CESNET technical report number 10/2006

Card database

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12.11.2006

1 Abstract

The objective of this report is to describe a Card database application. The application has been developed for a Liberouter project and is used for storing and displaying information of the server interconnections, the server reservations, the peripheral cards, the components of the peripheral cards and other additional information.

2 Introduction

A Liberouter project develops the specialized network cards. Due to a large number of computers and special devices interconnected in a project network, it is necessary to keep the state of the computer network and to provide different ways of representing this information.

The requested information of Combo6 cards, network cards, interconnections and hardware details was written down in the card database specification. This specification was used for a development of application “Card database” for storing, filtering and displaying information in different ways to make work in a complex network infrastructure easier.

3 The categories of the available information

The major aim of the card database is collecting information of the peripheral cards. These cards are divided into three categories:

- Network cards – common network cards (e.g., Intel 1Gb),
- Combo6 cards – have no network interface,
- Interface cards – provide the network interface, must be used with the Combo6 cards.

The range of stored technical information dependes on the card type. Common information for all types is used for a control of properties.

During development and testing of the application a requirement to store additional information has occured. This new request came from developers and testing group to make their work more effective.

Information is put down by both – "manual editing" and automatic scripts. Each approach uses a different storage space to prevent information to be lost.

4 Specification of the application

Due to various operating systems in the Liberouter project and accessibility of the stored information, Card database has been developed as a web application. The only prerequisite for using the card database in the various operating systems is the existence of a graphical web browser.

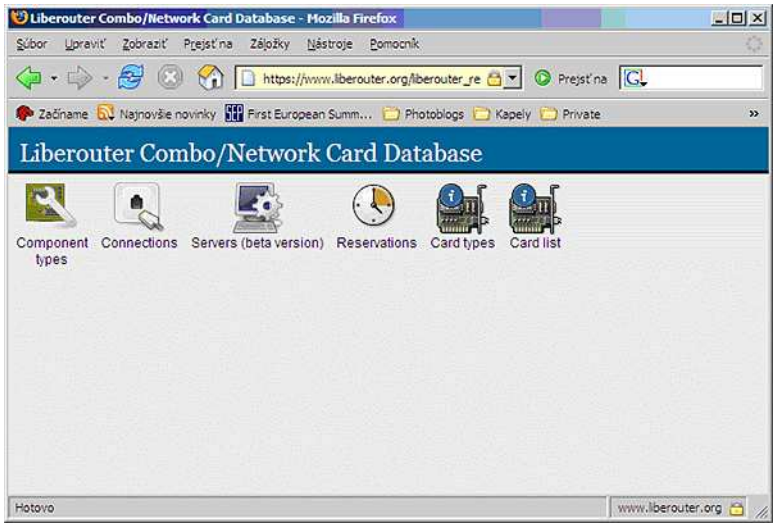

Figure 1: A title page of the Card database.

The application consists of a system base and the additional plug-ins. All these parts communicate through the common database. Plug-ins are represented by PHP scripts with a well-defined interface. The interface was designed specially for necessities of this application. As of now, six plug-ins mentioned below are available:

- plug-in Component types,
- plug-in Connections,
- plug-in Servers,
- plug-in Reservations,
- plug-in Card types,
- plug-in Card list.

The plug-ins provide users with customized representations of stored information. Each user has individual settings of filtering and table ordering. These settings are stored in the central database and are always available in a new session.

4.1 Plug-in Component types

This plug-in is used to store details about component types used in the Combo6 cards and the interface cards. Because of a variety of the stored information, a preview form only shows the most important data, all available information is shown in a detail view.

This plug-in also provides a tool for data export to the CSV format. The information can therefore be used by external applications.

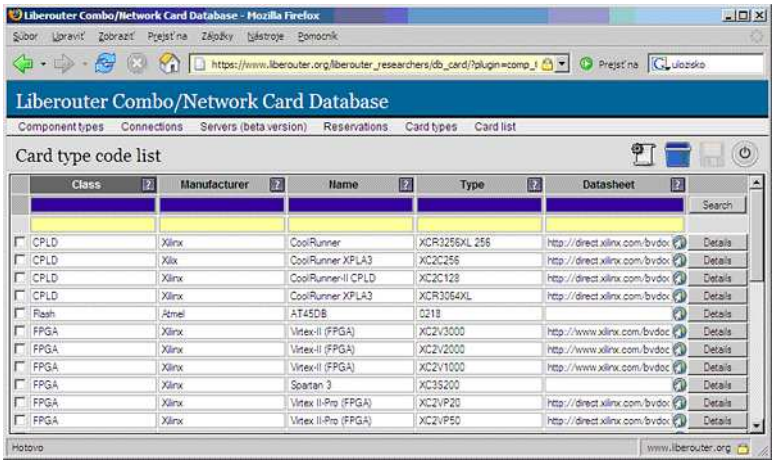

Figure 2: A basic form of the plug-in Component type.

4.2 Plug-in Connections

Display of the server interconnections is provided by the plug-in Connections. It also allows to filter information according to the location and the card type. More detailed information of listed cards is available by links in the connection list.

4.3 Plug-in Servers

The plug-in Servers is a replacement of a previously used application “Server list”. The new plug-in offers many statistics and information of project servers and other devices in the project computer network.

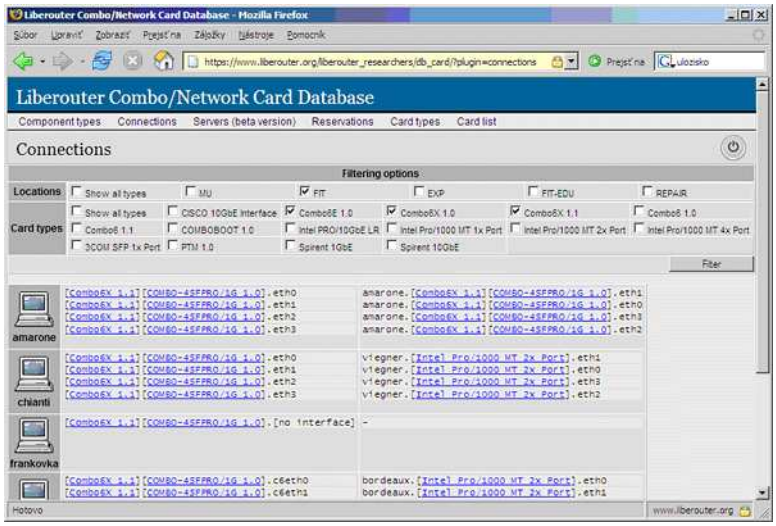

Figure 3: A preview of the server interconnections.

Each user can choose data of his interests. Filtering of servers according to a common administration and showing a hardware configuration of the computers obtained by a tool "lshw" is also available.

4.4 Plug-in Reservations

A collective usage of the project resources is possible only under the condition of the good cooperation among all members of the team. The plug-in Reservations allows to reserve available servers. Each user can place a new reservation for a chosen date. The reservations are always written out after logging into the server.

4.5 Plug-in Card types

The plug-in Card types is used to store information about peripheral card types. Users can show or edit basic information associated with all cards (e.g., name, class, description).

4.6 Plug-in Card list

Last, but not least plug-in Card list offers a complex information about each network, Combo6 or interface card. It is possible to write down:

- a serial number, a card type, an assignment of the card,
- a location (server or combo card),
- the components used on the cards,
- the available firmwares,

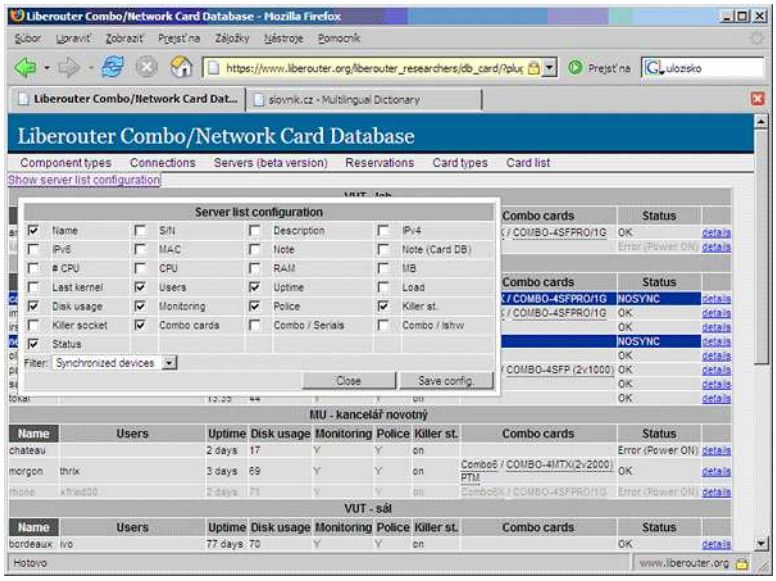

Figure 4: A configuration form of the plug-in Servers.

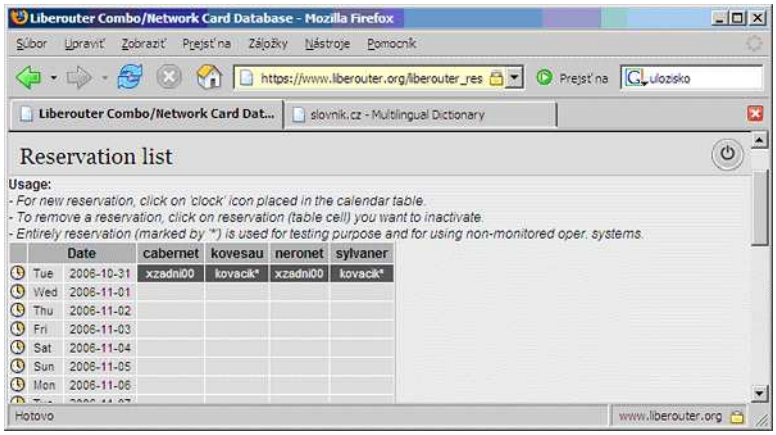

Figure 5: A reservation form of the plug-in Reservations.

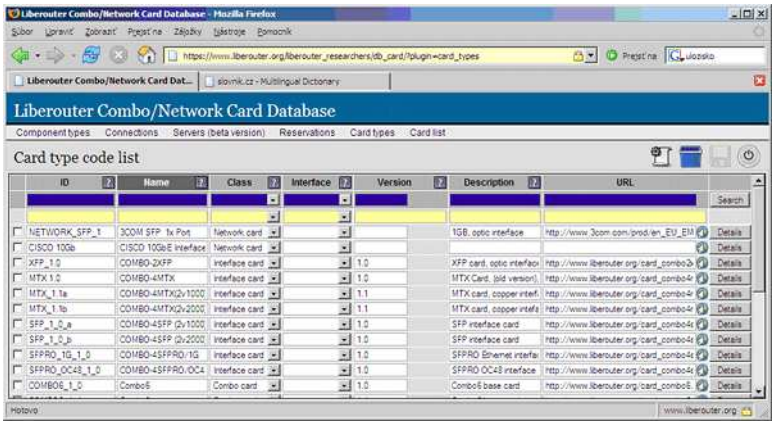

Figure 6: A preview form of the plug-in Card types.

- the testing reports,
- a history of card movement,
- etc.

For additional data processing, the CSV export of the filtered information is available.

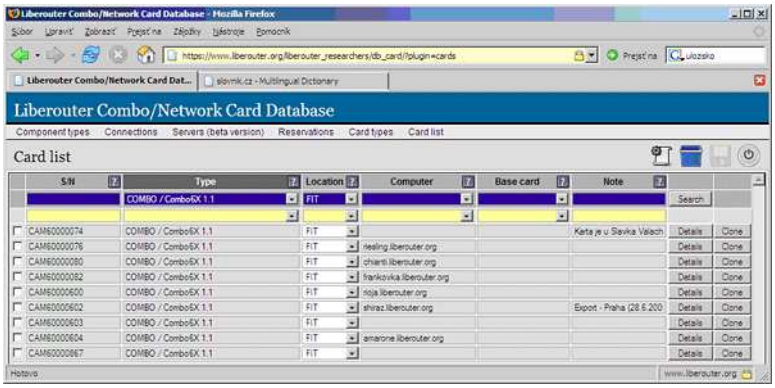

Figure 7: A preview form of the plug-in Card list.

5 Conclusion

We started to use the Card database in the mid-2006. Since that time it has replaced the most tools for collecting information of servers, interconnections and peripheral cards. On the basis of user demands it has been extended by the Reservation plug-in and the Servers plug-in. The major benefit of the new plug-ins is that they make work easier and more effective for users.