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Web IE Firefox Chrome

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IE Firefox Chrome Safari

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Web

Web

IP

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” ” ” ” ” Internet TCP/IP ”

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“ ” PC IP

“ Internet TCP/IP ” “ IP ” “ IP ” 192.168.1.xxx xxx

2 254 “ ” 255.255.255.0 “ ” 192.168.1.1 IP

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PC

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Ping Ping 192.168.1.1

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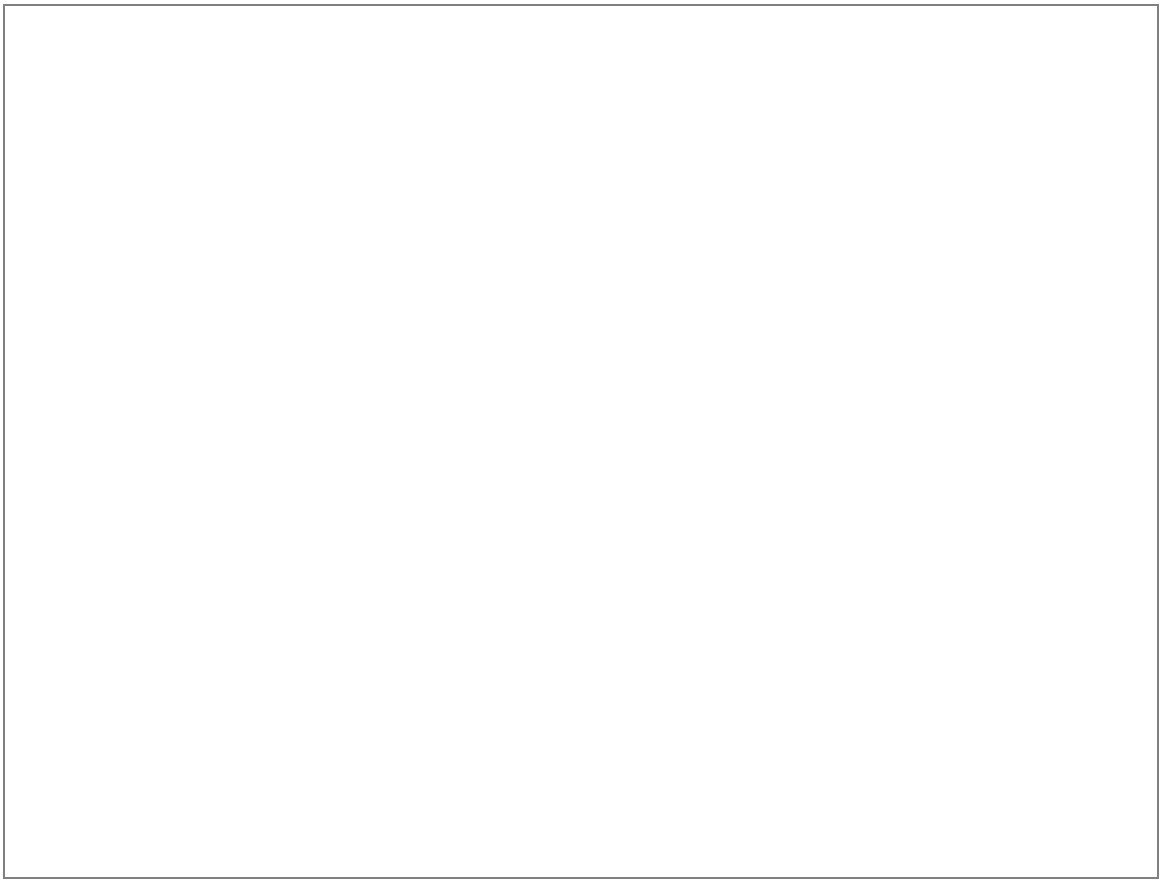
TCP/IP ¢



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LAN IP

WIFI SSID WiFi

DHCP WiFi IP

ئ Eth1 Eth 4

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4G

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¥ Ž $ Ž · u IP PPPoE ADSL

D Ž · u 4G 4G

4G

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4G

ADSL/PON WIFI

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1.3.2.5.1.3

L2TP VPN • ¯ q å c m Î Q — Ë d (d

1.3.2.5.2.1

4G 4G 4G
NAT VPN L2TP VPN AAA 4G
L2TP VPN IP

1.3.2.5.2.2

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1.3.3 ¯ › ´

“ VLAN ” “ ” “ ” “ DHCP ” “ SNMP ”

1.3.3.1 VLAN a Â

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VLAN Virtual Local Area Network VLAN

VLAN

VLAN VLAN VLAN VLAN

IP VLAN VLAN

1-28

⊥	VLAN1	VLAN	VLAN1	¢

1-29 VLAN

VLAN VLAN ID ID VLAN

VLAN ID VLAN

VLAN SVI VLAN VLAN VLAN
SVI “ ” “ SVI ”

1-30 VLAN

VLAN	VLAN	VLAN	¢

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“ 4G ” “ SVI “

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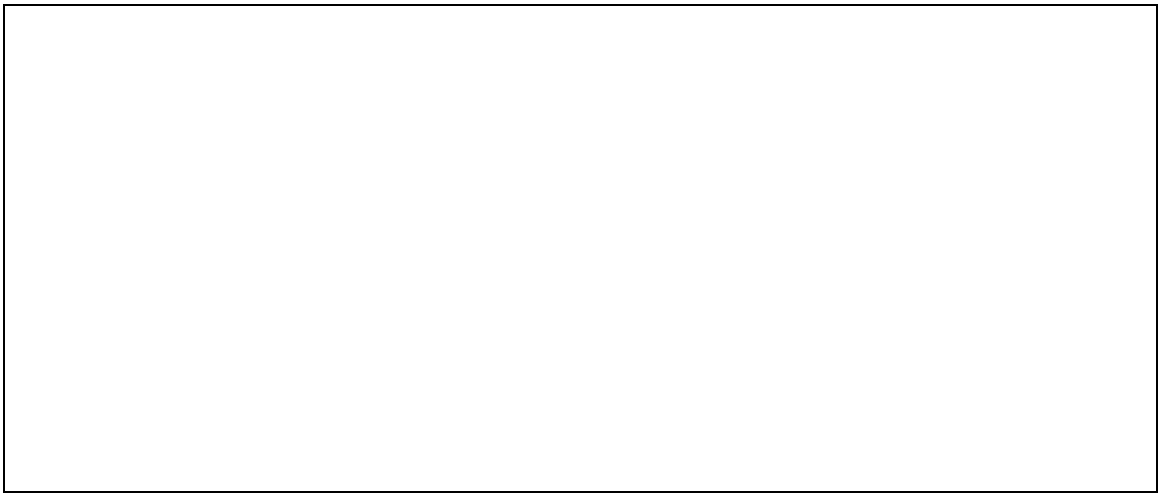

LTE 4G TD-SCDMA 3G WCDMA 3G GSM & 2G

(APN) APN APN

/ 4G

IP 4G IP 4G

IP

“ CHAP ” “ PAP ” “ CHAP&PAP ”,

4G UP

4G

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SVI Switch Virtual Interface, SVI

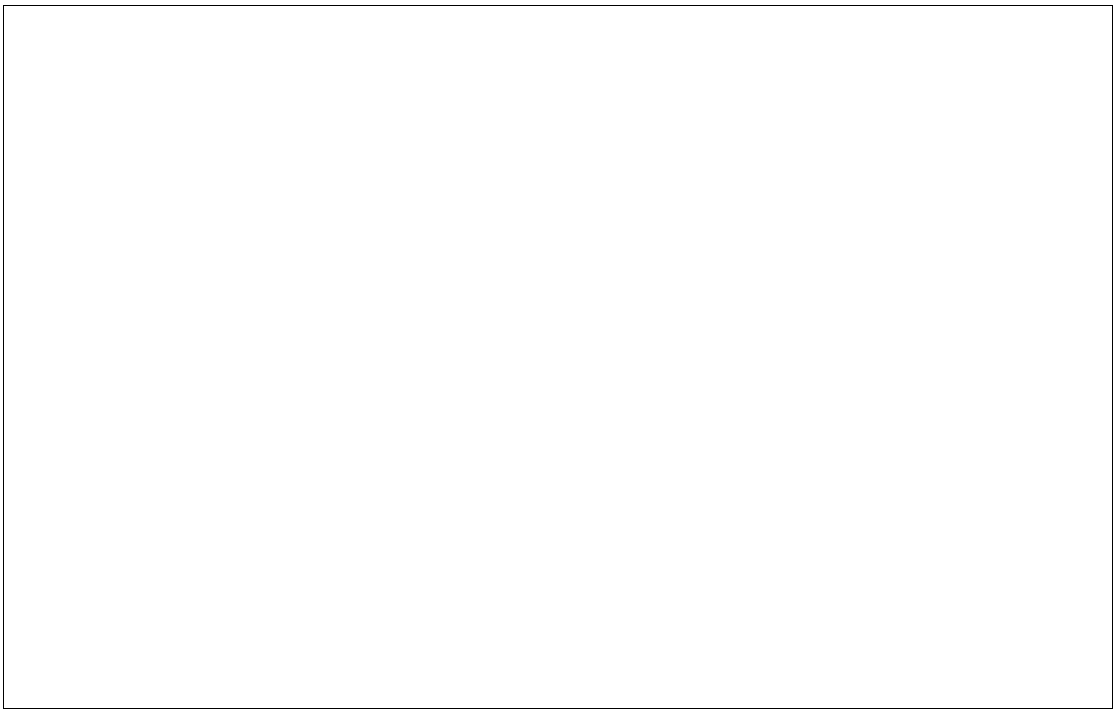
SVI Internet IP IP

DHCP IP PPPoE SVI VLAN ID “ VLAN ”

VLAN ID

NAT

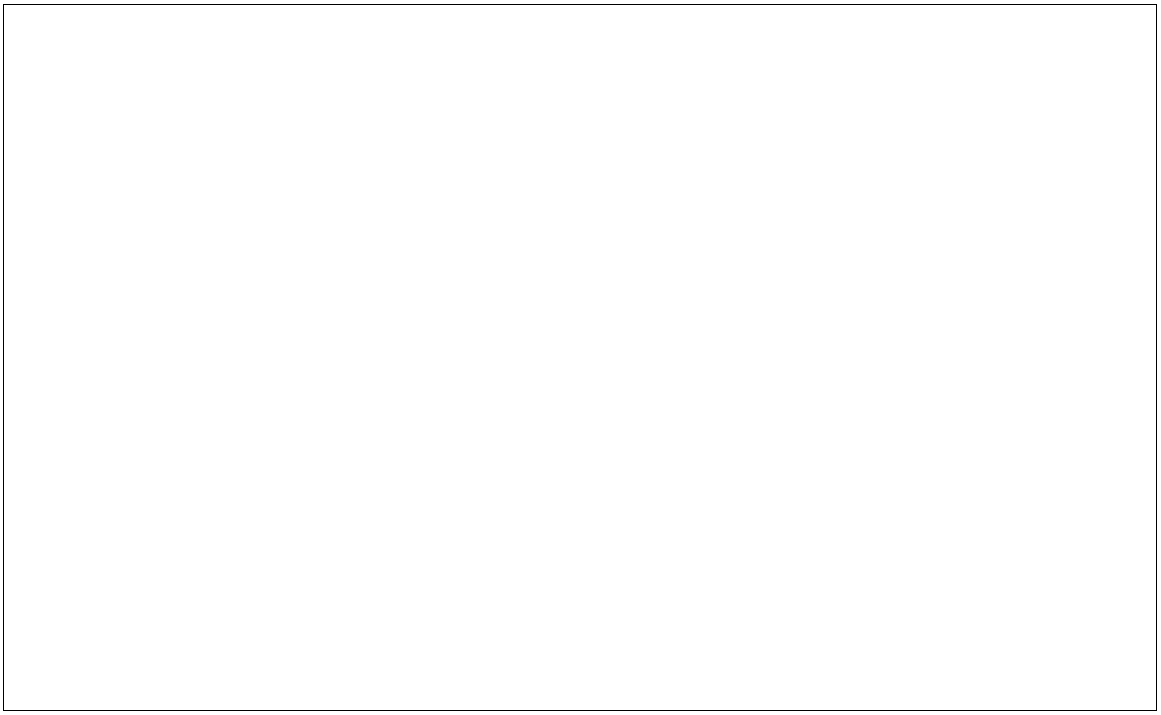
1-37



“ IP ” IP “ IP ” DHCP

“ PPPoE(ADSL) ” ADSL

1-38



SVI IP IP

DHCP IP

1.3.3.3 DHCP §

Dynamic Host Configuration Protocol, DHCP DHCP

IP DHCP IP IP IP

DHCP DHCP DHCP

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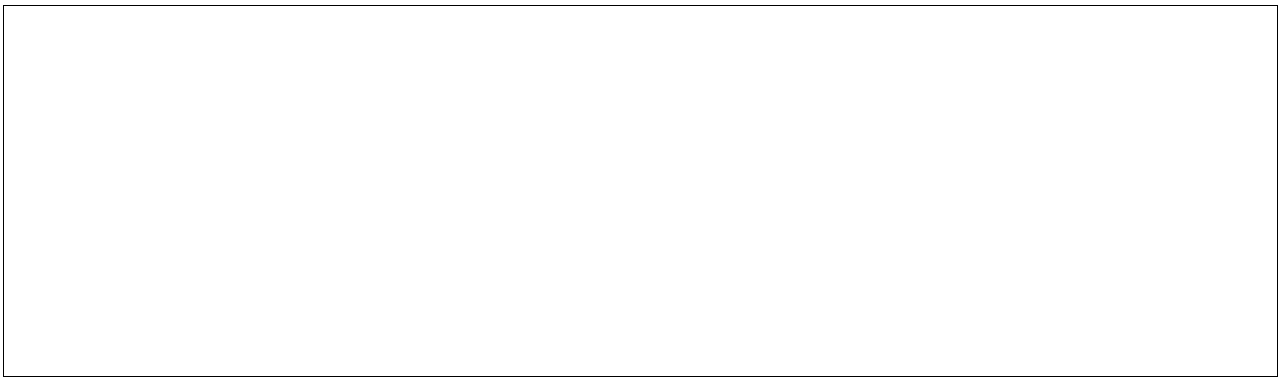

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IP

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1.3.3.4 SNMP a Â

SNMP

SNMP

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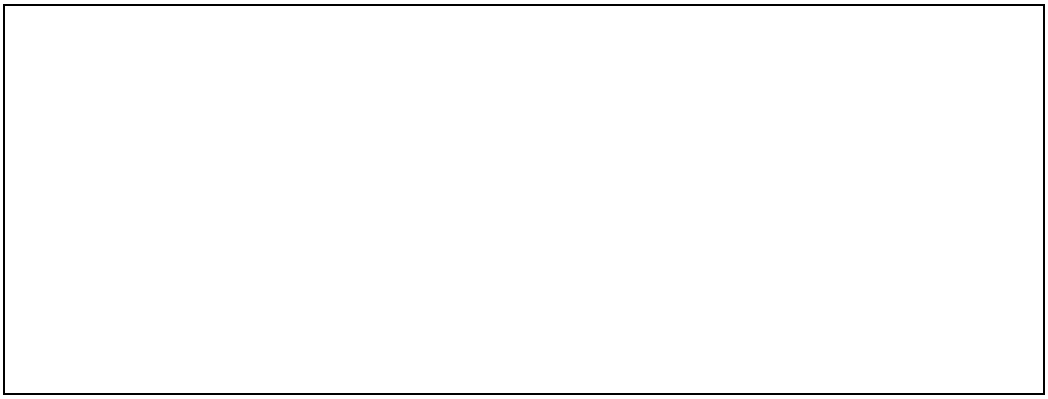


1.3.3.5 VRRP ´

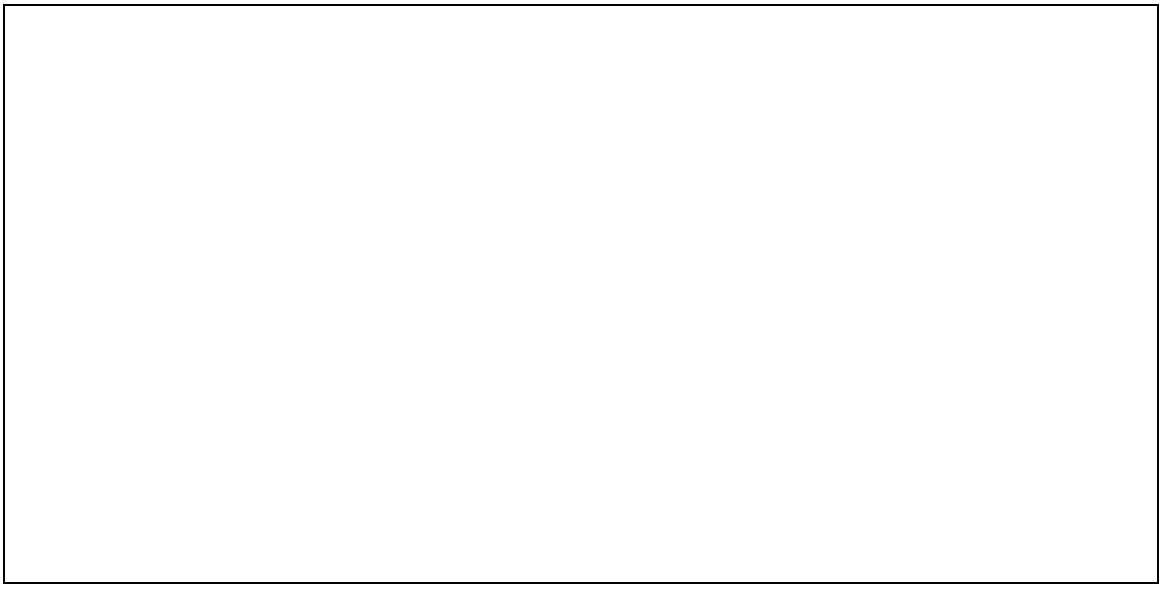
VRRP (Virtual Router Redundancy Protocol))

VRRP

VRRP

VRRP

1-45



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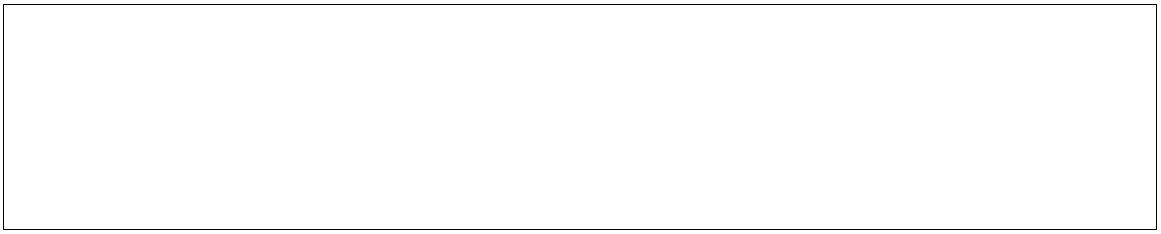
Wi-Fi AP iPad

1-46 AP



3 SSID ش ¢

AP SSID

WLAN-ID 1 3

SSID iPad

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AP

AP AP

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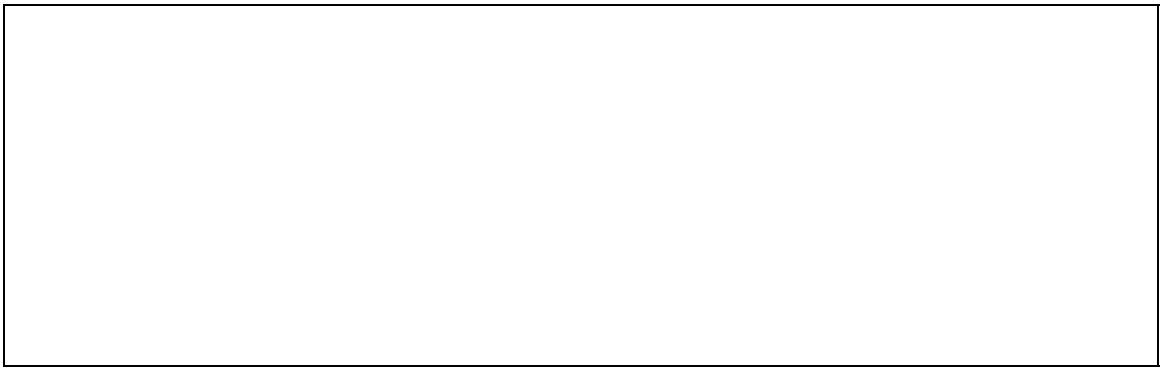
AP AP MAC IP
SSID



1-48 AP

AP

SSID iPad

SSID

DHCP IP

IP / IP Wi-Fi IP

255.255.255.0

DNS

Wi-Fi

Wi-Fi

WPA-PSK/ WPA2-PSK WPA2-PSK WPA-PSK WPA-PSK/ WPA2-PSK

AES/TKIP AES TKIP

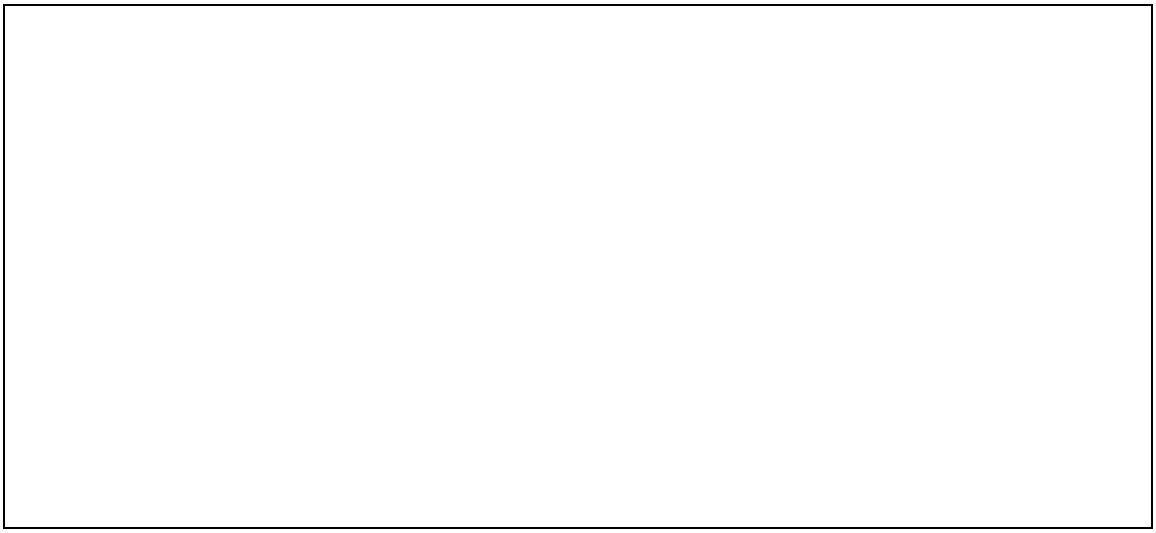
8-63 ASCII

1.3.4.2 /´CãC¯ ´

Wi-Fi

1-49 Wi-Fi

Station ₾ AP ₾ ¢



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Wi-Fi SSID

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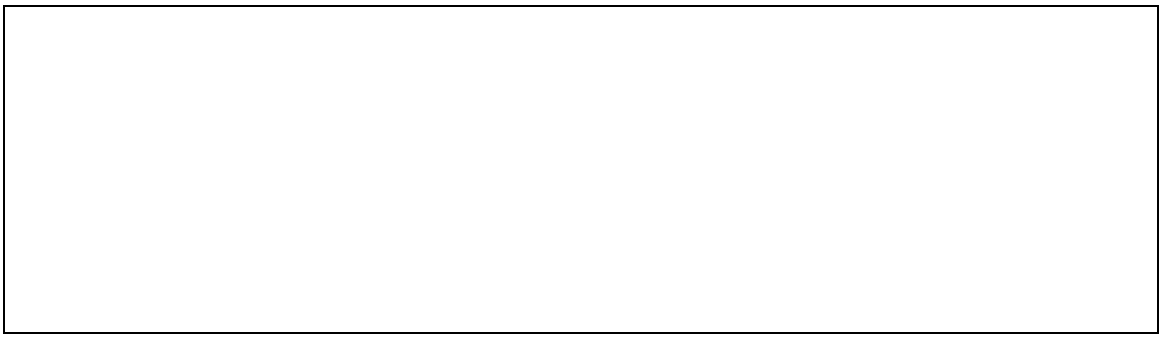

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PBR Policy-Based Routing

IP

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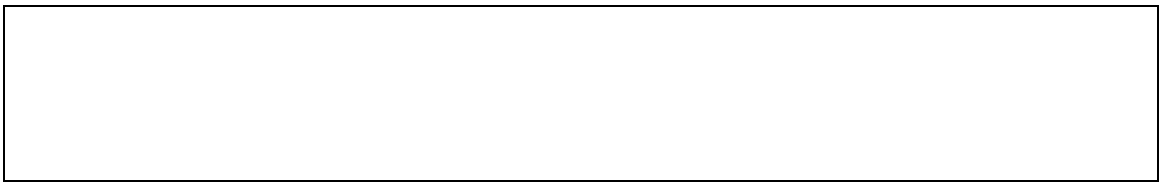

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IP

IP

IP ð , ð , ð ¢

1.3.5.3 RIP · Ò

RIP(Routing information Protocol) (Interior Gateway Protocol, IGP)
(distance-vector) RIP UDP
15

Web RIPv2 RIP RIP Web
RIP IP
RIP

± IP ± RIP ¢

n RIP

RIP

RIP

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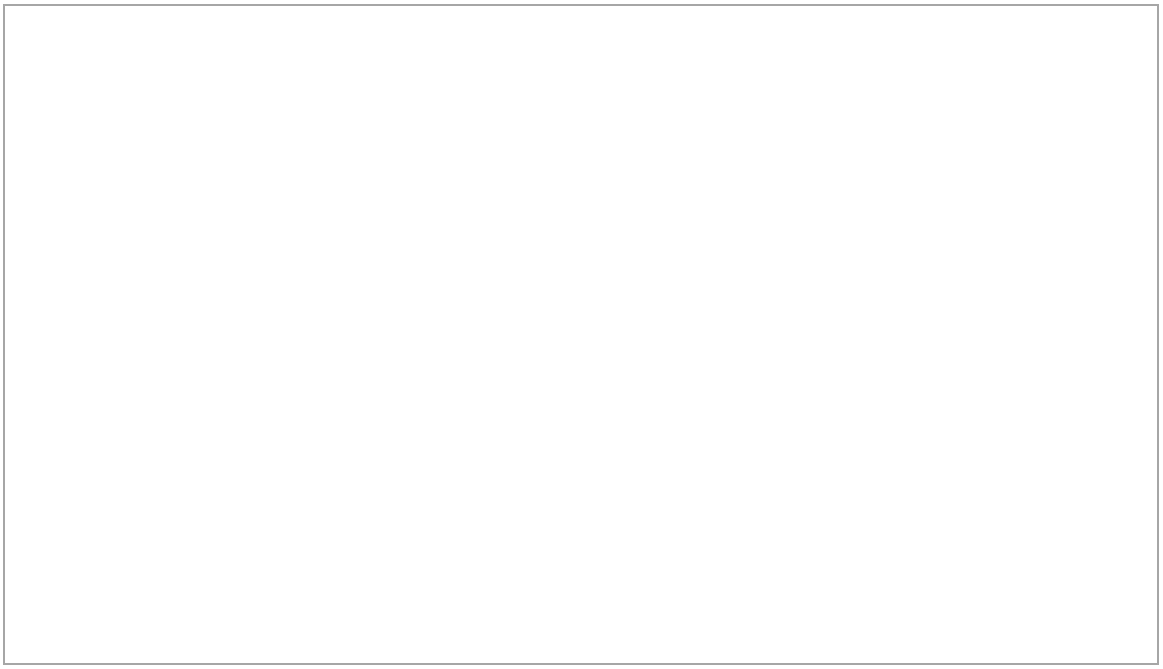
´ RIP

VLAN

RIP RIP

1-56



1.3.5.4 OSPF · Ò

OSPF Open Shortest Path First (Interior Gateway Protocol,IGP),
Autonomous System ,
(RIP) OSPF

OSPF OSPF Web
OSPF IP
OSPF

ID ٩ ID ذ ئ OSPF ¢	

n OSPF

OSPF ID “ 1 ”

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OSPF ¾ å â

VLAN

OSPF

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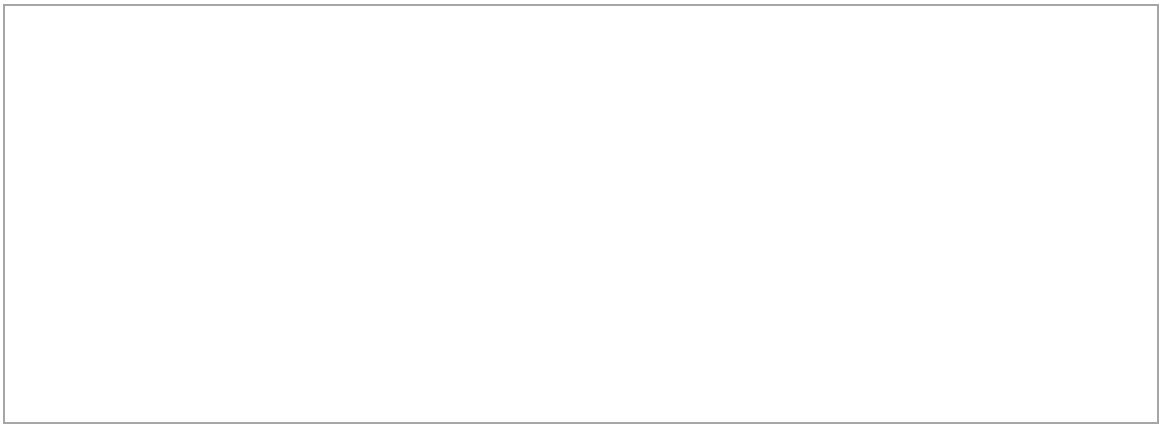

OSPF · Ò ‘54

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1.3.6) ¯

VPN “ Virtual þ ŋ ǻ ɔ̀ ʼH Ë

1.3.6.3 IPSec VPN

VPN Internet Internet

IPSec

IPSec

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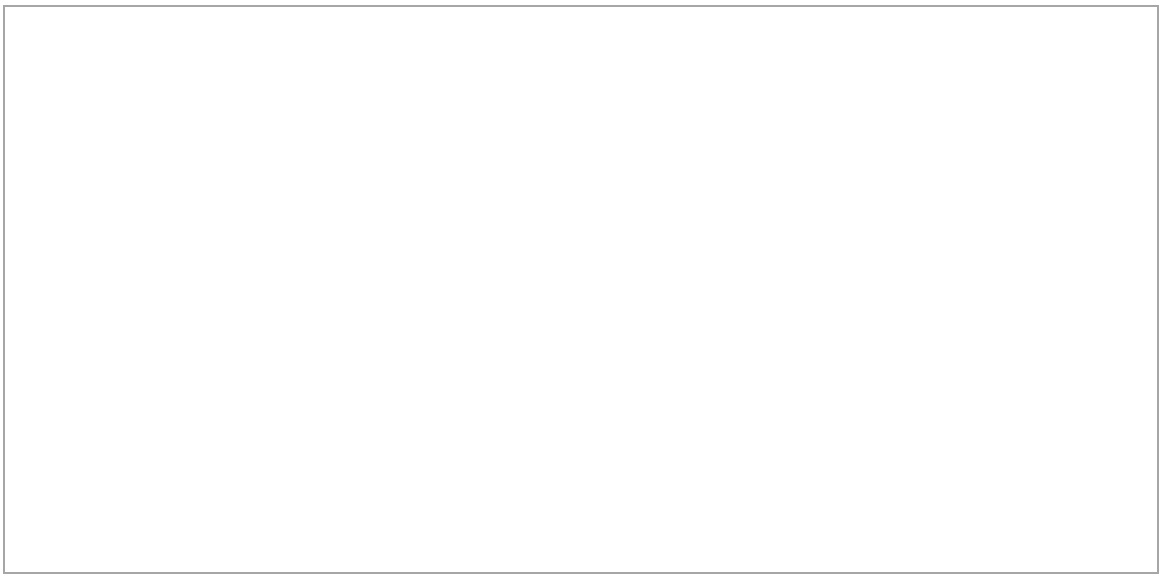

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CA Certificate Authority “ *.pfx ”

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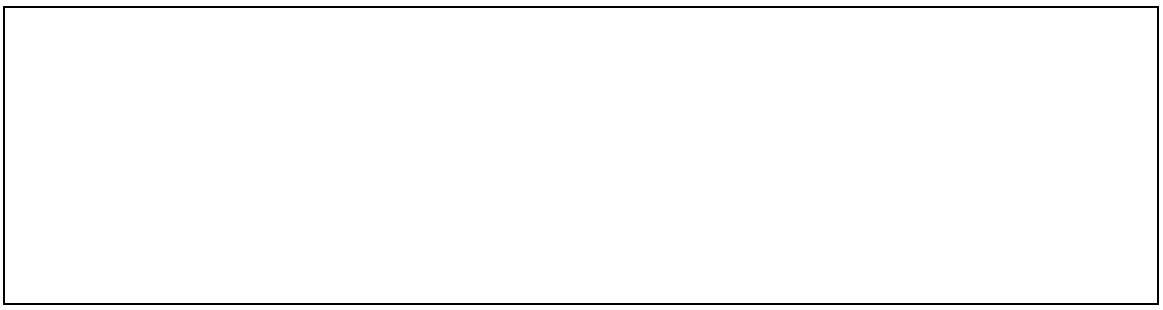

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DN CA Certificate Authority

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1.3.8 AAA

AAA Authentication Authorization and Accounting

AAA

\i RADIUS TACACS+ Local

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1.3.9.4 NAT ´

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NAT NAT NAT

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TCP UDP

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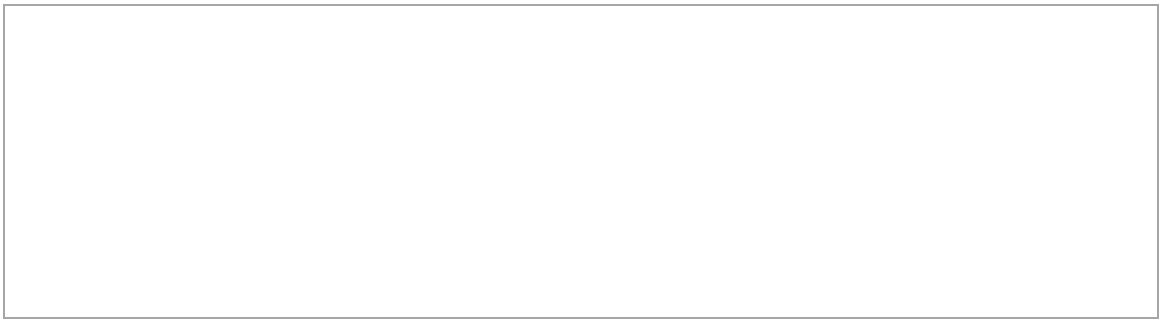

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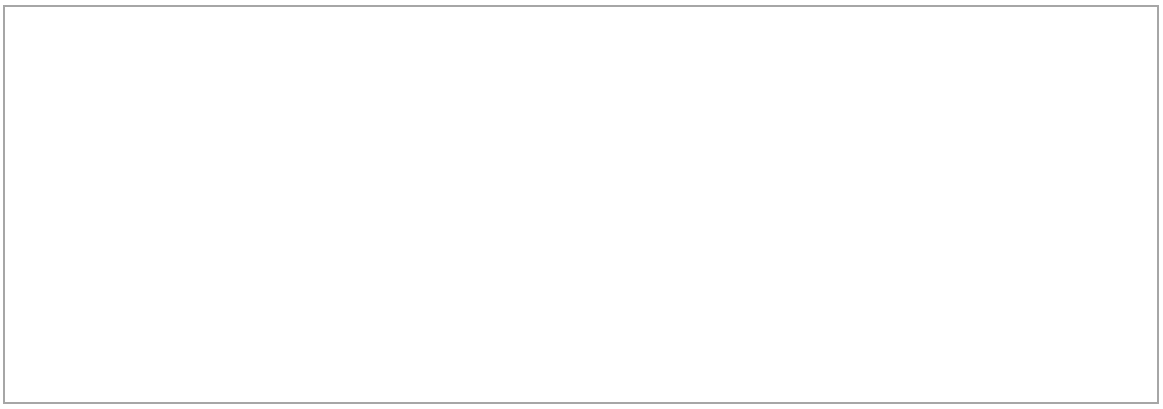

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1.3.10.3 • m

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HQoS QoS Quality of Service

QoS

QoS /

HQoS QoS QoS HQoS +
+ + QoS QoS
QoS QoS
HQOS QoS QoS

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QoS HQoS

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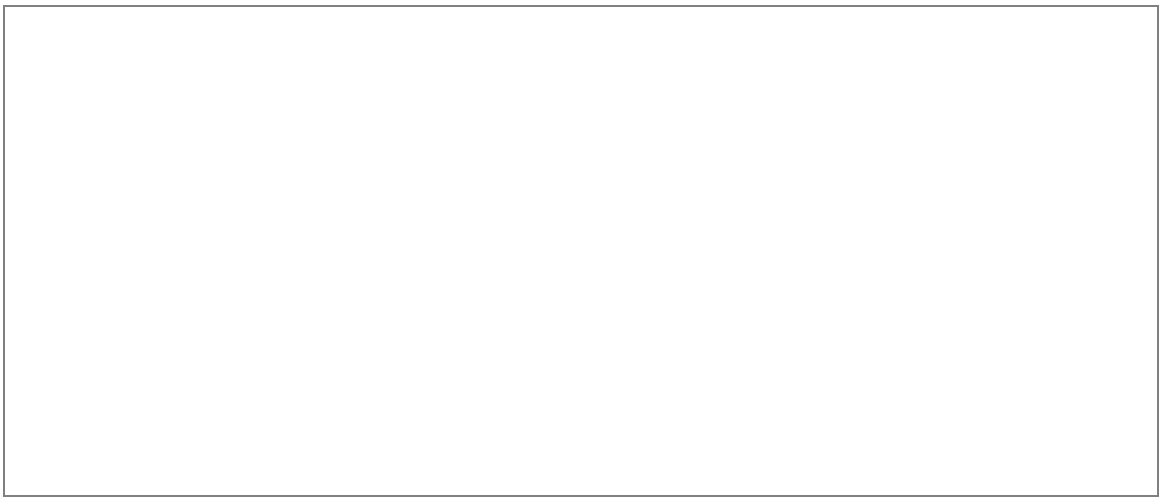

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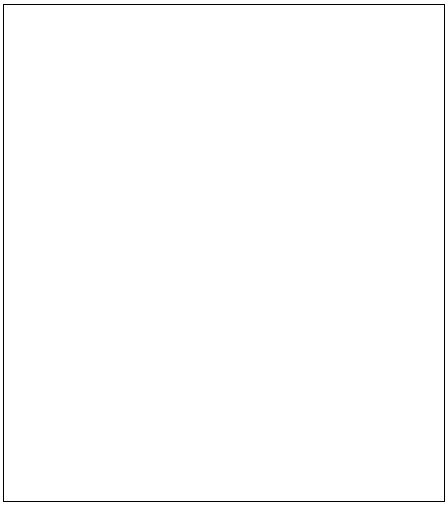

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DSCP ACL IP

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ACL “ ”

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DSCP ش ō Differentiated Services Code Point Ŏ,IETF 1998 ئ 12 ۦ Diff-Servō Differentiated Service Ŏ QoS . پ IP TOS 6 2
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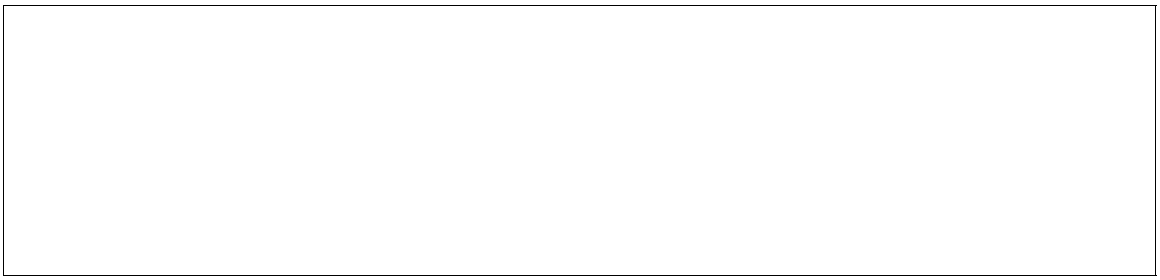

ث 18 ب ¡ ¡ Dialer Virtual-PPP ¢ ‴ ب
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1.3.11.2 x ž • N

PC

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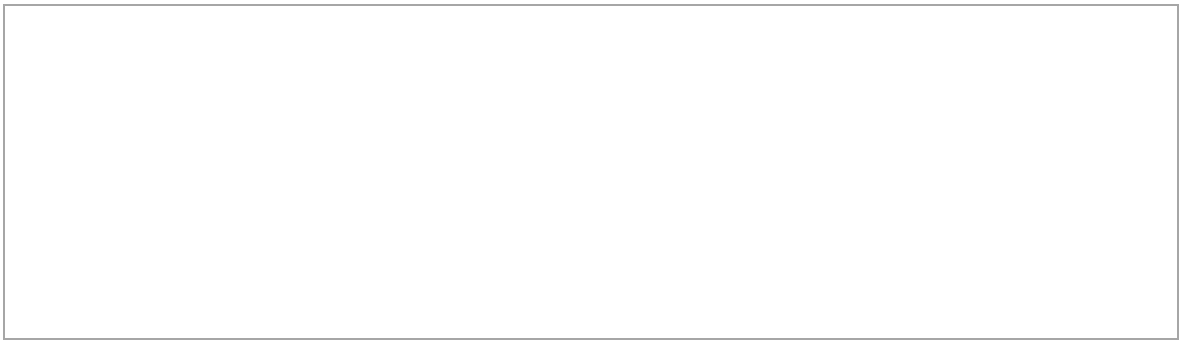

1.3.11.3 Web a Â

Web

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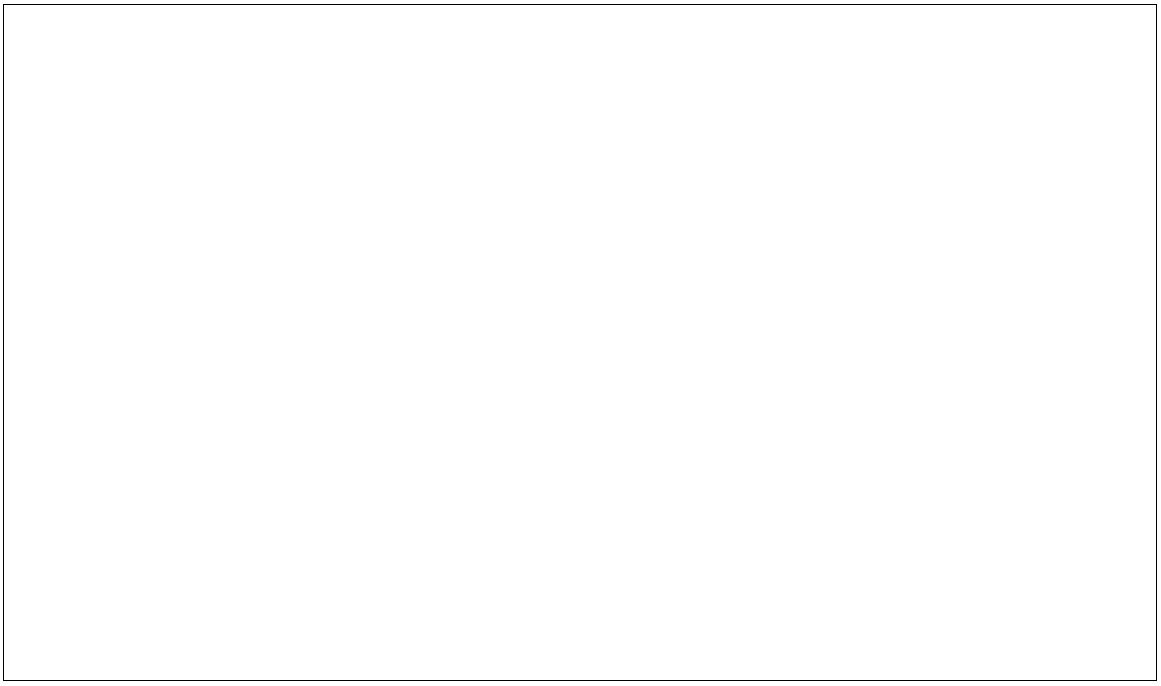

1.3.11.4 Telnet f ´

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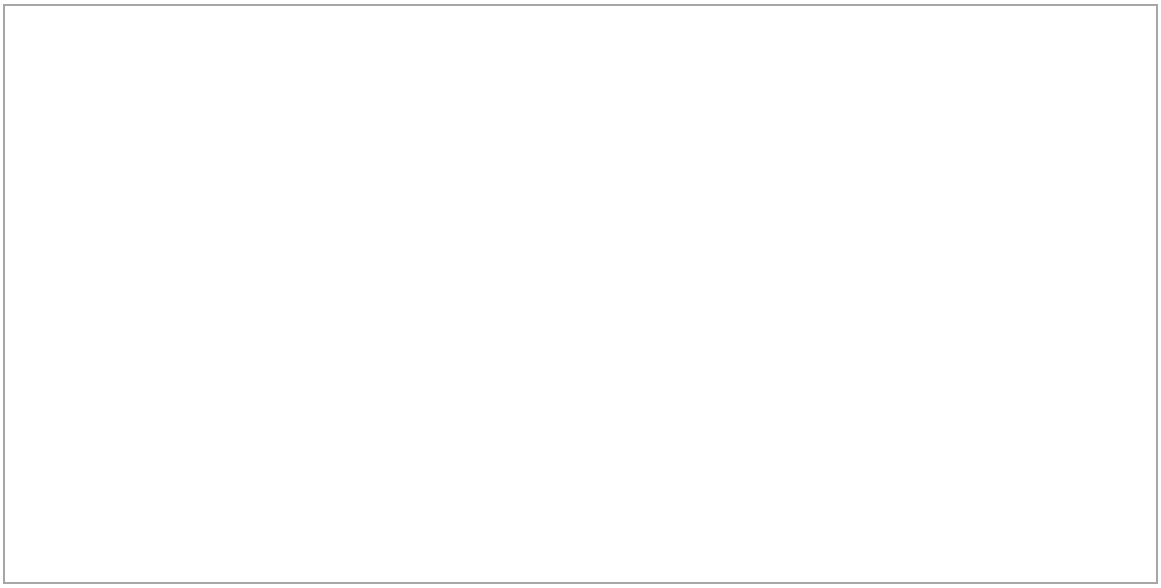

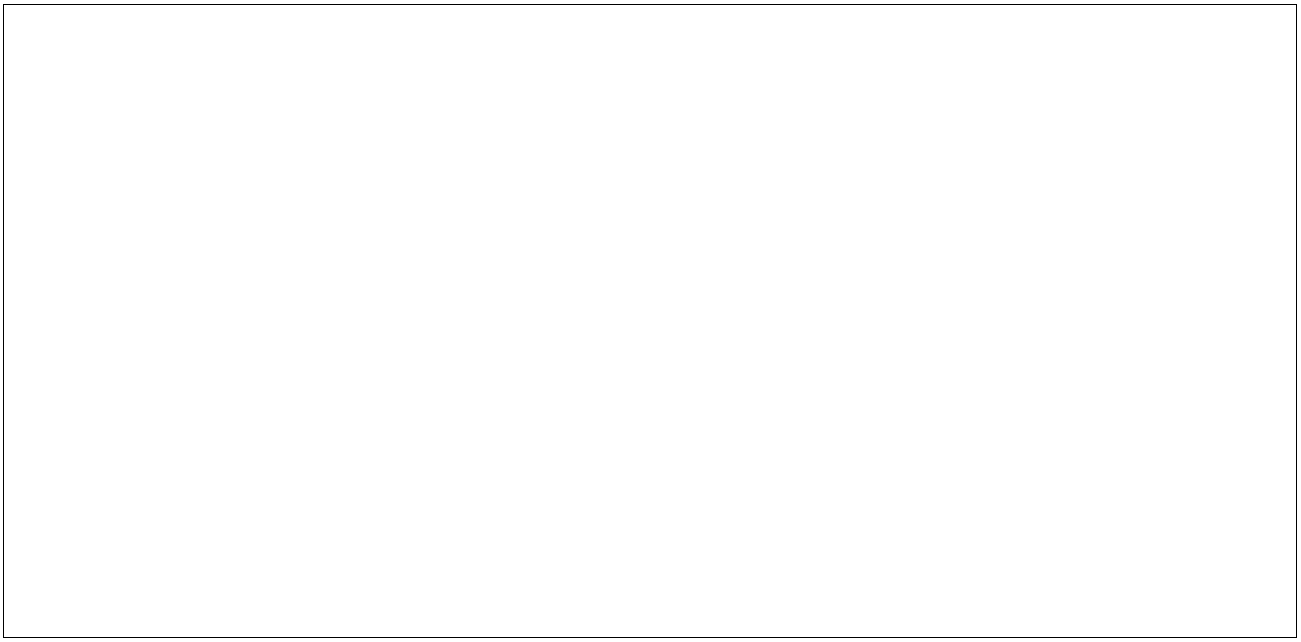

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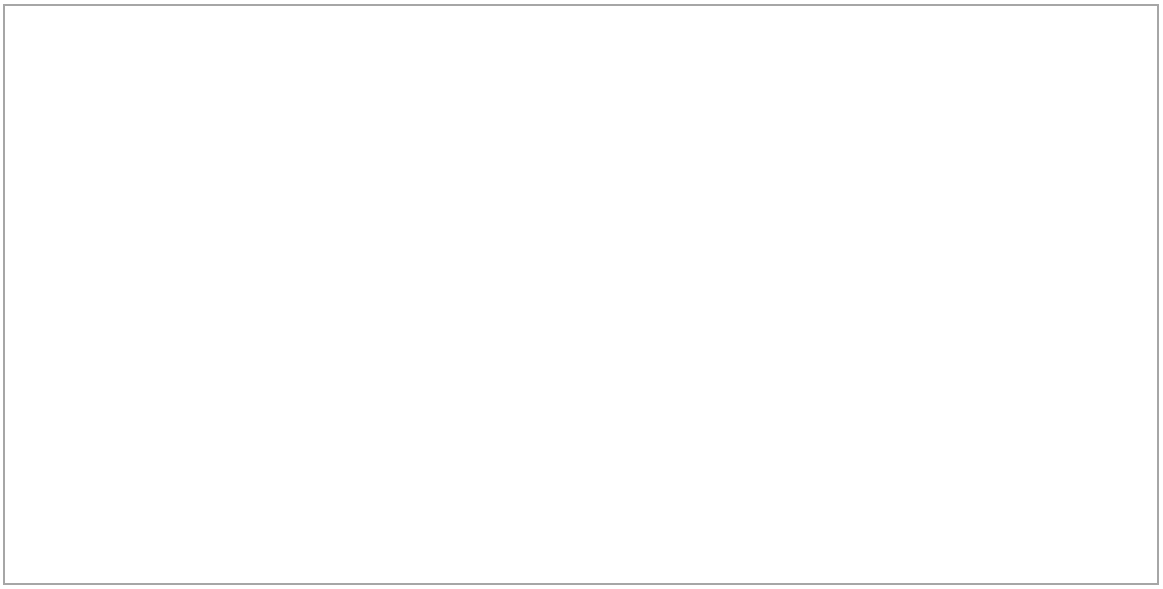

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Ping “ !!!!! ” “ ..... ”

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Traceroute

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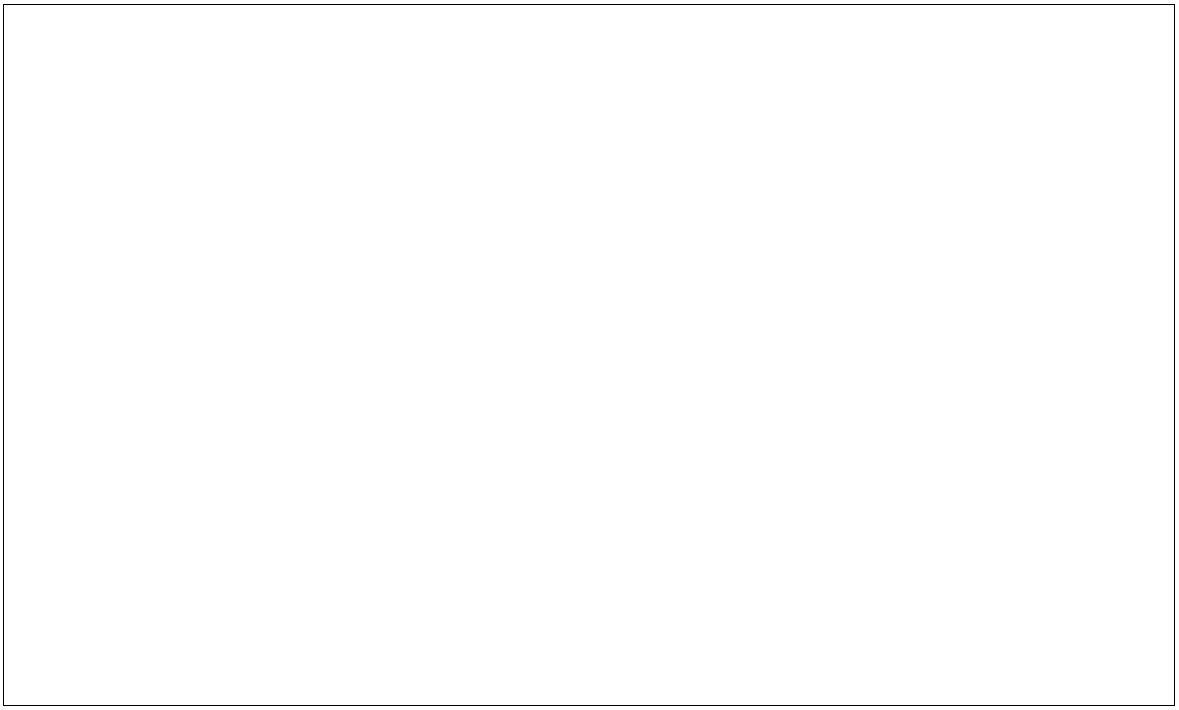
“ ” Web “ ”

1-119 Web



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4008-111-000 Web Web

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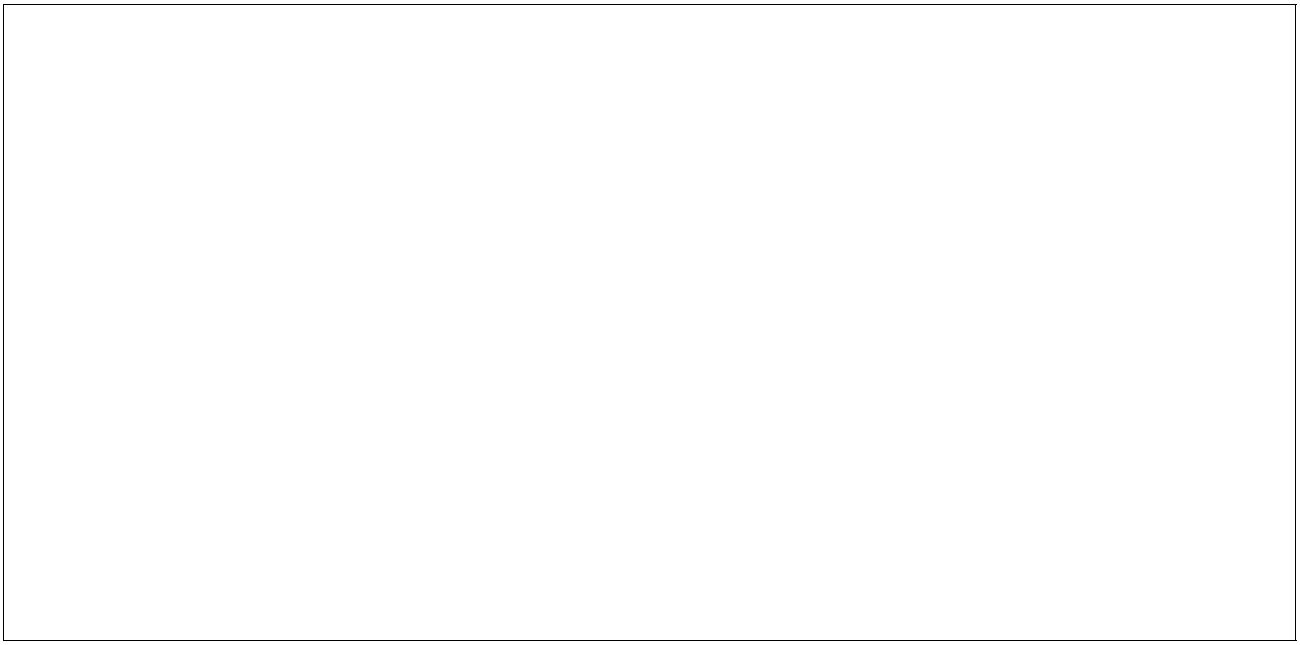

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Web

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Web IE

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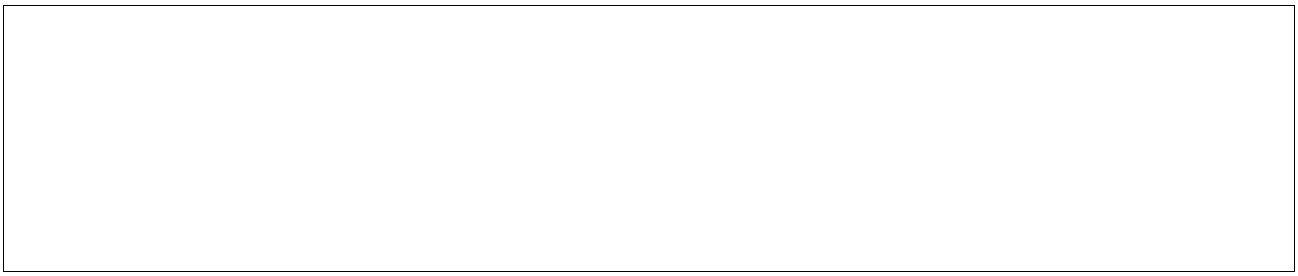

IE9.0 IE10.0 Web CPU l ₾ ¢

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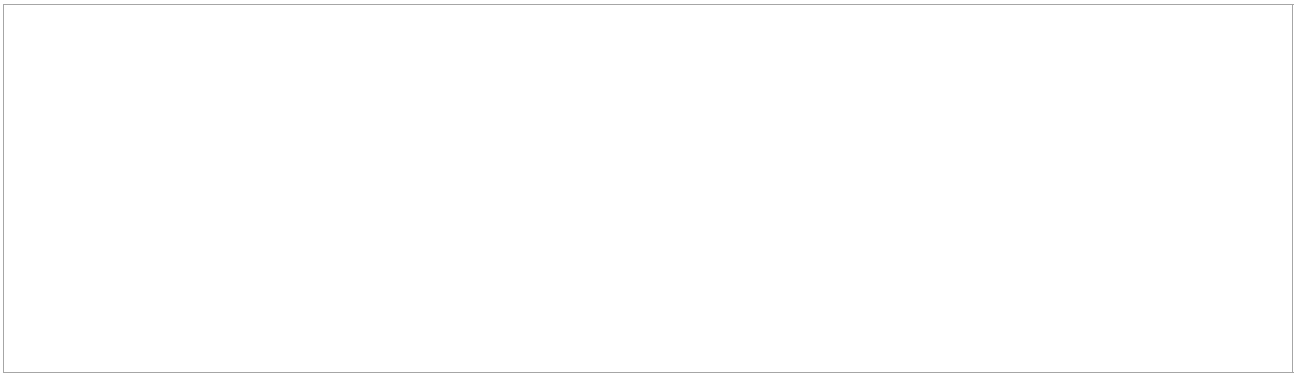

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“ Ctrl (+) ” “ Ctrl (-) ” , “ Ctrl (0) ”

Ctrl (+)	
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1.5.3 Web \ i á ‘

Web Web

IE

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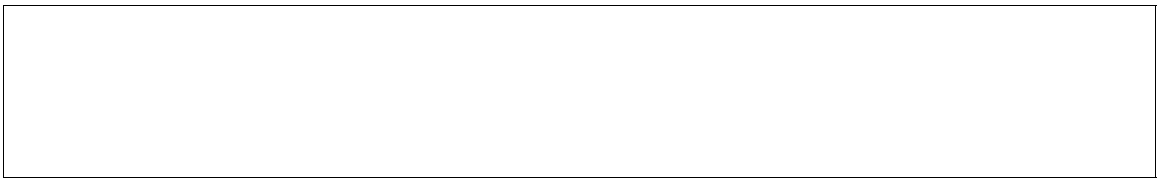

1.5.5 Web ¬ • æ Þ

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1.5.6 ý Í / L • n

Web

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PPPoE 4 Dialer

VPN 3-5 Virtual-PPP