psnmp

User reference manual

ENSEIRB

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2 Overview

psnmp is a LAN management software. Its main feature is guessing the topology of an Ethernet network.

This is the user reference manual, documenting how to use this software. It deals with the configuration of the environment, the launching of the data collecting and topology program *treeb*. And also about the use of the graphic user interface *psnmp* which offers different draw modes for the network trees.

One tree is build for each vlan encountered during the use of the collector *treeb*. These trees stored in the database are loaded and then can be merged using the *psnmp* interface.

3 Treeb

This is the data collecting and tree construction program of the psnmp package.

The first thing you have to do before using *treeb* or *psnmp* is to create a file with database connection parameters:

```
database {
    server "myhost";
    user "myuser";
    password "mypassword";
    database "mydatabase";
}
```

You also have access to the corresponding server with theses database parameters. You can create the table with the script including with the distribution ('`sql/create.sql`').

You must procede in this order:

1. Purge all database and initialize its hosts-related tables with '`file`' (*--ethers file*)
2. Query all the hosts in '`file`' (*--hosts file*), fetching general interface informations, IPs, and for network devices (switches, routers) their forwarding lists and VLAN-related configuration. Note that this step can take a very long time (especially when the algorithm has to guess VLAN/MAC dispatching).
3. Finally, build the tree (*--build*).
4. The Vlan configuration can be skipped with the option (*--build*).

4 Psnmp

This is the graphical interface of the psnmp package. It draws the topology of the network which is stored in a database filled by treeb.

The screen is divided in three parts:

- the left part shows an tree of the topology (explorer tree)
- the right part shows a graphical map of the network
- the bottom part is used to displays some informations like on-the-fly queries' result.

If you are in a VLANned network, the first thing you have to know is that *treeb* built one tree per virtual network. *psnmp* deals only with a tree at a time but it can merge many VLAN-trees if the merging does not create loops. At start, only the first VLAN is displayed. You can try to merge it with other VLANs or simply display another virtual network playing with the '`Vlans`' menu. Once your VLAN selection is done, click on '`Merge Vlans`' to do the job. If loops are detected, a message will be displayed and the first VLAN will be selected. Note that you have to click on '`Redraw map`' ('`View`' menu) to update the map; after the merging only the explorer tree is updated.

The map view is very configurable. It is centered on a particular host called the center host. After a redraw, the center host becomes the root of the tree. To change the center host, you can click on a host in the explorer tree, ⟨Control⟩ being pressed, or choose '`Recenter`' in the contextual menu of the map (right click on a host).

- '`Draw mode`' allows you to choose a host placement algorithm:
  - '`Sublayer`' displays the center host with his direct sons.
  - '`Depth tree`' displays the tree, each depth level at the same y coordinate.
  - '`Collapsed tree`' displays the tree , each depth level at the same y coordinate, centering each sub-trees on his father.
  - '`Circular layers`' displays the tree, each depth level at the same radius.
- '`Depth`' allows you to restrict the depth of the tree; distances are relative to center host. It can be infinite.
- '`Show types`' allows you to restrict the type of hosts displayed. You can choose it for the explorer tree and for the map, but the explorer tree restriction can't be stronger than map restriction. However hosts which have restricted types must be placed on the topography map provided that they have at least one son.
- '`Recenter modes`' can be '`chrooted`' (the fathers of the center host become sons) or '`subtree`' (the fathers of the center host are discarded).

After each change in the '`Draw mode`' menu, you have to click one time on '`Redraw map`' to make it effective.

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