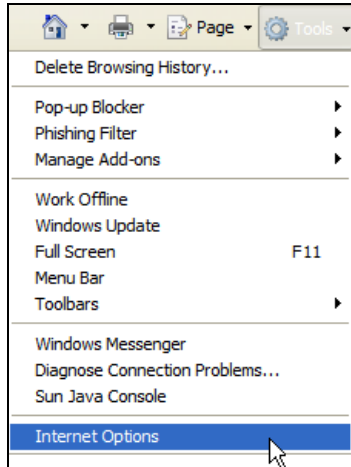


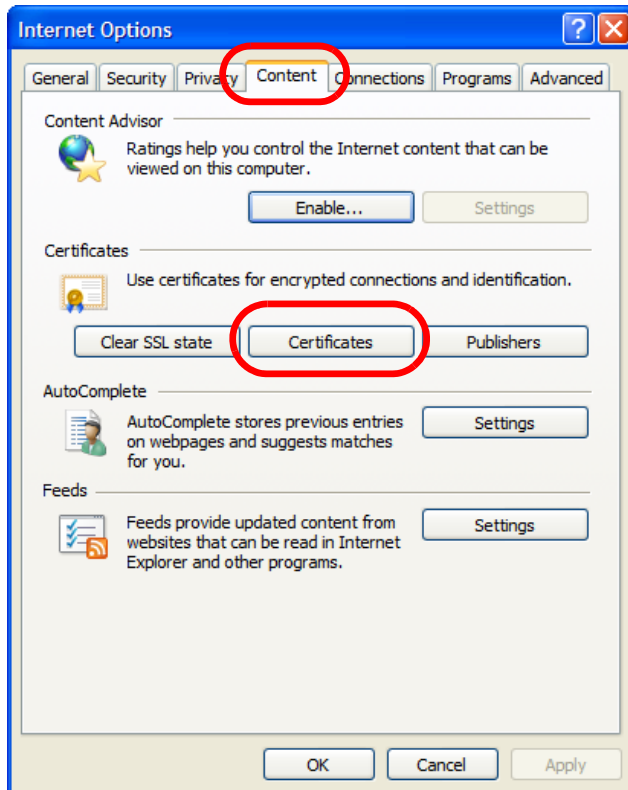
Removing a Certificate in Internet Explorer

This section shows you how to remove a public key certificate in Internet Explorer 7 on Windows XP.

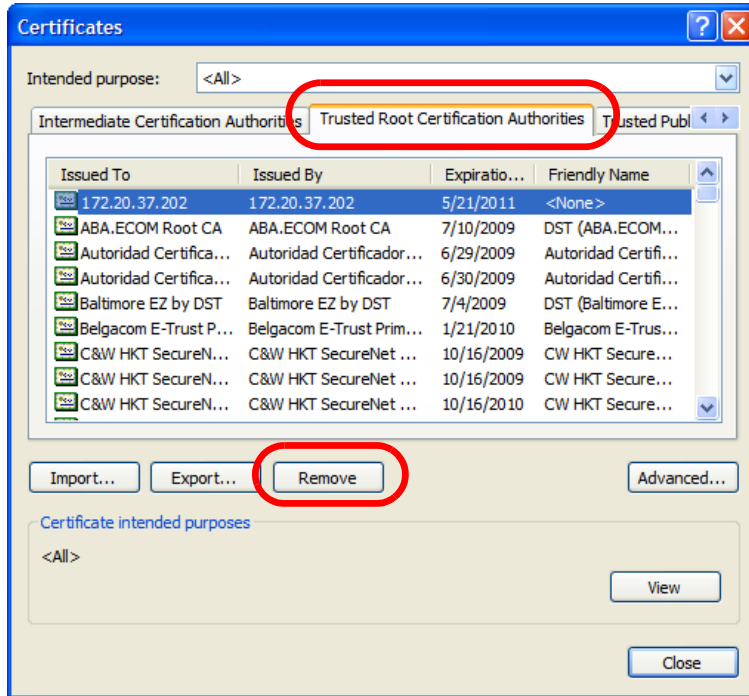
- 1 Open **Internet Explorer** and click **Tools > Internet Options**.



- 2 In the **Internet Options** dialog box, click **Content > Certificates**.



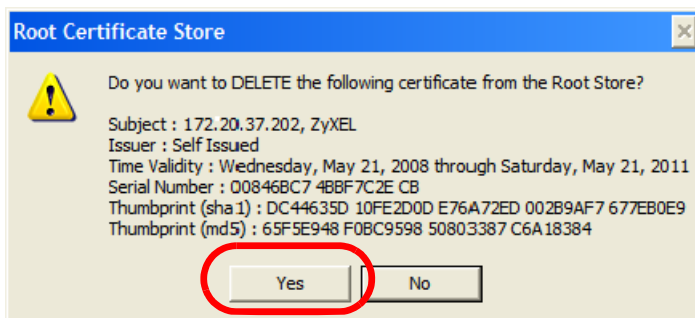
- 3 In the **Certificates** dialog box, click the **Trusted Root Certificates Authorities** tab, select the certificate that you want to delete, and then click **Remove**.



- 4 In the **Certificates** confirmation, click **Yes**.



- 5 In the **Root Certificate Store** dialog box, click **Yes**.

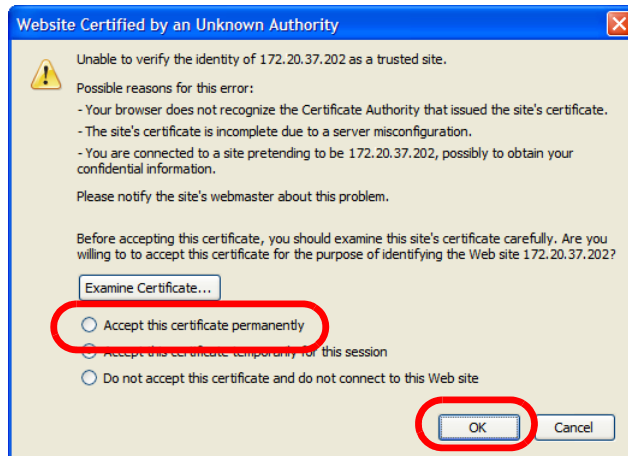


- 6 The next time you go to the web site that issued the public key certificate you just removed, a certification error appears.

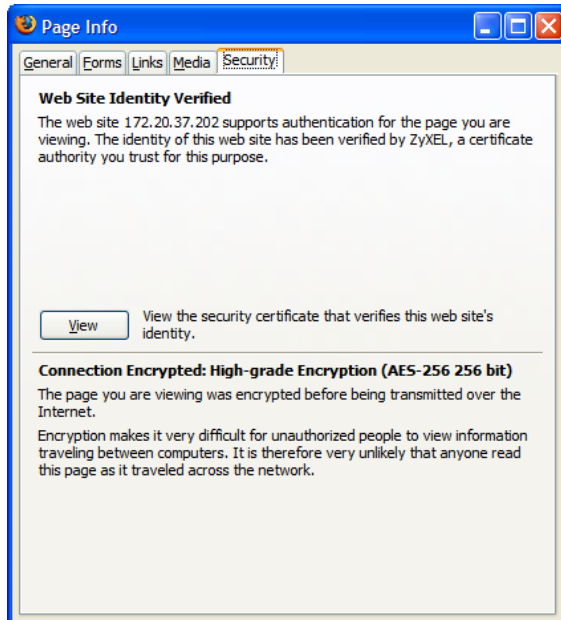
Firefox

The following example uses Mozilla Firefox 2 on Windows XP Professional; however, the screens can also apply to Firefox 2 on all platforms.

- 1 If your device's Web Configurator is set to use SSL certification, then the first time you browse to it you are presented with a certification error.
- 2 Select **Accept this certificate permanently** and click **OK**.



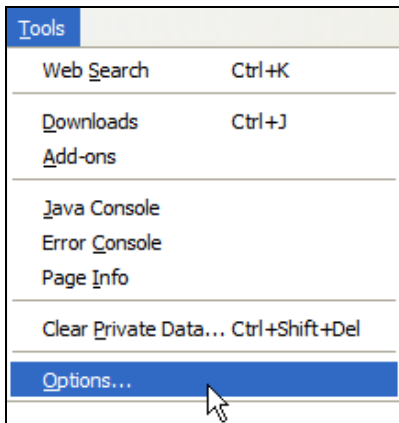
- 3 The certificate is stored and you can now connect securely to the Web Configurator. A sealed padlock appears in the address bar, which you can click to open the **Page Info > Security** window to view the web page's security information.



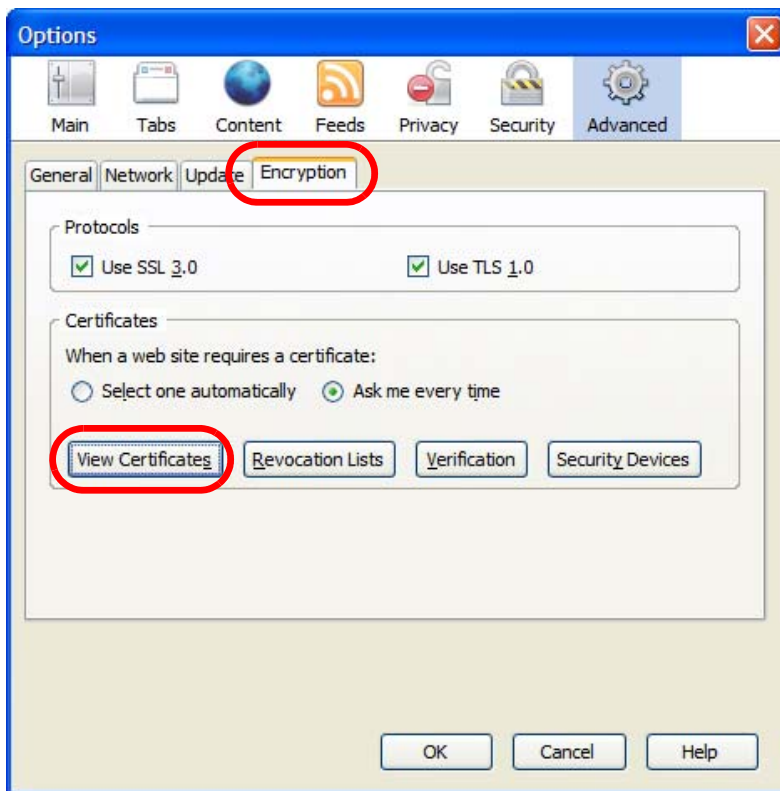
Installing a Stand-Alone Certificate File in Firefox

Rather than browsing to a ZyXEL Web Configurator and installing a public key certificate when prompted, you can install a stand-alone certificate file if one has been issued to you.

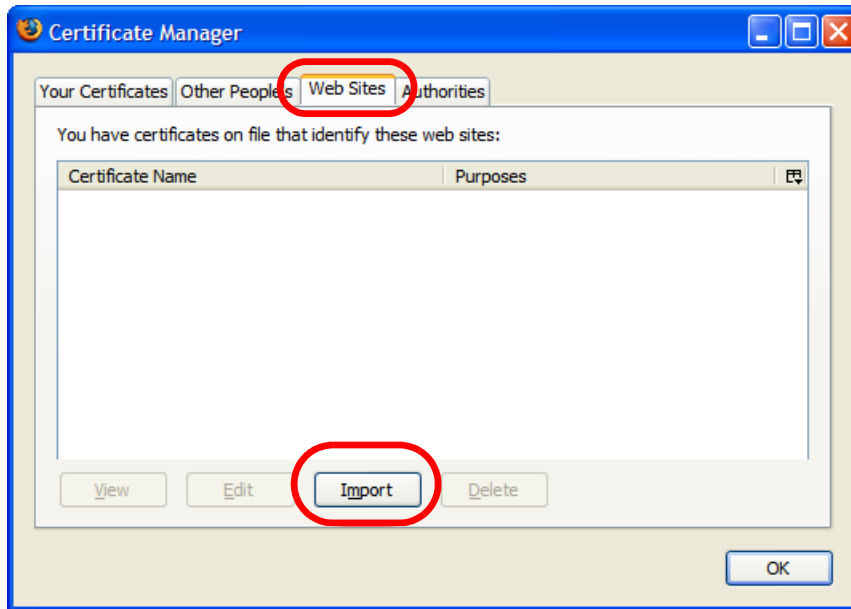
- 1 Open **Firefox** and click **Tools > Options**.



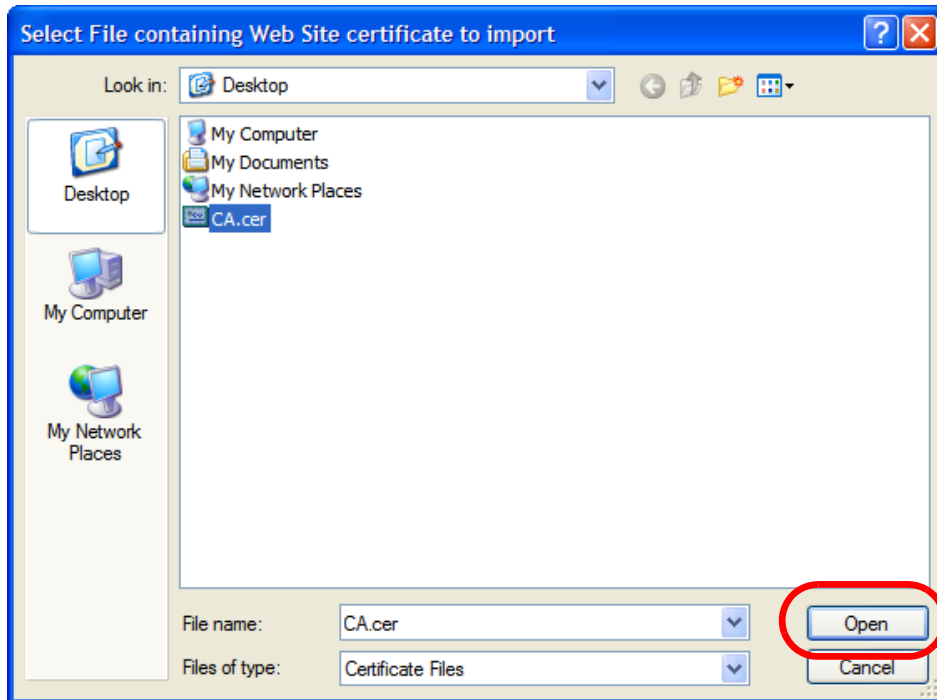
- 2 In the **Options** dialog box, click **Advanced > Encryption > View Certificates**.



- 3 In the **Certificate Manager** dialog box, click **Web Sites > Import**.



- 4 Use the **Select File** dialog box to locate the certificate and then click **Open**.

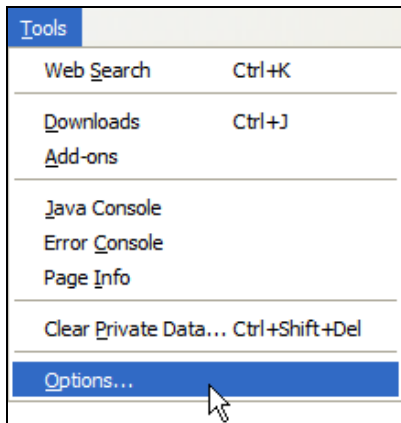


- 5 The next time you visit the web site, click the padlock in the address bar to open the **Page Info > Security** window to see the web page's security information.

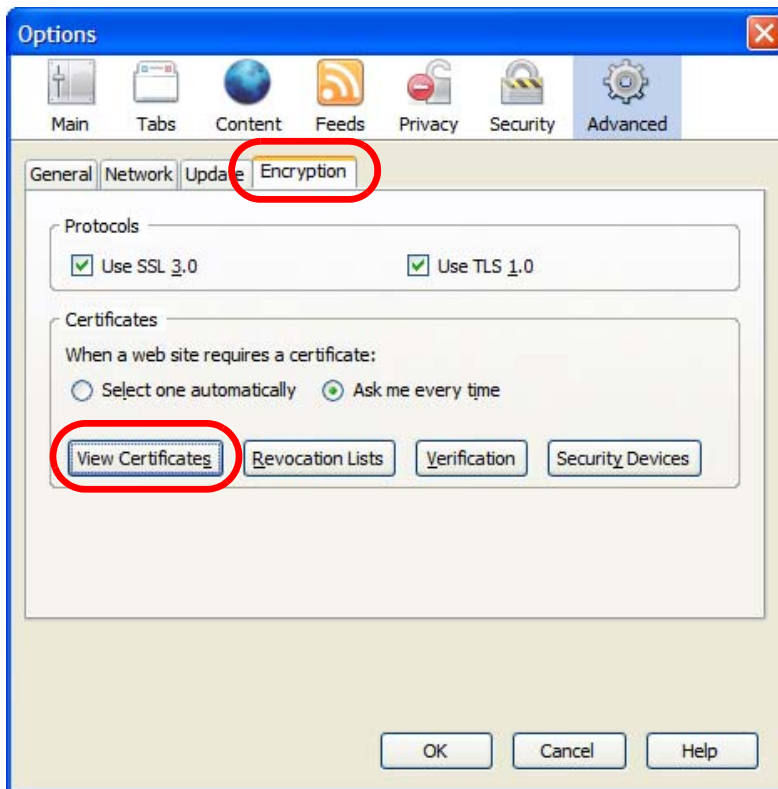
Removing a Certificate in Firefox

This section shows you how to remove a public key certificate in Firefox 2.

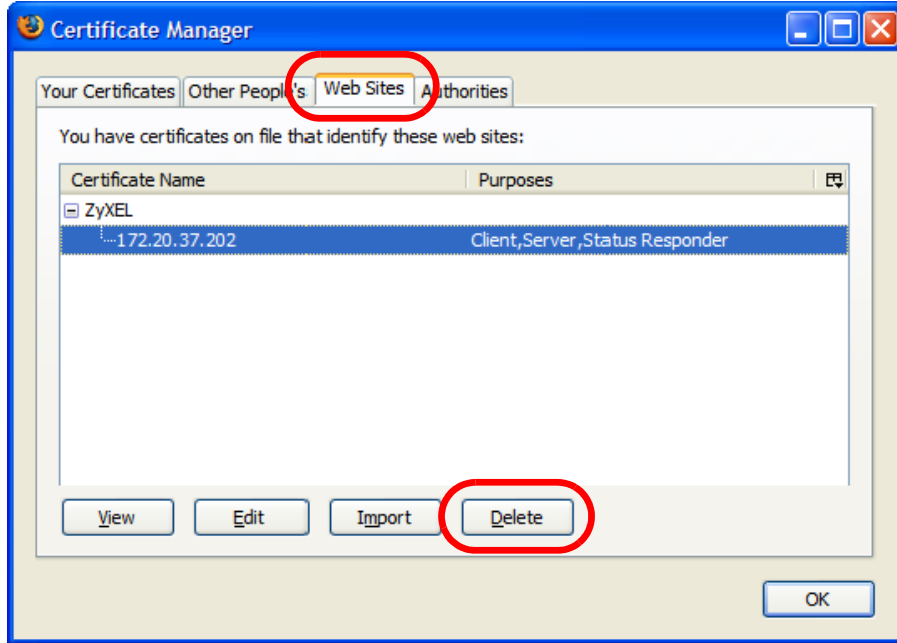
- 1 Open **Firefox** and click **Tools > Options**.



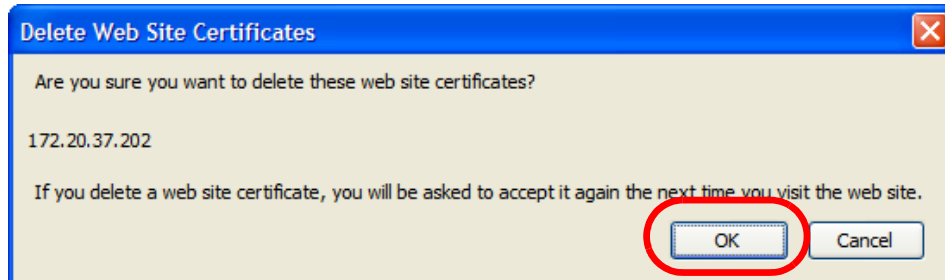
- 2 In the **Options** dialog box, click **Advanced > Encryption > View Certificates**.



- 3 In the **Certificate Manager** dialog box, select the **Web Sites** tab, select the certificate that you want to remove, and then click **Delete**.



- 4 In the **Delete Web Site Certificates** dialog box, click **OK**.



- 5 The next time you go to the web site that issued the public key certificate you just removed, a certification error appears.

Overview

IPv6 (Internet Protocol version 6), is designed to enhance IP address size and features. The increase in IPv6 address size to 128 bits (from the 32-bit IPv4 address) allows up to 3.4×10^{38} IP addresses.

IPv6 Addressing

The 128-bit IPv6 address is written as eight 16-bit hexadecimal blocks separated by colons (:). This is an example IPv6 address `2001:0db8:1a2b:0015:0000:0000:1a2f:0000`.

IPv6 addresses can be abbreviated in two ways:

- Leading zeros in a block can be omitted. So `2001:0db8:1a2b:0015:0000:0000:1a2f:0000` can be written as `2001:db8:1a2b:15:0:0:1a2f:0`.
- Any number of consecutive blocks of zeros can be replaced by a double colon. A double colon can only appear once in an IPv6 address. So `2001:0db8:0000:0000:1a2f:0000:0000:0015` can be written as `2001:0db8::1a2f:0000:0000:0015`, `2001:0db8:0000:0000:1a2f::0015`, `2001:db8::1a2f:0:0:15` or `2001:db8:0:0:1a2f::15`.

Prefix and Prefix Length

Similar to an IPv4 subnet mask, IPv6 uses an address prefix to represent the network address. An IPv6 prefix length specifies how many most significant bits (start from the left) in the address compose the network address. The prefix length is written as "/x" where x is a number. For example,

`2001:db8:1a2b:15::1a2f:0/32`

means that the first 32 bits (`2001:db8`) is the subnet prefix.

Link-local Address

A link-local address uniquely identifies a device on the local network (the LAN). It is similar to a "private IP address" in IPv4. You can have the same link-local address on multiple interfaces on a device. A link-local unicast address has a predefined prefix of `fe80::/10`. The link-local unicast address format is as follows.

Table 85 Link-local Unicast Address Format

1111 1110 10	0	Interface ID
10 bits	54 bits	64 bits

Global Address

A global address uniquely identifies a device on the Internet. It is similar to a "public IP address" in IPv4. A global unicast address starts with a 2 or 3.

Unspecified Address

An unspecified address (0:0:0:0:0:0:0 or ::) is used as the source address when a device does not have its own address. It is similar to "0.0.0.0" in IPv4.

Loopback Address

A loopback address (0:0:0:0:0:0:0:1 or ::1) allows a host to send packets to itself. It is similar to "127.0.0.1" in IPv4.

Multicast Address

In IPv6, multicast addresses provide the same functionality as IPv4 broadcast addresses. Broadcasting is not supported in IPv6. A multicast address allows a host to send packets to all hosts in a multicast group.

Multicast scope allows you to determine the size of the multicast group. A multicast address has a predefined prefix of ff00::/8. The following table describes some of the predefined multicast addresses.

Table 86 Predefined Multicast Address

MULTICAST ADDRESS	DESCRIPTION
FF01:0:0:0:0:0:0:1	All hosts on a local node.
FF01:0:0:0:0:0:0:2	All routers on a local node.
FF02:0:0:0:0:0:0:1	All hosts on a local connected link.
FF02:0:0:0:0:0:0:2	All routers on a local connected link.
FF05:0:0:0:0:0:0:2	All routers on a local site.
FF05:0:0:0:0:0:1:3	All DHCP servers on a local site.

The following table describes the multicast addresses which are reserved and can not be assigned to a multicast group.

Table 87 Reserved Multicast Address

MULTICAST ADDRESS
FF00:0:0:0:0:0:0:0
FF01:0:0:0:0:0:0:0
FF02:0:0:0:0:0:0:0
FF03:0:0:0:0:0:0:0
FF04:0:0:0:0:0:0:0
FF05:0:0:0:0:0:0:0
FF06:0:0:0:0:0:0:0
FF07:0:0:0:0:0:0:0
FF08:0:0:0:0:0:0:0
FF09:0:0:0:0:0:0:0

Table 87 Reserved Multicast Address (continued)

MULTICAST ADDRESS
FF0A:0:0:0:0:0:0:0
FF0B:0:0:0:0:0:0:0
FF0C:0:0:0:0:0:0:0
FF0D:0:0:0:0:0:0:0
FF0E:0:0:0:0:0:0:0
FF0F:0:0:0:0:0:0:0

Subnet Masking

Both an IPv6 address and IPv6 subnet mask compose of 128-bit binary digits, which are divided into eight 16-bit blocks and written in hexadecimal notation. Hexadecimal uses four bits for each character (1 ~ 10, A ~ F). Each block's 16 bits are then represented by four hexadecimal characters. For example, FFFF:FFFF:FFFF:FFFF:FC00:0000:0000:0000.

Interface ID

In IPv6, an interface ID is a 64-bit identifier. It identifies a physical interface (for example, an Ethernet port) or a virtual interface (for example, the management IP address for a VLAN). One interface should have a unique interface ID.

EUI-64

The EUI-64 (Extended Unique Identifier) defined by the IEEE (Institute of Electrical and Electronics Engineers) is an interface ID format designed to adapt with IPv6. It is derived from the 48-bit (6-byte) Ethernet MAC address as shown next. EUI-64 inserts the hex digits fffe between the third and fourth bytes of the MAC address and complements the seventh bit of the first byte of the MAC address. See the following example.

Table 88

MAC	00	:	13	:	49	:	12	:	34	:	56
-----	----	---	----	---	----	---	----	---	----	---	----

Table 89

EUI-64	02	:	13	:	49	:	FF	:	FE	:	12	:	34	:	56
--------	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----

Stateless Autoconfiguration

With stateless autoconfiguration in IPv6, addresses can be uniquely and automatically generated. Unlike DHCPv6 (Dynamic Host Configuration Protocol version six) which is used in IPv6 stateful autoconfiguration, the owner and status of addresses don't need to be maintained by a DHCP server. Every IPv6 device is able to generate its own and unique IP address automatically when IPv6 is initiated on its interface. It combines the prefix and the interface ID (generated from its own Ethernet MAC address, see [Interface ID](#) and [EUI-64](#)) to form a complete IPv6 address.

When IPv6 is enabled on a device, its interface automatically generates a link-local address (beginning with fe80).

When the interface is connected to a network with a router and the NWA/WAC is set to automatically obtain an IPv6 network prefix from the router for the interface, it generates ¹another

address which combines its interface ID and global and subnet information advertised from the router. This is a routable global IP address.

DHCPv6

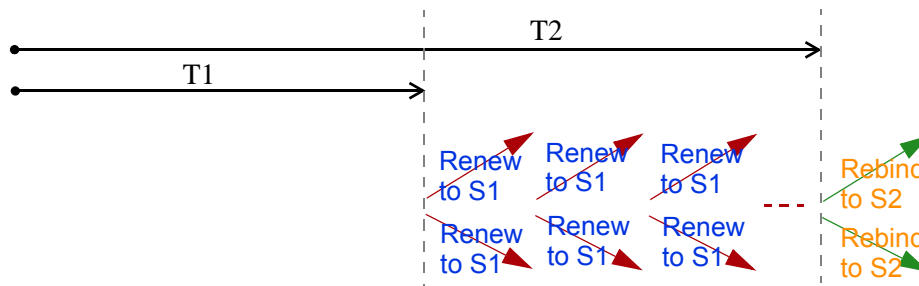
The Dynamic Host Configuration Protocol for IPv6 (DHCPv6, RFC 3315) is a server-client protocol that allows a DHCP server to assign and pass IPv6 network addresses, prefixes and other configuration information to DHCP clients. DHCPv6 servers and clients exchange DHCP messages using UDP.

Each DHCP client and server has a unique DHCP Unique Identifier (DUID), which is used for identification when they are exchanging DHCPv6 messages. The DUID is generated from the MAC address, time, vendor assigned ID and/or the vendor's private enterprise number registered with the IANA. It should not change over time even after you reboot the device.

Identity Association

An Identity Association (IA) is a collection of addresses assigned to a DHCP client, through which the server and client can manage a set of related IP addresses. Each IA must be associated with exactly one interface. The DHCP client uses the IA assigned to an interface to obtain configuration from a DHCP server for that interface. Each IA consists of a unique IAID and associated IP information.

The IA type is the type of address in the IA. Each IA holds one type of address. IA_NA means an identity association for non-temporary addresses and IA_TA is an identity association for temporary addresses. An IA_NA option contains the T1 and T2 fields, but an IA_TA option does not. The DHCPv6 server uses T1 and T2 to control the time at which the client contacts with the server to extend the lifetimes on any addresses in the IA_NA before the lifetimes expire. After T1, the client sends the server (**S1**) (from which the addresses in the IA_NA were obtained) a Renew message. If the time T2 is reached and the server does not respond, the client sends a Rebind message to any available server (**S2**). For an IA_TA, the client may send a Renew or Rebind message at the client's discretion.



DHCP Relay Agent

A DHCP relay agent is on the same network as the DHCP clients and helps forward messages between the DHCP server and clients. When a client cannot use its link-local address and a well-known multicast address to locate a DHCP server on its network, it then needs a DHCP relay agent to send a message to a DHCP server that is not attached to the same network.

The DHCP relay agent can add the remote identification (remote-ID) option and the interface-ID option to the Relay-Forward DHCPv6 messages. The remote-ID option carries a user-defined string,

1. In IPv6, all network interfaces can be associated with several addresses.

such as the system name. The interface-ID option provides slot number, port information and the VLAN ID to the DHCPv6 server. The remote-ID option (if any) is stripped from the Relay-Reply messages before the relay agent sends the packets to the clients. The DHCP server copies the interface-ID option from the Relay-Forward message into the Relay-Reply message and sends it to the relay agent. The interface-ID should not change even after the relay agent restarts.

Prefix Delegation

Prefix delegation enables an IPv6 router to use the IPv6 prefix (network address) received from the ISP (or a connected uplink router) for its LAN. The NWA/WAC uses the received IPv6 prefix (for example, 2001:db2::/48) to generate its LAN IP address. Through sending Router Advertisements (RAs) regularly by multicast, the NWA/WAC passes the IPv6 prefix information to its LAN hosts. The hosts then can use the prefix to generate their IPv6 addresses.

ICMPv6

Internet Control Message Protocol for IPv6 (ICMPv6 or ICMP for IPv6) is defined in RFC 4443. ICMPv6 has a preceding Next Header value of 58, which is different from the value used to identify ICMP for IPv4. ICMPv6 is an integral part of IPv6. IPv6 nodes use ICMPv6 to report errors encountered in packet processing and perform other diagnostic functions, such as "ping".

Neighbor Discovery Protocol (NDP)

The Neighbor Discovery Protocol (NDP) is a protocol used to discover other IPv6 devices and track neighbor's reachability in a network. An IPv6 device uses the following ICMPv6 messages types:

- Neighbor solicitation: A request from a host to determine a neighbor's link-layer address (MAC address) and detect if the neighbor is still reachable. A neighbor being "reachable" means it responds to a neighbor solicitation message (from the host) with a neighbor advertisement message.
- Neighbor advertisement: A response from a node to announce its link-layer address.
- Router solicitation: A request from a host to locate a router that can act as the default router and forward packets.
- Router advertisement: A response to a router solicitation or a periodical multicast advertisement from a router to advertise its presence and other parameters.

IPv6 Cache

An IPv6 host is required to have a neighbor cache, destination cache, prefix list and default router list. The NWA/WAC maintains and updates its IPv6 caches constantly using the information from response messages. In IPv6, the NWA/WAC configures a link-local address automatically, and then sends a neighbor solicitation message to check if the address is unique. If there is an address to be resolved or verified, the NWA/WAC also sends out a neighbor solicitation message. When the NWA/WAC receives a neighbor advertisement in response, it stores the neighbor's link-layer address in the neighbor cache. When the NWA/WAC uses a router solicitation message to query for a router and receives a router advertisement message, it adds the router's information to the neighbor cache, prefix list and destination cache. The NWA/WAC creates an entry in the default router list cache if the router can be used as a default router.

When the NWA/WAC needs to send a packet, it first consults the destination cache to determine the next hop. If there is no matching entry in the destination cache, the NWA/WAC uses the prefix list

to determine whether the destination address is on-link and can be reached directly without passing through a router. If the address is onlink, the address is considered as the next hop. Otherwise, the NWA/WAC determines the next-hop from the default router list or routing table. Once the next hop IP address is known, the NWA/WAC looks into the neighbor cache to get the link-layer address and sends the packet when the neighbor is reachable. If the NWA/WAC cannot find an entry in the neighbor cache or the state for the neighbor is not reachable, it starts the address resolution process. This helps reduce the number of IPv6 solicitation and advertisement messages.

Multicast Listener Discovery

The Multicast Listener Discovery (MLD) protocol (defined in RFC 2710) is derived from IPv4's Internet Group Management Protocol version 2 (IGMPv2). MLD uses ICMPv6 message types, rather than IGMP message types. MLDv1 is equivalent to IGMPv2 and MLDv2 is equivalent to IGMPv3.

MLD allows an IPv6 switch or router to discover the presence of MLD listeners who wish to receive multicast packets and the IP addresses of multicast groups the hosts want to join on its network.

MLD snooping and MLD proxy are analogous to IGMP snooping and IGMP proxy in IPv4.

MLD filtering controls which multicast groups a port can join.

MLD Messages

A multicast router or switch periodically sends general queries to MLD hosts to update the multicast forwarding table. When an MLD host wants to join a multicast group, it sends an MLD Report message for that address.

An MLD Done message is equivalent to an IGMP Leave message. When an MLD host wants to leave a multicast group, it can send a Done message to the router or switch. The router or switch then sends a group-specific query to the port on which the Done message is received to determine if other devices connected to this port should remain in the group.

Example - Enabling IPv6 on Windows XP/2003/Vista

By default, Windows XP and Windows 2003 support IPv6. This example shows you how to use the `ipv6 install` command on Windows XP/2003 to enable IPv6. This also displays how to use the `ipconfig` command to see auto-generated IP addresses.

```
C:\>ipv6 install
Installing...
Succeeded.

C:\>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . . : 10.1.1.46
    Subnet Mask . . . . . : 255.255.255.0
    IP Address. . . . . : fe80::2d0:59ff:feb8:103c%4
    Default Gateway . . . . . : 10.1.1.254
```

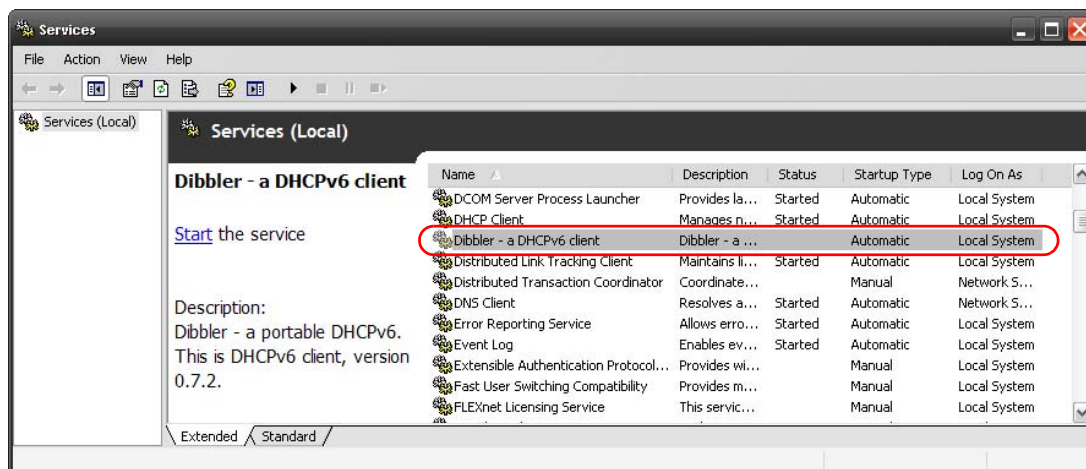
IPv6 is installed and enabled by default in Windows Vista. Use the `ipconfig` command to check your automatic configured IPv6 address as well. You should see at least one IPv6 address available for the interface on your computer.

Example - Enabling DHCPv6 on Windows XP

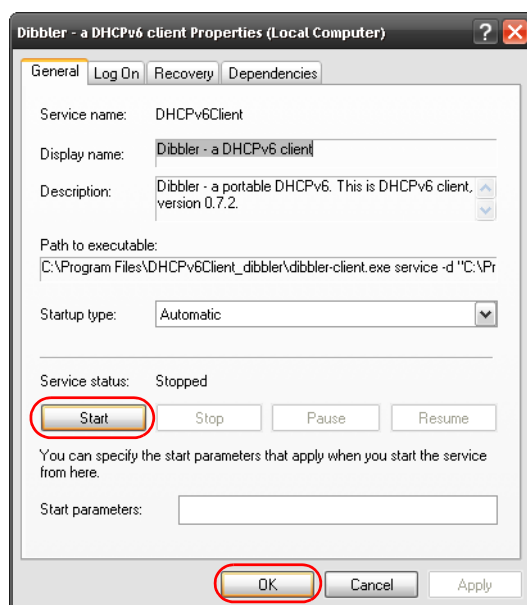
Windows XP does not support DHCPv6. If your network uses DHCPv6 for IP address assignment, you have to additionally install a DHCPv6 client software on your Windows XP. (Note: If you use static IP addresses or Router Advertisement for IPv6 address assignment in your network, ignore this section.)

This example uses Dibbler as the DHCPv6 client. To enable DHCPv6 client on your computer:

- 1 Install Dibbler and select the DHCPv6 client option on your computer.
- 2 After the installation is complete, select **Start > All Programs > Dibbler-DHCPv6 > Client Install as service**.
- 3 Select **Start > Control Panel > Administrative Tools > Services**.
- 4 Double click **Dibbler - a DHCPv6 client**.



- Click **Start** and then **OK**.



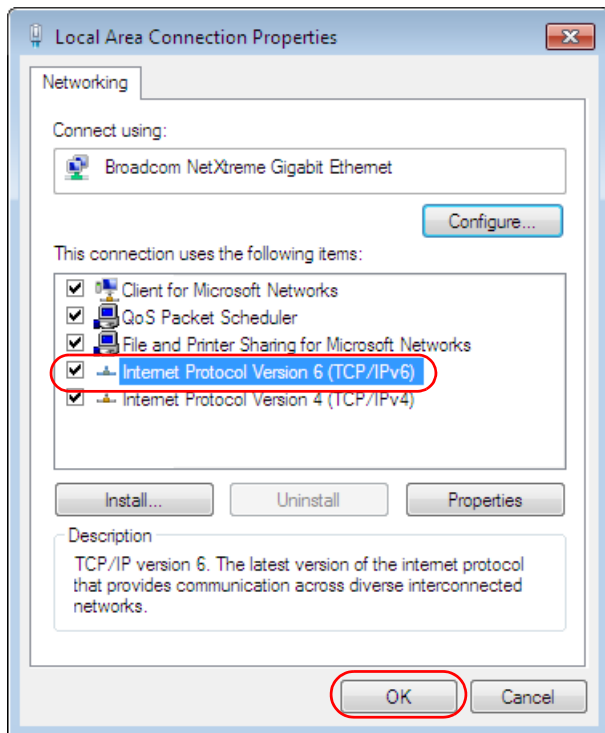
- Now your computer can obtain an IPv6 address from a DHCPv6 server.

Example - Enabling IPv6 on Windows 7

Windows 7 supports IPv6 by default. DHCPv6 is also enabled when you enable IPv6 on a Windows 7 computer.

To enable IPv6 in Windows 7:

- Select **Control Panel > Network and Sharing Center > Local Area Connection**.
- Select the **Internet Protocol Version 6 (TCP/IPv6)** checkbox to enable it.
- Click **OK** to save the change.



- 4 Click **Close** to exit the **Local Area Connection Status** screen.
- 5 Select **Start > All Programs > Accessories > Command Prompt**.
- 6 Use the `ipconfig` command to check your dynamic IPv6 address. This example shows a global address (2001:b021:2d::1000) obtained from a DHCP server.

```
C:\>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IPv6 Address. . . . . : 2001:b021:2d::1000
    Link-local IPv6 Address . . . . . : fe80::25d8:dcab:c80a:5189%11
    IPv4 Address. . . . . : 172.16.100.61
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : fe80::213:49ff:feaa:7125%11
                                172.16.100.254
```


Customer Support

In the event of problems that cannot be solved by using this manual, you should contact your vendor. If you cannot contact your vendor, then contact a ZyXEL office for the region in which you bought the device. Regional websites are listed below.

See also http://www.zyxel.com/about_zyxel/zyxel_worldwide.shtml.

Please have the following information ready when you contact an office.

Required Information

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

Corporate Headquarters (Worldwide)

Taiwan

- ZyXEL Communications Corporation
- <http://www.zyxel.com>

Asia

China

- ZyXEL Communications (Shanghai) Corp.
- ZyXEL Communications (Beijing) Corp.
- ZyXEL Communications (Tianjin) Corp.
- <http://www.zyxel.cn>

India

- ZyXEL Technology India Pvt Ltd
- <http://www.zyxel.in>

Kazakhstan

- ZyXEL Kazakhstan
- <http://www.zyxel.kz>

Korea

- ZyXEL Korea Corp.
- <http://www.zyxel.kr>

Malaysia

- ZyXEL Malaysia Sdn Bhd.
- <http://www.zyxel.com.my>

Pakistan

- ZyXEL Pakistan (Pvt.) Ltd.
- <http://www.zyxel.com.pk>

Philippines

- ZyXEL Philippines
- <http://www.zyxel.com.ph>

Singapore

- ZyXEL Singapore Pte Ltd.
- <http://www.zyxel.com.sg>

Taiwan

- ZyXEL Communications Corporation
- <http://www.zyxel.com>

Thailand

- ZyXEL Thailand Co., Ltd
- <http://www.zyxel.co.th>

Vietnam

- ZyXEL Communications Corporation-Vietnam Office
- <http://www.zyxel.com/vn/vi>

Europe

Austria

- ZyXEL Deutschland GmbH
- <http://www.zyxel.de>

Belarus

- ZyXEL BY
- <http://www.zyxel.by>

Belgium

- ZyXEL Communications B.V.
- <http://www.zyxel.com/be/nl/>

Bulgaria

- ZyXEL България
- <http://www.zyxel.com/bg/bg/>

Czech Republic

- ZyXEL Communications Czech s.r.o
- <http://www.zyxel.cz>

Denmark

- ZyXEL Communications A/S
- <http://www.zyxel.dk>

Estonia

- ZyXEL Estonia
- <http://www.zyxel.com/ee/et/>

Finland

- ZyXEL Communications
- <http://www.zyxel.fi>

France

- ZyXEL France
- <http://www.zyxel.fr>

Germany

- ZyXEL Deutschland GmbH
- <http://www.zyxel.de>

Hungary

- ZyXEL Hungary & SEE
- <http://www.zyxel.hu>

Latvia

- ZyXEL Latvia
- <http://www.zyxel.com/lv/lv/homepage.shtml>

Lithuania

- ZyXEL Lithuania
- <http://www.zyxel.com/lt/lt/homepage.shtml>

Netherlands

- ZyXEL Benelux
- <http://www.zyxel.nl>

Norway

- ZyXEL Communications
- <http://www.zyxel.no>

Poland

- ZyXEL Communications Poland
- <http://www.zyxel.pl>

Romania

- ZyXEL Romania
- <http://www.zyxel.com/ro/ro>

Russia

- ZyXEL Russia
- <http://www.zyxel.ru>

Slovakia

- ZyXEL Communications Czech s.r.o. organizacna zlozka
- <http://www.zyxel.sk>

Spain

- ZyXEL Spain
- <http://www.zyxel.es>

Sweden

- ZyXEL Communications
- <http://www.zyxel.se>

Switzerland

- Studerus AG
- <http://www.zyxel.ch/>

Turkey

- ZyXEL Turkey A.S.
- <http://www.zyxel.com.tr>

UK

- ZyXEL Communications UK Ltd.
- <http://www.zyxel.co.uk>

Ukraine

- ZyXEL Ukraine
- <http://www.ua.zyxel.com>

Latin America

Argentina

- ZyXEL Communication Corporation
- <http://www.zyxel.com/ec/es/>

Ecuador

- ZyXEL Communication Corporation
- <http://www.zyxel.com/ec/es/>

Middle East

Israel

- ZyXEL Communication Corporation
- <http://il.zyxel.com/homepage.shtml>

Middle East

- ZyXEL Communication Corporation
- <http://www.zyxel.com/me/en>

North America

USA

- ZyXEL Communications, Inc. - North America Headquarters
- <http://www.us.zyxel.com/>

Oceania

Australia

- ZyXEL Communications Corporation
- <http://www.zyxel.com/au/en/>

Africa

South Africa

- Nology (Pty) Ltd.
- <http://www.zyxel.co.za>

Legal Information

Copyright

Copyright © 2015 by ZyXEL Communications Corporation.

The contents of this publication may not be reproduced in any part or as a whole, transcribed, stored in a retrieval system, translated into any language, or transmitted in any form or by any means, electronic, mechanical, magnetic, optical, chemical, photocopying, manual, or otherwise, without the prior written permission of ZyXEL Communications Corporation.

Published by ZyXEL Communications Corporation. All rights reserved.

Disclaimers

ZyXEL does not assume any liability arising out of the application or use of any products, or software described herein. Neither does it convey any license under its patent rights nor the patent rights of others. ZyXEL further reserves the right to make changes in any products described herein without notice. This publication is subject to change without notice.

Your use of the NWA/WAC is subject to the terms and conditions of any related service providers.

Trademarks

Trademarks mentioned in this publication are used for identification purposes only and may be properties of their respective owners.

Regulatory Notice and Statement

UNITED STATE AMERICA



The following information applies if you use the product within USA area.

FCC EMC Statement

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
- 1 This device may not cause harmful interference, and
- 2 this device must accept any interference received, including interference that may cause undesired operation.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- This product has been tested and complies with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
- If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- 1 Reorient or relocate the receiving antenna.
- 2 Increase the separation between the equipment or devices.
- 3 Connect the equipment to an outlet other than the receiver's.
- 4 Consult a dealer or an experienced radio/TV technician for assistance.

FCC Radiation Exposure Statement

- This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.
- This transmitter must be at least 20 cm (NWA5123-AC, WAC6553D-E) from the user and must not be co-located or operating in conjunction with any other antenna or transmitter.
- Country Code selection feature to be disabled for products marketed to the US/CANADA
- Operation of this device is restricted to indoor use only. (WAC6553D-E is a device for outdoor use.)

CANADA

The following information applies if you use the product within Canada area.

Industry Canada ICES statement

CAN ICES-3 (B)/NMB-3(B)

Industry Canada RSS-GEN & RSS-210 statement

- This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
- Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.
- This radio transmitter (2468C-NWA5123AC (NWA5123-AC), 2468C-WAC6502D-E (WAC6502D-S, WAC6502D-E), 2468C-WAC6503D-S (WAC6503D-S), 2468C-WAC6553D-E (WAC6553D-E), 2468C-WAC6103DI (WAC6103D-I)) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.
- Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
- Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.
- Le présent émetteur radio (2468C-NWA5123AC (NWA5123-AC), 2468C-WAC6502D-E (WAC6502D-S, WAC6502D-E), 2468C-WAC6503D-S (WAC6503D-S), 2468C-WAC6553D-E (WAC6553D-E), 2468C-WAC6103DI (WAC6103D-I)) de modèle s'il fait partie du matériel de catégorie I a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

ANTENNA MODEL	NO.	TYPE	CONNECTOR	2.4 G GAIN	5 G GAIN	REMARK
NWA5123-AC 2.4 GHz Antenna	1	PIFA	U.FL	3.08 (2400-2483.5MHz)		
	2	PIFA	U.FL	3.07 (2400-2483.5MHz)		
NWA5123-AC 5 GHz Antenna	3	PIFA	U.FL		4.06 (5150-5250 MHz) 3.91 (5725-5850 MHz)	
	4	PIFA	U.FL		3.99 (5150-5250 MHz) 3.79 (5725-5850 MHz)	
WAC6502D-E		Dipole	RSMA	5	7	
WAC6502D-S		Dipole	IPEX	4	6	
WAC6503D-S		Dipole	IPEX	4	6	
ZXL04-22008A		Dipole	N type	4.5	7	
SINBON / 2.4 G & 5 G Metal & PCB Antenna	1	PIFA	U.FL	3.28		Ceiling Mounted: Antenna 1, 2, 3 Wall Mounted: Antenna 1, 2, 4
	2	PIFA	U.FL	3.37		
	3	PIFA	U.FL	3.15		
	4	Dipole	U.FL	4.33		
	5	Loop	U.FL		4.38 (5150-5250 MHz) 4.23 (5725-5850 MHz)	Ceiling Mounted: Antenna 5, 6, 7 Wall Mounted: Antenna 5, 6, 8
	6	Loop	U.FL		4.31 (5150-5250 MHz) 4.22 (5725-5850 MHz)	
	7	Loop	U.FL		4.38 (5150-5250 MHz) 4.36 (5725-5850 MHz)	
	8	Dipole	U.FL		5.12 (5150-5250 MHz) 5.20 (5725-5850 MHz)	

Industry Canada radiation exposure statement

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (NWA5123-AC, WAC6553D-E) between the radiator and your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm (NWA5123-AC, WAC6553D-E) de distance entre la source de rayonnement et votre corps.

Caution:

- (i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- (ii) the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall comply with the e.i.r.p. limit; and
- (iii) the maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate.
- (iv) Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.
- (v) WAC6553D-E is an outdoor device and only uses 5G Band 4 (5725-5850 MHz).

Avertissement:

- (i) les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
- (ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5250-5350 MHz et 5 470-5 725 MHz doit se conformer à la limite de p.i.r.e.;
- (iii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5725-5825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.
- (iv) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5650-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.
- (v) WAC6553D-E est un appareil extérieur et seulement utilise 5G Bane 4 (5725-5850 MHz).

EUROPEAN UNION



The following information applies if you use the product within the European Union.

Declaration of Conformity with Regard to EU Directive 1999/5/EC (R&TTE Directive)

Compliance information for 2.4GHz and/or 5GHz wireless products relevant to the EU and other Countries following the EU Directive 1999/5/EC (R&TTE).

Български (Bulgarian)	С настоящото ZyXEL декларира, че това оборудване е в съответствие със съществените изисквания и другите приложими разпоредбите на Директива 1999/5/EC.
Español (Spanish)	Por medio de la presente ZyXEL declara que el equipo cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Čeština (Czech)	ZyXEL tímto prohlašuje, že tento zařízený je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/EC.
Dansk (Danish)	Undertegnede ZyXEL erklærer herved, at følgende udstyr overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch (German)	Hiermit erklärt ZyXEL, dass sich das Gerät Ausstattung in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EU befindet.
Eesti keel (Estonian)	Käesolevaga kinnitab ZyXEL seadme seadmed vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Ελληνικά (Greek)	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ ΖΥΧΕΛ ΔΗΛΩΝΕΙ ΟΤΙ ΕΞΟΠΛΙΣΜΟΣ ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
English	Hereby, ZyXEL declares that this equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Français (French)	Par la présente ZyXEL déclare que l'appareil équipements est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/EC.
Hrvatski (Croatian)	ZyXEL ovime izjavljuje da je radijska oprema tipa u skladu s Direktivom 1999/5/EC.
Íslenska (Icelandic)	Hér með lýsir, ZyXEL því yfir að þessi búnaður er í samræmi við grunnkröfur og önnur viðeigandi ákvæði tilskipunar 1999/5/EC.
Italiano (Italian)	Con la presente ZyXEL dichiara che questo attrezzatura è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviešu valoda (Latvian)	Ar šo ZyXEL deklarē, ka iekārtas atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių kalba (Lithuanian)	Šiuo ZyXEL deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

Magyar (Hungarian)	Alulírott, ZyXEL nyilatkozom, hogy a berendezés megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EK irányelv egyéb előírásainak.
Malti (Maltese)	Hawnhekk, ZyXEL, jiddikjara li dan taghmir jikkonforma mal-htigijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Nederlands (Dutch)	Hierbij verklaart ZyXEL dat het toestel uitrusting in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EC.
Polski (Polish)	Niniejszym ZyXEL oświadcza, że sprzęt jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
Português (Portuguese)	ZyXEL declara que este equipamento está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/EC.
Română (Romanian)	Prin prezenta, ZyXEL declară că acest echipament este în conformitate cu cerințele esențiale și alte prevederi relevante ale Directivei 1999/5/EC.
Slovenčina (Slovak)	ZyXEL týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/EC.
Slovenščina (Slovene)	ZyXEL izjavlja, da je ta oprema v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/EC.
Suomi (Finnish)	ZyXEL vakuuttaa täten että laitteet tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska (Swedish)	Härmed intygar ZyXEL att denna utrustning står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EC.
Norsk (Norwegian)	Erklærer herved ZyXEL at dette utstyret er i samsvar med de grunnleggende kravene og andre relevante bestemmelser i direktiv 1999/5/EF.

National Restrictions

This product may be used in all EU countries (and other countries following the EU Directive 2014/53/EU) without any limitation except for the countries mentioned below:

Ce produit peut être utilisé dans tous les pays de l'UE (et dans tous les pays ayant transposés la directive 2014/53/UE) sans aucune limitation, excepté pour les pays mentionnés ci-dessous:

Questo prodotto è utilizzabile in tutte i paesi EU (ed in tutti gli altri paesi che seguono le direttiva 2014/53/UE) senza nessuna limitazione, eccetto per i paesi menzionati di seguito:

Das Produkt kann in allen EU Staaten ohne Einschränkungen eingesetzt werden (sowie in anderen Staaten die der Richtlinie 2014/53/EU folgen) mit Ausnahme der folgenden aufgeführten Staaten:

In the majority of the EU and other European countries, the 2.4GHz and 5GHz bands have been made available for the use of wireless local area networks (LANs). Later in this document you will find an overview of countries in which additional restrictions or requirements or both are applicable.

The requirements for any country may evolve. ZyXEL recommends that you check with the local authorities for the latest status of their national regulations for both the 2.4GHz and 5GHz wireless LANs.

The following countries have restrictions and/or requirements in addition to those given in the table labeled "Overview of Regulatory Requirements for Wireless LANs":

Belgium

The Belgian Institute for Postal Services and Telecommunications (BIPT) must be notified of any outdoor wireless link having a range exceeding 300 meters. Please check <http://www.bipt.be> for more details.

Draadloze verbindingen voor buitengebruik en met een reikwijdte van meer dan 300 meter dienen aangemeld te worden bij het Belgisch Instituut voor postdiensten en telecommunicatie (BIPT). Zie <http://www.bipt.be> voor meer gegevens.

Les liaisons sans fil pour une utilisation en extérieur d'une distance supérieure à 300 mètres doivent être notifiées à l'Institut Belge des services Postaux et des Télécommunications (IBPT). Visitez <http://www.ibpt.be> pour de plus amples détails.

Denmark

In Denmark, the band 5150 - 5350 MHz is also allowed for outdoor usage.

I Danmark må frekvensbåndet 5150 - 5350 også anvendes udendørs.

Italy

This product meets the National Radio Interface and the requirements specified in the National Frequency Allocation Table for Italy. Unless this wireless LAN product is operating within the boundaries of the owner's property, its use requires a "general authorization." Please check <http://www.sviluppoeconomico.gov.it/> for more details.

Questo prodotto è conforme alla specifiche di Interfaccia Radio Nazionali e rispetta il Piano Nazionale di ripartizione delle frequenze in Italia. Se non viene installato all'interno del proprio fondo, l'utilizzo di prodotti Wireless LAN richiede una "Autorizzazione Generale". Consultare <http://www.sviluppoeconomico.gov.it/> per maggiori dettagli.

Latvia

The outdoor usage of the 2.4 GHz band requires an authorization from the Electronic Communications Office. Please check <http://www.esd.lv> for more details.

2.4 GHz frekvenču joslas izmantošanai ārpus telpām nepieciešama atļauja no Elektronisko sakaru direkcijas. Vairāk informācijas: <http://www.esd.lv>.

Notes:

1. Although Norway, Switzerland and Liechtenstein are not EU member states, the EU Directive 2014/53/EU has also been implemented in those countries.

2. The regulatory limits for maximum output power are specified in EIRP. The EIRP level (in dBm) of a device can be calculated by adding the gain of the antenna used (specified in dBi) to the output power available at the connector (specified in dBm).

List of national codes

COUNTRY	ISO 3166 2 LETTER CODE	COUNTRY	ISO 3166 2 LETTER CODE
Austria	AT	Liechtenstein	LI
Belgium	BE	Lithuania	LT
Bulgaria	BG	Luxembourg	LU
Croatia	HR	Malta	MT
Cyprus	CY	Netherlands	NL
Czech Republic	CR	Norway	NO
Denmark	DK	Poland	PL
Estonia	EE	Portugal	PT
Finland	FI	Romania	RO
France	FR	Serbia	RS
Germany	DE	Slovakia	SK
Greece	GR	Slovenia	SI
Hungary	HU	Spain	ES
Iceland	IS	Sweden	SE
Ireland	IE	Switzerland	CH
Italy	IT	Turkey	TR
Latvia	LV	United Kingdom	GB

Professional installation instruction (WAC6553D-E)

Please be advised that due to the unique function supplied by this product, the device is intended for use with our interactive entertainment software and licensed third-party only. The product will be distributed through controlled distribution channel and installed by trained professional and will not be sold directly to the general public through retail store.

- 1 Installation personal**
This product is designed for specific application and needs to be installed by a qualified personal who has RF and related rule knowledge. The general user shall not attempt to install or change the setting.
- 2 Installation location**
The product shall be installed at a location where the radiating antenna can be kept 30 cm from nearby person in normal operation condition to meet regulatory RF exposure requirement.
- 3 External antenna**
Use only the antennas which have been approved by ZyXEL Communications Corporation. The non-approved antenna(s) may produce unwanted spurious or excessive RF transmitting power which may lead to the violation of FCC/IC limit and is prohibited.
- 4 Installation procedure**
Please refer to user's manual for the detail.
- 5 Warning**
Please carefully select the installation position and make sure that the final output power does not exceed the limit set force in relevant rules. The violation of the rule could lead to serious federal penalty.

Instructions d'installation professionnelle (WAC6553D-E)

Veuillez noter que l'appareil étant dédié à une fonction unique, il doit être utilisé avec notre logiciel propriétaire de divertissement interactif. Ce produit sera proposé par un réseau de distribution contrôlé et installé par des professionnels; il ne sera pas proposé au grand public par le réseau de la grande distribution.

- 1 Installation**
Ce produit est destiné à un usage spécifique et doit être installé par un personnel qualifié maîtrisant les radiofréquences et les règles s'y rapportant. L'installation et les réglages ne doivent pas être modifiés par l'utilisateur final.
- 2 Emplacement d'installation**
En usage normal, afin de respecter les exigences réglementaires concernant l'exposition aux radiofréquences, ce produit doit être installé de façon à respecter une distance de 30 cm entre l'antenne émettrice et les personnes.
- 3 Antenne externe.**
Utiliser uniquement les antennes approuvées par le fabricant. L'utilisation d'autres antennes peut conduire à un niveau de rayonnement essentiel ou non essentiel dépassant les niveaux limites définis par FCC/IC, ce qui est interdit.
- 4 Procédure d'installation**
Consulter le manuel d'utilisation.
- 5 Avertissement**
Choisir avec soin la position d'installation et s'assurer que la puissance de sortie ne dépasse pas les limites en vigueur. La violation de cette règle peut conduire à de sérieuses pénalités fédérales.

Safety Warnings

- Do NOT use this product near water, for example, in a wet basement or near a swimming pool.
- Do NOT expose your device to dampness, dust or corrosive liquids.
- Do NOT store things on the device.
- Do NOT install, use, or service this device during a thunderstorm. There is a remote risk of electric shock from lightning.
- Connect ONLY suitable accessories to the device.
- Do NOT open the device or unit. Opening or removing covers can expose you to dangerous high voltage points or other risks. ONLY qualified service personnel should service or disassemble this device. Please contact your vendor for further information.
- Make sure to connect the cables to the correct ports.
- Place connecting cables carefully so that no one will step on them or stumble over them.
- Always disconnect all cables from this device before servicing or disassembling.
- Use ONLY an appropriate power adaptor or cord for your device. Connect it to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe).
- Do NOT allow anything to rest on the power adaptor or cord and do NOT place the product where anyone can walk on the power adaptor or cord.
- Do NOT use the device if the power adaptor or cord is damaged as it might cause electrocution.
- If the power adaptor or cord is damaged, remove it from the device and the power source.
- Do NOT attempt to repair the power adaptor or cord. Contact your local vendor to order a new one.
- Do not use the device outside, and make sure all the connections are indoors. There is a remote risk of electric shock from lightning.
- CAUTION: RISK OF EXPLOSION IF BATTERY (on the motherboard) IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS. Dispose them at the applicable collection point for the recycling of electrical and electronic equipment. For detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the store where you purchased the product.
- Do NOT obstruct the device ventilation slots, as insufficient airflow may harm your device.
- Antenna Warning! This device meets ETSI and FCC certification requirements when using the included antenna(s). Only use the included antenna(s).
- If you wall mount your device, make sure that no electrical lines, gas or water pipes will be damaged.
- The PoE (Power over Ethernet) devices that supply or receive power and their connected Ethernet cables must all be completely indoors.
- This product is for indoor use only (utilisation intérieure exclusivement).
- FOR COUNTRY CODE SELECTION USAGE (WLAN DEVICES)
Note: The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all Wi-Fi product marketed in US must fixed to US operation channels only.

The following warning statements apply, where the disconnect device is not incorporated in the equipment or where the plug on the power supply cord is intended to serve as the disconnect device,

- for PERMANENTLY CONNECTED EQUIPMENT, a readily accessible disconnect device shall be incorporated external to the equipment;
- for PLUGGABLE EQUIPMENT, the socket-outlet shall be installed near the equipment and shall be easily accessible.

Environment statement

ErP (Energy-related Products)

ZyXEL products put on the EU market in compliance with the requirement of the European Parliament and the Council published Directive 2009/125/EC establishing a framework for the setting of ecodesign requirements for energy-related products (recast), so called as "ErP Directive (Energy-related Products directive) as well as ecodesign requirement laid down in applicable implementing measures, power consumption has satisfied regulation requirements which are:

Network standby power consumption < 12W, and/or

Off mode power consumption < 0.5W, and/or

Standby mode power consumption < 0.5W.

Wireless setting, please refer to "Wireless" chapter for more detail.

European Union - Disposal and Recycling Information

WEEE Directive

The symbol below means that according to local regulations your product and/or its battery shall be disposed of separately from domestic waste. If this product is end of life, take it to a recycling station designated by local authorities. At the time of disposal, the separate collection of your product and/or its battery will help save natural resources and ensure that the environment is sustainable development.

Die folgende Symbol bedeutet, dass Ihr Produkt und/oder seine Batterie gemäß den örtlichen Bestimmungen getrennt vom Hausmüll entsorgt werden muss. Wenden Sie sich an eine Recyclingstation, wenn dieses Produkt das Ende seiner Lebensdauer erreicht hat. Zum Zeitpunkt der Entsorgung wird die getrennte Sammlung von Produkt und/oder seiner Batterie dazu beitragen, natürliche Ressourcen zu sparen und die Umwelt und die menschliche Gesundheit zu schützen.

El símbolo de abajo indica que según las regulaciones locales, su producto y/o su batería deberán depositarse como basura separada de la doméstica. Cuando este producto alcance el final de su vida útil, llévelo a un punto limpio. Cuando llegue el momento de desechar el producto, la recogida por separado éste y/o su batería ayudará a salvar los recursos naturales y a proteger la salud humana y medioambiental.

Le symbole ci-dessous signifie que selon les réglementations locales votre produit et/ou sa batterie doivent être éliminés séparément des ordures ménagères. Lorsque ce produit atteint sa fin de vie, amenez-le à un centre de recyclage. Au moment de la mise au rebut, la




collecte séparée de votre produit et/ou de sa batterie aidera à économiser les ressources naturelles et protéger l'environnement et la santé humaine.

Il simbolo sotto significa che secondo i regolamenti locali il vostro prodotto e/o batteria deve essere smaltito separatamente dai rifiuti domestici. Quando questo prodotto raggiunge la fine della vita di servizio portarlo a una stazione di riciclaggio. Al momento dello smaltimento, la raccolta separata del vostro prodotto e/o della sua batteria aiuta a risparmiare risorse naturali e a proteggere l'ambiente e la salute umana.

Symbolen innebär att enligt lokal lagstiftning ska produkten och/eller dess batteri kastas separat från hushållsavfallet. När den här produkten når slutet av sin livslängd ska du ta den till en återvinningsstation. Vid tiden för kasseringen bidrar du till en bättre miljö och mänsklig hälsa genom att göra dig av med den på ett återvinningsställe.



Environmental Product Declaration

Български (Bulgarian)	Čeština (Czech)	Dansk (Danish)	Deutsch (German)
<p>Екологична продуктова декларация</p> <p>RuHS Директива 2011/65/ЕО WEEE Директива 2012/19/ЕО PPW Директива 94/62/ЕО REACH Регламент (ЕО) № 1907/2006 ErP Директива 2009/125/ЕО</p> <p>Име/титул: Richard Hsu / Quality Management Division Senior Manager Подпис: <i>Richard Hsu</i> Дата (dd/mm/yyyy): 01/10/2014</p>  	<p>Environmentální prohlášení o produktu</p> <p>RuHS Směrnice 2011/65/EU WEEE Směrnice 2012/19/EU PPW Směrnice 94/62/ES REACH Nařízení (ES) č. 1907/2006 ErP Směrnice 2009/125/ES</p> <p>Jméno/úřad: Richard Hsu / Quality Management Division Senior Manager Podpis: <i>Richard Hsu</i> Datum (dd/mm/yyyy): 01/10/2014</p>  	<p>Miljøerklæring</p> <p>RuHS Direktiv 2011/65/EU WEEE Direktiv 2012/19/EU PPW Direktiv 94/62/EF REACH Forordning (EF) nr. 1907/2006 ErP Direktiv 2009/125/EF</p> <p>Navn/ still: Richard Hsu / Quality Management Division Senior Manager Underskrift: <i>Richard Hsu</i> Dato (dd/mm/åååå): 01/10/2014</p>  	<p>Produkt-Umweltdeklaration</p> <p>RuHS Richtlinie 2011/65/EU WEEE Richtlinie 2012/19/EU PPW Richtlinie 94/62/EG REACH VERORDNUNG (EG) Nr. 1907/2006 ErP Richtlinie 2009/125/EG</p> <p>Name/ still: Richard Hsu / Quality Management Division Senior Manager Unterschrift: <i>Richard Hsu</i> Datum (dd/mm/yyyy): 2014/10/01</p>  
<p>Toote keskkonnadeklaratsioon</p> <p>RuHS Direktiiv 2011/65/EL WEEE Direktiiv 2012/19/EL PPW Direktiiv 94/62/EÜ REACH MAARUS (EÜ) nr 1907/2006 ErP Direktiiv 2009/125/EÜ</p> <p>Nimi/ pealkiri: Richard Hsu / Quality Management Division Senior Manager Allkiri: <i>Richard Hsu</i> Kuupäev (pp/kk/aaaa): 01/10/2014</p>  	<p>Environmental product declaration</p> <p>RuHS Directive 2011/65/EU WEEE Directive 2012/19/EU PPW Directive 94/62/EC REACH Regulation (EC) No 1907/2006 ErP Directive 2009/125/EC</p> <p>Name/ title: Richard Hsu / Quality Management Division Senior Manager Signature: <i>Richard Hsu</i> Date (dd/mm/yyyy): 01/10/2014</p>  	<p>Declaraciones Ambientales de Producto</p> <p>RuHS Directiva 2011/65/UE WEEE Directiva 2012/19/UE PPW Directiva 94/62/CE REACH REGLAMENTO (CE) n° 1907/2006 ErP Directiva 2009/125/CE</p> <p>Nombre/ título: Richard Hsu / Quality Management Division Senior Manager Firma: <i>Richard Hsu</i> Fecha (aaaa/mm/dd): 2014/10/01</p>  	<p>Profil environnemental de produit</p> <p>RuHS Directive 2011/65/UE WEEE Directive 2012/19/UE PPW Directive 94/62/CE REACH RÈGLEMENT (CE) N° 1907/2006 ErP Directive 2009/125/CE</p> <p>Nom/ titre: Richard Hsu / Quality Management Division Senior Manager Signature: <i>Richard Hsu</i> Date (dd/mm/yyyy): 2014/10/01</p>  
<p>Deklaraciju o zbirjanju proizvoda</p> <p>RuHS Direktiva 2011/65/EU WEEE Direktiva 2012/19/EU PPW Direktiva 94/62/EK REACH Uredba (EZ) br. 1907/2006 ErP Direktiva 2009/125/EZ</p> <p>Ime/ nadim: Richard Hsu / Quality Management Division Senior Manager Podpis: <i>Richard Hsu</i> Datum (dd/mm/yyyy): 01/10/2014</p>  	<p>Dichiarazione ambientale di prodotto</p> <p>RuHS Direttiva 2011/65/UE WEEE Direttiva 2012/19/UE PPW Direttiva 94/62/CE REACH REGOLAMENTO (CE) n. 1907/2006 ErP Direttiva 2009/125/CE</p> <p>Nome/ titolo: Richard Hsu / Quality Management Division Senior Manager Firma: <i>Richard Hsu</i> Data (aaaa/mm/yy): 2014/10/01</p>  	<p>Produkta vides ietekmējuma deklarācija</p> <p>RuHS Direktīva 2011/65/ES WEEE Direktīva 2012/19/ES PPW Direktīva 94/62/EK REACH Regula (EK) Nr. 1907/2006 ErP Direktīva 2009/125/EK</p> <p>Nosaukums/ tālrunis: Richard Hsu / Quality Management Division Senior Manager Paraksts: <i>Richard Hsu</i> Datums (dd/mm/yyyy): 01/10/2014</p>  	<p>Apļinkosauģing gaminio deklaraciją</p> <p>RuHS Direktiva 2011/65/ES WEEE Direktiva 2012/19/ES PPW Direktiva 94/62/ES REACH REGLAMENTAS (EB) Nr. 1907/2006 ErP Direktiva 2009/125/EB</p> <p>Vardas/ titul: Richard Hsu / Quality Management Division Senior Manager Parašas: <i>Richard Hsu</i> Data (ddmmmmmm): 01/10/2014</p>  
<p>Környezetvédelmi terméknyilatkozat</p> <p>RuHS 2011/65/EU irányelv WEEE 2012/19/EU irányelv PPW 94/62/EK irányelv REACH 1907/2006/EK rendelet ErP 2009/125/EK irányelv</p> <p>Név/ cím: Richard Hsu / Quality Management Division Senior Manager Aláírás: <i>Richard Hsu</i> Datum (dd/mm/yyyy): 2014/10/01</p>  	<p>Dikjarazzjoni Ambjentali dwar il-Prodott</p> <p>RuHS Direktiva 2011/65/UE WEEE Direktiva 2012/19/UE PPW Direktiva 94/62/EK REACH REGOLAMENTO (CE) NR 1907/2006 ErP Direktiva 2009/125/CE</p> <p>Isim/ itlu: Richard Hsu / Quality Management Division Senior Manager Firma: <i>Richard Hsu</i> Data (aaaa/mm/yy): 2014/10/01</p>  	<p>Miljøproducterklæring</p> <p>RuHS Richtlin 2011/65/EU WEEE Richtlin 2012/19/EU PPW Richtlin 94/62/EF REACH Verordning (EG) nr. 1907/2006 ErP Richtlin 2009/125/EG</p> <p>Navn/ still: Richard Hsu / Quality Management Division Senior Manager Handskrevet: <i>Richard Hsu</i> Datum (dd/mm/åååå): 01/10/2014</p>  	<p>Deklarację środowiskową produktu</p> <p>RuHS Dyrektywa 2011/65/UE WEEE Dyrektywa 2012/19/UE PPW Dyrektywa 94/62/WE REACH Rozporządzenie (WE) nr 1907/2006 ErP Dyrektywa 2009/125/WE</p> <p>Nazwisko/ tytuł: Richard Hsu / Quality Management Division Senior Manager Podpis: <i>Richard Hsu</i> Data (ddmmmmmm): 2014/10/01</p>  
<p>Declaração ambiental do produto</p> <p>RuHS Directiva 2011/65/UE WEEE Directiva 2012/19/UE PPW Directiva 94/62/CE REACH Regulamento (CE) n° 1907/2006 ErP Directiva 2009/125/CE</p> <p>Nome/ título: Richard Hsu / Quality Management Division Senior Manager Assinatura: <i>Richard Hsu</i> Data (dd/mm/aaaa): 01/10/2014</p>  	<p>Declarație de mediu privind produsele</p> <p>RuHS Directivă 2011/65/UE WEEE Directivă 2012/19/UE PPW Directivă 94/62/CE REACH REGULAMENTUL (CE) NR. 1907/2006 ErP Directivă 2009/125/CE</p> <p>Numele/ titlu: Richard Hsu / Quality Management Division Senior Manager Semnatura: <i>Richard Hsu</i> Data (dd/mm/yyyy): 01/10/2014</p>  	<p>Vyhlašení o environmentálním výrobku</p> <p>RuHS Směrnice 2011/65/EU WEEE Směrnice 2012/19/EU PPW Směrnice 94/62/ES REACH Nařízení (ES) č. 1907/2006 ErP Směrnice 2009/125/ES</p> <p>Podpis: <i>Richard Hsu</i> Datum (dd/mm/yyyy): 01/10/2014</p>  	<p>Okoljsko deklaracijo izdelka</p> <p>RuHS Direktiva 2011/65/UE WEEE Direktiva 2012/19/UE PPW Direktiva 94/62/ES REACH Uredba (ES) št. 1907/2006 ErP Direktiva 2009/125/ES</p> <p>Podpis: <i>Richard Hsu</i> Datum (ddmm/yyyy): 01/10/2014</p>  
<p>Suomi (Finnish)</p> <p>Standardin perustava ympäristötietosuostelu</p> <p>RuHS Direktiiv 2011/65/EU WEEE Direktiiv 2012/19/EU PPW Direktiiv 94/62/EY REACH ASETUS (EY) N° 1907/2006 ErP Direktiiv 2009/125/EY</p> <p>Nimi/ osasto: Richard Hsu / Quality Management Division Senior Manager Allekirjoitus: <i>Richard Hsu</i> Päivämäärä (pp/kk/vvvv): 01/10/2014</p>  	<p>Miljöproduktdeklaration</p> <p>RuHS Direktiv 2011/65/EU WEEE Direktiv 2012/19/EU PPW Direktiv 94/62/EG REACH Förordning (EG) nr 1907/2006 ErP Direktiv 2009/125/EG</p> <p>Namn/ titel: Richard Hsu / Quality Management Division Senior Manager Namnteckning: <i>Richard Hsu</i> Datum (dd/mm/åååå): 01/10/2014</p>  	<p>Περιβαλλοντική δήλωση προϊόντος</p> <p>RuHS Οδηγία 2011/65/ΕΕ WEEE Οδηγία 2012/19/ΕΕ PPW Οδηγία 94/62/ΕΚ REACH Έ.υπονομοτομ (ΕΚ) αριθ. 1907/2006 ErP Οδηγία 2009/125/ΕΚ</p> <p>Όνομα/ τίτλος: Richard Hsu / Quality Management Division Senior Manager Υπογραφή: <i>Richard Hsu</i> Ημερομηνία (ηη/μμ/εεεε): 01/10/2014</p>  	<p>Miljødeklarasjon</p> <p>RuHS Direktiv 2011/65/EU WEEE Direktiv 2012/19/EU PPW Direktiv 94/62/EF REACH Forordning (EF) nr. 1907/2006 ErP Direktiv 2009/125/EF</p> <p>Navn/ still: Richard Hsu / Quality Management Division Senior Manager Signatur: <i>Richard Hsu</i> Dato (ddmm/åååå): 01/10/2014</p>  

台灣



以下訊息僅適用於產品銷售至台灣地區

NCC Statement:

1) 用 20 cm 計算 MPE 能符合 $1\text{mW}/\text{cm}^2$

電磁波曝露量 MPE 標準值 (MPE) $1\text{mW}/\text{cm}^2$ ，送測產品實值為 $0.316\text{ mW}/\text{cm}^2$ for NWA5123-AC。

電磁波曝露量 MPE 標準值 (MPE) $1\text{mW}/\text{cm}^2$ ，送測產品實值為 $0.320\text{ mW}/\text{cm}^2$ for WAC6502D-S。

電磁波曝露量 MPE 標準值 (MPE) $1\text{mW}/\text{cm}^2$ ，送測產品實值為 $0.403\text{ mW}/\text{cm}^2$ for WAC6502D-E。

電磁波曝露量 MPE 標準值 (MPE) $1\text{mW}/\text{cm}^2$ ，送測產品實值為 $0.744\text{ mW}/\text{cm}^2$ for WAC6503D-S。

電磁波曝露量 MPE 標準值 (MPE) $1\text{mW}/\text{cm}^2$ ，送測產品實值為 $0.448\text{ mW}/\text{cm}^2$ for WAC6103D-I。

2) 用 30 cm 計算 MPE 能符合 $1\text{mW}/\text{cm}^2$

電磁波曝露量 MPE 標準值 (MPE) $1\text{mW}/\text{cm}^2$ ，送測產品實值為 $0.305\text{ mW}/\text{cm}^2$ for WAC6553D-E。

802.11b/802.11g 警語：

第十二條→經型式認證合格之低功率射頻電機，非經許可，公司，商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條→低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

802.11a 警語：

無線傳輸設備 (UNII)

在 5.25-5.35 赫赫頻帶內操作之無線資訊傳輸設備，限於室內使用。(4.7.5)

無線資訊傳輸設備忍受合法通信之干擾且不得干擾合法通信；如造成干擾，應立即停用，俟無干擾之虞，始得繼續使用。(4.7.6)

無線資訊傳輸設備的製造廠商應確保頻率穩定性，如依製造廠商使用手冊上所述正常操作，發射的信號應維持於操作頻帶中。(4.7.7)

專業安裝警語：(WAC6553D-E)

"本器材須經專業工程人員安裝及設定，始得設置使用，且不得直接販售給一般消費者"。

Viewing Certifications

Go to <http://www.zyxel.com> to view this product's documentation and certifications.

ZyXEL Limited Warranty

ZyXEL warrants to the original end user (purchaser) that this product is free from any defects in material or workmanship for a specific period (the Warranty Period) from the date of purchase. The Warranty Period varies by region. Check with your vendor and/or the authorized ZyXEL local distributor for details about the Warranty Period of this product. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, ZyXEL will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal or higher value, and will be solely at the discretion of ZyXEL. This warranty shall not apply if the product has been modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

Note

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. ZyXEL shall in no event be held liable for indirect or consequential damages of any kind to the purchaser.

To obtain the services of this warranty, contact your vendor. You may also refer to the warranty policy for the region in which you bought the device at http://www.zyxel.com/web/support_warranty_info.php.

Registration

Register your product online to receive e-mail notices of firmware upgrades and information at www.zyxel.com.

Open Source Licenses

This product contains in part some free software distributed under GPL license terms and/or GPL like licenses. Open source licenses are provided with the firmware package. You can download the latest firmware at www.zyxel.com. If you cannot find it there, contact your vendor or ZyXEL Technical Support at support@zyxel.com.tw.

To obtain the source code covered under those Licenses, please contact your vendor or ZyXEL Technical Support at support@zyxel.com.tw.

Index

Symbols

A

access [28](#)
access privileges [13](#)
access users [80](#)
 see also users [80](#)
admin users [80](#)
 multiple logins [85](#)
 see also users [80](#)
alerts [157, 160, 161, 163, 164, 165](#)
antenna switch [183](#)
AP [12](#)
applications
 MBSSID [13](#)
 Repeater [16](#)

B

backing up configuration files [169](#)
Basic Service Set
 see BSS
boot module [174](#)
BSS [13](#)

C

CA
 and certificates [113](#)
CA (Certificate Authority), see certificates
CAPWAP [59, 61](#)
CEF (Common Event Format) [158, 163](#)
Certificate Authority (CA)

 see certificates
Certificate Management Protocol (CMP) [119](#)
Certificate Revocation List (CRL) [113](#)
 vs OCSP [128](#)
certificates [112](#)
 advantages of [113](#)
 and CA [113](#)
 and FTP [149](#)
 and HTTPS [134](#)
 and SSH [146](#)
 and WWW [136](#)
 certification path [113, 121, 126](#)
 expired [113](#)
 factory-default [113](#)
 file formats [113](#)
 fingerprints [122, 127](#)
 importing [116](#)
 not used for encryption [113](#)
 revoked [113](#)
 self-signed [113, 118](#)
 serial number [121, 126](#)
 storage space [115, 124](#)
 thumbprint algorithms [114](#)
 thumbprints [114](#)
 used for authentication [113](#)
 verifying fingerprints [114](#)
certification requests [118, 119](#)
certifications
 viewing [231](#)
channel [14](#)
CLI [17, 33](#)
 button [33](#)
 messages [33](#)
 popup window [33](#)
 Reference Guide [2](#)
cold start [27](#)
commands [17](#)
 sent by Web Configurator [33](#)
Common Event Format (CEF) [158, 163](#)
comparison table [11](#)
configuration [12](#)
 information [178](#)

- configuration files [167](#)
 - at restart [169](#)
 - backing up [169](#)
 - downloading [170](#)
 - downloading with FTP [148](#)
 - editing [167](#)
 - how applied [168](#)
 - lastgood.conf [169](#), [172](#)
 - managing [169](#)
 - startup-config.conf [172](#)
 - startup-config-bad.conf [169](#)
 - syntax [168](#)
 - system-default.conf [172](#)
 - uploading [172](#)
 - uploading with FTP [148](#)
 - use without restart [167](#)
- contact information [217](#)
- Control and Provisioning of Wireless Access Points
 - See CAPWAP
- cookies [28](#)
- copyright [223](#)
- CPU usage [43](#), [45](#)
- current date/time [43](#), [130](#)
 - daylight savings [131](#)
 - setting manually [133](#)
 - time server [133](#)
- customer support [217](#)

D

- date [130](#)
- daylight savings [131](#)
- DCS [69](#)
- DHCP [130](#)
 - and domain name [130](#)
- diagnostics [178](#)
- Digital Signature Algorithm public-key algorithm,
 - see DSA
- disclaimer [223](#)
- documentation
 - related [2](#)
- domain name [130](#)
- DSA [118](#)
- DTLS [59](#)
- dual radios [14](#)

- dual-radio application [14](#)
- dynamic channel selection [69](#)

E

- e-mail
 - daily statistics report [154](#)
- encryption [16](#)
 - RSA [121](#)
- ESSID [191](#)
- Extended Service Set IDentification [87](#)

F

- FCC interference statement [223](#)
- file extensions
 - configuration files [167](#)
 - shell scripts [167](#)
- file manager [167](#)
- Firefox [28](#)
- firmware
 - and restart [173](#)
 - boot module, see boot module
 - current version [42](#), [174](#)
 - getting updated [173](#)
 - uploading [173](#), [174](#)
 - uploading with FTP [148](#)
- flash usage [43](#)
- FTP [17](#), [148](#)
 - and certificates [149](#)
 - with Transport Layer Security (TLS) [149](#)

G

- Guide
 - CLI Reference [2](#)
 - Quick Start [2](#)

H

- HTTP

- over SSL, see HTTPS
- redirect to HTTPS [136](#)
- vs HTTPS [135](#)
- HTTPS [134](#)
 - and certificates [134](#)
 - authenticating clients [134](#)
 - avoiding warning messages [138](#)
 - example [136](#)
 - vs HTTP [135](#)
 - with Internet Explorer [136](#)
 - with Netscape Navigator [137](#)
- HyperText Transfer Protocol over Secure Socket Layer, see HTTPS

I

- IEEE 802.1x [88](#)
- installation [12](#)
- interface
 - status [44](#)
- interfaces
 - as DHCP servers [130](#)
- interference [14](#)
- Internet Explorer [28](#)
- Internet Protocol version 6, see IPv6
- Internet telephony [13](#)
- IP Address [59](#)
 - gateway IP address [59](#)
- IP subnet [59](#)
- IPv6 [208](#)
 - addressing [208](#)
 - EUI-64 [210](#)
 - global address [209](#)
 - interface ID [210](#)
 - link-local address [208](#)
 - Neighbor Discovery Protocol [208](#)
 - ping [208](#)
 - prefix [208](#)
 - prefix length [208](#)
 - stateless autoconfiguration [210](#)
 - unspecified address [209](#)

J

- Java
 - permissions [28](#)
- JavaScripts [28](#)

K

- key pairs [112](#)

L

- lastgood.conf [169, 172](#)
- layer-2 isolation [102](#)
 - example [103](#)
 - MAC [103](#)
- LED suppression [180](#)
- LEDs [20](#)
 - Blinking [21, 23, 25](#)
 - Flashing [21, 23, 25, 26](#)
 - Off [21, 23, 25, 26](#)
- load balancing [69](#)
- Locator LED [181](#)
- log messages
 - categories [161, 163, 164, 165](#)
 - debugging [55](#)
 - regular [55](#)
 - types of [55](#)
- logout
 - Web Configurator [30](#)
- logs
 - e-mail profiles [156](#)
 - e-mailing log messages [57, 160](#)
 - formats [158](#)
 - log consolidation [161](#)
 - settings [156](#)
 - syslog servers [156](#)
 - system [156](#)
 - types of [156](#)

M

- MAC address
 - range [42](#)
- maintenance [12](#)
- management [12](#)
- Management Information Base (MIB) [150](#)
- Management Mode
 - CAPWAP and DHCP [60](#)
 - CAPWAP and IP Subnets [61](#)
 - managed AP [60](#)
 - standalone mode [59](#)
- management mode [12](#)
- managing the device
 - good habits [17](#)
 - using FTP. See FTP.
- MBSSID [13](#)
- memory usage [43, 46](#)
- message bar [36](#)
- messages
 - CLI [33](#)
 - warning [36](#)
- mode [12](#)
- model name [42](#)
- My Certificates, see also certificates [115](#)

N

- Netscape Navigator [28](#)
- network access control [12](#)
- Network Time Protocol (NTP) [132](#)

O

- objects
 - certificates [112](#)
 - users, account
 - user [80](#)
- Online Certificate Status Protocol (OCSP) [128](#)
 - vs CRL [128](#)
- operating mode [12](#)
- other documentation [2](#)
- overview [11](#)

P

- pop-up windows [28](#)
- power off [27](#)
- power on [27](#)
- product registration [231](#)
- Public-Key Infrastructure (PKI) [113](#)
- public-private key pairs [112](#)

Q

- Quick Start Guide [2](#)

R

- radio [14](#)
- reboot [27, 185](#)
 - vs reset [185](#)
- Reference Guide, CLI [2](#)
- registration
 - product [231](#)
- related documentation [2](#)
- remote management
 - FTP, see FTP
 - Telnet [148](#)
 - WWW, see WWW
- reports
 - daily [154](#)
 - daily e-mail [154](#)
- reset [194](#)
 - vs reboot [185](#)
 - vs shutdown [186](#)
- RESET button [27, 194](#)
- restart [185](#)
- RF interference [14](#)
- RFC
 - 2510 (Certificate Management Protocol or CMP) [119](#)
- Rivest, Shamir and Adleman public-key algorithm (RSA) [118](#)
- root AP [12](#)
- RSA [118, 121, 127](#)
- RSSI threshold [93](#)

S

- SCEP (Simple Certificate Enrollment Protocol) [119](#)
- screen resolution [28](#)
- Secure Socket Layer, see SSL
- serial number [42](#)
- service control
 - and users [134](#)
 - limitations [134](#)
 - timeouts [134](#)
- Service Set [87](#)
- Service Set Identifier
 - see SSID
- shell scripts [167](#)
 - downloading [176](#)
 - editing [175](#)
 - how applied [168](#)
 - managing [176](#)
 - syntax [168](#)
 - uploading [177](#)
- shutdown [27](#), [186](#)
 - vs reset [186](#)
- Simple Certificate Enrollment Protocol (SCEP) [119](#)
- Simple Network Management Protocol, see SNMP
- SNMP [149](#), [150](#)
 - agents [150](#)
 - Get [150](#)
 - GetNext [150](#)
 - Manager [150](#)
 - managers [150](#)
 - MIB [150](#)
 - network components [150](#)
 - Set [150](#)
 - Trap [150](#)
 - traps [151](#)
 - versions [149](#)
- SSH [144](#)
 - and certificates [146](#)
 - client requirements [146](#)
 - encryption methods [145](#)
 - for secure Telnet [146](#)
 - how connection is established [144](#)
 - versions [145](#)
 - with Linux [147](#)
 - with Microsoft Windows [147](#)
- SSID [13](#)
- SSID profile
 - pre-configured [13](#)
- SSID profiles [13](#)
- SSL [134](#)
- starting the device [27](#)
- startup-config.conf [172](#)
 - if errors [169](#)
 - missing at restart [169](#)
 - present at restart [169](#)
- startup-config-bad.conf [169](#)
- station [69](#)
- statistics
 - daily e-mail report [154](#)
- status [41](#)
- status bar [36](#)
 - warning message popup [36](#)
- stopping the device [27](#)
- supported browsers [28](#)
- syslog [158](#), [163](#)
- syslog servers, see also logs
- system log, see logs
- system name [42](#), [130](#)
- system uptime [43](#)
- system-default.conf [172](#)

T

- Telnet [148](#)
 - with SSH [146](#)
- time [130](#)
- time servers (default) [132](#)
- trademarks [223](#)
- Transport Layer Security (TLS) [149](#)
- troubleshooting [178](#)
- Trusted Certificates, see also certificates [123](#)

U

- upgrading
 - firmware [173](#)
- uploading
 - configuration files [172](#)
 - firmware [173](#)

- shell scripts [175](#)
- usage
 - CPU [43, 45](#)
 - flash [43](#)
 - memory [43, 46](#)
 - onboard flash [43](#)
- use [12](#)
- user authentication [80](#)
- user name
 - rules [81](#)
- user objects [80](#)
- users [80](#)
 - access, see also access users
 - admin (type) [80](#)
 - admin, see also admin users
 - and service control [134](#)
 - currently logged in [43](#)
 - default lease time [84, 86](#)
 - default reauthentication time [85, 86](#)
 - lease time [83](#)
 - limited-admin (type) [80](#)
 - lockout [85](#)
 - reauthentication time [83](#)
 - types of [80](#)
 - user (type) [80](#)
 - user names [81](#)
- access [28](#)
- requirements [28](#)
- supported browsers [28](#)
- web configurator [12](#)
- WEP (Wired Equivalent Privacy) [88](#)
- wireless channel [191](#)
- wireless client [69](#)
- Wireless Distribution System (WDS) [16](#)
- wireless LAN [191](#)
- Wireless network
 - overview [68](#)
- wireless network
 - example [68](#)
- wireless profile [87](#)
 - layer-2 isolation [87](#)
 - MAC filtering [87](#)
 - radio [87](#)
 - security [87](#)
 - SSID [87](#)
- wireless repeater [12](#)
- wireless security [13, 191](#)
- wireless station [69](#)
- WLAN interface [14](#)
- WPA2 [88](#)
- WWW [135](#)
 - and certificates [136](#)
 - see also HTTP, HTTPS [135](#)

V

- Vantage Report (VRPT) [158, 163](#)
- Virtual Local Area Network [64](#)
- VLAN [64](#)
 - introduction [64](#)
- VoIP [13](#)
- VRPT (Vantage Report) [158, 163](#)

W

- warm start [27](#)
- warning message popup [36](#)
- warranty [231](#)
 - note [231](#)
- WDS [12, 16](#)
- Web Configurator [17, 28](#)