TB Academy

*T*media^{TM} Gateways – Essentials and Configuration

eLearning Activity Book (with answers)

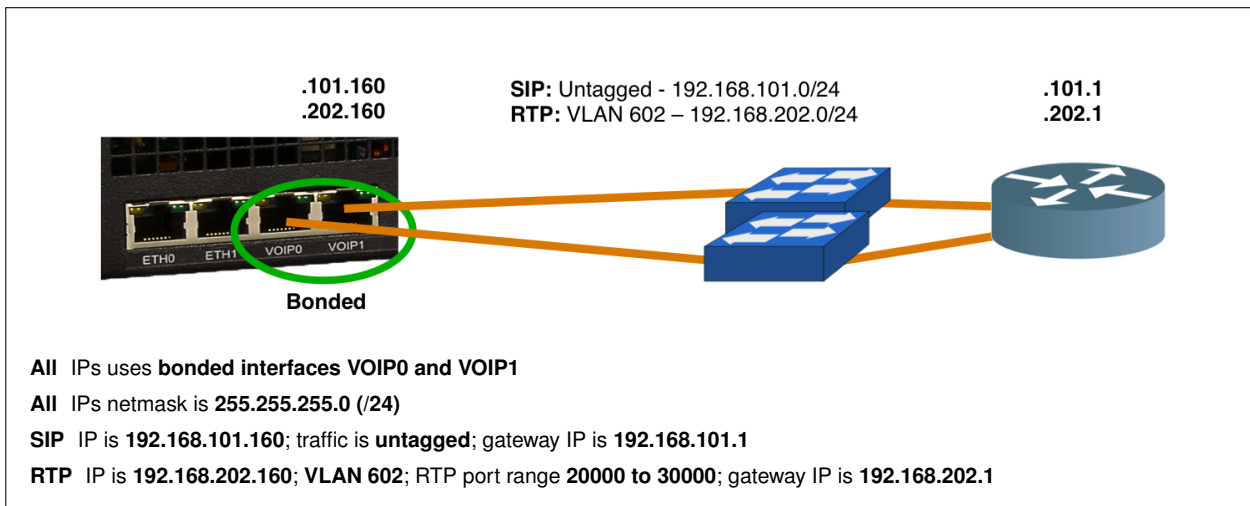March 2017
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IP Network

2.1 IP Configuration

2.1.1 Activity

⊙ 15 minutes

In this activity, you will configure four IP addresses to handle SIP, RTP, H.248 and SIGTRAN traffic, all on different VLAN tagged network, using VOIP0 and VOIP1 bonded network interfaces.

.101.160
.202.160

SIP: Untagged - 192.168.101.0/24
RTP: VLAN 602 – 192.168.202.0/24

.101.1
.202.1

ETH0   ETH1   VOIP0   VOIP1

Bonded

All IPs uses **bonded interfaces VOIP0 and VOIP1**

All IPs netmask is **255.255.255.0 (/24)**

SIP IP is **192.168.101.160**; traffic is **untagged**; gateway IP is **192.168.101.1**

RTP IP is **192.168.202.160**; **VLAN 602**; RTP port range **20000 to 30000**; gateway IP is **192.168.202.1**

For the system connection information, refer to the file *"TMGEC_lab_connection_info.pdf"* :

1. Open your web browser, type the http address of the lab system

2. Login with the given *"Username"* and *"Password"*

3. Select your configuration

From the web portal, execute the following steps.

✔ **Step 1 -** Create the Untagged Virtual Port

1. Click on *"IP Interfaces"* menu ✍ Note that IP interfaces of both units are shown

2. Click on *"Virtual Ports"* tab

3. Click on *"Create New Virtual Port"*

   a) In *"Name"*, type *"voip_untagged"*

   b) In *"Unit to create for"*, select *"UNIT01"*

   c) Set *"Untagged"* checkbox

   d) Click on *"Create"*
      ❊ Notice that there is no *"voip0"* and *"voip1"* *"Physical Ports"* in the field *"Available"*

   e) Click on *"Save"*

4. In the *"Virtual Ports"* table, locate the ports for *"UNIT01"* and *"UNIT02"*

   a) What is the name of the *"Untagged"* port using *"voip0"* physical port? _____[A1] [voip0]_____

   b) Why this Virtual Port is already created? _____[A2] [untagged voip0 and voip1 are created by default]___
      ❊ Also notice the default *"voip0"* IP *"0.0.0.0"* in *"IP Interfaces"* tab

   c) Why can't more then one *"Untagged"* virtual port be configured on the same physical port?_____
      _____[A3] [only one untagged virtual port can be created per physical port]_____
      _____[A4] [many vlan virtual port can be created per physical port]_____

5. *"Delete"* both *"voip0"* and *"voip1"* Virtual Ports
   ❊ This will delete the default *"voip0"* and *"voip1"* virtual ports. Those physical ports will now be available to be used by the *"voip_untagged"* virtual port

6. Click on *"voip_untagged"* virtual port

   a) In *"Physical Ports"*

      i. Select both *"voip0"* and *"voip1"*
         ❊ *CTRL-Click* to select one by one

      ii. Click on *"<<"*

   b) Click on *"Save"*

✔ **Step 2 -** Create the Virtual Ports for VLAN 602

1. Click on *"Create New Virtual Port"*

   a) In *"Name"*, type *"voip_602"*

   b) In *"Unit to create for"*, select *"UNIT01"*

   c) In *"VLAN id"*, type *"602"*

   d) Click on *"Create"*

   e) In *"Physical Ports"*

      i. Select both *"voip0"* and *"voip1"*
         ❊ *CTRL-Click* to select one by one

      ii. Click on *"<<"*

   f) Click on *"Save"*

✔ **Step 3 -** Create the untagged IP Interface 192.168.101.160

1. Click on *"IP Interfaces"* tab

2. *"Delete"* both *"voip0"* and *"voip1"* *"0.0.0.0"* IP Interfaces
   ❊ 0.0.0.0 IP interfaces are created by default by the system for voip.

3. Click on *"Create New IP Interface"*

   a) In *"Interface name"*, type *"sip_101_160"*

   b) In *"Services to use"*, select SIP
      ❊ *Shift-Click* selects a range while *CTRL-Click* selects one by one

c) In *"Virtual port"*, select *"voip_untagged"* (UNIT01)

d) In *"IP address"*, type *"192.168.101.160"*

e) In *"Netmask"*, type *"255.255.255.0"*

f) In *"Gateway"*, type *"192.168.101.1"*

g) Click on *"Create"*

✔ **Step 4 -** Create the VLAN IP Interfaces

1. Click on *"IP Interfaces"* tab

2. Click on *"Create New IP Interface"*

a) In *"Interface name"*, type *"rtp_202_160"*

b) In *"Services to use"*, select RTP
   ✽ *Shift-Click* selects a range while *CTR-Click* selects one by one

c) In *"Virtual port"*, select *"voip_602"* (UNIT01)

d) In *"IP address"*, type *"192.168.202.160"*

e) In *"Netmask"*, type *"255.255.255.0"*

f) In *"Gateway"*, type *"192.168.202.1"*

g) Click on *"Create"*

✔ **Step 5 -** Modify the default RTP Port Ranges

1. Click on *"RTP Port Ranges"* tab

2. Click on *"pr_rtp_202_160"* ✍ The port ranges are automatically created when an IP interface with service *"RTP"* is created.

a) In *"RTP Port Max"*, type *"30000"*

b) Click on *"Save"*

☛ Validate your Results

● Click on *"IP Interfaces"* menu to verify that you have the following result:

Virtual Ports

Name	Unit	VLAN ID	Physical Ports	IP interfaces
voip_602	UNIT01/ UNIT02	602	voip0,voip1	rtp_202_160
voip_untagged	UNIT01/ UNIT02	Untagged	voip0,voip1	sip_101_160

IP Interfaces

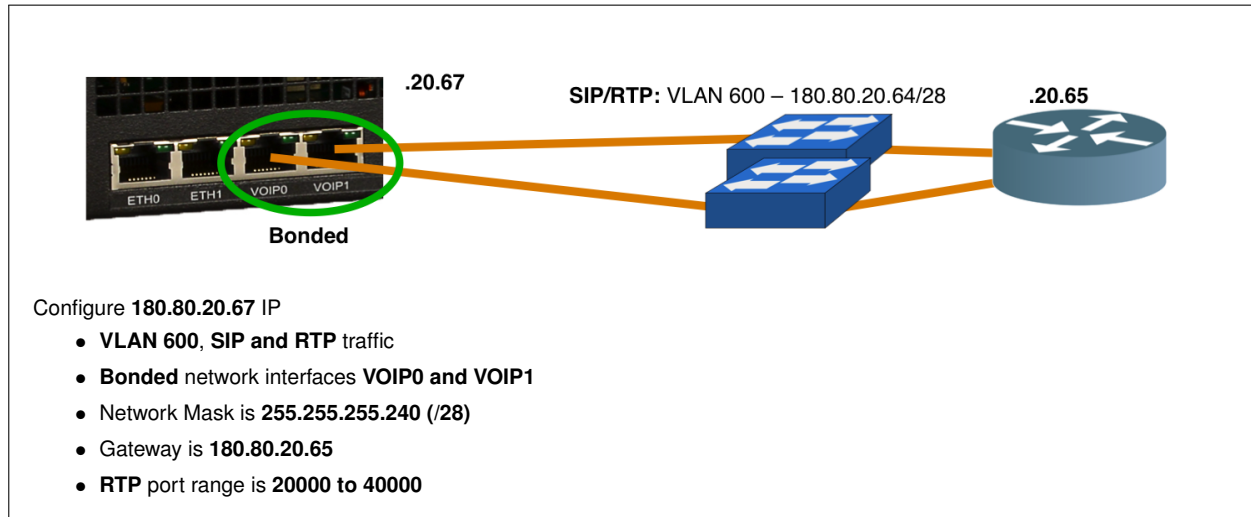| Name	Unit	Virtual Ports	IP Address	Services	Used by
rtp_202_160	UNIT01/ UNIT02	voip_602	192.168.202.160	RTP	UNIT01:rtp_202_160:pr_rtp_202_160
sip_101_160	UNIT01/ UNIT02	voip_untagged	192.168.101.160	SIP	

RTP Port Ranges

Name	Unit	IP Interface	Port Range	Owned by
pr_rtp_202_160	UNIT01	rtp_202_160	20000-30000	

2.1.2 Exercise *(Optional)*

⏱ 15 minutes

In this exercise, you must configure the following IP address.

Configure **180.80.20.67** IP
- **VLAN 600**, **SIP and RTP** traffic
- **Bonded** network interfaces **VOIP0 and VOIP1**
- Network Mask is **255.255.255.240 (/28)**
- Gateway is **180.80.20.65**
- **RTP** port range is **20000 to 40000**

✎ Answer the Questions

1. How many virtual ports will you create? _____*[A5] [1;* **"voip_600"** *]*_____

2. How many IP Interfaces will you create? _____*[A6] [1;* **"public_20_67"** *]*_____

3. How do you create the port bonding? _____*[A7] [automatically created with the virtual port]*_____

➤ Start the Exercise

✍ Do not delete the virtual ports and IP interfaces that were created in the previous activity.

1. Select your configuration and *"UNIT01"* from the left menu

2. Create a Virtual Port named *"voip_600"*

3. Create an IP Interface named *"public_20_67"*

4. Validate your configuration from Appendix subsection A.1.1 on page 5

Exercise Expected Results

A.1   IP

A.1.1   IP Configuration

Click on *"IP Interfaces"* menu to verify:

Virtual Ports

Name	Unit	VLAN ID	Physical Ports	IP interfaces
voip_600	UNIT01/ UNIT02	600	voip0,voip1	public_20_67

IP Interfaces

Name	Unit	Virtual Ports	IP Address	Services	Used by
public_20_67	UNIT01/ UNIT02	voip_600	180.80.20.67	RTP,SIP	UNIT01 :public_20_67:pr_public_20_67

RTP Port Ranges

Name	Unit	IP Interface	Port Range	Owned by
pr_public_20_67	UNIT01	public_20_67	20000-40000	