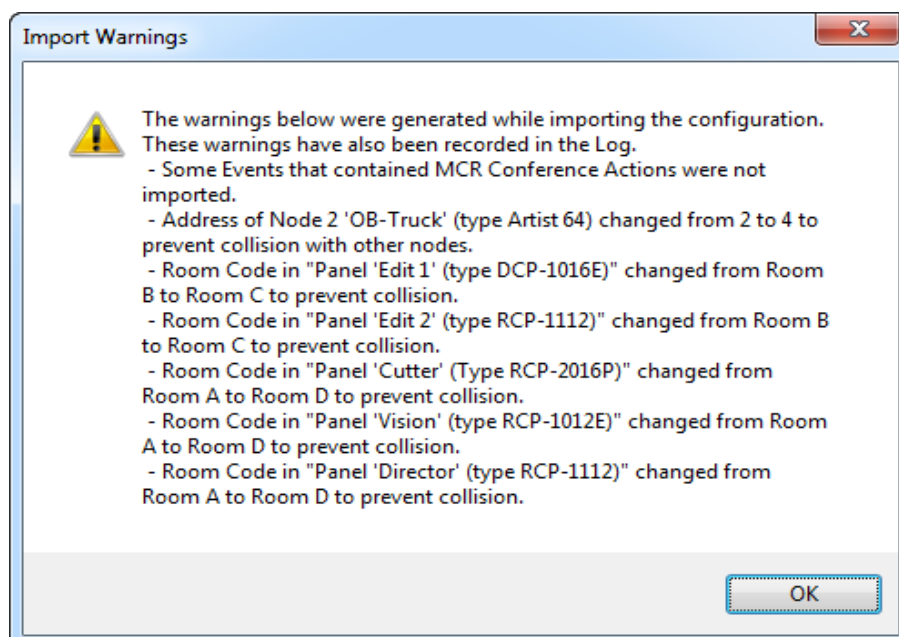
When importing another configuration, the Director will offer you to add a prefix to all **“Longnames”** of the imported configuration (8 char. Labels will be not changed). Otherwise it can happen that you have for example 2x **“Sound”** in your merged configuration what can cause some confusions. The prefix should be short as possible.



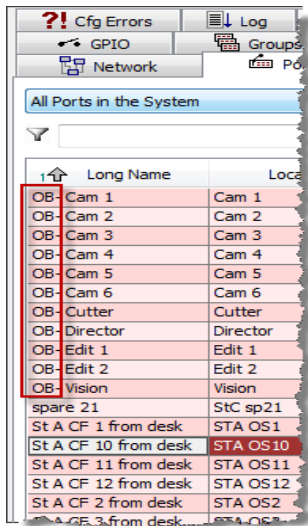
Press if you want to add the prefix, if you want to import without a prefix

During the import, the Director is checking the configurations about any collisions. For example if the Director find the same Room codes used in both configurations, it will automatically shift the Room codes of the imported configuration to unused Room codes to avoid malfunctions.

Also double Node-Addresses will be adjusted automatically.



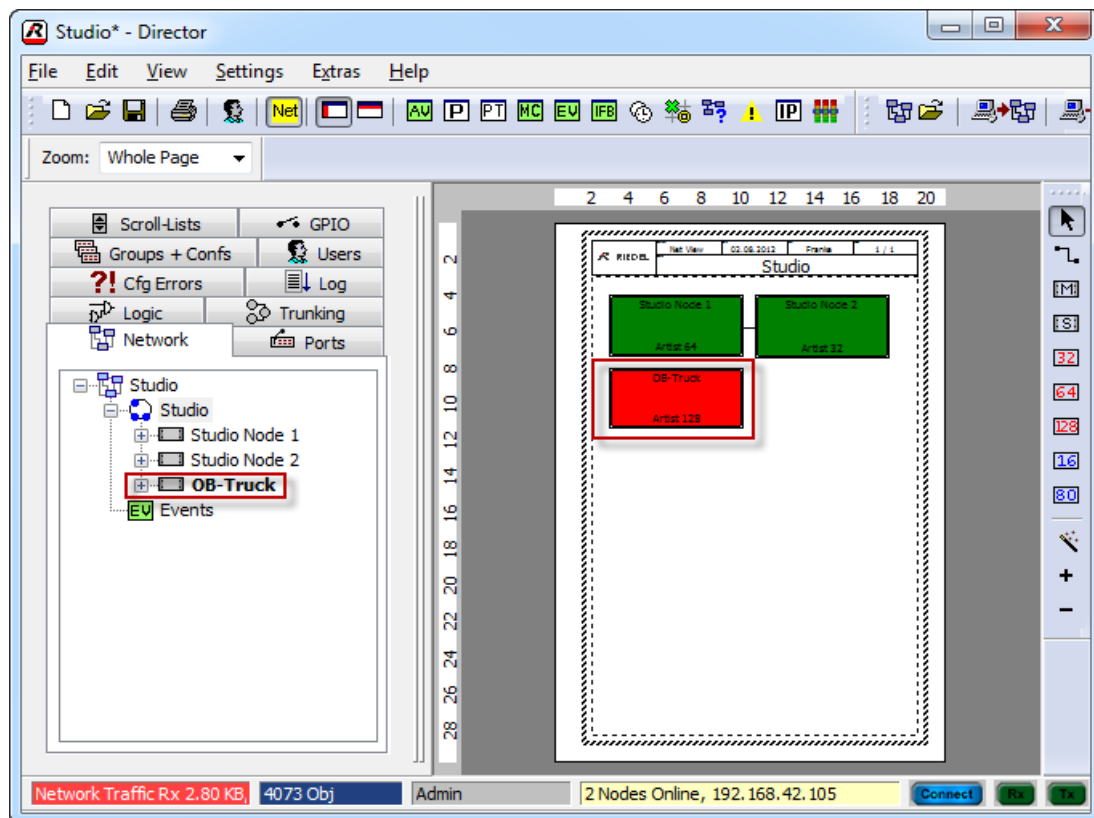
In the Port list you can now find imported ports with the prefix in the longname. So it is also now easy to use the filter to show only ports of the OB-truck.



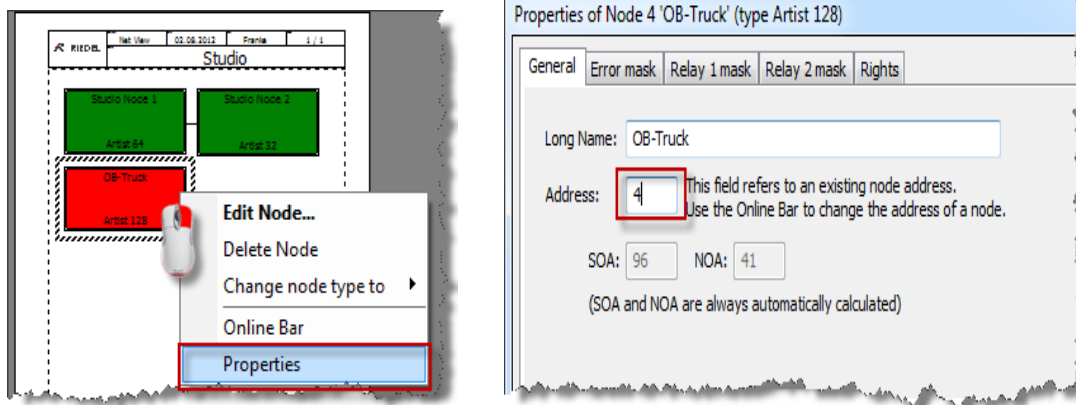
Long Name	Location
OB-Cam 1	Cam 1
OB-Cam 2	Cam 2
OB-Cam 3	Cam 3
OB-Cam 4	Cam 4
OB-Cam 5	Cam 5
OB-Cam 6	Cam 6
OB-Cutter	Cutter
OB-Director	Director
OB-Edit 1	Edit 1
OB-Edit 2	Edit 2
OB-Vision	Vision
spare 21	StC sp21
St A CF 1 from desk	STA OS1
St A CF 10 from desk	STA OS10
St A CF 11 from desk	STA OS11
St A CF 12 from desk	STA OS12
St A CF 2 from desk	STA OS2
St A CF 3 from desk	STA OS3

2.1.2 Adjusting the Node addresses and reconnecting the fiber lines

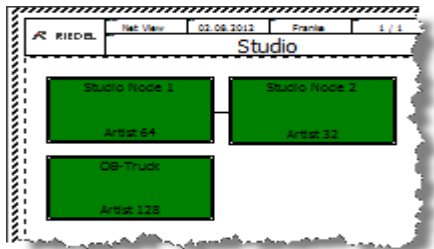
When the import was successfully, you can now see the new added Nodes in the **Net-View** of Director.




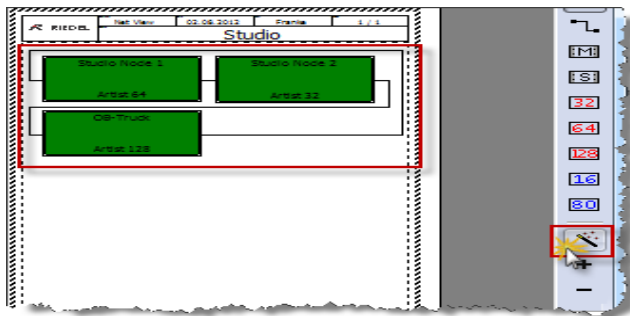
Because before we changed the Node address of the imported Node in the **Node Properties**, now we need to change also the Node address of the imported Node in the configuration to the same Node address (example: address 4).



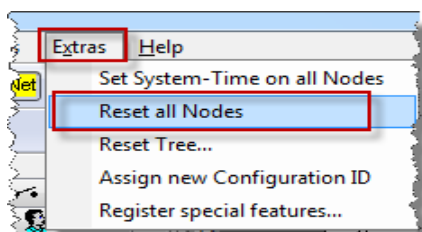
If the Node address is correct, the node shows green, if the Director is connected.



Now you need to connect the fiber lines between the Nodes. Therefore just press the magic stick button .



Now you have to send the new complete configuration with , and Reset all Nodes



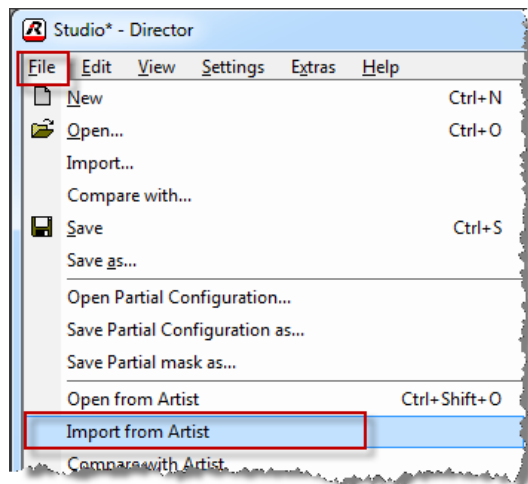
The merging procedure is no finished. When you want to merge further systems, repeat the steps up from [Chapter 2](#).

All you have to do now is to configure the calls and functions between the ports of the 2 systems in the Director.

2.2 Import another configuration from a connected system

Another way of importing the configuration file of a system you want to merge, is to read out the configuration directly from the node instead of opening it from a USB drive (a working IP-connection to this system is required).

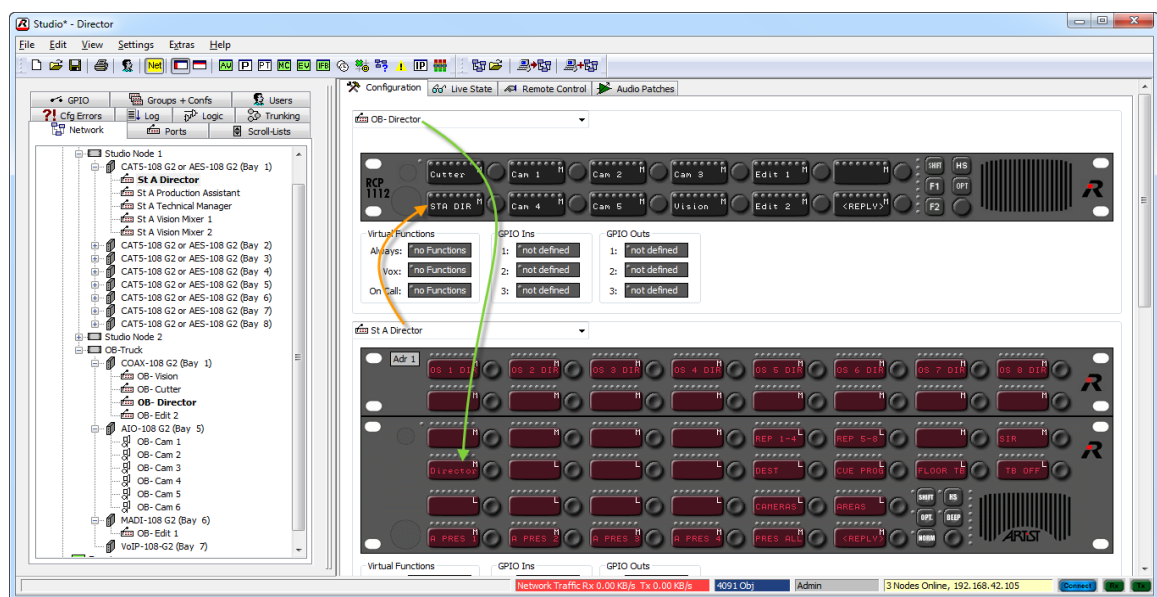
Therefore you have to open the configuration of the first system (example: Studio) in the Director. Then you have to connect the Director by changing the **"IP-Address of local Node"** in **"Extras"** directly to the second system (example: OB-Truck) and activate **"Import from Artist"** in the **"File"-menu**.



The rest of the procedure is absolute identically with the **"Import from File"** method.

3 ADDING COMMANDS BETWEEN THE SYSTEMS

Because the system is now one system and have only one big configuration, you now have to just establish all the calls and functions between the Studio and the Truck ports in the standard way within the Director Software.



4 DISCONNECT SYSTEMS

To disconnect merged systems, just:

- Disconnect the fiber connections between the systems and close the Fiber rings on every system
- Connect a Director PC to each system and set the Node Properties back to the original settings (Node address, Ring Clock Master, etc.)
- Load the backup configuration files you made before the merging process
- Send the configurations to the systems and do a Node reset.

NOTES



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