

MultiSSID and VLAN

Wi-Fi

CONTROL



RUGGED

POWER

VALUEPOINT NETWORKS

The Speaker

- 20 years in networking
- First half doing integration
- Second half building products
- 5 years building Wi-Fi

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The Audience

- Systems Integrators and WISPs
- Current and future ValuePoint customers
- You have done MultiSSID or have a requirement
- Good networking and Wi-Fi background (ie VLAN ready)

 **VALUEPOINT NETWORKS**

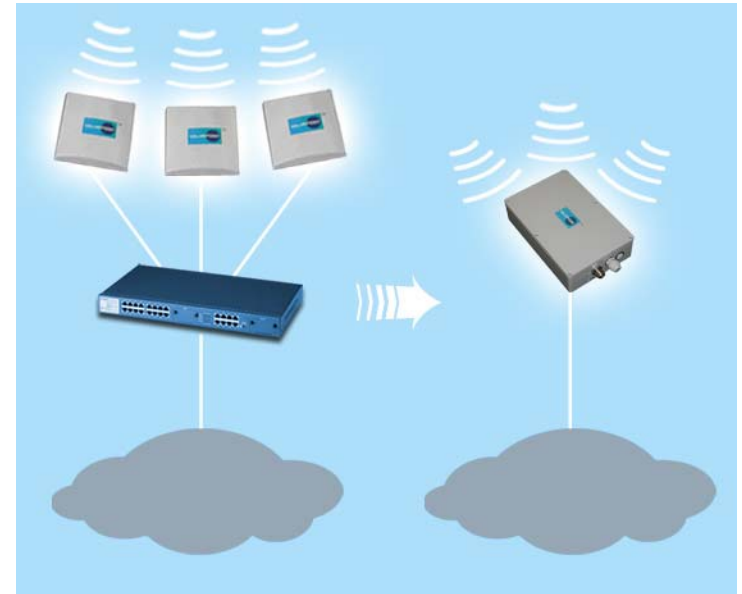
Goals for Presentation

- Learn more about
 - Technology and fundamentals
 - Pros and Cons
 - What is possible
 - Available products from ValuePoint

**VALUEPOINT NETWORKS**

Why use a M-SSID AP

- Virtual APs in one unit
- Lowers equipment and installation cost versus multiple APs
- Integrates and extends the VLAN to wireless clients
- “Port-based VLAN for wireless”



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Why have M-SSID in your Network

- Public private separation
- Metro area
- Hotels
- Different brandings
- Guest access to Enterprise
- Different levels of security

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Why VLAN

- Well known and well supported standard
- Proven in enterprise networks
- Integrates well with switches and routers
- Multiple vendor options lowers costs
- Highly secure and manageable



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Different flavors of M-SSID

- One broadcasted and Multiple private
- ESSID vs. BSSID
- Multiple broadcasted
- How many SSIDss are supported
- Advertised vs. practical
- Always proprietary, vendor implementation will vary

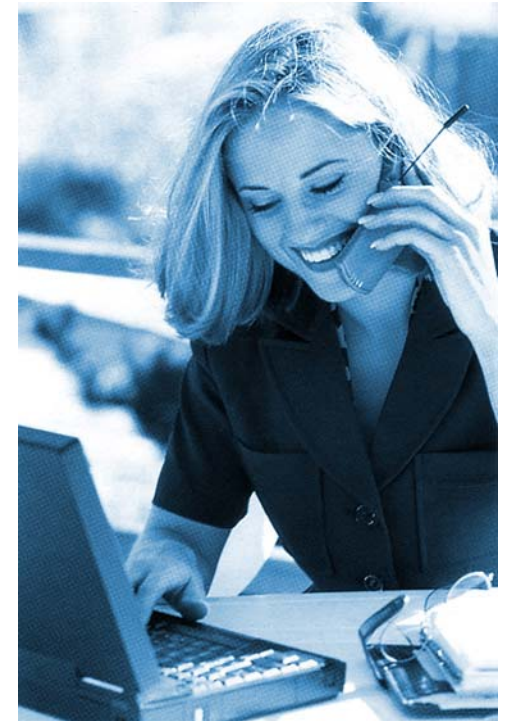
M-SSID		
	Multi Broadcast	Single Broadcast
Different Branding	Yes	No
Different Security	Yes	Yes
Mixed VOIP + Data	Yes	No
Guest vs. Staff	Yes	No

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Wi-Fi Client Issues

- How many SSIDs do you need?
More SSIDs means more problems
- Reassociation
- Changing security (WEP, WPA, WPA2)
- In practice, clients will generally associate with the same SSID each time



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Proof of Concept/Lab Testing

- Create an accurate test that reflects your requirements
- Use MULTIPLE client stations to simulate actual connectivity scenario
- Don't get bogged down by Windows and Wireless adapter issues
- Test the real world deployment



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M-SSID without VLAN

- Different wireless security settings
- Different privacy settings
- Different network ranges



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VLAN Issues

- Integrating with VLAN infrastructure
- SSIDs map to VLAN IDs
 - Individually or in groups
- VLAN IDs stay with all traffic through your network
- It looks just like a VLAN switch!
 - Trunking, port mapping

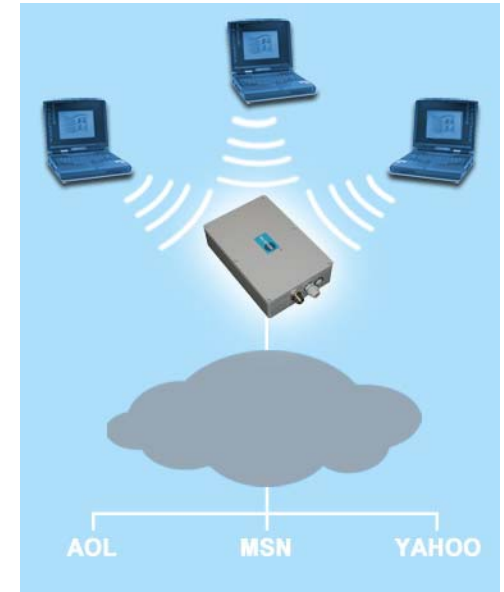


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What can you do with VLAN

- Anything you normally do with VLAN
- Can identify the source and destination
- Differentiated services
- Different portals (login page per VLAN)
- Neutral host



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Extend Enterprise security to wireless users



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Hotspot – Multiple brandings



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Neutral Host

- M-SSID + VLAN facilitates neutral host
- Neutral host is sexy
 - Good for revenue sharing
 - offloads ISP responsibility
- Billing providers can be neutral
- DIY neutral host by choosing some ISPs

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Hotel – private vs. public vs. VOIP

- Use separate networks for staff and guests
- Guest network is open
- Staff network is secure
- VOIP highest priority
- MAC based
- May or may not need VLAN



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Enterprise Access

- Extend VLAN to wireless users
 - Protected resources for user groups
 - Independent security settings
- Open network for guest access
- Mixture of public and hidden SSIDs

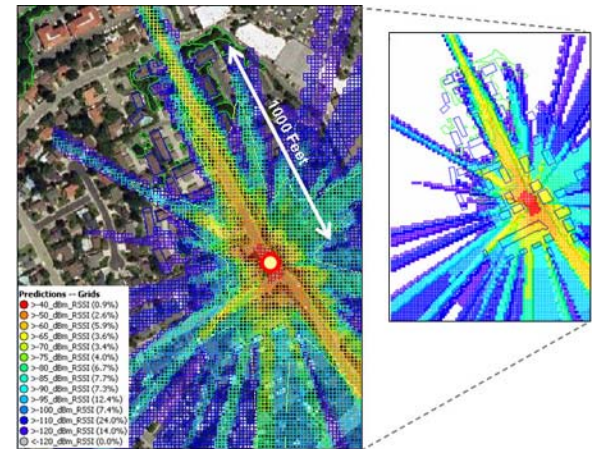


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Metro Area

- Does your metro RFP require separate networks for public and safety access
- Does the city really need 32 SSIDs?
- Neutral host may be required or desired
- Ad based models: location based advertising

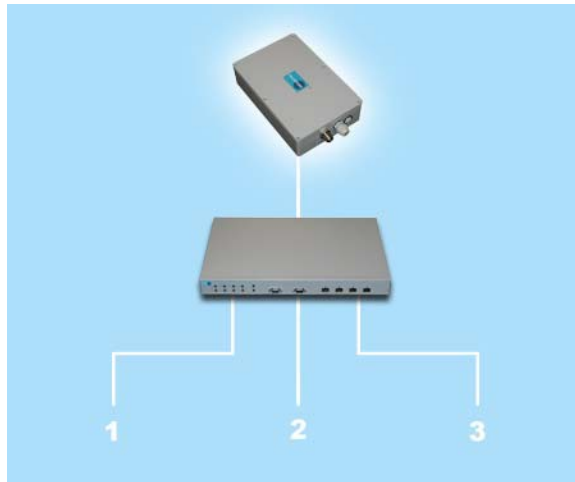


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How the controller fits into the Network

- VLAN controller
- Controller behind VLAN switch



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MultiAP 700g

- 16 broadcasted or private SSIDs
- Per SSID security/VLAN
- Outdoor rated POE
- High power b/g
- Per SSID bandwidth control



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MultiAP 700g IA-12

- Integrated 12 dBi antenna
- 36 dBi total output
- Ideal for hallways
- Compact and discrete
- Outdoor rated POE



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NC-3500 Controller

- Connect stack to VLAN switch
- Different portals (login page per VLAN)
- Authentication per VLAN



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EC-5000 Controller

- VLAN built in (no switch needed)
- Different services based on VLAN



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Multi-SSID Management

Access Point Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print View Source Help

Address <https://192.168.1.153/>

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Summary
- Connected Clients

Access Point

WLANs Settings

SNMP Settings
- SNMP Traps

Web Admin Settings

Message Log

Flash Management

Commands

WLANs Settings

WLAN SSID	Default VLAN ID	Admin Status	Security Policies	
Private	2	Enable	Static WEP	Edit Delete
Public	1	Enable	None	Edit Delete
SuperPrivate	3	Enable	WPA-AES:CCMP (PSK)	Edit Delete

[Add](#)

MultiAP 700g (2.2.0b7)

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SSID 1



The screenshot shows the ValuePoint management interface for WLAN configuration. The top header features the ValuePoint logo and a background image of a woman in a business suit talking on a mobile phone while holding a laptop. The interface is divided into a left sidebar and a main content area.

ValuePoint

Summary
- Connected Clients

Access Point

WLANs Settings

SNMP Settings
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Web Admin Settings

Message Log

Flash Management

Commands


WLAN Details

Save Save to flash and activate

Enable	<input checked="" type="radio"/> Yes <input type="radio"/> No
WLAN SSID	Public
Default VLAN ID	1
Broadcast SSID	<input checked="" type="checkbox"/> Enabled
Default Quality of Service	Bronze
DHCP Server Type	None
Security Policy	None

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SSID 2



Summary
- Connected Clients

Access Point

WLANs Settings

SNMP Settings
- SNMP Traps

Web Admin Settings

Message Log

Flash Management

Commands

WLAN Details

[Save](#) [Save to flash and activate](#)

Enable	<input checked="" type="radio"/> Yes <input type="radio"/> No
WLAN SSID	Private
Default VLAN ID	2
Broadcast SSID	<input checked="" type="checkbox"/> Enabled
Default Quality of Service	Silver
DHCP Server Type	None
Security Policy	Static WEP

Static WEP Parameters

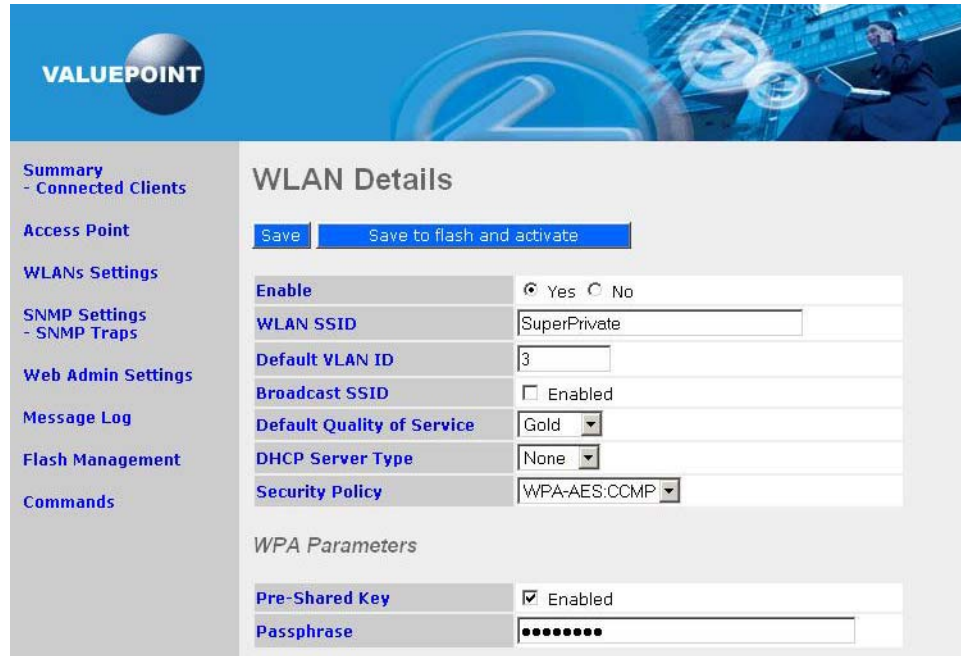
Key Size	104 bits
Key Format	ASCII
Encryption Key	1234567890abc



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SSID 3



The screenshot shows the ValuePoint web management interface for configuring WLAN details. The interface includes a sidebar with navigation options and a main configuration area with various settings and buttons.

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Summary
- Connected Clients

Access Point

WLANs Settings

SNMP Settings
- SNMP Traps

Web Admin Settings

Message Log

Flash Management

Commands

WLAN Details

Save **Save to flash and activate**

Enable	<input checked="" type="radio"/> Yes <input type="radio"/> No
WLAN SSID	SuperPrivate
Default VLAN ID	3
Broadcast SSID	<input type="checkbox"/> Enabled
Default Quality of Service	Gold
DHCP Server Type	None
Security Policy	WPA-AES:CCMP

WPA Parameters

Pre-Shared Key	<input checked="" type="checkbox"/> Enabled
Passphrase	••••••••

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Challenges

- Client issues switching between SSIDs
- Building VLAN network takes planning
- Practical limit on number of broadcasted SSIDs - do only what you need
- One radio
 - Single channel
 - Limited bandwidth
- Finding a reliable AP



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Questions

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