

## **Networking (IP addressing and VLANs)**

Subnet range: 192.168.8.0 /22 - 192.168.11.255

### **Subnets and VLANs**

<b>Subnet /Mask /Vlan</b>	<b>First usable Address</b>	<b>Last Usable Address</b>
<b>Students /23 VLAN 0</b>	<b>192.168.8.1</b>	<b>192.168.9.254</b>
<b>Classroom 1 /27 VLAN 20</b>	<b>192.168.10.1</b>	<b>192.168.10.30</b>
<b>Classroom 2 /27 VLAN 30</b>	<b>192.168.10.33</b>	<b>192.168.10.62</b>
<b>Classroom 3 /27 VLAN 40</b>	<b>192.168.10.65</b>	<b>192.168.10.94</b>
<b>Classroom 4 /27 VLAN 50</b>	<b>192.168.10.97</b>	<b>192.168.10.126</b>
<b>Classroom 5 /27 VLAN 60</b>	<b>192.168.10.129</b>	<b>192.168.10.158</b>
<b>Classroom 6 /27 VLAN 70</b>	<b>192.168.10.161</b>	<b>192.168.10.190</b>
<b>Classroom 7 /27 VLAN 80</b>	<b>192.168.10.193</b>	<b>192.168.10.222</b>
<b>Staff /27 VLAN 90</b>	<b>192.168.10.225</b>	<b>192.168.10.254</b>
<b>Instructors /28 VLAN 100</b>	<b>192.168.11.1</b>	<b>192.168.11.14</b>
<b>IT /28 VLAN 110</b>	<b>192.168.11.17</b>	<b>192.168.11.30</b>
<b>DC /28 VLAN 120</b>	<b>192.168.11.33</b>	<b>192.168.11.46</b>
<b>Extra VLAN 130</b>	For unused ports	
<b>Internet VLAN 140</b>		
<b>Wi-Fi /22 510 hosts</b>	<b>10.10.0.1</b>	<b>10.10.3.254</b>

Notes:

**Ip address of internet facing T port: 10.128.209.139/24.**

**Host PCs in rooms are assigned addresses via DHCP.**

### **R1 Interface IP Addresses**

**G0/1.10:**

**Address: 192.168.8.2/23**

**Virtual Gateway: 192.168.8.1**

**DHCP Helper Address: 192.168.11.37**

**G0/1.20:**

**Address: 192.168.10.2/27**

**Virtual Gateway: 192.168.10.1**

**DHCP Helper Address: 192.168.11.37**

**G0/1.30:**

**Address: 192.168.10.34/27**

**Virtual Gateway: 192.168.10.33**

**DHCP Helper Address: 192.168.11.37**

**G0/1.40:**

**Address: 192.168.10.66/27**

**Virtual Gateway: 192.168.10.65**

**DHCP Helper Address: 192.168.11.37**

**G0/1.50:**

**Address: 192.168.10.98/27**

**Virtual Gateway: 192.168.10.97**

**DHCP Helper Address: 192.168.11.37**

**G0/1.60:**

**Address: 192.168.10.130/27**

**Virtual Gateway: 192.168.10.129**

**DHCP Helper Address: 192.168.11.37**

**G0/1.70:**

**Address: 192.168.10.162/27**

**Virtual Gateway: 192.168.10.161**

**DHCP Helper Address: 192.168.11.37**

**G0/1.80:**

**Address: 192.168.10.194/24**

**Virtual Gateway: 192.168..10.193**

**DHCP Helper Address: 192.168.11.37**

**G0/1.90:**

**Address: 192.168.10.226/27**

**Virtual Gateway: 192.168.10.225**

**DHCP Helper Address: 192.168.11.37**

**G0/1.100:**

**Address: 192.168.11.2/28**

**Virtual Gateway: 192.168.11.1**

**DHCP Helper Address: 192.168.11.37**

**G0/1.110:**

**Address: 192.168.11.18/28**

**Virtual Gateway: 192.168.11.17**

**DHCP Helper Address: 192.168.11.37**

**G0/1.120:**

**Address: 192.168.11.38**

**Virtual Gateway: 192.168.11.33**

**DHCP Helper Address: 192.168.11.37**

**G0/1.140:**

**Address: 10.128.209.139/24**

## **R2 Interfaces**

**G0/0/1.10:**

**Address: 192.168.8.3/23**

**Virtual Gateway: 192.168.8.1**

**DHCP Helper Address: 192.168.11.37**

**G0/0/1.20:**

**Address: 192.168.10.3/27**

**Virtual Gateway: 192.168.10.1**

**DHCP Helper Address: 192.168.11.37**

**G0/0/1.30:**

**Address: 192.168.10.35/27**

**Virtual Gateway: 192.168.10.33**

**DHCP Helper Address: 192.168.11.37**

**G0/0/1.40:**

**Address: 192.168.10.67/27**

**Virtual Gateway: 192.168.10.65**

**DHCP Helper Address: 192.168.11.37**

**G0/0/1.50:**

**Address: 192.168.10.99/27**

**Virtual Gateway: 192.168.10.97**

**DHCP Helper Address: 192.168.11.37**

**G0/0/1.60:**

**Address: 192.168.10.131/27**

**Virtual Gateway: 192.168.10.129**

**DHCP Helper Address: 192.168.11.37**

**G0/0/1.70:**

**Address: 192.168.10.163/27**

**Virtual Gateway: 192.168.10.161**

**DHCP Helper Address: 192.168.11.37**

**G0/0/1.80:**

**Address: 192.168.10.195**

**Virtual Gateway: 192.168.10.193**

**DHCP Helper Address: 192.168.11.37**

**G0/0/1.90:**

**Address: 192.168.10.227/27**

**Virtual Gateway: 192.168.10.225**

**DHCP Helper Address: 192.168.11.37**

**G0/0/1.100:**

**Address: 192.168.11.3/28**

**Virtual Gateway: 192.168.11.1**

**DHCP Helper Address: 192.168.11.37**

**G0/0/1.110:**

**Address: 192.168.11.19/28**

**Virtual Gateway: 192.168.11.17**

**DHCP Helper Address: 192.168.11.37**

**G0/0/1.120:**

**Address: 192.168.11.39/28**

**Virtual Gateway: 192.168.11.33**

**DHCP Helper Address: 192.168.11.37**

**Domain Controllers:**

**Primary Proxmox Server: 192.168.11.34/28**

**Backup Proxmox Server: 192.168.11.45/28**

**DC01: 192.168.11.36/28**

**DC02: 192.168.11.37/28**