

CE Router符合性測試 安裝說明



建立日期: 2016/02/22



設定CE Router

- **WAN**

- 接收RA

- 根據RA的值決定WAN global address從DHCPv6或SLAAC取得

- 啟動DHCPv6 client

- 至少要求PD,DNS Server

- **LAN**

- 當Router

- 發送RA(須包含RDNSS與RDNSSSL option)

- 當DHCPv6 Server

- DHCPv6 stateful或stateless server

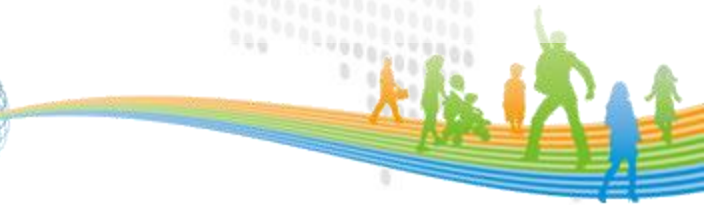




CE-Router Conformance Tool 安裝步驟(1/2)

• 安裝v6eval

1. 下載v6eval-3.3.3.tar.gz與v6eval_patch_20150430.rar
 - 假設兩個檔案均下載到 /home/user/底下
2. 解壓縮 v6eval-3.3.3.tar.gz與v6eval_patch_20150430.rar
 - `$ cd /home/user/`
 - `$ tar zxvf v6eval-3.3.3.tar.gz`
 - `$ tar xvf v6eval_patch_20150430.rar`
3. 將v6eval_patch_20150430中的patch files複製到v6eval-3.3.3
 - `$ cd /home/user/v6eval_patch_20150430/`
 - `$ cp * /home/user/v6eval-3.3.3/lib/Pz/.`
4. 編譯與安裝
 - `$ cd /home/user/v6eval-3.3.3/`
 - `$ make`
 - `$ make install`



CE-Router Conformance Tool 安裝步驟(2/2)

- 安裝Perl module HMAC
 - `$ cd /usr/ports/security/p5-Digest-HMAC`
 - `$ make install`
- 安裝CE-Router conformance tool
 1. 下載CE-Router_Self_Test_1_0_X.tar.gz
 - 假設下載到/home/user/底下
 2. 解壓縮CE-Router conformance test package
 - `$ cd /home/user/`
 - `$ tar zxvf CE-Router_Self_Test_1_0_X.tar.gz`
- 閱讀CE-Router_Self_Test_1_0_X目錄下的INSTALL.ct了解
 1. 如何設定【tn.def】、【nut.def】與【config.pl】
 2. 如何執行測試



CE-Router Conformance Tool 設定步驟(1/4)

• 設定 **【/usr/local/v6eval/etc/tn.def】**

- 注意事項：需開啟Link0 & Link1，修改網卡卡名為【TN之卡名】
 - **Link0** MUST be EXACT **name of Tester Interface** connect to NUT **WAN** Interface Under Test.
 - **Link1** MUST be EXACT **name of Tester Interface** connect to NUT **LAN** Interface Under Test.

```
#  
# Remote Control Configuration  
#  
RemoteDevice cuad0  
RemoteDebug 0  
RemoteIntDebug 0  
RemoteLog 1  
RemoteSpeed 0  
RemoteLogout 0  
RemoteMethod serial  
#filter ipv6  
  
#linkname interface BOGUS ether source address  
# name of the Tester Interface  
Link0 em0 00:00:00:00:01:00  
Link1 em1 00:00:00:00:01:01  
#Link2 de2 00:00:00:00:01:02  
#Link3 de4 00:00:00:00:01:03
```

TN的em0 interface連到CE Router WAN port

MAC address不需修改

TN的em1 interface連到CE Router LAN port

移除Link1前面的#

CE-Router Conformance Tool 設定步驟(2/4)

• 設定 **【/usr/local/v6eval/etc/nut.def】**

- 注意事項1 : **Type** 一定是 **router**
- 注意事項2 : MAC位址必須為 **【CE Router WAN&LAN上的位址】**
 - **Link0** MUST have the **EXACT MAC address** of the CE-Routers' **WAN** Interface
 - **Link1** MUST have the **EXACT MAC address** of the CE-Routers' **LAN** Interface

```
# System type
System manual

# System information
TargetName FreeBSD/i386 4.9-RELEASE + kame-20040726-freebsd49-snap

# Name
HostName target.tahi.org

# Type
# host, router, special
Type router          Type一定是router

# Super user name and it's password
# if you select manual as "System", you don't care "User" and "Password"
#
User root
Password v6eval

#linkname interface The EXACT ether source address
# name of the Interface Under Test
Link0 fxp0 00:00:92:a7:6d:f5 CERouter_WAN_IFname CERouter_WAN_MAC
Link1 fxp1 00:00:92:a7:6d:f6 CERouter_LAN_IFname CERouter_LAN_MAC
#Link2 de0 00:c0:f6:b0:aa:ef
```

CE-Router Conformance Tool 設定步驟(3/4)

設定

【CE-Router_Self_Test_1_0_X/config.pl】

基本功能設定

- DUID產生方式 (DUID-LLT, DUID-EN...)
- LAN端為DHCPv6 stateful 或 stateless server
- Implementation depend condition

```
# ===== #
# WAN
# ===== #
# Number of RS transmitted when initializing (Needed by CERouter 1.3.8)
# zero - only one RS          0: 開機後只送出一個RS
# non-zero - more then one RS  1: 開機後會送出多個RS
$Init_RS_Num = 1;

#
# Need RA to trigger DHCPv6 Client
# zero - DHCPv6 Client sends Solicit packet automatically after initialization
# non-zero - Needs RA to trigger DHCPv6 Client sending DHCPv6 Solicit packet
#                                           DHCPv6 client是否在收到RA後才會啟動
$RA_trigger_DHCPv6 = 1;          0: 否, DHCPv6 client在開機後就會自動送出Solicit封包
                                   1: 是, CE Router需收到RA後才會送出DHCPv6 Solicit封包

# DUID configuration (for Clinet)
# It is required to select one DUID type from following.
# zero - NUT does not support
# non-zero - NUT supports
#
$Support_DUID_LL = 0;
$Support_DUID_EN = 0;
$Support_DUID_LL = 1;
# CE Router DUID產生方式, 此三項只能有一個為1
```

```
# ===== #
# LAN
# ===== #
# Support Stateful/Stateless DHCPv6 server on LAN side
# 0 - Only Stateless DHCPv6 server LAN端支援DHCPv6 Stateful或Stateless Server
# 1 - Only Stateful DHCPv6 server 0: 只支援Stateless Server, 將執行LAN RFC3736
# 2 - Both Stateful and Stateless DHCPv6 server
$Stateful_Server = 2;          1: 只支援Stateful Server, 將執行LAN RFC3315
                                   2(建議): 同時支援Stateful與Stateless, 將執行LAN RFC3315與
                                   LAN RFC3736

#-----#
# implementation depend condition
#-----#

#
# Time between finishing DHCPv6 process on CE Router WAN side and
# CE Router can provide prefix generated from DHCPv6_PD in RA
#
# default: 6[sec] WAN端完成DHCPv6流程後等待$want_lan_ra秒,
# LAN底下TN送出RS給CE Router, CE Router送
# 出之Router Lifetime必須大於0
# CE Router是否在WAN取得上網參數後才會啟動
# $wait_lan_ra = 6;          LAN interface?
#                               0: CE Router一開機即啟動LAN interface
#                               1: CE Router在WAN順利取得global address
#                               後才會啟動LAN interface

# This flag is ONLY needed for LAN RFC 4862
# CE Router initialize LAN interface with concerning WAN interface status or not
# zero - CE Router initialize LAN interface without concerning WAN interface status.
# non-zero - CE Router initialize LAN interface after WAN gets global address.
#
$need_wan_up_first = 0;
```

CE-Router Conformance Tool 設定步驟(4/4)

設定【CE-Router_Self_Test_1_0_X/config.pl】

進階功能設定

- 支援Ping、MTU設定
- WAN支援global address經由SLAAC產生
-

```
# Support Confirm Message
#   zero      - not support
#   non-zero  - support
$Support_Confirm = 0;

# Support Release Message
#   zero      - not support
#   non-zero  - support
$Support_Release = 0;

# Support DNS Search List option on CE WAN side
#   zero      - not support
#   non-zero  - support
$Support_DNSSL = 0;

# ===== #
# LAN
# ===== #
# Support ULA
#   zero      - not support
#   non-zero  - support
$Support_ULA = 0;
```

進階功能，可全設為0

```
# ===== #
# General
# ===== #
# Support transmitting echo-request function
#   zero      - not support
#   non-zero  - support
$Support_Ping = 0;

# Support mtu configuration
#   zero      - not support
#   non-zero  - support
$Support_mtu = 0;

# ===== #
# WAN
# ===== #
# CE WAN IPv6 address mode (Needed by WAN_RFC4862 global address test cases)
#   zeo      - WAN global address only generate from DHCPv6 IA_NA
#   non-zeo  - WAN global address support SLAAC
$Support_global_addr_SLAAC = 0;

# Support DHCPv6 prefix size from hint
#   zero      - not support
#   non-zero  - support
$Support_Hint = 0;
```

進階功能，可全設為0



執行CE-Router Conformance Tool

- 執行所有測試案例(假設程式放在/home/user下)
 - `$cd /home/user/CE-Router_Self_Test_1_0_X/`
 - `$make ipv6ready_p2_ce`
- 執行某個**folder** (例如：**wan_rfc7084**)下的所有測試案例
 - `$cd /home/user/CE-Router_Self_Test_1_0_X/wan_rfc7084`
 - `$make ipv6ready_p2_ce`
- 執行某個**folder** (例如：**wan_rfc7084**)下某些測試案例(例如第3項到第7項)
 - `$cd /home/user/CE-Router_Self_Test_1_0_X/wan_rfc7084`
 - `$make AROPT="-s 3 -e 7" ipv6ready_p2_ce`

