Quick Installation Guide

1. Gather Network Information:

The addresses below are examples corresponding to the schema figure. This might be different for your network setup. For more detailed instructions please refer to the **Installation Manual** and **User Manual**.

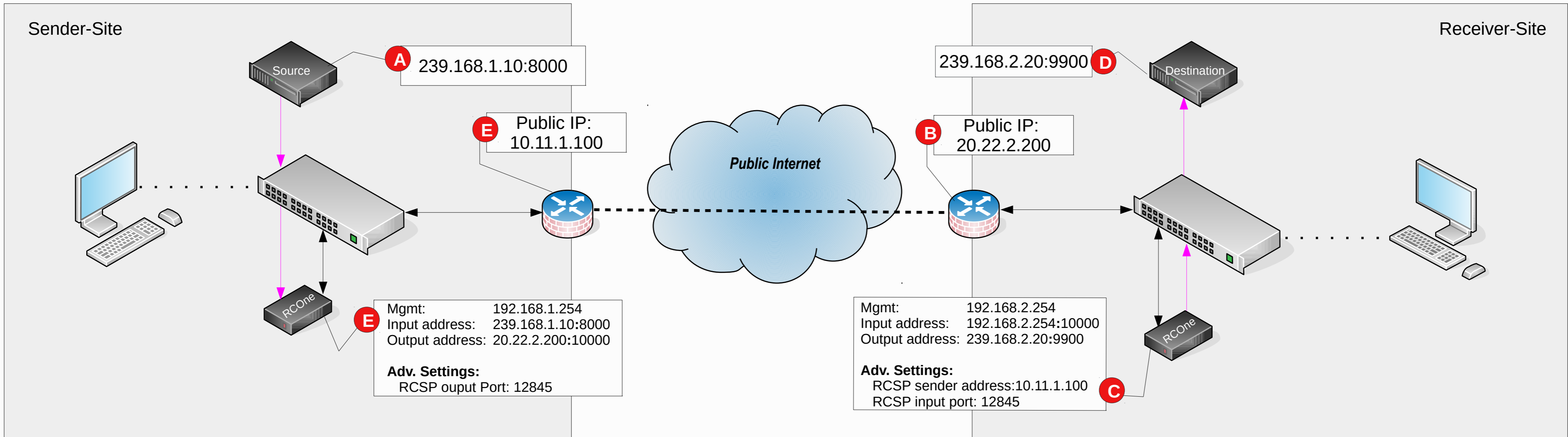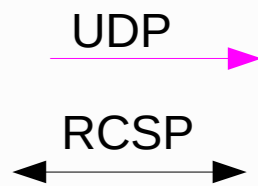|	Sender-Site	Receiver-Site
Mgmt RelayCaster	192.168.1.254	192.168.2.254
GbE RelayCaster	Optional: please refer	to user manual
Input address	239.168.1.10	Mgmt (192.168.2.254)
Input port	8000	10000
Output address	20.22.2.200	239.168.2.20
Output port	10000	9900
RCSP input Port	-----	12845
Public IP	10.11.1.100	20.22.2.200
Firewall forwarding port	12845	10000
FW forwarding IP address	GbE or Mgmt	192.168.2.254

2. Setup Sender-Site Stream:

Attention: when using Multicast set **Multicast Input** and **Multicast Output** accordingly to your setup. These can be found in the **Info** Tab section: **General Network Settings.**

1) Open web GUI via browser (default IP: 192.168.1.254) and login (User: admin Password: password)

2) Select **Stream** Tab and fill in the fields with information gathered

3) Set **Input protocol** to RAW-UDP or RTP

4) Set **Output protocol** to RelayCaster Streaming Protocol

5) **Advanced Settings:** set RCSP output port the same as the RCSP input port on Receiver-Site (default = 12845)

6) Generate Stream by clicking **Create**

3. Setup Receiver-Site:

1) Open web GUI via browser (default IP: 192.168.1.254) and login (User: admin Password: password)

2) Select **Stream** Tab and fill in the fields with information gathered

3) Set **Input protocol** to RelayCaster Streaming Protocol

4) Set **Output protocol** to RAW-UDP or RTP

5) **Advanced Settings**:
   - **RCSP sender address**: set to public IP of Sender-Site (port forwarding)
   - **RCSP input port:** same as RCSP output port on Sender-Site (default = 12845)

6) Generate Stream by clicking **Create**

7) **Attention:** Please wait 60 seconds and then check statistics on Sender-site and Receiver-Site by hovering over the green Button. RelayCaster Streaming Protocol is working correctly when the **Forwarded packets** are at 100 percent. RCSP is active when Button is green. If Button is yellow please re-check your settings, if red then stream is not active at all.

UDP →

RCSP ←→

Sender-Site

Source

A 239.168.1.10:8000

E Public IP: 10.11.1.100

RCOne

Public Internet

Mgmt: 192.168.1.254
Input address: 239.168.1.10**:8000**
Output address: 20.22.2.200**:10000**

Adv. Settings:
   RCSP ouput Port: 12845

Receiver-Site

239.168.2.20:9900 **D**

Destination

B Public IP: 20.22.2.200

RCOne

Mgmt: 192.168.2.254
Input address: 192.168.2.254**:10000**
Output address: 239.168.2.20**:9900**

Adv. Settings:
   RCSP sender address:10.11.1.100
   RCSP input port: 12845

C

A Unicast or Multicast address and port

B Public IP and Port of Receiver-Site (in case of firewall; port forwarding needs to be configured)

C Address and Port on Receiver-Site (in case of firewall; private IP is used)

D Unicast or Multicast address and port

E IP address and port of Sender-Site RelayCaster unit or firewall/router in case of port forwarding

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RelayCaster Webinterface
admin@192.168.3.176

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Encode | Streams | Help | Info | Logout

GUI view ←→

Status

Total Streams	Bandwidth GbE [Mbps]	Bandwidth GbE-2 [Mbps]	Bandwidth GbE-3 [Mbps]	Bandwidth Mgmt [Mbps]
0	In: 4.34 / Out: 0.00	In: 0.00 / Out: 0.00	In: 0.00 / Out: 0.00	In: 0.01 / Out: 0.02
Disk Usage /	Disk Usage /home	Disk Usage /home/nmm/video	CPU Load	Memory Usage
/ 1.7G 23%	/home 2.6G 19%	ftp 176M 1%	0.00 %	7.67 %

Create New Stream

Stream name	Input address	Input port	Output address	Output port	Input protocol	Output protocol	Adv.	Action
Stream 1	239.168.1.10	8000	20.22.2.2002	10000	Raw-UDP	RelayCaster Streaming	+	Create Defaults

Modify Streams

A   **B**

Stream name	Input address	Input port	Output address	Output port

Advanced Settings

Input protocol:

AES Decryption for Input Protocol:

Decryption Key

Decryption Initial Vector

Decryption Cipher Strength   128

Output protocol:

RCSP output port *   12845

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RelayCaster Webinterface
admin@192.168.3.175

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Streams | Help | Info | Logout

Status

Total Streams	Bandwidth GbE [Mbps]	Bandwidth GbE-2 [Mbps]	Bandwidth GbE-3 [Mbps]	Bandwidth Mgmt [Mbps]
0	In: 0.00 / Out: 0.00	In: 0.00 / Out: 0.00	In: 0.00 / Out: 0.00	In: 0.00 / Out: 0.00
Disk Usage /	Disk Usage /home	Disk Usage /home/nmm/video	CPU Load	Memory Usage
/ 1004M 14%	/home 3.2G 23%	ftp 176M 1%	0.00 %	6.42 %

Create New Stream

Stream name	Input address	Input port	Output address	Output port	Input protocol	Output protocol	Adv.	Action
Stream 1	192.168.2.254	10000	239.168.2.20	9900	RelayCaster Streamin	Raw-UDP	+	Create Defaults

Modify Streams

C   **D**

Stream name	Input address	Input port	Output address	Output port

Advanced Settings

Input protocol:

RCSP sender address *   10.11.1.100

RCSP input port *   12845

E

RCSP input buffer (in msec) *   100

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RelayCaster Quick Installation Guide

Network Configuration

1. Network Interfaces:

The following tables show which network interfaces are available on a specific RelayCaster model for streaming. RelayCaster One provides one integrated network port and optional external USB network adapters.

System	GbE	GbE-2	GbE-3	Mgmt
RelayCaster 200	X			X
RelayCaster 1000	X	X	X	X
RelayCaster One	X			X

2. Accessing the System via ssh

To pass the authentification, you need to provide the username and the password, which default to:

Username	Password
root	rootarnual
nmm	nmmarnual

These passwords can be changed as follows: log in with ssh as root and run 'passwd' for changing the root password, and 'passwd nmm' for changing the nmm password.

3. Setting up Network Configuration via Console

Important note: If you change network configuration current config files of the system are deleted.
Setting up the network configuration can also be done via console either by directly logging into the system or via remote log-in using ssh.

To directly log in to the system via console:
- Connect a keyboard and screen to the system.
- Power on and boot the system.
- If the log-in prompt appears login to system as user root. Default password is described in Section 2.

For remote login you have to use ssh:
- Please make sure that Mgmt network interface is connected to your network.
- Power on and boot system.
- Login via ssh as described in Section 2.

After logging in to the system as user root (either via ssh or console) execute following steps.

- Change to directory providing tool for changing network configuration by entering following commands:
  cd /home/nmm/nmm3_relaycaster/bin/
- Start tool for changing network configuration by entering following command:
  ./wrapper.sh nmm_lcd_setup -c -R
- If the message Setup network? Press any key appears press enter to enter the setup.
- In the following dialogues, current network parameters are printed to console.
  After a specific setting is printed, you have to enter the new value.
  Note: If you press enter without entering a new value the system keeps the current shown setting.
- After changing all settings you have to reboot the system using following command
  reboot
- Please do **NOT** use any other tools, such as OpenSuse's yast or yast2, for configuring the network interfaces.
- Important note: All products require that an NTP server is configured for correctly sending streams.

After configuring all network parameters including NTP server and system runs for longer time, login to the system via ssh as user root to verify that NTP service has a good synchronization to the used NTP server. Please refer to online resource http://support.ntp.org/bin/view/Support/TroubleshootingNTP#Section_9.4.
how to check quality of the used NTP server.
The offset to the used NTP server should be less than 250ms.
(With RelayCaster 200 or RelayCaster 1000 you can also use the integrated Display to set up Network configuration -> detailed instructions can be found in the Installation Manual)

4. Firewall/Router configuration

If your RelayCaster has a local IP address but is connected to the Internet through a router or firewall you can configure these products through the Internet. In this case your router or firewall has to forward TCP traffic received from the Internet for the following ports to RelayCaster:
- TCP traffic on Port 80: Forwarding port 80 is required to access the web interface of RelayCaster.
- TCP traffic on Port 8111: Forwarding port 8111 is required to send control commands via XML-RPC to RelayCaster.

Note: Forwarding of this port is only required if sender of XML-RPC commands access a RelayCaster behind a firewall/router. If access to web interface is sufficient forwarding of this port is not required. For information how to configure your firewall or router please contact your system administrator or device manufacturer.