

# Multi Zone WiFi with Cyberoam UTM, Edge-Core ECS2000 series switch Ubiquiti UniFi

## Preamble

With UniFi multiple SSIDs can connect to VLANs on single interface of a router / firewall. Wi-Fi guest have different rights & throughout allowances depending on the SSID they join. This could for example keep a guest network away from production networks at layer 2 or for multiple services to be presented using a single set of hardware e.g. an SSID with static PSK that's non-trusted, a guest portal that's non trusted and a production SSID with 802.1X auth that is trusted for corporate laptops/devices etc...

The instructions below assume you can access your devices, have set static IP addresses for management & authentication on both the Cyberoam & Switch & have the latest version of UniFi available for installation. Details on this are available for each device separately & aren't covered in this guide.

UniFi System: <http://www.ubnt.com/unifi>

Cyberoam UTM: <http://www.cyberoam.com/utmoverview.html>

Edge-Core ECS2000: <http://www.snappernet.co.nz/search?q=ECS2000>



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## Cyberoam

### Configure default management VLAN (A.K.A. VLAN 1)

Interface	Zone										
<div style="display: flex; justify-content: space-between;"> <span>Add Bridge-Pair</span> <span>Add Alias</span> <span>Add VLAN</span> <span>Delete</span> </div>											
<i>Default VLAN, used for management</i>											
<input type="checkbox"/>	Interface Name	Status	IP Assignment	IP / Netmask	MAC Address	Zone Name	MTU	MSS	Interface Speed	Manage	
<input type="checkbox"/>	PortA	Connected, 1000 Mbps - Full Duplex	Static	192.168.1.1/255.255.255.0	00:0D:48:33:33:80	LAN	1500	1460	Auto-negotiated		
<b>VLAN</b>											
<input type="checkbox"/>	PortA.100	Connected	Static	192.168.100.1/255.255.255.0	00:0D:48:33:33:80	WiFiGUEST					
<input type="checkbox"/>	PortA.101	Connected	Static	192.168.101.1/255.255.255.0	00:0D:48:33:33:80	WiFiGUEST					
<input type="checkbox"/>	PortA.102	Connected	Static	192.168.102.1/255.255.255.0	00:0D:48:33:33:80	WiFiGUEST					
<input type="checkbox"/>	PortB	Connected, 1000 Mbps - Full Duplex	DHCP	10.0.111.103/255.255.255.0	00:0D:48:33:33:81	WAN	1500	1460	Auto-negotiated		
<input type="checkbox"/>	PortC	Disabled	Static	NA	00:0D:48:33:33:82	Unbound	1500	1460	Auto-negotiated		
<input type="checkbox"/>	PortD	Disabled	Static	NA	00:0D:48:33:33:83	Unbound	1500	1460	Auto-negotiated		
<div style="display: flex; justify-content: space-between;"> <span>Add Bridge-Pair</span> <span>Add Alias</span> <span>Add VLAN</span> <span>Delete</span> </div>											

VLAN Sub interfaces  
Each is bound to an SSID in UniFi

This is the subnet where the controller sits & can be either a LAN, DMZ or another custom zone. This could be a dedicated management subnet with the controller isolated within it or possibly a primary production LAN if the UniFi controller has to go on an existing server. Only ports TCP/8080 & 8443 are allowed from the WiFi zones to the UniFi host.

### Configure custom zone in Cyberoam

Interface	Zone										
<b>Edit Zone</b>											
Name *		WiFiGUEST									
Type		DMZ									
Member Ports		PortA.100,PortA.101,PortA.102									
Description											
Appliance Access		Admin Services <input type="checkbox"/> HTTP <input type="checkbox"/> HTTPS <input type="checkbox"/> TELNET <input type="checkbox"/> SSH Authentication Services <input type="checkbox"/> Windows/Linux Client <input type="checkbox"/> Captive Portal <input type="checkbox"/> NTLM Network Services <input checked="" type="checkbox"/> DNS <input checked="" type="checkbox"/> Ping Other Services <input type="checkbox"/> Web Proxy <input type="checkbox"/> SSLVPN									
		<input type="button" value="OK"/> <input type="button" value="Cancel"/>									

A custom zone is created so that it's easy to set default behaviour for WAN & LAN access. Only DNS (proxy) & Ping need to be enabled.

Add VLAN sub interfaces as per the KB article  
<http://kb.cyberoam.com/default.asp?id=1984&SID=&Lang=1>

Configure DHCP for each VLAN  
<http://kb.cyberoam.com/default.asp?id=1717&SID=&Lang=1>

Add service definitions for the web portal pages TCP/8080 & TCP/8443

**Add Service**

Name \* UniFiHTTP

Type \*  TCP / UDP  IP  ICMP

Protocol	Source Port	Destination Port	
TCP	*	8080	+
TCP	*	8443	-

OK Cancel

Add firewall rule to allow client access to the UniFi controller UI

### Rule

---

#### General Settings

**Rule Name**

Name \*

Description

---

**Basic Settings**

<b>Source</b>	<b>Destination</b>
Zone * <input type="text" value="WiFiGUEST"/>	<input type="text" value="LAN"/>
Attach Identity <input type="checkbox"/>	
Network / Host * <input type="text" value="Any IP Address"/>	<input type="text" value="UniFi"/>
Services * <input type="text" value="UniFiHTTP"/>	
Schedule <input type="text" value="All The Time"/>	
Action * <input checked="" type="radio"/> Accept <input type="radio"/> Drop <input type="radio"/> Reject	
<input type="checkbox"/> Apply NAT <input type="text" value="Select NAT Policy"/>	

---

**Advanced Settings (Security Policies, QoS, Routing Policy, Log Traffic)**

### Add firewall rule to allow Internet access from the WiFi zones

**Rule**

---

**General Settings**

**Rule Name**

Name \*

Description

**Basic Settings**

Zone \*

Attach Identity

Network / Host \*

Services \*

Schedule  ⓘ

Action \*  Accept  Drop  Reject

Apply NAT  ⓘ

**Advanced Settings (Security Policies, QoS, Routing Policy, Log Traffic)**

OK Cancel

## ECS2000

### Create VLANs & assign ports

**VLAN Membership Configuration**

Start from VLAN  with  entries per page.

Delete	VLAN ID	VLAN Name	Port Members																									
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
<input type="checkbox"/>	1	default	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	100	VLAN100	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	101	VLAN101	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	102	VLAN102	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Add New VLAN

Save Reset

*Port to Cyberoam* (pointing to ports 1-10)

*Port(s) to APs* (pointing to ports 11-26)

### Set port VLAN properties

Change 'Port Type' to C-Port & enable ingress filtering on all ports.

Ethertype for Custom S-ports 0x88A8

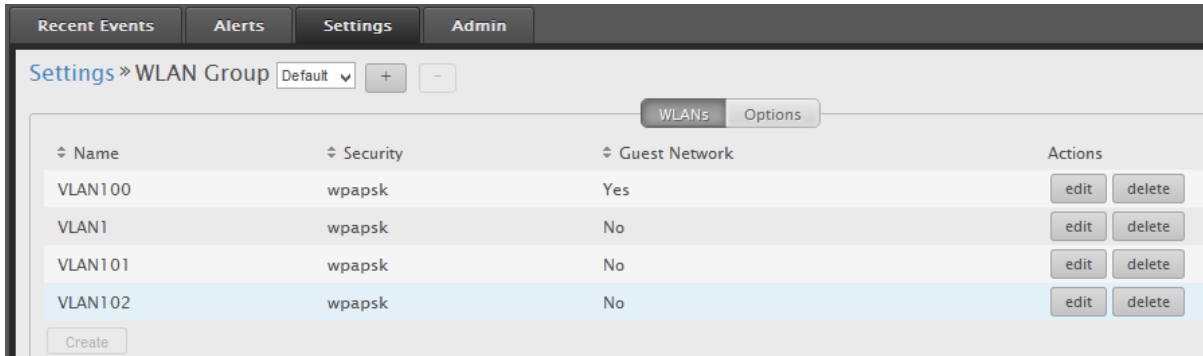
#### VLAN Port Configuration

Port	Port Type	Ingress Filtering	Frame Type	Port VLAN		Tx Tag
				Mode	ID	
*	<>	<input checked="" type="checkbox"/>	<>	<>	1	<>
1	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
2	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
3	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
4	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
5	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
6	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
7	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
8	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
9	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
10	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
11	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
12	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
13	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
14	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
15	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
16	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
17	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
18	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
19	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
20	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
21	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
22	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
23	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
24	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
25	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid
26	C-port	<input checked="" type="checkbox"/>	All	Specific	1	Untag_pvid

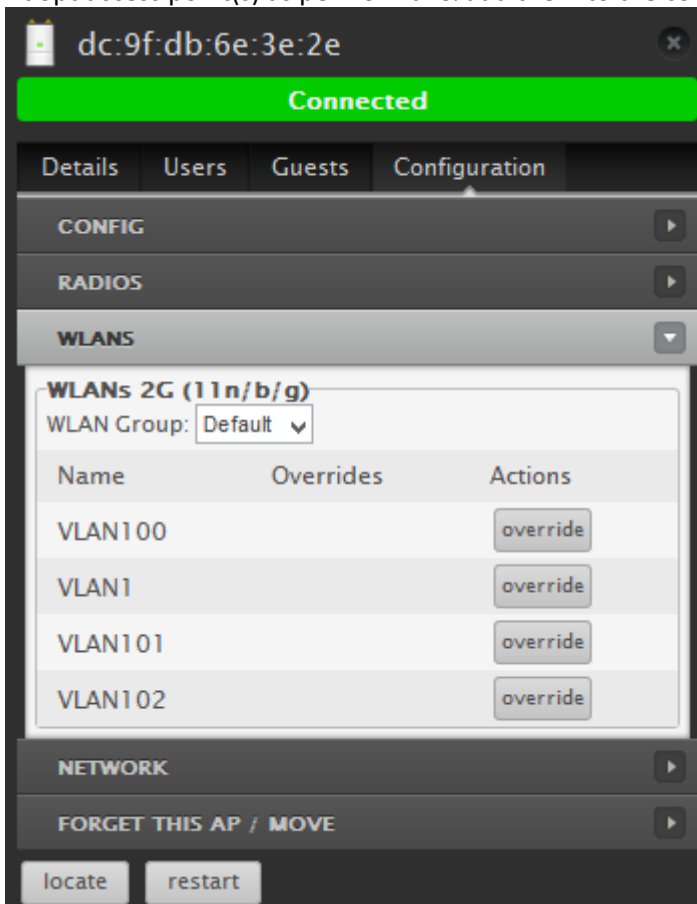
Save Reset

## UniFi

Add various Wi-Fi zones/networks



Adopt access point(s) as per normal & add them to the configured zones







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## Test the setup

DHCP is the litmus test, on a test Wi-Fi client device connect to each SSID, you should be delivered a different IP address from each VLAN / SSID & you should not be able to communicate between LANs or see any broadcasts from other VLANs.

To enable any inter-VLAN routing simply create allow rules on the Cyberoam between subnets / hosts.