

EKI-7700 Series / EKI-5000 Series Protocol Switch VLAN Configuration SOP

- Configure VLAN with WebGUI
- Configure VLAN with CLI

Revision Date	Revision	Description	Author
Feb/2018	V1.0	Initial release	ICG AE Eddie.Wei / Raimen Liu

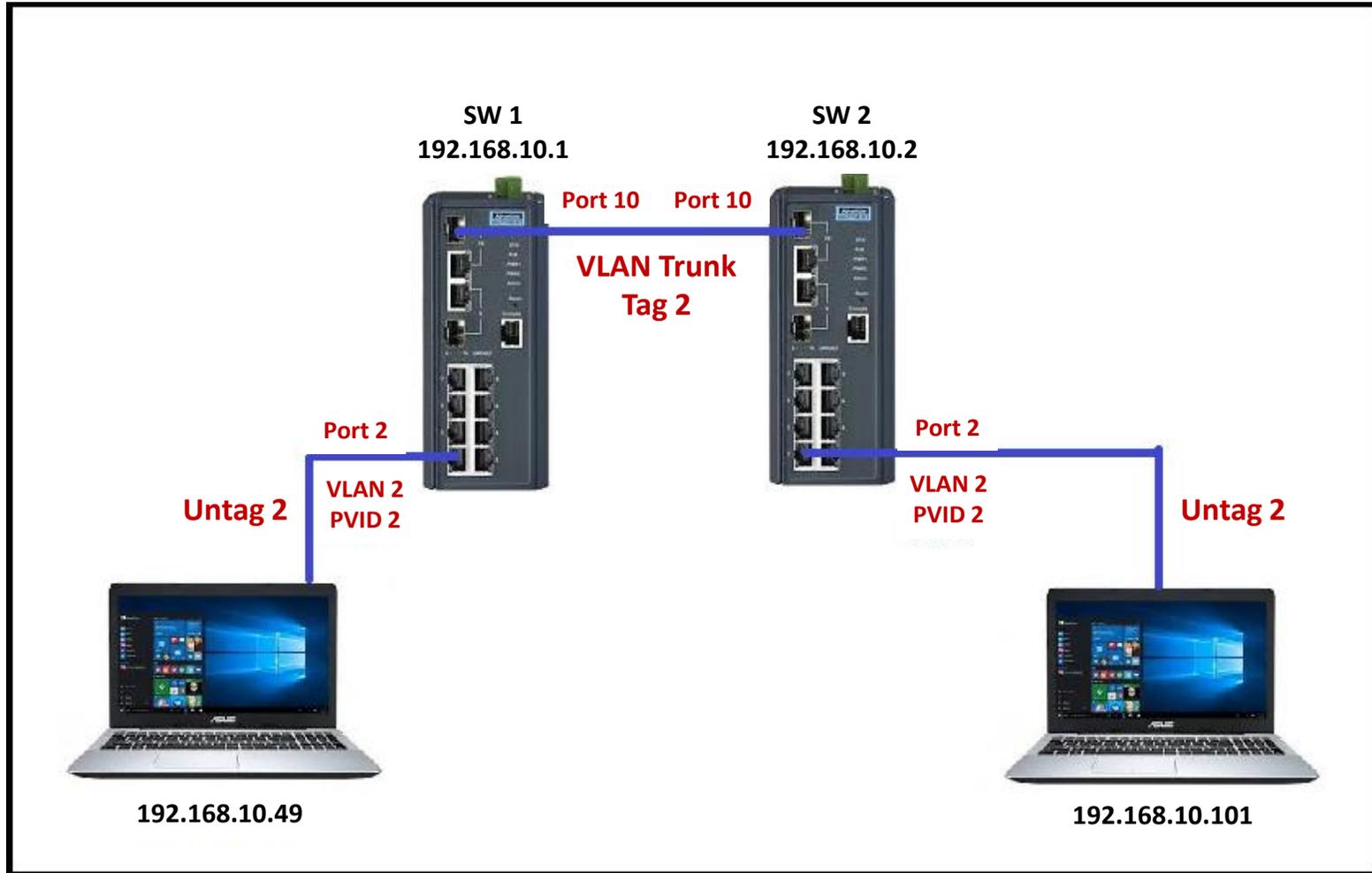
Abstract

- ❖ **This SOP explains how to configure VLAN on Advantech EKI-7700 series industrial ethernet manage switch and EKI-5000 series protocol switch by WebGUI and Command Line Interface(CLI).**
- ❖ **Related products:**
EKI-7428, EKI-7706, EKI-7708, EKI-7710, EKI-7712, EKI-7716, EKI-7720, EKI-5526-PN, EKI-5526-EI, EKI-5526-MB, EKI-5528-PN, EKI-5528-EI, EKI-5528-MB, EKI-5629C-PN, EKI-5629C-EI, EKI-5629C-MB.
- ❖ **Requirement: Advantech manage switch, RJ45 ethernet cable, Console cable, PC**
- ❖ **How to select Advantech manage switch console cable:**
http://support.advantech.com/support/KnowledgeBaseSRDetail_New.aspx?SR_ID=1-1IOM96L&Doc_Source=Knowledge+Base

Configure VLAN with WebGUI

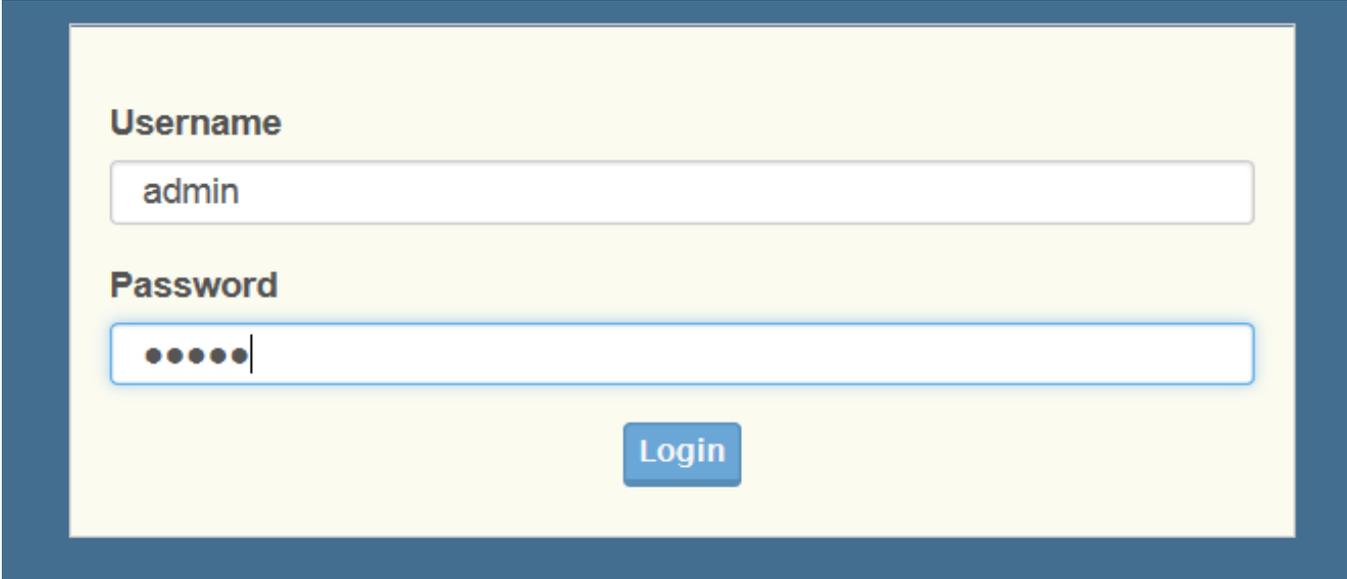
Configure VLAN with WebGUI

- Topology: Create one VLAN with two switch



Configure VLAN with WebGUI

- Setting:
 - Step 1: Logging the switch with admin/admin as Username/Password by default.



The image shows a web-based login interface for a switch. It features a light yellow background with a dark blue border. The form contains two input fields: a 'Username' field with the text 'admin' and a 'Password' field with six dots representing a masked password. Below the fields is a blue 'Login' button.

Username

Password

Login

Configure VLAN with WebGUI

- Setting (Both SW1 and SW2 use the same setting):
 - Step 2: Under VLAN Management, add **VLAN 2** and press “Apply” button. And now VLAN 2 has already created.

The screenshot displays the Advantech WebGUI interface for an EKI-7710G-2CI-AE Intelligent Industrial Switch. The navigation menu on the left shows 'VLAN Management' selected. The main content area is titled 'VLAN Management' and contains a 'VLAN Settings' section with a 'VLAN list' input field containing the value '2'. Below this, the 'VLAN Action' is set to 'Add'. The 'VLAN Name Prefix' field is empty. An 'Apply' button is visible. Below the settings is a 'VLAN Table' with the following data:

VLAN ID	VLAN Name	VLAN Type	Modify
1	default	Default	Edit
2	VLAN0002	Static	Edit Delete

Showing 1 to 2 of 2 VLANs

Configure VLAN with WebGUI

- Setting (Both SW1 and SW2 use the same setting):
 - Step 3: Under *PVID Setting*, select the VLAN 2 member port 2 (GE2) and then input **PVID = 2**.
 - Press “Apply” button. And accordingly, GE2 will have its PVID as 2.

The screenshot displays the Advantech WebGUI interface for configuring PVID settings. The left sidebar shows the navigation menu with 'PVID Settings' highlighted. The main content area is titled 'Edit Interface Settings' and shows the following configuration:

- Port Select:** GE2
- PVID:** 2 (1 - 4094)
- Accepted Type:** All (selected), Tag Only, Untag Only
- Ingress Filtering:** Enabled (selected), Disabled
- Apply** button

Below the configuration form is a table titled 'Port VLAN Status' showing the status of various ports:

Port	Interface VLAN Mode	PVID	Accept Frame Type	Ingress Filtering
GE1	Hybrid	1	ALL	Enabled
GE2	Hybrid	2	ALL	Enabled
GE3	Hybrid	1	ALL	Enabled
GE4	Hybrid	1	ALL	Enabled
GE5	Hybrid	1	ALL	Enabled
GE6	Hybrid	1	ALL	Enabled

Configure VLAN with WebGUI

- Setting (Both SW1 and SW2 use the same setting):
 - Step 4: Under *Port to VLAN*, selects VLAN ID = 2, and then changes GE2 to **Untagged** and GE10 with **Tagged**. So now port 2 belongs to VLAN 2, and normally we'll call port 2 as **access port**, port 10 as **VLAN trunk port** with tagged 2 connects to SW2.

The screenshot shows the Advantech WebGUI interface for an EKI-7710G-2CI-AE Intelligent Industrial Switch. The navigation menu on the left includes 'Monitoring', 'System', 'L2 Switching', 'Port Configuration', 'Port Mirror', 'Link Aggregation', '802.1Q VLAN', 'VLAN Management', 'PVID Settings', 'Port to VLAN', 'Port-VLAN Mapping', 'Q-in-Q', 'GARP', '802.3az EEE', and 'Multicast'. The 'Port to VLAN' option is highlighted in red. The main content area shows the 'Port to VLAN' configuration page. At the top, the 'VLAN ID' dropdown is set to 2. Below it is the 'Port to VLAN Table' with the following data:

Port	Interface VLAN Mode	Membership	PVID
GE1	Hybrid	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged	NO
GE2	Hybrid	<input type="radio"/> Forbidden <input type="radio"/> Excluded <input type="radio"/> Tagged <input checked="" type="radio"/> Untagged	YES
GE3	Hybrid	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged	NO
GE4	Hybrid	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged	NO
GE5	Hybrid	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged	NO
GE6	Hybrid	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged	NO
GE7	Hybrid	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged	NO
GE8	Hybrid	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged	NO
GE9	Hybrid	<input type="radio"/> Forbidden <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged	NO
GE10	Hybrid	<input type="radio"/> Forbidden <input type="radio"/> Excluded <input checked="" type="radio"/> Tagged <input type="radio"/> Untagged	NO

Configure VLAN with WebGUI

- Setting (Both SW1 and SW2 use the same setting):
 - Step 5: Under Port-VLAN Mapping, we can see the overall VLAN setting result. For port 2 (GE2), the port is untagged and has its PVID = 2 (U for untagged, P for PVID). For port 10 (GE10), the port is VLAN trunk port with Tag = 2 (T is tagged and VLAN trunk).

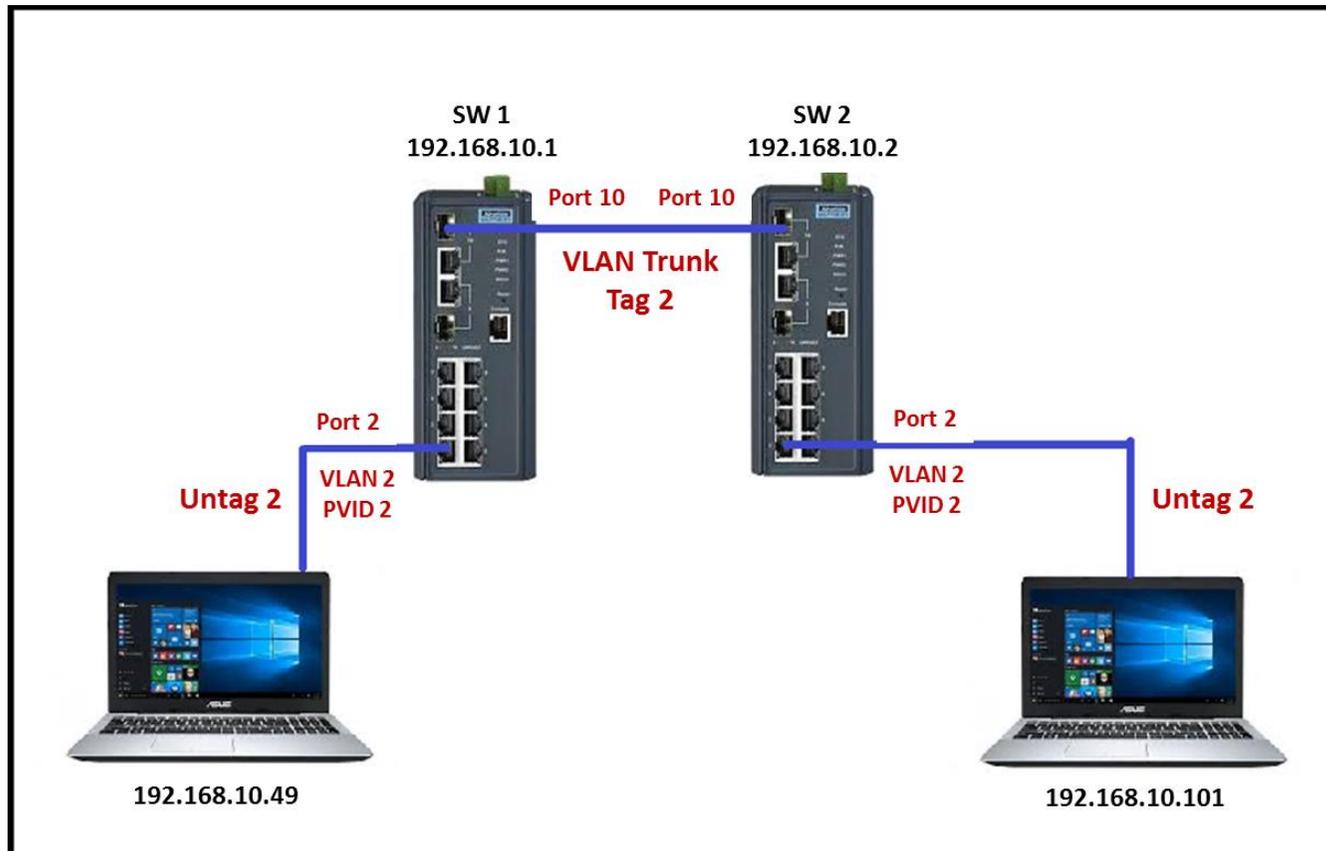
The screenshot shows the Advantech WebGUI interface for an EKI-7710G-2CI-AE Intelligent Industrial Switch. The navigation menu on the left includes Monitoring, System, L2 Switching, Port Configuration, Port Mirror, Link Aggregation, 802.1Q VLAN, VLAN Management, PVID Settings, Port to VLAN, Port-VLAN Mapping (highlighted with a red box), Q-in-Q, and GARP. The main content area displays the 'Port-VLAN Mapping Table' with the following data:

Port	Mode	Administrative VLANs	Operational VLANs
GE1	Hybrid	1UP	1UP
GE2	Hybrid	1U, 2UP	1U, 2UP
GE3	Hybrid	1UP	1UP
GE4	Hybrid	1UP	1UP
GE5	Hybrid	1UP	1UP
GE6	Hybrid	1UP	1UP
GE7	Hybrid	1UP	1UP
GE8	Hybrid	1UP	1UP
GE9	Hybrid	1UP	1UP
GE10	Hybrid	1UP, 2T	1UP, 2T

Configure VLAN with WebGUI

■ Result:

- After the setting on SW1 and SW2, the laptop 192.168.10.49 on SW1 can communicate with laptop 192.168.10.101 on SW2 now. Because SW1 port 2 and SW2 port 2 are all belonging to VLAN 2 member.



Configure VLAN with CLI

NOTE : CLI setting only for EKI-7700 series industrial manage switch. There is no console interface on the EKI-5000 series protocol switch.

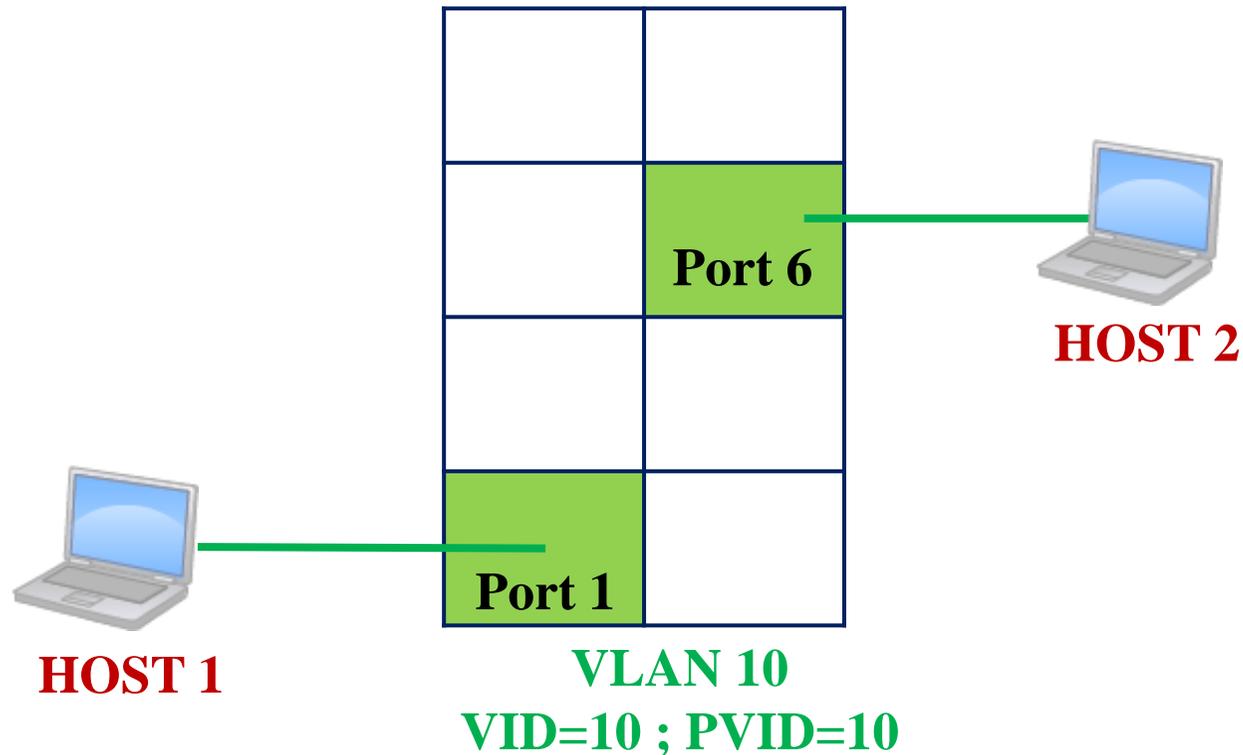
CLI User Manual : (Page 14 – Page 16)

http://support.advantech.com/Support/DownloadSRDetail_New.aspx?SR_ID=1-19HAUMG&Doc_Source=Download

Configure VLAN with CLI Commands

- Topology: Create one VLAN with one switch
- In the following slides, we will show you how to configure the VLAN setting by *CLI commands with corresponding WebGUI as reference step by step.*

Switch 1(EKI-7710G)



Configure VLAN with CLI Commands

■ For Switch 1

- Step 1: Create a new VLAN (VLAN 10)

```
switch# config
switch(config)# vlan 10
switch(config-vlan)# *Jan 01 2000 08:34:09: %VLAN-5: VLAN 10 is added, default name is VLAN0010
```

ADANTECH EKI-7710G-2CPI-AE Intelligent Industrial Switch

Switch / L2 Switching / 802.1Q VLAN / VLAN Management

VLAN Settings

VLAN Action Add Delete

VLAN ID / VLAN List

VLAN Name / VLAN Prefix

Apply

VLAN Table

VLAN ID	VLAN Name	VLAN Type	Modify
1	default	Default	Edit
10	EKI7710G	Static	Edit Delete

Showing 1 to 2 of 2 VLANs Previous 1 Next

Configure VLAN with CLI Commands

■ For Switch 1

- Step 2: Assign PVID for port 1 & port 6 (PVID = 20)

```
switch(config-vlan)# exit  
switch(config)# interface GigabitEthernet 1  
switch(config-if)# switchport hybrid pvid 10
```

```
switch# config  
switch(config)# interface GigabitEthernet 6  
switch(config-if)# switchport hybrid pvid 10
```

ADVANTECH EKI-7710G-2CPI-AE Intelligent Industrial Switch

Switch / L2 Switching / 802.1Q VLAN / PVID Settings

Edit Interface Settings

Port Select: GE6

PVID: 10 (1 - 4094)

Accepted Type: All Tag Only Untag Only

Ingress Filtering: Enabled Disabled

Apply

Port VLAN Status

Port	Interface VLAN Mode	PVID	Accept Frame Type	Ingress Filtering
GE1	Hybrid	10	ALL	Enabled
GE2	Hybrid	1	ALL	Enabled
GE3	Hybrid	1	ALL	Enabled
GE4	Hybrid	1	ALL	Enabled
GE5	Hybrid	1	ALL	Enabled
GE6	Hybrid	10	ALL	Enabled
GE7	Hybrid	1	ALL	Enabled

Configure VLAN with CLI Commands

■ For Switch 1

- Step 3: Assign VLAN egress rule for port 1 & port 6

```
switch(config)# interface GigabitEthernet 1
switch(config-if)# switchport hybrid allowed vlan add 10 untagged
```

```
switch# config
switch(config)# interface GigabitEthernet 6
switch(config-if)# switchport hybrid allowed vlan add 10 untagged
```

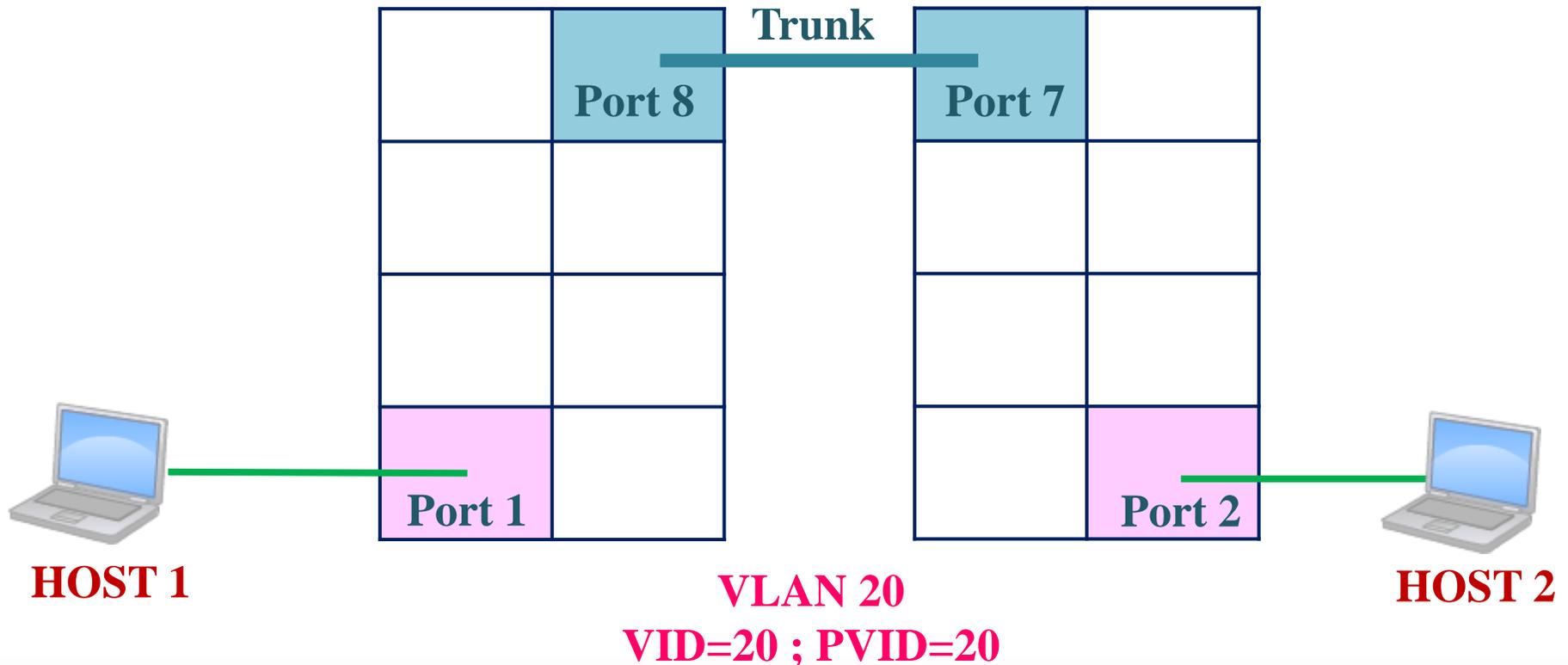
The screenshot shows the Advantech web management interface for an EKI-7710G-2CPI-AE Intelligent Industrial Switch. The navigation menu on the left includes Monitoring, System, L2 Switching, Port Configuration, Port Mirror, Link Aggregation, 802.1Q VLAN, VLAN Management, PVID Settings, Port to VLAN, Port-VLAN Mapping (highlighted), Q-in-Q, and GARP. The main content area displays the Port-VLAN Mapping Table for the selected switch configuration.

Port	Mode	Administrative VLANs	Operational VLANs
GE1	Hybrid	1U, 10UP	1U, 10UP
GE2	Hybrid	1UP	1UP
GE3	Hybrid	1UP	1UP
GE4	Hybrid	1UP	1UP
GE5	Hybrid	1UP	1UP
GE6	Hybrid	1U, 10UP	1U, 10UP
GE7	Hybrid	1UP	1UP
GE8	Hybrid	1UP	1UP
GE9	Hybrid	1UP	1UP
GE10	Hybrid	1UP	1UP

Configure VLAN with CLI Commands

- Topology: Create one VLAN across two switches
- In the following slides, we will show you how to configure the VLAN setting by *CLI commands with corresponding WebGUI as reference step by step.*

Switch 1(EKI-7710E) Switch 2(EKI-7710G)



Configure VLAN with CLI Commands

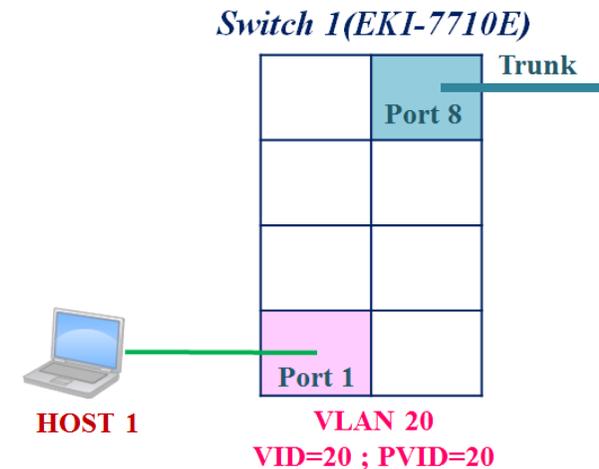
■ For Switch 1

- Step 1: Create a new VLAN (VLAN 20)

```
switch#  
switch# configure  
switch(config)# vlan 20  
switch(config-vlan)# *Jan 01 2000 09:21:05: %VLAN-5: VLAN 20 is added, default name is VLAN0020  
switch(config-vlan)# exit  
switch(config)# █
```

The screenshot shows the web management interface for a switch, specifically the 'VLAN Management' page. The left sidebar has '802.1Q VLAN' highlighted. The main content area shows 'VLAN Settings' with 'Add' selected. Below, the 'VLAN Table' shows two entries: VLAN 1 (default) and VLAN 20 (VLAN0020, Static). The row for VLAN 20 is highlighted with a red box.

VLAN ID	VLAN Name	VLAN Type	Modify
1	default	Default	Edit
20	VLAN0020	Static	Edit Delete



Configure VLAN with CLI Commands

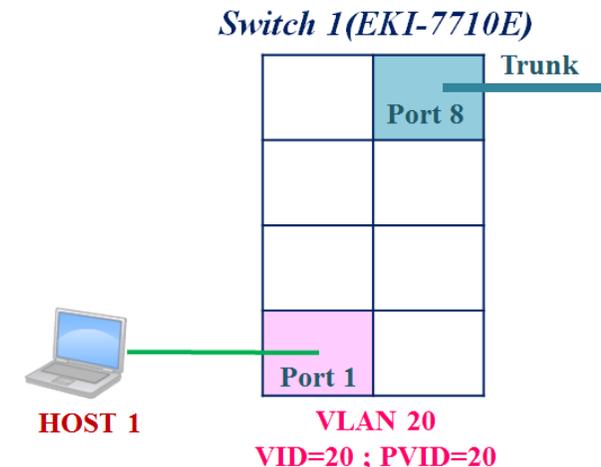
■ For Switch 1

- Step 2: Assign PVID for port 1 & port 8 (PVID = 20)

```
switch(config)#  
switch(config)# interface FastEthernet 1  
switch(config-if)# switchport hybrid pvid 20  
switch(config-if)# exit  
switch(config)#  
switch(config)# interface FastEthernet 8  
switch(config-if)# switchport hybrid pvid 20  
switch(config-if)# exit  
switch(config)#
```

The screenshot shows the 'Edit Interface Settings' window for a switch. The 'Port Select' dropdown is set to 'Select Ports'. The 'PVID' is set to '1' (range 1-4094). The 'Accepted Type' is set to 'All' (radio button selected). The 'Ingress Filtering' is set to 'Enabled' (radio button selected). An 'Apply' button is visible. Below the settings is a 'Port VLAN Status' table with the following data:

Port	Interface VLAN Mode	PVID	Accept Frame Type	Ingress Filtering
FE1	Hybrid	20	ALL	Enabled
FE2	Hybrid	1	ALL	Enabled
FE3	Hybrid	1	ALL	Enabled
FE4	Hybrid	1	ALL	Enabled
FE5	Hybrid	1	ALL	Enabled
FE6	Hybrid	1	ALL	Enabled
FE7	Hybrid	1	ALL	Enabled
FE8	Hybrid	20	ALL	Enabled



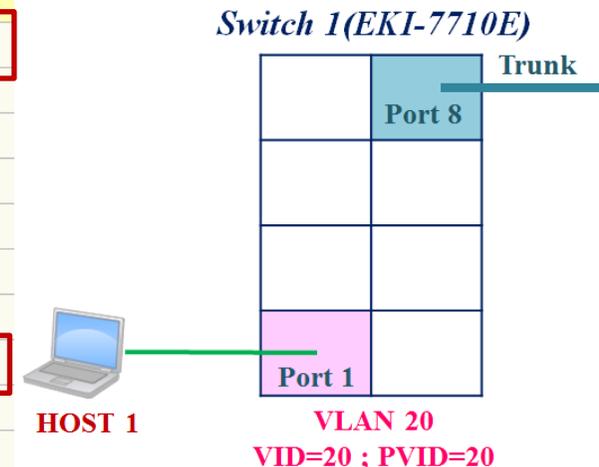
Configure VLAN with CLI Commands

■ For Switch 1

- Step 3: Assign VLAN egress rule for port 1 & port 8

```
switch(config)#  
switch(config)# interface FastEthernet 1  
switch(config-if)# switchport hybrid allowed vlan add 20 untagged  
switch(config-if)# exit  
switch(config)#  
switch(config)# interface FastEthernet 8  
switch(config-if)# switchport hybrid allowed vlan add 20 tagged  
switch(config-if)# exit  
switch(config)#
```

Port	Mode	Administrative VLANs	Operational VLANs
FE1	Hybrid	1U, 20UP	1U, 20UP
FE2	Hybrid	1UP	1UP
FE3	Hybrid	1UP	1UP
FE4	Hybrid	1UP	1UP
FE5	Hybrid	1UP	1UP
FE6	Hybrid	1UP	1UP
FE7	Hybrid	1UP	1UP
FE8	Hybrid	1U, 20TP	1U, 20TP
GE1	Hybrid	1UP	1UP
GE2	Hybrid	1UP	1UP



Configure VLAN with CLI Commands

■ For Switch 2

- Step 1: Create a new VLAN (VLAN 20)

```
switch#  
switch# configure  
switch(config)# vlan 20  
switch(config-vlan)# *Jan 01 2000 09:54:21: %VLAN-5: VLAN 20 is added, default name is VLAN0020  
switch(config-vlan)# exit  
switch(config)#
```

Monitoring
System
L2 Switching
Port Configuration
Port Mirror
Link Aggregation
802.1Q VLAN
VLAN Management
PVID Settings
Port to VLAN
Port-VLAN Mapping
Q-in-Q
GARP

Switch / L2 Switching / 802.1Q VLAN / VLAN Management

VLAN Settings

VLAN Action Add Delete

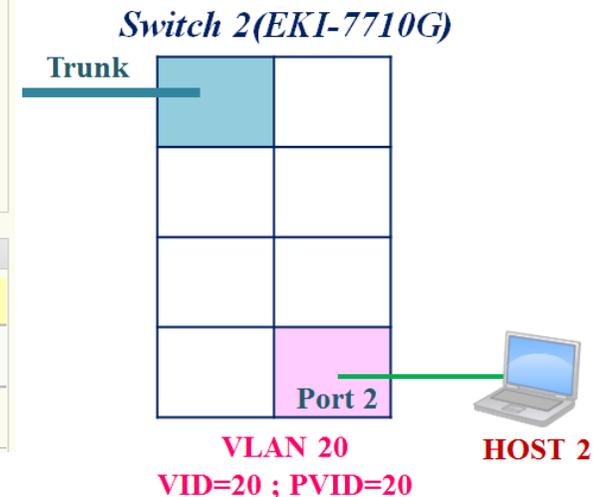
VLAN ID / VLAN List

VLAN Name / VLAN Prefix

Apply

VLAN Table

VLAN ID	VLAN Name	VLAN Type	Modify
1	default	Default	Edit
20	VLAN0020	Static	Edit Delete



Configure VLAN with CLI Commands

■ For Switch 2

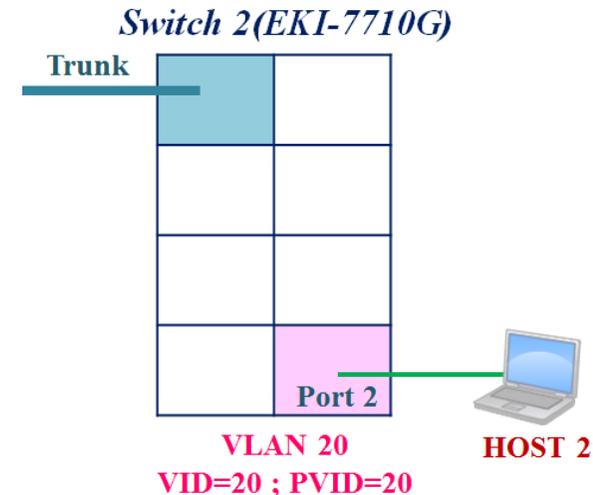
- Step 2: Assign PVID for port 2 & port 7 (PVID = 20)

```
switch(config)#
switch(config)# interface GigabitEthernet 2
switch(config-if)# switchport hybrid pvid 20
switch(config-if)# exit
switch(config)#
switch(config)# interface GigabitEthernet 7
switch(config-if)# switchport hybrid pvid 20
switch(config-if)# exit
switch(config)#
```

The screenshot shows the 'Edit Interface Settings' window for a switch. The 'Port Select' dropdown is set to 'Select Ports'. The 'PVID' field is set to '1' with a range of '(1 - 4094)'. The 'Accepted Type' is set to 'All' (radio button selected), and 'Ingress Filtering' is set to 'Enabled' (radio button selected). An 'Apply' button is visible.

Below the settings is a table titled 'Port VLAN Status' with the following data:

Port	Interface VLAN Mode	PVID	Accept Frame Type	Ingress Filtering
GE1	Hybrid	1	ALL	Enabled
GE2	Hybrid	20	ALL	Enabled
GE3	Hybrid	1	ALL	Enabled
GE4	Hybrid	1	ALL	Enabled
GE5	Hybrid	1	ALL	Enabled
GE6	Hybrid	1	ALL	Enabled
GE7	Hybrid	20	ALL	Enabled
GE8	Hybrid	1	ALL	Enabled



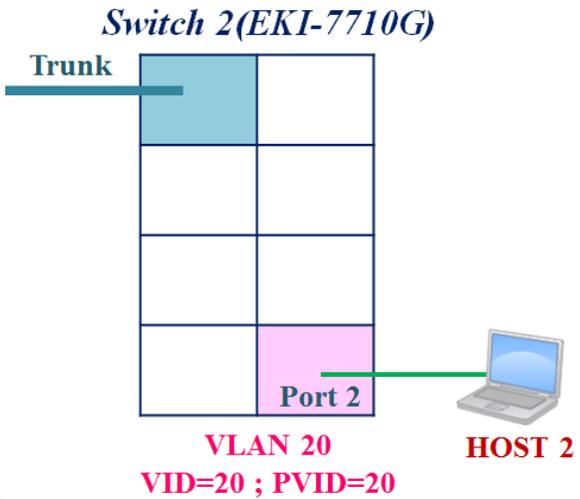
Configure VLAN with CLI Commands

■ For Switch 2

- Step 3: Assign VLAN egress rule for port 2 & port 7

```
switch(config)#  
switch(config)# interface GigabitEthernet 2  
switch(config-if)# switchport hybrid allowed vlan add 20 untagged  
switch(config-if)# exit  
switch(config)#  
switch(config)# interface GigabitEthernet 7  
switch(config-if)# switchport hybrid allowed vlan add 20 tagged  
switch(config-if)# exit  
switch(config)#
```

Port	Mode	Administrative VLANs	Operational VLANs
GE1	Hybrid	1UP	1UP
GE2	Hybrid	1U, 20UP	1U, 20UP
GE3	Hybrid	1UP	1UP
GE4	Hybrid	1UP	1UP
GE5	Hybrid	1UP	1UP
GE6	Hybrid	1UP	1UP
GE7	Hybrid	1U, 20TP	1U, 20TP
GE8	Hybrid	1UP	1UP
GE9	Hybrid	1UP	1UP
GE10	Hybrid	1UP	1UP





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