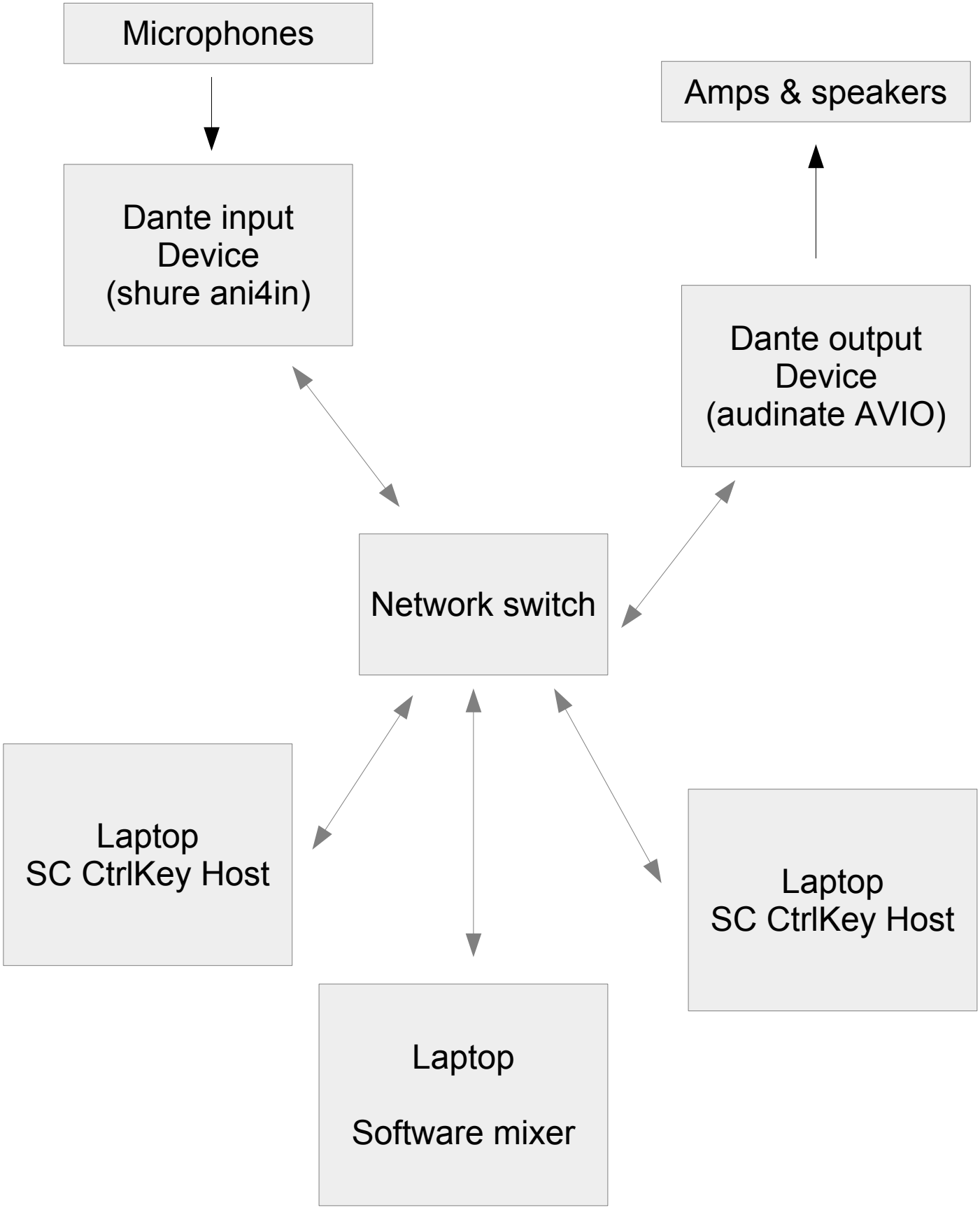
Scenario 1: Hardware 3 host variation AVIO/Radial output



Scenario 1: Hardware 3 host variation AVIO/Radial output

Dante input device
- Shure ani4in (4 channel input)
  - Pre-amp gain and eq controlled via web browser
- 4 microphones connected
- Multicast-flow with all 4 channels make these inputs available to all hosts
- 4 channel multicast flow costs 5Mbps on the switch

Dante Output device
- Audinate AVIO (2 channel output) or Radial
- Output to Amps and speakers

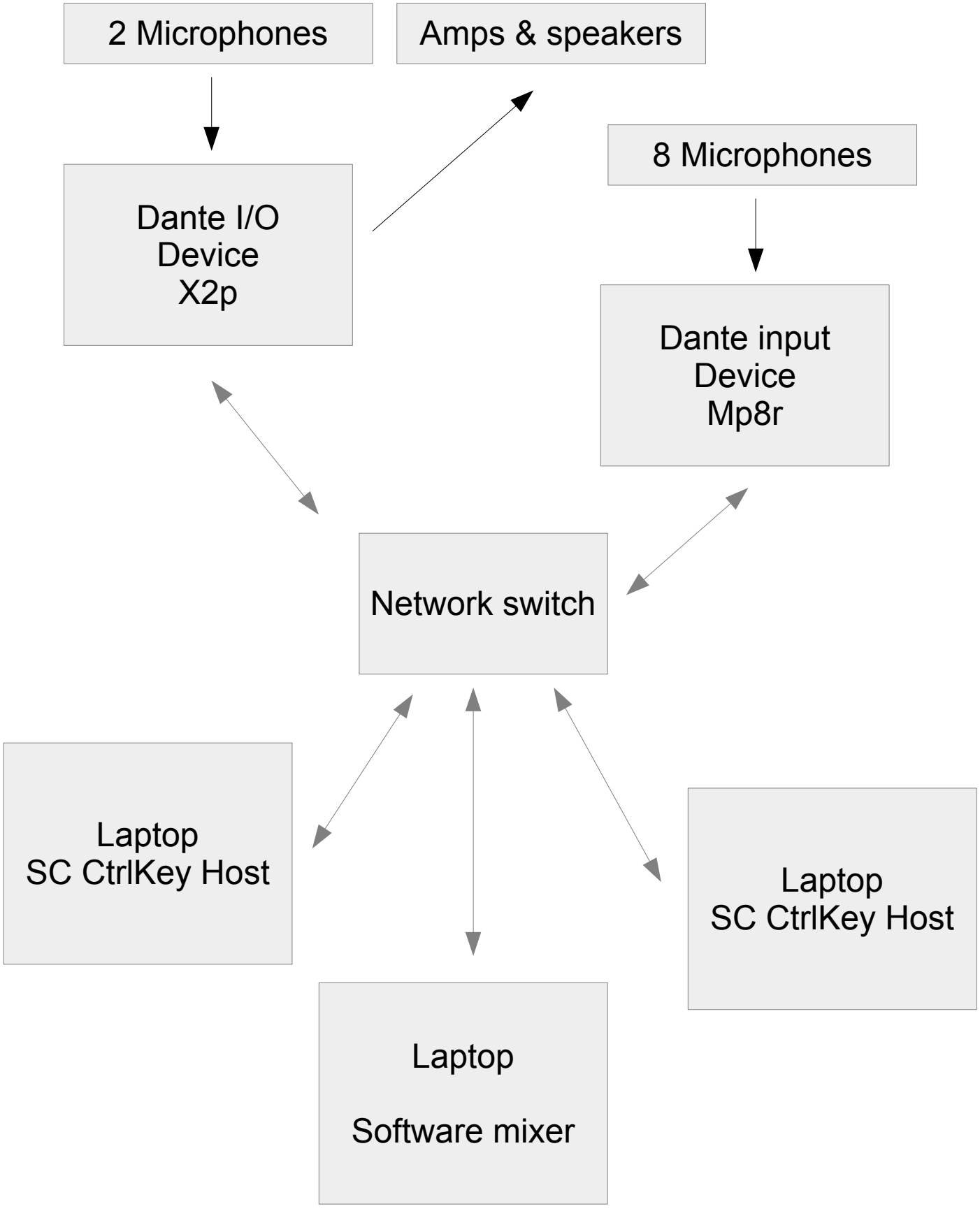
Network Switch
- Dante compatible network switch with PoE and QoS DSCP
  - Netgear gs308ep
  - D-Link DGS-1210
  - others??

Laptop 1
- SuperCollider ctrlKeys
- Dante virtual sound card
  - subscribe to all 4 input microphones

Laptop 2
- SuperCollider ctrlKeys
- Dante virtual sound card
  - subscribe to all 4 input microphones

Laptop 3
- software mixer
- Dante Controller (configure network flows)
- Web browser control of microphne pre-amps
- Dante Virtual Sound card
  - Subscribe to multichannel output from
    - Laptop 1, 2 channels
    - Laptop 2, 4 channels
  - Output 2 channels to Dante output node

Scenario 2: Hardware 3 host variation redNet X2P output



Scenario 2: Hardware 3 host variation redNet Mp8r and X2P output

Dante I/O device
- Focusrite X2P (2x2 I/O)
  - Pre-amp gain, eq, etc controlled via RedNet Control 2
- 2 microphones connected
- Multicast flow for 2 channels (<5Mbps?)
- Output to Amps and speakers

Dante input Device
- Focusrite Mp8r (8 in)
  - Pre-amp gain, eq, etc controlled via RedNet Control 2
- 8 microphones connected
- Multicast flow for 8 channels (10Mbps?)

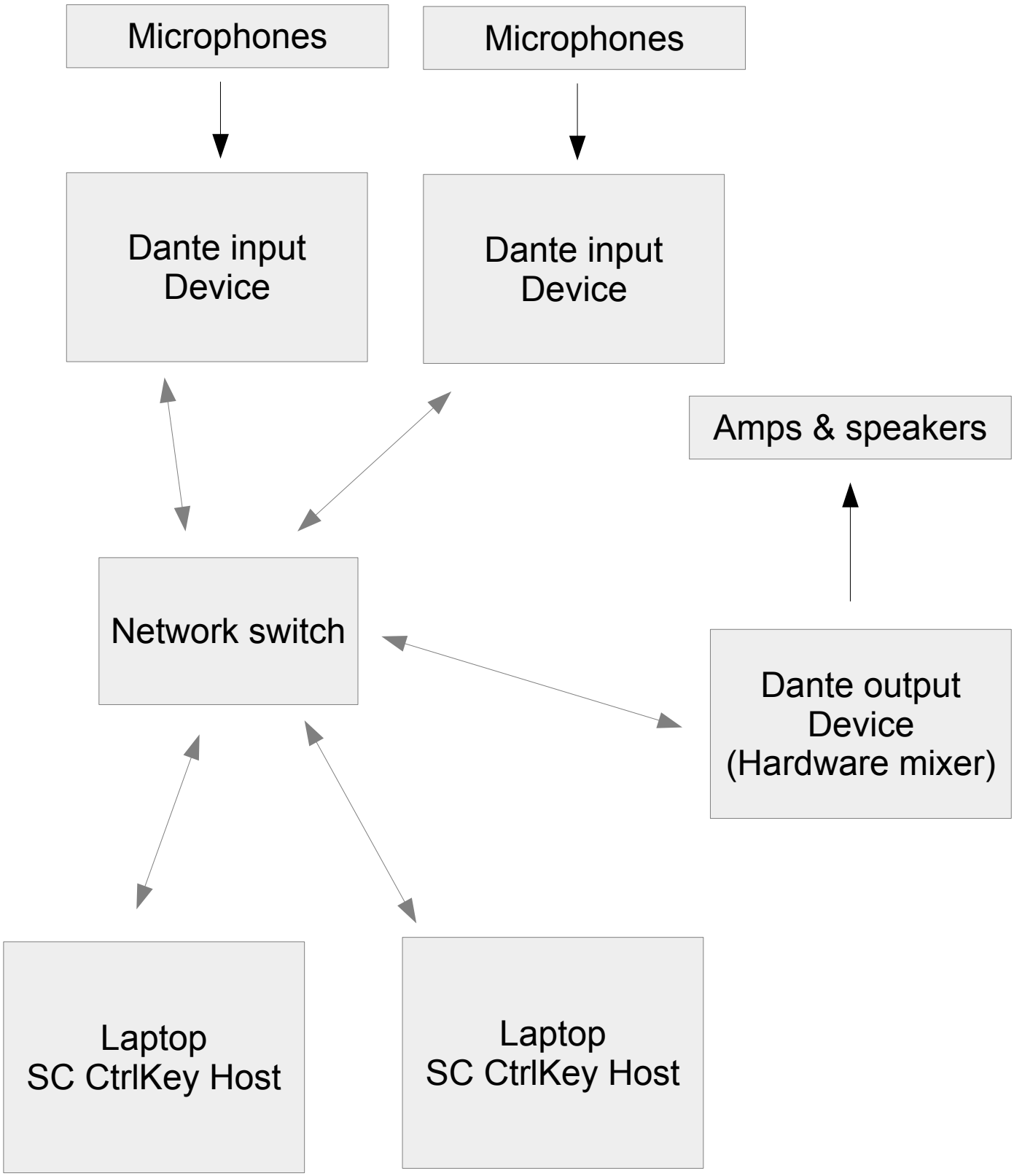
Network Switch
- Dante compatible network switch with PoE and QoS DSCP
  - Netgear gs308ep
  - D-Link DGS-1210
  - others??

Laptop 1
- SuperCollider ctrlKeys output 2 channels to DANTE
- Dante virtual sound card
  - subscribe to 2 input microphones from X2P
  - subscribe to 8 input microphones from Mp8r

Laptop 2
- SuperCollider ctrlKeys output X channels to DANTE
- Dante virtual sound card
  - subscribe to 2 input microphones from X2P
  - subscribe to 8 input microphones from Mp8r

Laptop 3
- software mixer
- Dante Controller
- optional RedNet Control 2 for control od X2P pre-amps
- Dante Virtual Sound card
  - Subscribe to multichannel output from
    - Laptop 1, 2 channels
    - Laptop 2, 8 channels
  - Output 2 channels to Dante, amplified via X2P

Scenaro 3: Hardware 3 host variant Rednet + hardware mixer



Scenaro 3: Hardware 3 host variant Rednet + hardware mixer

Dante input device
- Focusrite X2P (2x2 I/O)
- 2 microphones connected
- Pre-amp gain, eq, etc controlled via RedNet Control 2
- connected to amps and speakers on 2 chan output
- Multicast flow for 2 channels (<5Mbps?)

Dante input Device
- Focusrite Mp8r (8 in)
  - Pre-amp gain, eq, etc controlled via RedNet Control 2
- 8 microphones connected
- Multicast flow for 8 channels (10Mbps?)

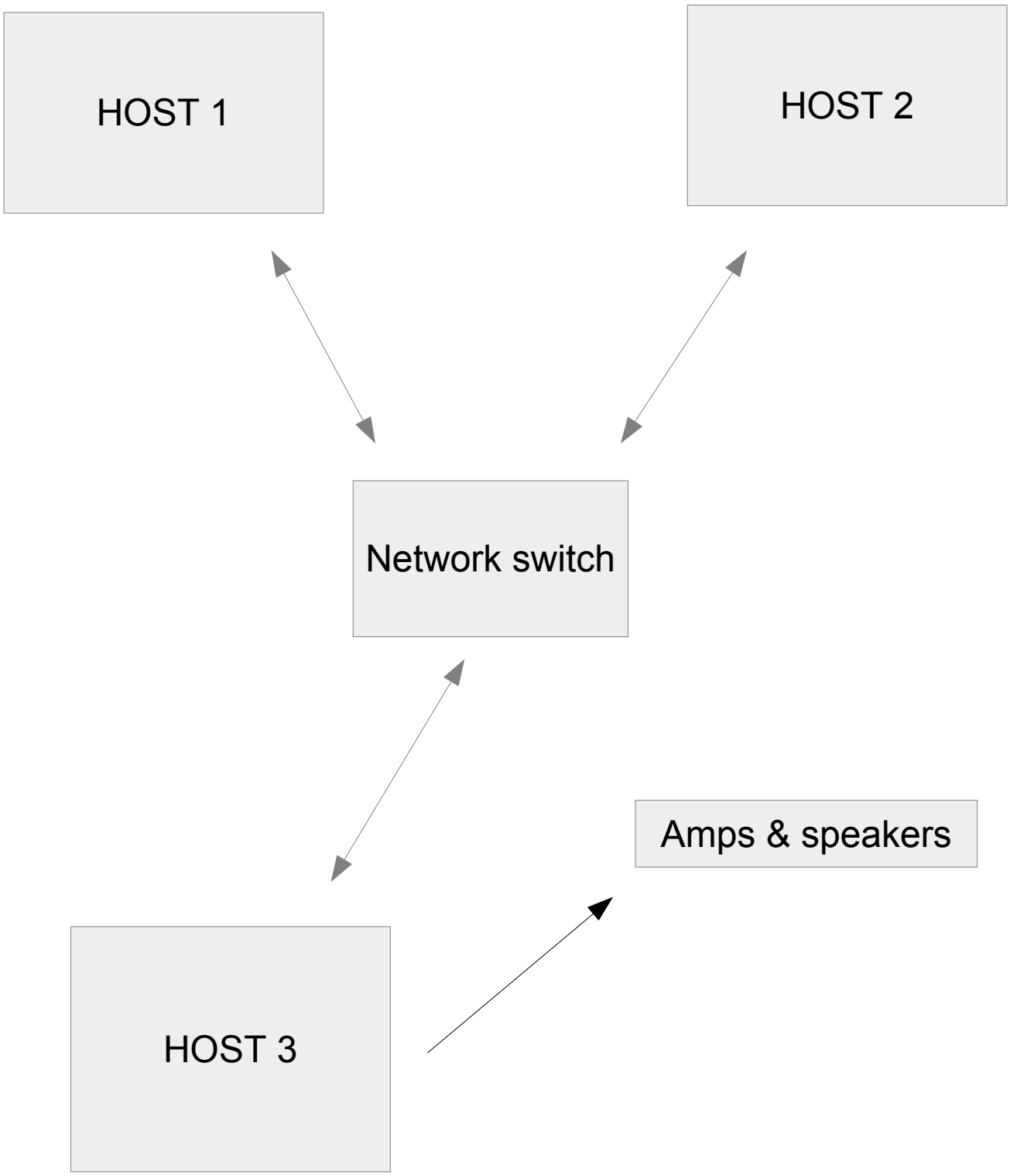
Network Switch
- Dante compatible network switch with PoE and QoS DSCP
  - Netgear gs308ep
  - D-Link DGS-1210
  - others??

Laptop 1
- SuperCollider ctrlKeys output 2 channels to DANTE
- Dante virtual sound card
  - subscribe to 2 input microphones from X2P
  - subscribe to 8 input microphones from Mp8r

Laptop 2
- SuperCollider ctrlKeys output X channels to DANTE
- Dante virtual sound card
  - subscribe to 2 input microphones from X2P
  - subscribe to 8 input microphones from Mp8r

Hardware Mixer with DANTE card
- Midas M32 (for example) with Klark and Technic Dante card
- Subscribe to multichannel output from
  - Laptop 1, 2 channels
  - Laptop 2, 4 channels
- Output to Amps and speakers

Scenario 4: 3 hosts with Virtual Soundcard



Scenario 4: Dante Virtual Soundcard

Host 1 – 16x16, 4ns
- SuperCollider synthesizing 4 channels and processing 4 inputs for 8 channels of output
  - synthesized output on 8 channels
    - 1-4 channels synthesis
    - 5-8 channels processing (of input)
  - input from 4 channels into processing channels

- 8 channel output
  - h1, 1-8
- 4 channel multicast
  - h1, 1-4 (synthesis channels)
- 4 channel input
  - h2, 1-4

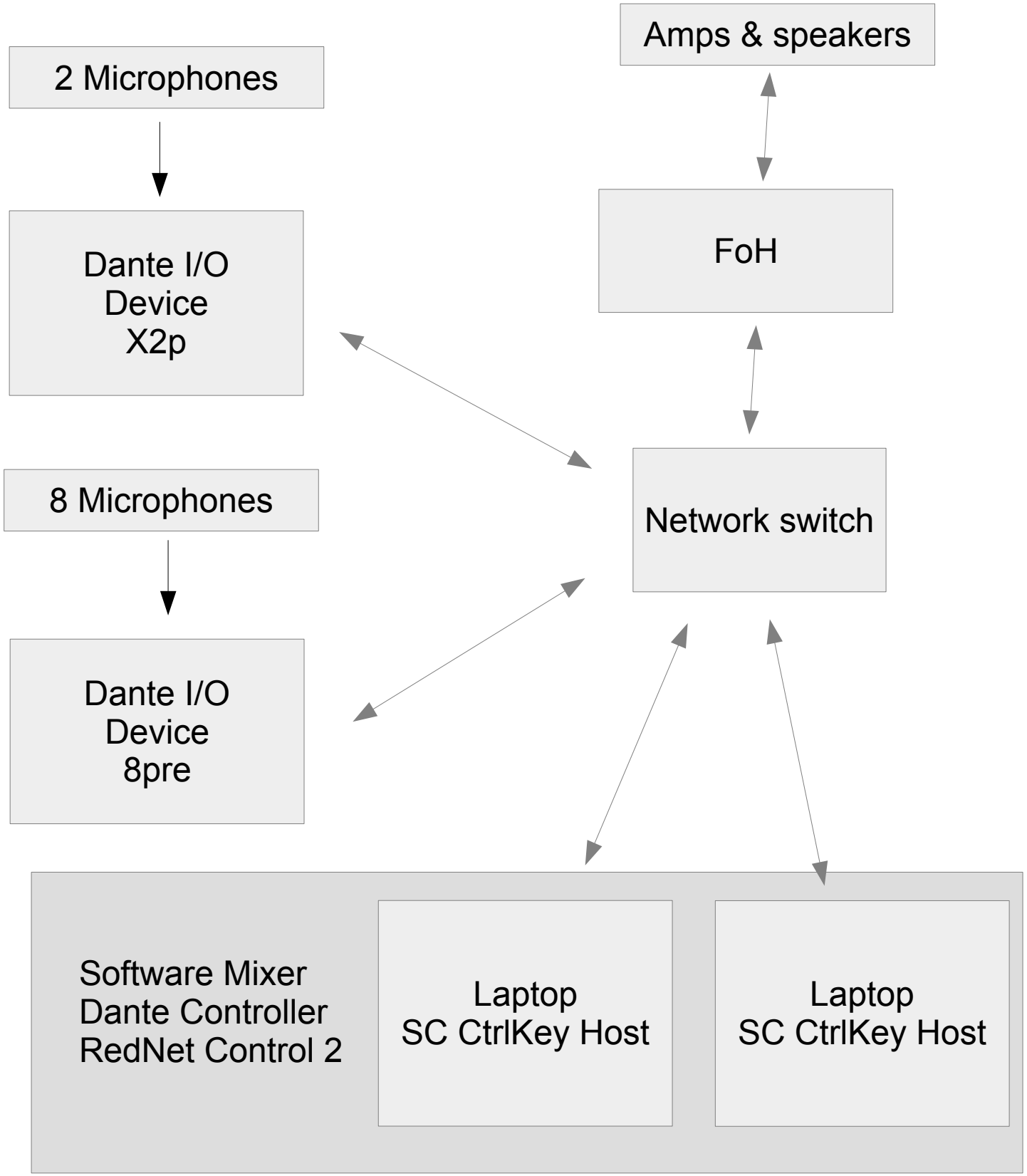
Host 2 – 16x16, 4ns
- SuperCollider synthesizing 4 channels and processing 4 inputs for 8 channels of output
  - synthesized output on 8 channels
    - 1-4 channels synthesis
    - 5-8 channels processing (of input)
  - input from 4 channels into processing channels

- 8 channel output
  - h2, 1-8
- 4 channel multicast
  - h2, 1-4 (synthesis channels)
- 4 channel input
  - h1, 1-4

Host 3 – 16x16, 4ns
- Mixer output to stereo signal
  - Reaper
  - SuperCollider based

- 16 channels in
  - h1, 1-4 (from multicast)
  - h2, 1-4 (from multicast)
  - h1, 5-8 (unicast)
  - h2, 5-8 (unicast)

Scenario 5: Hardware 2 host variation redNet X2P/Mp8r



Scenario 5: Hardware 2 host variation redNet Mp8r and X2P

Dante I/O device
- Focusrite X2P (2x2 I/O)
  - Pre-amp gain, eq, etc controlled via RedNet Control 2
- 2 microphones connected
- Multicast flow for 2 channels (<5Mbps?)

Dante input Device
- Focusrite Mp8r (8 in)
  - Pre-amp gain, eq, etc controlled via RedNet Control 2
- 8 microphones connected
- Multicast flow for 8 channels (10Mbps?)

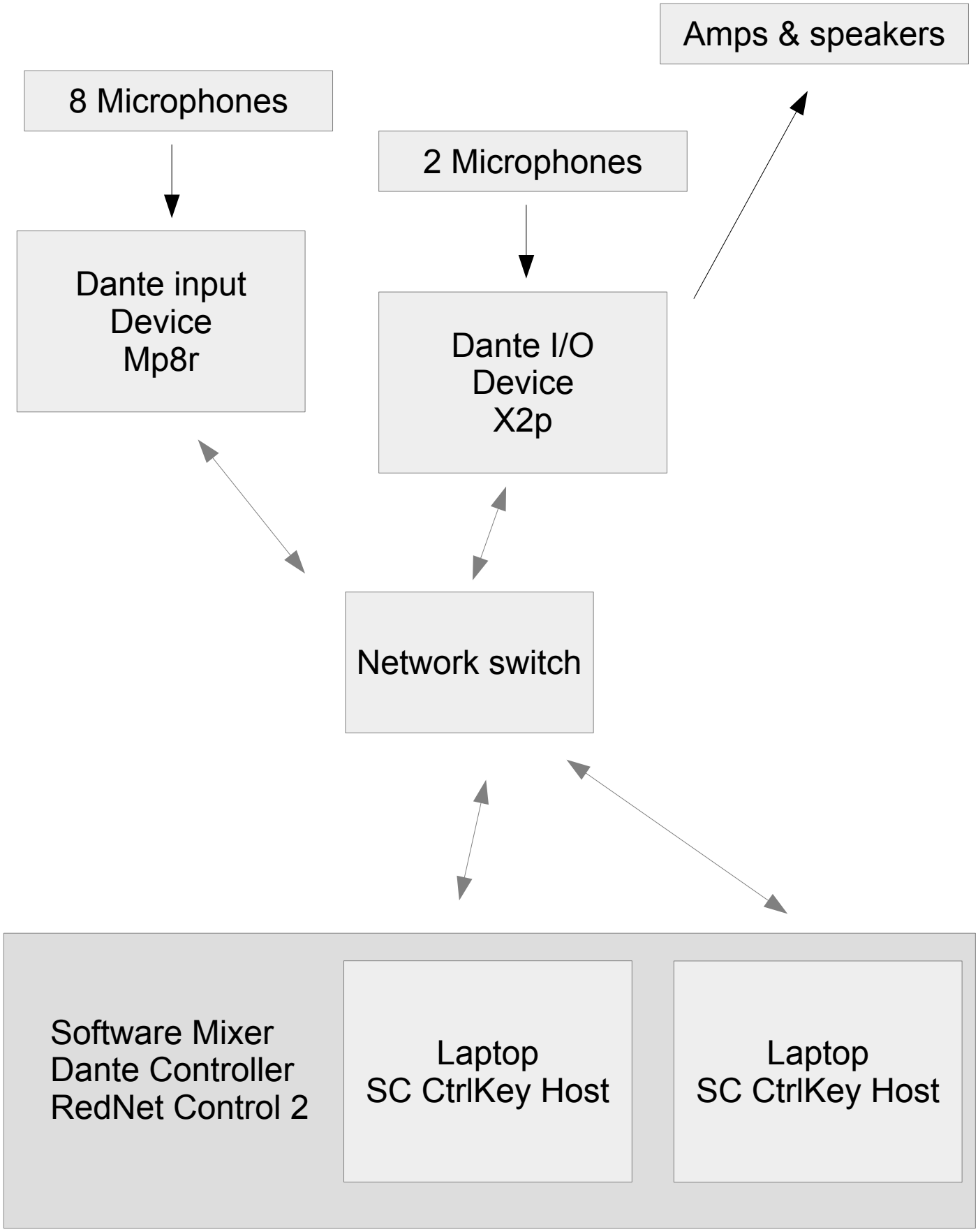
Network Switch
- Dante compatible network switch with PoE and QoS DSCP
  - Netgear gs308ep
  - D-Link DGS-1210
  - others??

Laptop 1
- SuperCollider ctrlKeys output 2 channels to DANTE
- Dante virtual sound card
  - subscribe to 2 input microphones from X2P
  - subscribe to 8 input microphones from Mp8r

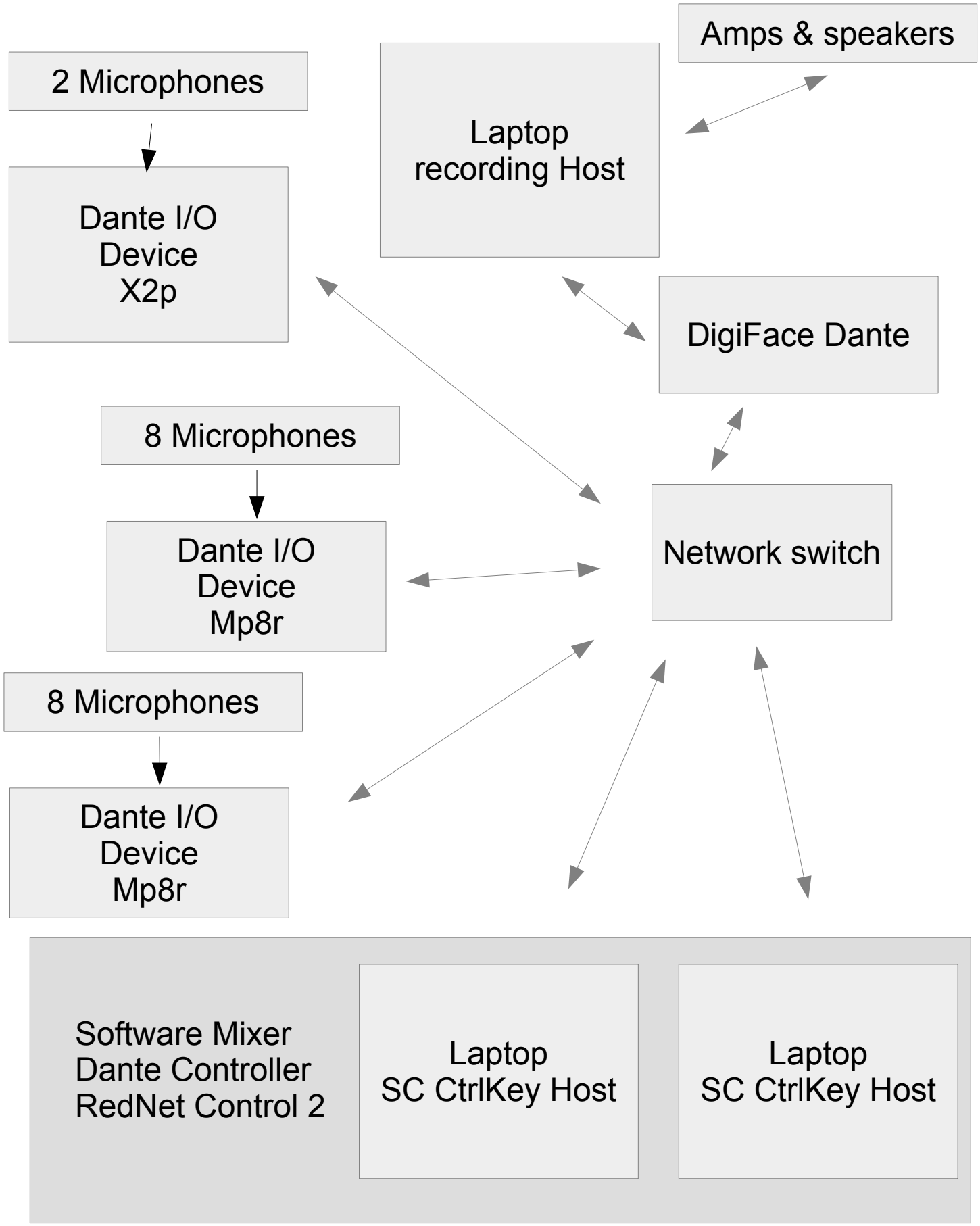
Laptop 2
- SuperCollider ctrlKeys output X channels to DANTE
- Dante virtual sound card
  - subscribe to 2 input microphones from X2P
  - subscribe to 8 input microphones from Mp8r

these items can be distributed amongst either laptop
1) software mixer
2) Dante Controller
   - define multicast channels for inputs
   - define unicast link from software mixer host to FoH
3) RedNet Control 2 for control od X2P pre-amps

Scenario 5.5: Hardware 2 host variation redNet X2P output



Scenario 6: Hardware recording variant



Scenario 6: Hardware recording variant

Dante I/O device
- Focusrite X2P (2x2 I/O)
  - Pre-amp gain, eq, etc controlled via RedNet Control 2
- 2 microphones connected
- Multicast flow for 2 channels (<5Mbps?)

Dante input Device
- Focusrite Mp8r (8 in)
  - Pre-amp gain, eq, etc controlled via RedNet Control 2
- 8 microphones connected
- Multicast flow for 8 channels (10Mbps?)

Dante input Device
- Focusrite Mp8r (8 in)
  - Pre-amp gain, eq, etc controlled via RedNet Control 2
- 8 microphones connected
- Multicast flow for 8 channels (10Mbps?)

Network Switch
- Dante compatible network switch with PoE and QoS DSCP
  - Netgear gs308ep
  - D-Link DGS-1210
  - others??

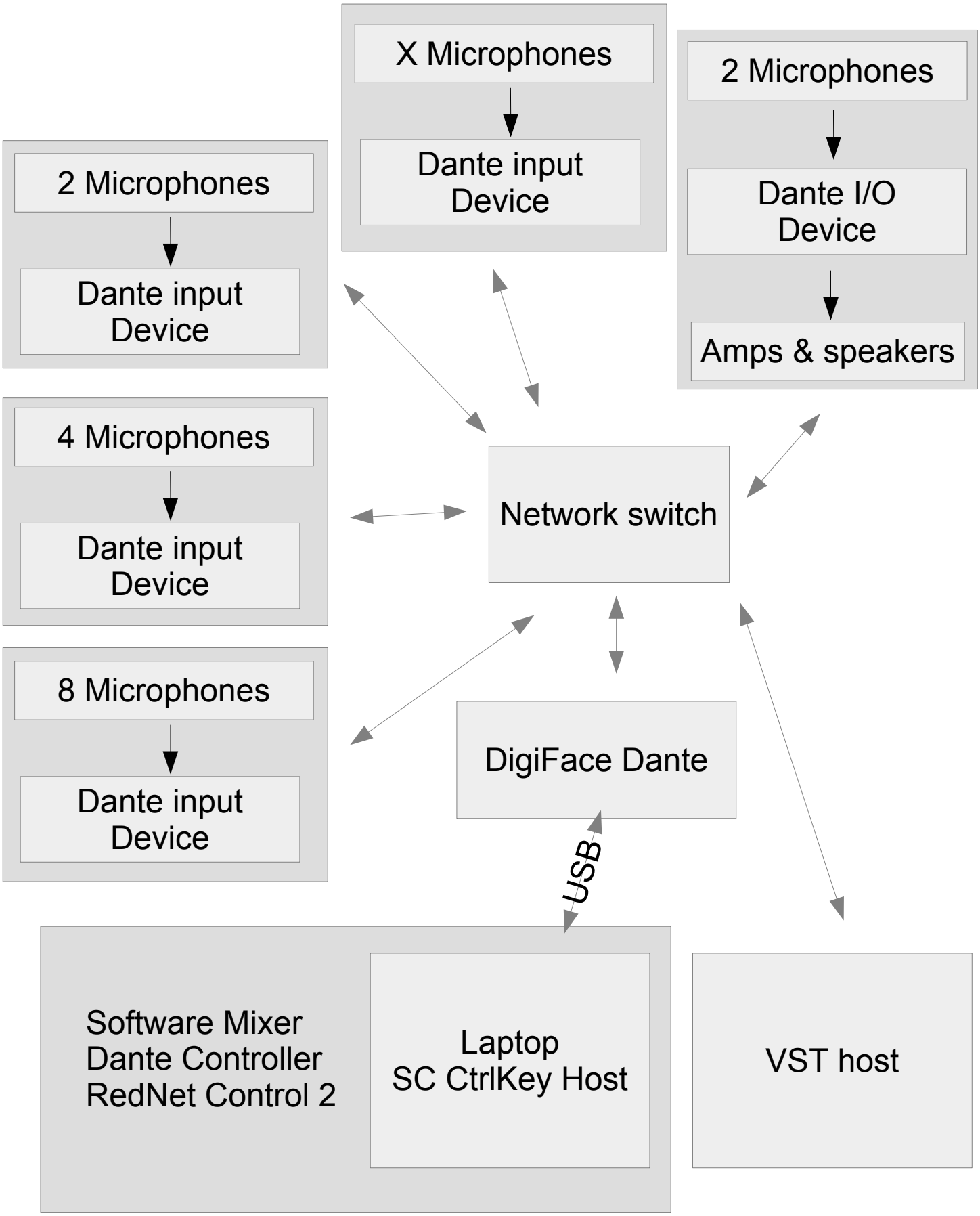
Laptop 1
- SuperCollider ctrlKeys output 2 channels to DANTE
- Dante virtual sound card
  - subscribe to 2 input microphones from X2P
  - subscribe to 8 input microphones from Mp8r

Laptop 2
- SuperCollider ctrlKeys output X channels to DANTE
- Dante virtual sound card
  - subscribe to 2 input microphones from X2P
  - subscribe to 8 input microphones from Mp8r

Laptop 3
- USB connected to DigiFace Dante 128x128
- Recording software

these items can be distributed amongst any laptop
1) software mixer
2) Dante Controller
   - define multicast channels for inputs
   - define unicast link from software mixer host to FoH
3) RedNet Control 2 for control od X2P pre-amps

Scenario 7: Hardware very large ensemble



Notes:

A unicast flow is a group of 4 channels that is sent from on host to another. A network switch will create a connection that does not use bandwidth between other hosts.

A Multicast flow is a group of 4 channels that is sent to all hosts on a network from one host. This type of flow uses a portion of the total bandwidth available on the switch. A 4 channel flow uses approximately 5Mbps.

The number of flows a device can manage is based on "platform" or chipset.

Some of the many different chips
https://www.audinate.com/products/manufacturer-products/dante-brooklyn-ii
https://www.audinate.com/products/manufacturer-products/dante-ultimo

shure devices enumerated by chipset and flow capacity:
https://service.shure.com/s/article/understanding-dante-flows?language=en_US

multicast flows Dante Controller tutorial:
https://www.audinate.com/learning/training-certification/video-tutorials/using-multicast-with-dante-controller