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PAKEDGE DEVICE & SOFTWARE, INC. ROUTER TRAINING BASICS



NETWORK RESPONSIBLY

AGENDA

- Training Goals
- Router Positing within A/V Network
- Basic Functions of a Router
- Pakedge Routers
- Common Sales Objections
- Jumpstart: 5 Things to Do Now
- Resources
- Technical Training/Troubleshooting



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TRAINING GOALS

The goals of this presentation are:

- Increase basic knowledge of Pakedge routers
- Increase technician productivity in the field through awareness of common router setup and configuration tasks

This training is intended for

- Sales and marketing personnel
- Technical personnel



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BASIC FUNCTIONS & KEY ATTRIBUTES

What it Does

- Connects network with Internet
- Packet routing
- Access control
- IP address management
- Provide firewall protection

Key Parameters

- Routing Performance
 - # of concurrent sessions
 - Throughput firewall, IPSec, VPN
 - # of concurrent and VPN users
- Secure compartmentalized access
 - VPN
 - Port forwarding
 - DMZ
 - Guest networks
- IP Address Management
 - ISP address management
 - Device IP address management (DHCP/Static, Reservations)
- Threat management intrusion protection, anti-virus, web filtering, firewall policies

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PAKEDGE ROUTER COMPARISON CHART

Router Products	Switch Capacity Gbps	Port Speeds 10/100/1000 Mbps	Console Port	# of LAN Ports (Router / Switch)	# of PoE Ports	# of High Power PoE Ports	# of SFP Ports	Port Orientation	Cooling
K60D	N/A	Yes	Yes	7	N/A	N/A	N/A	Rear	Fanless
K60D-S8Mpd	16	Yes	Yes	7 / 8	N/A	N/A	1	Rear	Fanless
K60D-S8Hav	24	Yes	Yes	7 / 8	8	4	4	Rear	Fan
K60D-S24av	64	Yes	Yes	7 / 24	N/A	N/A	2	Rear	Fanless
K60D-S24F	64	Yes	Yes	7 / 24	N/A	N/A	2	Front	Fanless
K60D-S24Hav	64	Yes	Yes	7 / 24	24	12	4	Rear	Fan
K60D-S24Hf	64	Yes	Yes	7 / 24	24	12	4	Front	Fan
K60D-S24P8av	64	Yes	Yes	7 / 24	8	N/A	4	Rear	Fan (
K60D-S24P16av	64	Yes	Yes	7 / 24	16	N/A	4	Rear	Fan
K60D-S24Pav	64	Yes	Yes	7 / 24	24	N/A	4	Rear	Fan

*All kits are also available in UTM configurations.

*Part numbers will change to *"R60DU-"* followed by the switch model of your choice.

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WHY PAKEDGE ROUTERS?

- Enterprise Performance "out of the box":
 - Up to 400,000 concurrent sessions, with capability to add 3,000 new sessions/second
 - Enterprise level reliability
- Enterprise level features and services:
 - IP Address Management DHCP, Static, or PPPoE
 - Port Forwarding: Access a device or server directly over the internet
 - Secure and Remote Access to Internal Network with SSL VPN
 - Dual WAN redundancy: Enable backup connectivity to Internet
 - Dynamic DNS: Access the router via non-IP address
 - DMZ and guest networks for compartmentalized access to network
- Pre-configured setup files for faster and trouble free installations
- Unified Threat Management: Intrusion protection, Parental Website Control and System Antivirus protection
- Remote management and monitoring through cloud Bakpak compatible
- Rack mountable metal housing with AV aesthetics

SALES OPPORTUNITIES

- High-End A/V networks with latency-sensitive equipment
- Networks which can't tolerate the intermittent downtime that comes alongside consumer-grade routers.
- Networks which require the ability to talk across VLANs for example, networks with a VLAN dedicated to streaming equipment (Apple TVs, Sonos, etc.)

COMMON CUSTOMER OBJECTIONS

• "The routers are too expensive."

- The network is the backbone of the entire home and business system.
 - Your control systems, lighting, audio and video, VoIP phones, and IP cameras are all connected to your network.
 - With Pakedge Equipment, you'll have a strong network in place to handle all the incoming and outgoing traffic

• Time is money.

- What is the typical cost of a service call?
- How often do you call because something's not working on the network?
 - With a reliable network, you will save time and money on troubleshooting your network issues

COMMON RESELLER OBJECTIONS

- "My customer doesn't need an enterprise class router."
 - Enterprise Class routers prevent network outages that otherwise cost the dealer time and money to support.
 - Enterprise Class routers are the only equipment on the market fully capable of handling highend, latency-sensitive A/V equipment.
- What's the difference between Pakedge routers and Apple Airport Extreme?
 - Apple equipment is still consumer grade, and not built for the speed and reliability required by enterprise-grade networks.
 - Pakedge routers have available UTM services for complete end-to-end network protection right at the gateway.

COMMON RESELLER OBJECTIONS

• How will this boost performance?

 Higher session counts and better processing provides better overall network performance than consumer-grade equipment.



JUMPSTART – 5 THINGS YOU CAN DO

- **1. Bookmark** and familiarize yourself with the Pakedge Router Resources page – <u>www.pakedge.com/router</u> (shortcut URL)
- 2. List the router information and product brochure on your business website. Send/email the brochure to past and future customers.
- **3.** Contact your Pakedge rep to develop a profile of the ideal router opportunity and a custom sales plan.
- **4. Upsell previous customers** by reviewing and identifying customers who have purchased switches and wireless products but not a router
- 5. Quote Pakedge routers with every potential "systems" opportunity

RESOURCES – ONE STOP REFERENCE

pakedgedevice&software inc . WHERE TO BUY FOR DEALERS TECHNOLOGY **NETWORK** Products **Gateway Appliance** CLOUD TECHNOLOGY WIRELESS Single LAN | VLAN (8 Port) | VLAN (24 Port) INFRASTRUCTURE GATEWAY APPLIANCE All Pakedge Gateway Appliances provide dealers with monitoring and control of client devices on iOS, Andr Single LAN browsers via BakPak Cloud. Pakedge products also come with free technical assistance from an award-winr . VLAN (8 Port) based support team. VLAN (24 Port INTELLIGENT POWER ACCESSORIES K6/K6U Router KITs The K6 is the backbone of a seamless A/V network, thanks to its BakPak cloud management system. Dealers can monitor and change the network status of their clients, as well as receive alerts of by email SMS, or push notifications from anywhere. The K6 comes preconfigured for easy installation, thereby eliminating all unnecessary hassles. Its five gigabit ports provide speeds of 1 Gbps on up to five devices. While ordinary routers experience frequent disconnections from their service providers, the K6 features dual WAN ports that can immediately fail over to a second ISP connection and keep the network online Another feature that sets the K6 apart from its competitors is that endusers have the opportunity to create a separate network for their ---guests. The separate guest network, or DMZ port, lets others connect to the internet without infiltrating the privacy of the main network. Secure access to the network from outside the office or home is also guaranteed through this router's multiple VPN tunnels The K6's clean finish and wires in the back allow it to easily fit in 1 U of a standard wiring rack. The K6U (or K6 w/ Unified Threat Management) comes with all the features of a K6, along with parental controls and complete automatic Shortcut URL: www.pakedge.com/router

- Customer brochure
- User manual
- Case studies
- Pakedge contacts
- Webinar recording
- **Router resources**
- Sales and Marketing Resources

* Updated page will be up Wednesday

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THANK YOU!

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PAKEDGE ESSENTIALS

BY: LUIS SERRANO



NETWORK RESPONSIBLY

WHAT'S IN STORE

- Learn how to port forward on R6S/R6V
- Learn how to SSL & PPTP VPN
- Learn how to change IP address for a network
- Change IP address to the router
- Setting up WAN address
- Setting up DDNS

- W6/W7 recommended settings
- Changing IP address in PoE switch
- Change/Add gateway in PoE switch
- Setting up VLANs on switches
- Setting up QoS
- C36 configuration
- NP36 Configuration
- PDU set up

PORT FORWARDING

- We port forward to allow access for remote devices to connect to a specific device or server in the private local-area network (LAN)
- To do this you will need to know the IP address of what you are trying to get to and the port number also if it is TCP or UDP.
- There are 2 parts to create the port forward. The first part is to create the rule to tell the router where to send the traffic, second is allowing the traffic through the firewall.
- *If the client device is set with a static IP make sure that it has the correct default gateway.*

PORT FORWARDING CONTINUED

- First go to Firewall Objects > Virtual IP > Virtual IP
- Click Create New at top left
- Enter in a unique name
- Enter in the clients address under Mapped IP Address/Range
- Check the box for Port Forwarding and make sure you have the correct Protocol (TCP or UDP)
- The External Service Port and Map to Port will have the same port numbers

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Help Logout FortiGate 60C F System Name Rule name Router Policy External Interface wan1 🔻 **Firewall Objects** Static NAT Type Source Address Filter (e.g.: x.x.x.x, x.x.x.y.y.y.y, x.x.x.x/y) 🖻 🛄 Address External IP Address/Range 0.0.0.0 Address Group Mapped IP Address/Range 192.168.1.1 🗉 📢 Service 🗄 🐻 Schedule Port Forwarding 🗉 🗐 Traffic Shape Protocol ● TCP ○ UDP ○ SCTP 🖮 🏫 Virtual IP External Service Port 80 - Virtual IP Map to Port 80 • VIP Group IP Pool ОК Cancel 🗄 🗐 Monitor UTM Profiles VPN User WiFi Controller Log&Report S

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PORT FORWARDING CONTINUED

- Next, go to Policy > Policy > Policy
- Click on Create New

- Source Interface/Zone wan1
- Source Address All
- Destination Interface/Zone internal (where device lives)
- Destination Address port forward rule/rule's

NETWORK RESPON

- Schedule always
- Service ANY
- Action ACCEPT

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FortiGate 60C	Jan La			(?) Help	Logout	FCRTINET
System			New Policy			
System Router Policy Policy Sniffer Policy Protocol Options Monitor	Source Interface/Zone Source Address Destination Interface/Zone Destination Address Schedule Service Action Log Allowed Traffic Enable NAT Enable Identity Based Policy Resolve User Names Using FSSO Agent UTM Traffic Shaping Enable Endpoint Security	wan1 internal Port forward rule always ■ ANY ✓ ACCEPT [Please Select]	New Policy • •			
	Comments	Write a comment	0/63			
Firewall Objects			OK Cancel			
UTM Profiles						
VPN						J
User						
WiFi Controller						
Log&Report						
Logukeport						



VIRTUAL PRIVATE NETWORK (VPN)

- Extends a private network across a public network. •
- It will enables a computer to send and receive data across a public networks as if it were directly connected to the private network.
- The 3 types that are supported is PPTP, SSL, and site-to-site IPSec

PPTP/SSL SET UP

- To set up PPTP go to Users > Users
- Create New or Edit an existing user
- Check add users to group check box
- The rest of the set up is on the client device, i.e. PC, Mac, Phone, Tablet

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PPTP/SSL SET UP CONTINUED

FortiGate 60C			Help Logout	F
System		Edit User		
Router	User Name pakedge	1		
Policy	Disable			
Firewall Objects	Password			
UTM Profiles	◎ Match user on LDAP server [Please Select] ▼			
VPN	◎ Match user on RADIUS server [Please Select] ▼			
User	■ Match user on TACACS+ server [Please Select] ▼			
User User • Authentication • I User Group • I Remote • Remote • FortiToken • I Single Sign-On • Monitor	■ Enable Two-factor Authentication Add this user to groups ■ IPsec Users ■ PPTP Users ■ SSL Users	ΟΚ Cancel		
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HOW TO CHANGE THE IP ADDRESS FOR A NETWORK

• We would want to change the IP range is for a few reasons:

- 1. Was an existing network and to many static address to change
- **2.** Just don't like the 192.168.1.x network range
- 3. It is just the way you like your network to be set up

HOW TO CHANGE THE IP ADDRESS FOR A NETWORK CONTINUED

- There are 3 different locations to go to if you want to change the network subnet.
 - 1. Change the DHCP range under System > Network > DHCP Server then edit desired network
 - Change the "IP" to the network range you want the router to had out, i.e. 192.168.10.110 192.168.10.199
 - Next change the Default Gateway and DNS Server 0 to the address that you want the router to be, i.e. 192.168.10.1
 - 2. Now we can change the interface address under System > Network > Interface and edit the same network from the above step.
 - Change the IP/Netmask to what you want the router to be, i.e. 192.168.10.1/255.255.255.0
 - 3. Finally we need to go to Firewall Objects > Addresses > Address and edit the network that we want to change.
 - Change the Subnet / IP Rage, i.e. 192.168.10.0/255.255.255.0

HOW TO CHANGE THE IP ADDRESS FOR A NETWORK CONTINUED

FortiGate 60C

System			Edit DHCP Service
 S Dashboard Status Network Interface DNS DNS Server DHCP Server Explicit Proxy Modem Config G Admin 	Interface Name Mode Enable Type IP Network Mask Default Gateway DNS Service DNS Server 0 DNS Server 1	internal ▼ Server ▼ Image: Constraint of the server of	
⊕ 💽 Certificates ⊕ 🕎 Monitor	 IP Reservation [Advanced] (DNS, WIN 	IS, Custom Options, Exclude Ranges.)	OK Cancel

HOW TO CHANGE THE IP ADDRESS FOR A NETWORK CONTINUED

FortiGate 60C

1:0-1- 000

FortiGate 60C		
System		Edit Address
Router	Address Name VLAN_1	
Policy	Type Subnet / IP Range 🔻	
Firewall Objects	Subnet / IP Range 192.168.10.0/255.255.0	
🖻 📔 Address	Interface Any V	OK Cancel
• Address		
- • Group • 🏹 Service		
⊕ 👩 Schedule		
🖲 🗐 Traffic Shaper		
🕀 🍖 Virtual IP 🕀 💷 Monitor		
	Aummistrative Status	
		OK Cancel Apply

Edit Interface

HOW TO CHANGE THE ROUTER TO BE 192.168.1.1

- Many people call about how to do this
 - 1.1 just makes sense to them
 - Replacing other router that was set at 1.1
 - Setting to 1.1 will make it easier to widen DHCP range
- To change go to System > Network > DHCP Server then edit internal
 - Change only the Default Gateway and DNS Server 0 to be 192.168.1.1
- Then go to System > Network > Interface and again edit internal
 - Change IP/Netmask to be 192.168.1.1/255.255.255.0

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HOW TO CHANGE THE ROUTER TO BE 192.168.1.1 CONTINUED

Tortidate 000			
System			Edit DHCP Service
 Dashboard Status Network Interface DNS DNS Server DHCP Server Explicit Proxy Modem Config Config Certificates Monitor 	Interface Name Mode Enable Type IP Network Mask Default Gateway DNS Service DNS Server 0 DNS Server 1 IP Reservation F [Advanced] (DNS, W	internal ▼ Server ▼ ● Regular IPsec 192.168.1.110 - 255.255.255.0 - 192.168.1.1 ● Use System DNS Setting ● Specify 192.168.1.1 ● NS, Custom Options, Exclude Ranges.) INS, Custom Options, Exclude Ranges.)	OK Cancel

SETTING UP WAN CONNECTION

- There are 3 different types that you can run into when seeing up internet on the router.
- 1. The most common is DHCP. This is what you run into most likely everyday you don't have to do anything just connect it to the modem provided by the ISP and you have a public IP address. Nothing you have to do set by default.
- 2. The next type is PPPoE, more commonly used with DSL providers. This is they way they authenticate to make sure that a subscribed customer is able to use there service. This requires a username (typically email address) and a password.

MANUAL/STATIC ADDRESS

- Manual aka Static IP address. Normally you have to pay extra for static IP addresses and the address is provided by the ISP.
 - Go under System > Network > Interface and edit wan1, set mode to Manual and enter IP and Subnet provide by the ISP, i.e. 69.227.93.157/255.255.255.252
 - Next go to Router > Static > Static Route and Create New, add the default gateway provided by the ISP, i.e. 69.227.93.156

-			_	Edit Interface		$ \land $
Name	wan1 (08:5B:0E:03:42:C9)	_				\cup
Alias Link Status	Up					
Addressing mode IP/Netmask:	Manual DHCP PPPoE					
IP/Neullask.	ipaddress/subnetmask					
- · · · · · · · · · · · · · · · · · · ·					New Static Route	_
Destination IP/Mask	0.0.0.0/0.0.0.0					
Device						
Gateway	wan1 🔹					
	0.0.0.0					
Comments	Write a comment	0/63				
Advanced						
					OK Cancel	
			ОК	Cancel	Apply	
				Cuncer	Арру	
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SETTING UP DDNS

- If you have a location with a dynamic public IP address (router set to DHCP) and you want to VPN, remotely manage, or access services from the outside you will need to know the IP address.
- This can be very difficult depending on the ISP because of how frequent it changes
- DDNS is the solution, it automatically updates the host name that you registered, often in real time, with the public IP address.



SETTING UP DDNS CONTINUED

 To do this go to System > Network > DNS and check Use DDNS, select the correct sever from the drop down list and enter in your credentials and hostname.

DNS Settings		
Primary DNS Server	209.18.47.61	
Secondary DNS Server	209.18.47.62	
Local Domain Name		
V Use DDNS		
Interface	wan1 🔻	
Server	members.dhs.org	
Domain		
Username		
Password]

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THANK YOU!

BY LUIS SERRANO

ON BEHALF OF PAKEDGE DEVICE&SOFTWARE INC.



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