

11. - 13. 9. 2008

249

ONLINE WARE MANAGING IN A LOGISTICAL WAREHOUSE VIA INTERNET

Mihály Varga – Etele Csanády – Zalán Koppány Kovács – Zoltán Kocsis

Abstract

The aim of this project was to create a multilingual web-interface between our partner – who is a national spedition company– and its partners, to cut lower the order processing time, and to increase the ability and the satisfaction of its partners. To realize that, we used a classic LAMP system, which is not just relaible, flexible, secure, but also cost-effective. This was proved to a good selection, because we managed to not just fullfill the project, but we could gave a really usable, simple interfaced, parametrizable solution to our partner by minimal development cost. © University of West Hungary.

Key words: logistics, Internet, web, Linux, MySQL, PHP

INTRODUCTION

In this project our task was to create and fit a web-interface to an exiting ERP (Enterprise Resource Planning) system of the company. It had to be cheap, parametrizale, easy to develop in the future, and of course safe. Implementation of security was the most difficult job, because we had to accomodate to the existing source system and to the content provider too. (Each of these systems have their features and limitations.) We solved this "security problem" with a special implementation: the program is totally indipendent from the source system, and also completes the (security) demands of the content provider. This means, if somebody hacks the web-interface, he will not gets into the real system. He can change values, but it is totally useless, because the web-system gets every value from the source system with automatic refresh, and between the two system there are no direct connection. The web-interface itself has been made according to the *xhtml* standards extended with *CSS* (Cascading Style Sheets).

In a few point our tasks were the following:

- 1. Increase the comfort of the partners
- 2. Decrease the time spending with managing orders
- 3. Cheap system
- 4. Wordwide (Europe-wide) accessibility and availability
- 5. To adapt to the customised source system
- 6. Customizable functionality and surface

1. IT BACKEND

Final environment			
Operating system	FreeBSD 6.1		
Database	MySQL 5.0.51a		
Web server	Apache 2.2.8		
PHP	PHP 5.2.5		

Development and test environments

Operating system	Fedora 7, Ubuntu 7.10
Database	MySQL 5.0.45
Web server	Apache 2.2.4
РНР	PHP 5.2.3

 Table 1: Software environments

1.1 Infrastructure

1.1.1 Linux

Linux is an operating system that was initially created as a hobby by a young student, Linus Torvalds, at the University of Helsinki in Finland. Linus had an interest in Minix, a small UNIX system, and decided to develop a system that exceeded the Minix standards. He began his work in 1991 when he released version 0.02 and worked steadily until 1994 when version 1.0 of the Linux Kernel was released. The kernel, at the heart of all Linux systems, is developed and released under the GNU General Public License and its source code is freely available to everyone. It is this kernel that forms the base around which a Linux operating system is developed. There are now literally hundreds of companies and organizations and an equal number of individuals that have released their own versions of operating systems based on the Linux kernel.

Apart from the fact that it's freely distributed, Linux's functionality, adaptability and robustness, has made it the main alternative for proprietary Unix and Microsoft operating systems. IBM, Hewlett-Packard and other giants of the computing world have embraced Linux and support its ongoing development. Well into its second decade of existence, Linux has been adopted worldwide primarily as a server platform. Its use as a home and office desktop operating system is also on the rise. The operating system can also be incorporated directly into microchips in a process called "embedding" and is increasingly being used this way in appliances and devices.

Throughout most of the 1990's, tech pundits, largely unaware of Linux's potential, dismissed it as a computer hobbyist project, unsuitable for the general public's computing needs. Through the efforts of developers of desktop management systems such as KDE and GNOME, office suite project OpenOffice.org and the Mozilla web browser project, to name only a few, there are now a wide range of applications that run on Linux and it can be used by anyone regardless of his/her knowledge of computers.

1.1.2 Apache Web Server

The Apache HTTP Server, commonly referred to simply as Apache, is a web server notable for playing a key role in the initial growth of the World Wide Web. Apache is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation. The application is available for a wide variety of operating systems, including Unix, FreeBSD, Linux, Solaris, Novell NetWare, Mac OS X, and Microsoft Windows. Released under the Apache License, which is characterized as free software and open source software.

Apache supports a variety of features, many implemented as compiled modules which extend the core functionality. These can range from server-side programming language support to authentication schemes. Some common language interfaces support *mod_perl*, *mod_python*, Tcl, and PHP. Popular authentication modules include *mod_access*, *mod_auth*, and *mod_digest*. A sample of other features include SSL and TLS support (*mod_ssl*), a proxy module, a useful URL rewriter (also known as a rewrite engine, implemented under *mod_rewrite*), custom log files (*mod_log_config*), and filtering support (*mod_include* and *mod_ext_filter*).

Popular compression methods on Apache include the external extension module, *mod_gzip*, implemented to help with reduction of the size (weight) of web pages served over HTTP. Apache logs can be analyzed through a web browser using free scripts such as AWStats/W3Perl or Visitors.

Virtual hosting allows one Apache installation to serve many different actual websites. For example, one machine, with one Apache installation could simultaneously serve www.example.com, www.test.com, test47.test-server.test.com, etc.

Apache features configurable error messages, DBMS-based authentication databases, and content negotiation. It is also supported by several graphical user interfaces (GUIs) which permit easier, more intuitive configuration of the server.

1.1.3 MySQL

MySQL is the world's most popular open source database software, with over 100 million copies of its software downloaded or distributed throughout its history. With its superior speed, reliability, and ease of use, MySQL has become the preferred choice for Web, Web 2.0, SaaS, ISV, Telecom companies and forward-thinking corporate IT Managers because it eliminates the major problems associated with downtime, maintenance and administration for modern, online applications.

Many of the world's largest and fastest-growing organizations use MySQL to save time and money powering their high-volume Web sites, critical business systems, and packaged software â including industry leaders such as Yahoo!, Alcatel-Lucent, Google, Nokia, YouTube, Wikipedia, and Booking.com.

The flagship MySQL offering is MySQL Enterprise, a comprehensive set of productiontested software, proactive monitoring tools, and premium support services available in an affordable annual subscription.

MySQL is a key part of LAMP (Linux, Apache, MySQL, PHP / Perl / Python), the fastgrowing open source enterprise software stack. More and more companies are using LAMP as an alternative to expensive proprietary software stacks because of its lower cost and freedom from platform lock-in.

1.1.4 PHP

PHP (recursive acronym for "PHP: Hypertext Preprocessor") is a widely-used Open Source general-purpose scripting language that is especially suited for Web development and can be embedded into HTML.

What distinguishes PHP from something like client-side JavaScript is that the code is executed on the server. If you were to have a script similar to the above on your server, the client would receive the results of running that script, with no way of determining what the underlying code may be. You can even configure your web server to process all your HTML files with PHP, and then there's really no way that users can tell what you have up your sleeve.

2. THE SYSTEM

2.1 Superuser

Structure of the menu of the superuser:

1. Administration

(a) Create new user

If the superuser wants to create a new user

(b) Modify user

If the superuser wants to modify some data of the already created user, or wants to chage its privilegs

(c) Delete user

If the superuser wants to delete a user

(d) Refresh partnerlist

The refresing of partners is not automatic. The source system is uploading the new parnerlist. When the superuser logs in, and clicks to this menupoint the refresing will be done.

Stock

(a) Stock at the moment

The superuser can see what is the acual state. He can see all of the stored goods, or just the goods fo a specific partner.

(b) Uncompleted orders

The superuser can see all of the uncompleted orders, and of course he has the ability to delete them.

On road

(a) Orders on road

In this menupont the system lists all of the completed orders that are already on the road and still haven't arrived to the customer and how much time needs to have arrived. (This time is estimated.) After the estimated arriving, the completed order will be listed for 2 more hours. After the 2 more hours, the order is not shown any more (but the system itself is sores it for amonth for security reasons).

Exit

2.2 Normal user

Structure of the menu of the normal user:

1. Userdata

(a) Change data

The user can some of change his data, like his real name, e-mail address, etc..

Orders

(a) Place an order

Here the user can place an order. He can pick the wished amount of the good he wants from a list, and the system automaticly sends this order to the spedition company who process the order. While placing the order, the system of course checks whether there are the ordered amount goods in the stock or not, or the user can place an order at all. The user can specify the buyer, the transporter, he can specify the time the time of start of the transportation, and he can even upload his own transportlist.

(b) Follow orders

Here the user can see his placed, but haven't processed orders.

(c) Orders on road

The user can follow his own orders that are processed by the spedition company already on the road.

Exit

3. FUNCTIONALITY IN SCREENSHOTS

3.1 Superuser

			Felhasználó módosi	itása	
Adminisztráció	- Falbaemáló módaeltára				
Felhasználó létrehozása	Feihssznälónáv	ralan 👱			
Felhasználó módoeltása	E-mail cim:	alangimkiryme.hu			
Felhasználó törlése	Repesolódó partnen Rendeléet adhet-e fei:	igen 🔹			
Partnerlista frissítése	Új jelszó: Új jelszó mégogyszec:				
Készlet	Modent	1			
Úton					
Kilépés					

Figure 1: Modify user data

Online ware managing in a logistical warehouse via Internet

		Feldolgoz	Feldolgozatlan rendelés				
Adminisztráció		Megrendelés 1					
Készlet	Rendelés kódia:	75/2007					
jelenlegi készlet	Tulaidonos:	SWEEDWOOD					
Feldolgozatlan	Vevő:	SWEEDWOOD					
rendelések	Szállító:						
Úton .	Felrakás időpontja:):00					
Kilépés	Szállítójogyzők:						
	Rendelést felvette:	Zalán2					
	Rendelést kelte:	2007-12-07 17:58:04					
	Megjegyzés:	Ez egy megjegyzés.					
		Tételjegyzék					
	Cikkszám	Mognevezés	LOT	Mennyiség			
	A302222	FUNERLAP A 0,55		2500			
	A398037	NYIR 395X164X23 (22)	1450	600			
		73/64					
		megrendeles 2					
	Rendelės kodja:	79/2008					
	Tulajdonos:	SWEEDWOOD					
	Vevo:	SWEEDWOOD					
	Szallito:						
	Feirakas idopontja:	1000					
	Szallitojogyzok:	Imics					
	Rendelest relvette:	Kovace Zalan					
	Rendelest keite: Magiegyzés:	2008-01-03 09:44:41					
		Tataljagyzák					
	Cikkszám	Megnevezés	LOT	Mennyiség			
	A322222	FUNERLAP A 0.55		10			
	A390037	NYIR 3953(164)(23)	1.480	600			
		Tarál					
		Megrendelés 3					
	Rendelés kódja:	78/2008					
	Tulaidonos:	SWEEDWOOD					
	Vevői	SWREDWOOD					
	Szállító:	4					
	Felrakās idopontja:	1 0.00					

Figure 2: List of uncompleted orders

		Úton lévő rendelések			
Adminisztráció					
Készlet		Feldolgozott rendelés 1			
Üton	Rendelés kódja:				
Úton Jévő	Tulajdonos:				
	Vevó:	SWEEDWOOD			
Kilépés	Szállító:	SWEEDWOOD			
	Rendszám:	DFG-123, XFG-589			
	Indulás:	2008-02-11 12:31:12			
	Várható érkezés:	2008-02-11 17:31:12			
	Pillanatnyi teljesítési		74 96		
	Pozíció:	xfq-582.pdf			
		Tételjegyzék.			
	Cikkszám	Megnevezés	Mennyiség		
	A398037	NYIR 395X154023 [22]	800		
	A322222	FRUNERLAP A 0.55	2500		

Figure 3: List of orders on road

3.2 Normal user

			Rer	ndelés fel	adása				
Adataim	_			ALC: NO.	NOT N				
Rondelósok	1 March 19			WEELDWE					
Rendelés feladása	A3222222	FUNERLARADSS	101	Receipt (Line)	CONCE LINE	Cerry, n4kill	Rec.	Ch	
Rendelések	A398037	NYIR 395X164X23 (22)	1438	590	0	Caom, nAlkil	40	Ch	-
kővetése	A309037	NYIR 395X164X23 (22)	1450	0	0	Coom, náikili	-	Ch	
	A309037	NYIR 395X164X23 (22)	1480	0	D	Ceom, nálkili		Ctb	
	A309037	NYIR 395X164X23 (22)	1501	200	0	Csom, nóikül	_	06	
Kilepes	A399038	NYIRFA 470(164)(23) (22)	1439	400	1	Csom, nélkül	1	Paletta	-
	A398038	NYIRFA 4700(164)(23) (22)	1440	400	1	Csom, nélkül	2	Paletta	-
	A308038	NYIREA 4700(1640(23)(22)	1452	400	1	Ceom, nálkül		Cla	•
	A398038	NYÍREA 470X164X23 (22)	1455	300	0	Csom, nálkül		Clo	•
	A308044	NYIREA 625X164X23 (22)	1459	400	1	Csom, nélkül		00	-
	A308044	NYIRFA 6250(164)(23) (22)	1509	100	0	Csom, nólkül		Ob	
	A398045	NYIRFA 525X1443C23 (22)	1513	100	1	Csom, nélkili		00	
	A398048	NYIRFA 775X164X23 (22)	1448	250	1	Csom, nélkül	_	Clo	
	A399049	NYIREA 3953(292)(23) (22)	1511	250	1	Osom, nélkül		Cib	
	A398051	NYIREA 4700292023 (22)	148t	250	1	Csom, nélkül	_	Clb	•
	A398701	395X164X23 B DKK		238	0	Ceom. náikül		Ob	•
	A398702	470X164X23 BDKK		21.60	4	Csom, nálkili		Clb	
	A398704	625301643023 BÜKK		774	2	Csom, néikül	_	06	
	A398710	415X132X23 BÜKK		1380	2	Csom, nélkül		Ob	*
	A398712	615X132X23 BÜKK		482	1	Csom, nélkül		06	•
	A398715	615X100X23 BÜKK		2918	4	Csom, nélkül		Clu	•
	A398716	815X132X23 B OKK		312	1	Ceom. nálkül		Ob	•
	A900046	NYIRPA 320X70X24		40691	15	Csom, nélkül		Db	•
	A900047	NYIRFA 41.5X70X24		46552	24	Csom, náikili		06	
	A900049	NYÍRFA 1095X70X24		11095	22	Csom, nóikili		Ob	*
	A900852	NYÍRFA 320X100X25		18884	16	Csom, nélkül		06	
	A900053	NYIRFA 340X100X25		3465	3	Csom, nélkül		06	•
	A900054	NYÍRFA 400X100X25		1564	1	Ceom. nélkül		Ob	•
	A900055	NYIRFA 490X100X25		3640	3	Csom, nélkül		Clb	-
	A900056	NYIRFA 625X100X25		3909	7	Csom, nélkül		Ob	-
	A900057	NYIRFA 785X100X25		5270	12	Csom, nálkili		06	-
	A900058	NYIRFA 1010X100X25		2448	6	Csom, nólkül		06	
	A900059	NYIRFA 1650X100X25		2121	5	Ceom, nélkül		06	1
	A900061	NYIRFA 1900X45X61	1518	308	1	Csom, nélkül		Cib	

Figure 4: Selecting goods



Figure 5: Placeing the order



Figure 6: Completed orders

REFERENCES

- [1.] www.linux.com
- [2.] www.mysql.hu
- [3.] www.phpstudio.hu