

- Linux VM з Wordpress на Azure під'єднано до SQL-бази в приватному центрі обробки даних.

Як бачимо, бізнес Microsoft вже дуже сильно зав'язаний на Open Source! Далі в доповіді будуть розглянуті подробиці інтеперабельності платформ з Linux Server, Apache Hadoop, Java, PHP, Node.JS, MongoDB, і наостанок дізнаємося про цікаві Open Source-розробки Microsoft Research.

OpenSource Software in Mac OS X

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Mac OS X stem from Unix: BSD. It contains a lot of things that are common for Unix systems. Kernel, filesystem and base unix utilities as well as it's own package managers. It's not a secret that Mac OS X has a BSD kernel Darwin. The raw Mac OS X won't provide you with all power of Unix but this could be easily fixed: install package manager. There are 3 package manager: MacPorts, Fink and Homebrew.

To dive in OpenSource world of mac os x we would try to install latest version of bash, bash-completion and few other utilities. Where we should start?

First of all you need to install on you system dev-tools: Xcode – native development tools that contain GCC and libraries. Next step: bring a GUI – X11 into your system.

Starting from Mac OS 10.8 X11 is not included in base-installation and it's need to install Xquartz(<http://xquartz.macosforge.org>).

Now it's time to look closely to package managers

MacPorts

Site: www.macports.org

Latest MacPorts release: 2.1.3

Number of ports: 16740

MacPorts born inside Apple in 2002. Early it was called DarwinPorts. As far as Mac OS stem from

BSD was decided to brought BSD ports, hierarchy and compilation from source. MacPorts are part of Mac OS Forge, that is maintained by Apple. MacPorts are very familiar to FreeBSD ports and Gentoo package manager.

To install MacPports visit <http://www.macports.org/install.php> . There are two ways to gain MacPorts installed, over PKG-installer or compilation from source. Installer will add line to you profile-file

```
export PATH=/opt/local/bin:/opt/local/sbin:$PATH
```

that force your shell to look commands in MacPorts directories.

Next step is to update ports-tree.

```
$ sudo port selfupdate
```

```
---> Updating MacPorts base sources using rsync
MacPorts base version 2.1.3 installed,
```

```
MacPorts base version 2.1.3 downloaded.
--> Updating the ports tree
--> MacPorts base is already the latest version
```

The ports tree has been updated. To upgrade your installed ports, you should run

```
port upgrade outdated
```

As far as we don't have any ports installed "port upgrade outdated" it's not needed.

Lets try to install bash-completion.

```
$sudo port install bash-completion
```

Mac OS X has bash version 3 installed by default. But MacPort will bring bash version 4 and to use you will need to switch your terminal to use bash v.4

```
/opt/local/bin/bash -l
```

and add bash-completion to your profile-file

```
# bash-completion
```

```
if [ -f /opt/local/etc/profile.d/bash_completion.sh ]; then
```

```
    . /opt/local/etc/profile.d/bash_completion.sh
```

```
fi
```

After all this operation you should restart you Terminal.

MacPorts is a powerful instrument to work with packages. It contains the biggest repository of packages.

Fink

Site: www.finkproject.org

Latest Fink release: 0.34.7

Number of ports: 14175

Fink is more familiar with debian apt package manager and work with binaries instead of ports source compilation.

To install fink you need to get tar-ball from

<http://sourceforge.net/projects/fink/>

```
$ tar -xzvf fink-0.34.7.tar.gz
```

```
$ cd fink-0.34.7
```

```
$ ./bootstrap
```

Installer ask few question for configuration. After installation we have to add to our profile-file line

```
/sw/bin/init.sh or bash_rc-file
```

```
$echo 'source /sw/bin/init.sh' >> ~/.profile
```

Now update a package tree

```
$ fink selfupdate-cvs
```

To install any package in our case bash-completion use:

```
$ fink install bash-completion
```

and add initialisation script to our profile file

```
$ echo 'source /sw/etc/bash_completion' >> ~/.profile
```

Regarding to issue with official site we can guess that fink is not popular. But if you came from Debian and Ubuntu you will find fink vary familiar with apt or aptitude

Homebrew

Site: <https://github.com/mxcl/homebrew>

Number of Formulas: 2289

Homebrew is the youngest packages manager for Mac OS X. The first commits to GitHub date 2009. Packages in Homebrew called Formulas. Formulas are written with Ruby, that's why they are easy to read and edit.

To install Homebrew simply run next line in Terminal

```
$ sudo ruby -e "$(curl -fsSL
https://raw.github.com/mxcl/homebrew/go)"
```

Instead of Fink and MacPorts Homebrew doesn't isolate packages from system, it installs packages into /usr/local

The searching and installing of packages is really easy:

```
$ brew search completion
```

Get more information about package

```
$ brew info bash-completion
```

And installation

```
$ brew install bash-completion
```

If you'd like to upgrade installed packages

```
$ brew upgrade
```

Or remove packages

```
$ brew uninstall bash-completion
```

And Formulas the main feature of Homebrew. It's Ruby file and formula itself is a ruby class

```
require 'formula'
class Wget < Formula
  homepage 'http://www.gnu.org/wget/'
  url 'http://ftp.gnu.org/wget-1.12.tar.gz'
  md5 '308a5476fc096a8a525d07279a6f6aa3'

  def install
    system "./configure --prefix=#{prefix}"
    system 'make install'
  end
end
```

Editing Formula provide you easy way to chose specified version of package. It brings a bit of flexibility to managing installing packages.

Conclusion.

From 3 popular Mac OS X packages managers we can recommend MacPorts and Homebrew.