6DISS

South America Workshop

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Services

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Laboratory Exercise: *Services*

Objectives

In this laboratory exercise you will complete the following tasks:

- *Configure and run an IPv6 (virtual) web server*
- *Configure and run an IPv6 ftp server*

- *Test services with IPv6 clients (web, ftp)*

Visual Objective

The following figure shows the topology of the current laboratory. This laboratory is different with the ones on the last days because we don't need a routed topology.

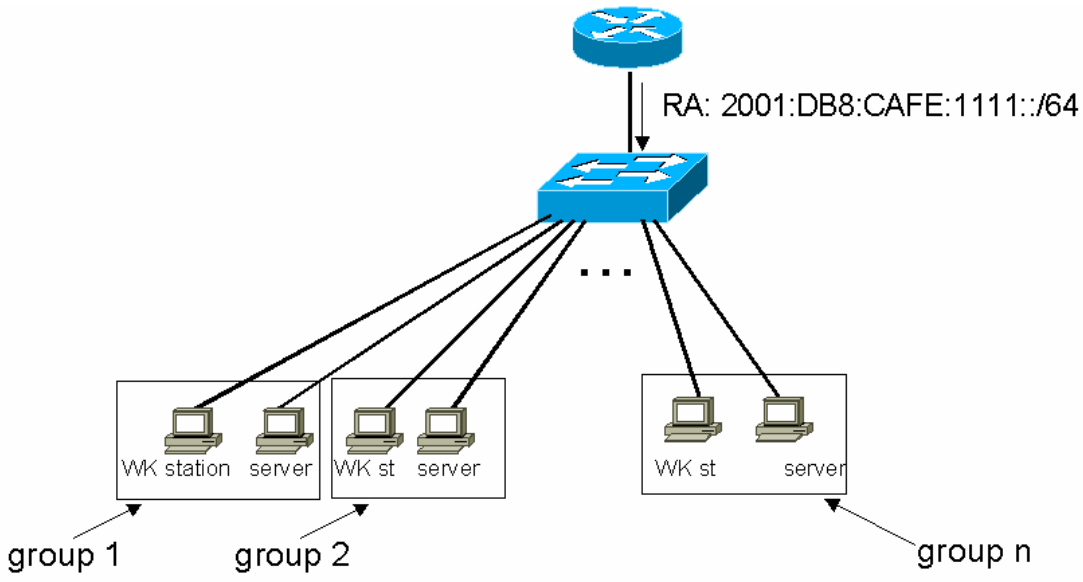


Figure 1: Scenario topology

Setup/Scenario

For this hands-on, you will work by binomial (server/workstation). In the server, you will configure the services. The workstation will be used to check that the services are running well. For this, you will install client applications like web browsers, ftp clients, etc.
The server must run in a Linux platform.
The workstation must run in a Windows XP platform

For the Workstations:
Step 1 - *Check if you have a global IPv6 address (derived of 2001:DB8:CAFE:1111::/64) and IPv4 connectivity to Internet.*

For the Servers:
Step 1 - *Disable autoconfiguration in the servers (eth0, default and all):*
Example for eth0:
echo "0" > /proc/sys/net/ipv6/conf/eth0/autoconf
echo "0" > /proc/sys/net/ipv6/conf/eth0/accept_ra
echo "0" > /proc/sys/net/ipv6/conf/eth0/accept_redirects

Step 2 - *Configure the following IPv6 address in your eth0 interface:*

Group	IPv6 Address
1	2001:DB8:CAFE:1111::1/64
2	2001:DB8:CAFE:1111::2/64
…	…
n	2001:DB8:CAFE:1111::n/64

With: 01<= group n <=1F

Note: The IPv4 addresses will be configured by DHCP

Task 1: Server Configuration: Configure and launch a web server (apache2)

- **Step 1:** Install apache2
  ~#apt-get install apache2

- **Step 2:** In /etc/apache2/ directory, check that the file ports.conf is not IPv4 specific:
  e.g: *Listen 80*

remark: With this configuration, the web server will listen IPv4 and IPv6 addresses. If you want that web server only listen IPv6 addresses you have to specify the web server IPv6 address in ports.conf:

e.g: *Listen* [2001:db8:CAFE:1111::n]:*80*

- **Step 3:** Launch apache2 daemon:
  /etc/apache2#apache2ctl start

- **Remark:** The configuration of IPv6 virtual hosts is similar to IPv4 configuration: In */etc/apache2/sites-enabled/default* file, you have to specify the IPv6 web server address:

```
NameVirtualHost [2001:db8:CAFE:1111::n]:80
NameVirtualHost 192.168.1.1:80

<VirtualHost [2001:db8:CAFE:1111::n]:80  192.168.1.1:80>
   ServerName web.quito.6diss.org
   DocumentRoot /www/
</VirtualHost>

<VirtualHost  [2001:db8:CAFE:1111::n]:80  192.168.1.1:80>
   ServerName web2.quito.6diss.org
   DocumentRoot /www/quito2
</VirtualHost>
```

Task 2: Server Configuration: Configure and launch an FTP server

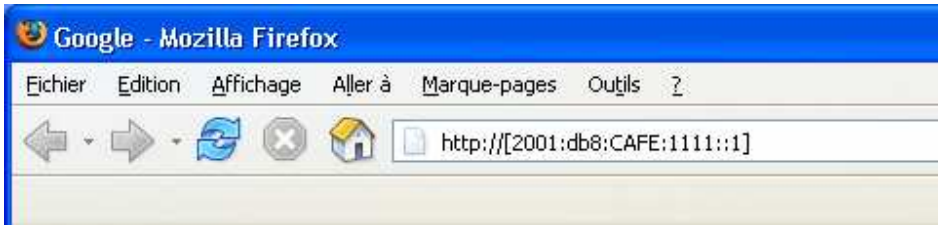
- **Step 1:** Install the IPv6 compliant FTP server pureftpd.
  ~#apt-get install pure-ftpd

- **Step 2:** Launch the FTP server
  ~# pure-ftpd &

Task 1': Workstation configuration: install and test a web browser *(parallel task with Task 1)*

- **Step 1**: Download and install a web browser supporting IPv6
  Download and Install Firefox (http://www.mozilla.org/firefox/)

- **Step2:** Check that you can reach the web server in IPv6 (of your neighbor)
  After having installed Firefox, try to access the web server of your group using IPv6 support. To do that, you must use this syntax:
  http://[2001:db8:CAFE:1111::n]



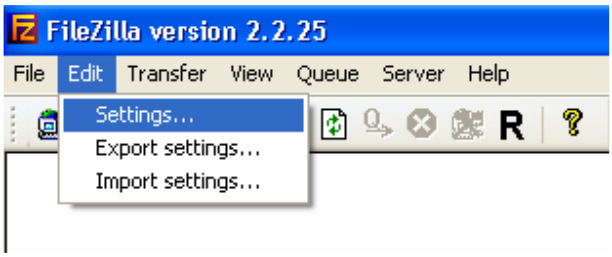
The square brackets avoid the confusion with the ":" of protocol, address and the port number.

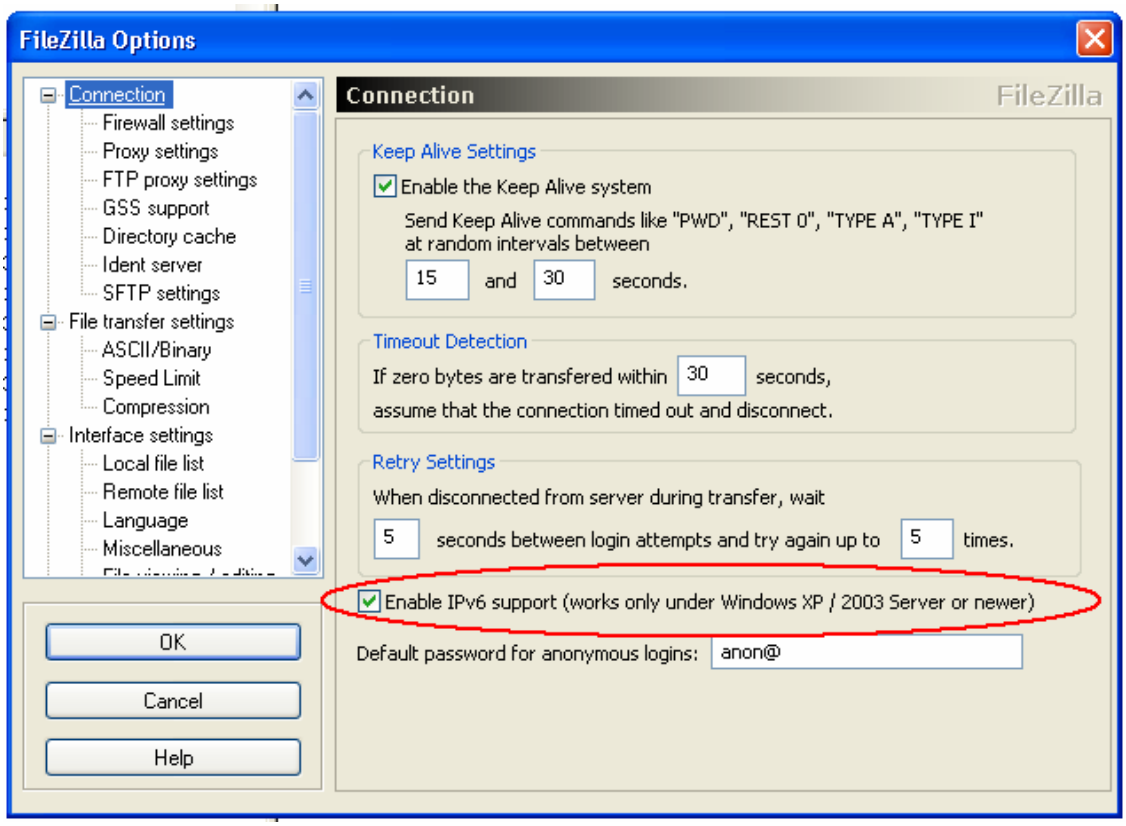
- **Step 3:** Analyse with Ethereal the packets and check that the TCP connection on port 80 is over IPv6.
- **Step 4:** Test that you can aslo access the web server with IPv4 address
- **Step 5:** Modify the web server configuration to only listen in the IPv6 address:
  Listen [2001:db8:CAFE:1111::n]:*80*

- **Step 6:** Check that you can only access the web service with IPv6 address.

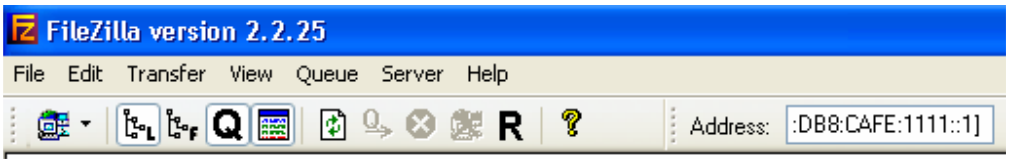
Task 2': Workstation configuration: install and test an FTP client *(parallel task with task 2)*

- **Step 1**: Download and install an IPv6 FTP client
  - Download and install Filezilla (http://filezilla.sourceforge.net)
  - Check that IPv6 is enable:





- **Step2:** Check that you can reach the ftp server in IPv6
  Try to access the FTP server of your group using IPv6 support. To do that, you must use this syntax in the address box: [2001:db8:CAFE:1111::n]



- **Step 3**: Use Ethereal to analyse the IPv6 requests and responses.

Summary

After completing these exercises, you should be able to:

- *Configure and run an IPv6 servers (web, ftp)*
- *Install and configure IPv6 client (ftp clients, web browsers)*