

F O R U M N O K I A

Mobile Web Server: Technology White Paper

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Mobile Web Server

NOKIA

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Change history

May 29, 2007	Version 1.0	Initial document release

1 Introduction

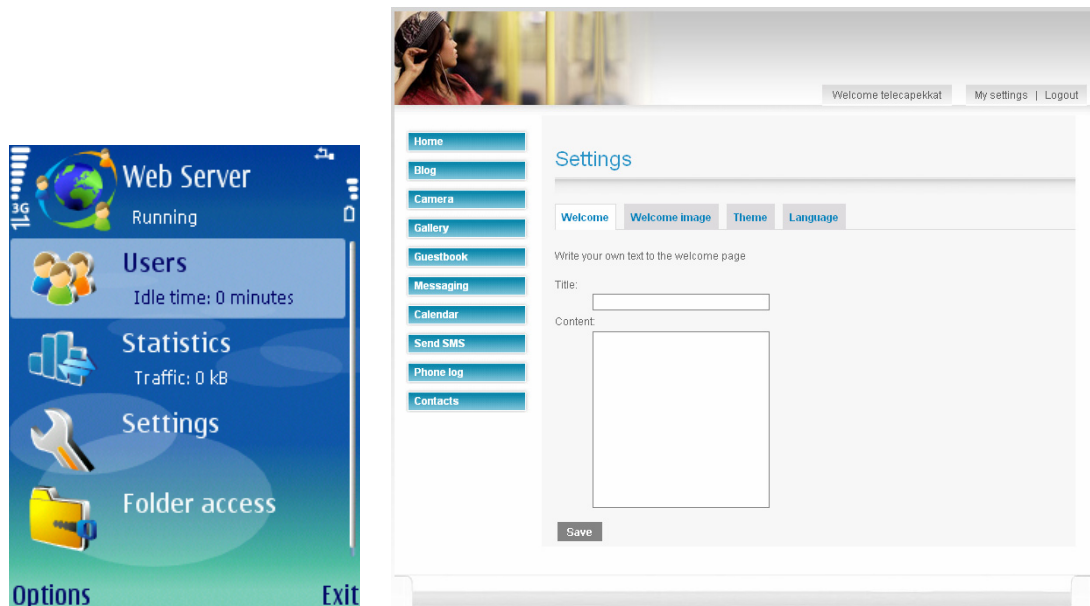


Figure 1: Mobile Web Server in the device UI and browser

Mobile Web Server (MWS) consists of a Web server powered by Apache technology and a connectivity solution providing a mobile device with a global URL and HTTP access to it. The connectivity solution consists of a module in the mobile device and a gateway server (GW).

MWS differs from a normal Web server due to the mobile environment (see [1]). This mobility offers many new possibilities for the use of the mobile device and the personal Web server. With a Web server on a mobile device it is straightforward to provide a Web service interface to all core functionality of the device.

On the other hand, mobility sets some demands and restrictions to the mobile Web server. Mobile devices are battery-operated devices and not always online due to the nature of the device (switched off, out of network, and so on). Mobile devices have limited processing power and connection bandwidth when compared to normal Web server computers. Data traffic costs may also vary depending on the network connection used (for example, GPRS, WLAN).

2 Technology

- S60 3rd Edition mobile device
- Python S60 1.14
- Python 2.2.2
- Mod_python 3.2.10
- Apache 2.2.3
- HTTP 1.1 protocol

3 System requirements

- S60 3rd Edition compatible mobile device
- 3 MB of free memory on the mobile device or on the device's memory card. Note that memory consumption increases as content is added to MWS.

4 Key features of MWS

4.1 HTTP 1.1 server based on Apache technology

Apache-based Web server ported to Symbian OS.

4.2 Access identities based on device Contacts

MWS provides user accounts to authorize the use of the server's services.

4.3 Domains

Every MWS has its own domain. You can create an account for your own domain at the gateway.

4.4 Settings

MWS settings are managed in the UI application installed on the mobile device. The Web site appearance is defined through browser.

4.5 Access rights

You can give user accounts and groups access to your Web applications.

4.6 Authentication

The gateway can block unwanted visitors based on the filtering rules defined in the MWS settings.

4.7 Offline page

When your Mobile Web Server is unreachable, a message is shown to the visitor. You can edit the message in the MWS settings.

4.8 Content and Web applications

- Welcome page
- Blog
- Camera
- Guestbook
- Send SMS
- Messaging
- Phone log
- Contacts
- Gallery
- Calendar

4.9 WebDAV

WebDAV is a set of extensions to the HTTP protocol that allows you to edit and manage files on MWS.

5 General architecture

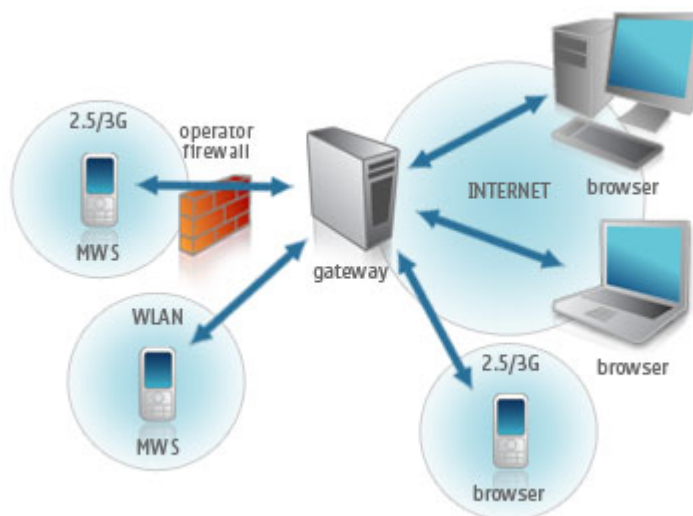


Figure 2: Overview of the architecture

Mobile Web Server (MWS) is running on the mobile device with the connectivity solution (connector) providing connection to the gateway.

The gateway enables devices to be available from the same address (individual). The gateway also informs when the device cannot be reached.

User management is implemented in MWS so that administrators can define who can access their Web site and what content is accessible.

6 Open source vs. closed components

Nokia provides the gateway free of charge for the users.

The Raccoon is a completely open source project. All its components are open for further development. MWS instead is divided into open and closed components (see Figure 3) [4].

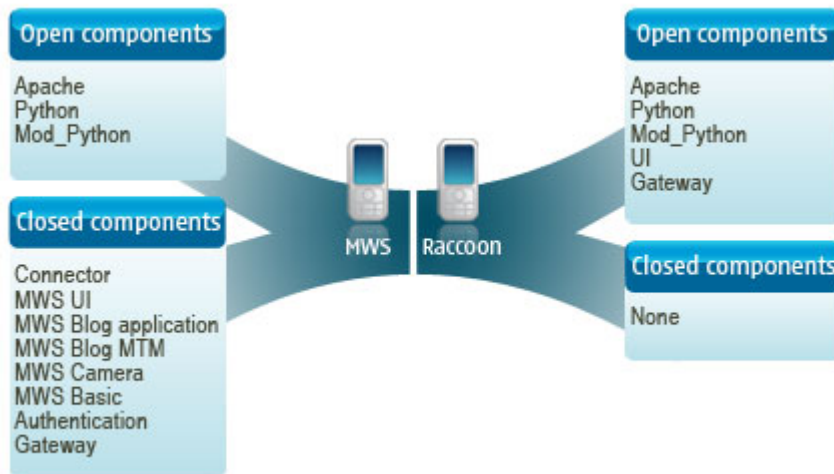


Figure 3: Open vs. closed components in MWS and Raccoon

MWS is a fully functional Web server with content. MWS is aimed at developers who want to create new Python or html content for themselves and anybody else. The MWS core Web server can be expanded with modules to gain new functionalities [2].

The original content source codes are not available, but there are example Python content applications that can be used as a basis for developing new applications and for further improvement [3]. Python content can be installed to MWS without signed installation packages. Python content can access the protected features of the device, so only applications from trusted sources should be installed.

Component	Description
Core Web server	New modules can be ported and created
Content	Static Web pages (HTML, jpeg, etc.) Dynamic Web pages (Python applications)
Python for S60	Participate in Python development

Table 1: Component descriptions

7 Terms and abbreviations

Term or abbreviation	Meaning
MWS	Mobile Web Server
GW	Gateway server provided by Nokia

8 References

- [1] [Mobile Web Server: Mobile Environment Demands](http://www.forum.nokia.com), available at www.forum.nokia.com
- [2] [Mobile Web Server: Apache Configuration](http://www.forum.nokia.com), available at www.forum.nokia.com
- [3] [Mobile Web Server: How to Develop Content](http://www.forum.nokia.com), available at www.forum.nokia.com
- [4] [Mobile Web Server: How to Contribute](http://www.forum.nokia.com), available at www.forum.nokia.com

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