Getting to Know Free Software and Open Source and Some of the Common FUDs About It

Presentation Will Cover

- What is open-source software (OSS)?
- Importance and benefits of open source
- Common FUDs on OSS
- State of OSS in Malaysia
- The way forward

What is Open-Source Software?

Free Software

Freedom to run, copy, distribute, study, change and improve the software.

- Freedom to run the program, for any purpose
- Freedom to study how the program works, and adapt it to your needs
- Freedom to redistribute copies so you can help others
- Freedom to improve the program, and release your improvements to the public

Access to the source code is needed to realise most of the above.

Open-Source Software (OSS)

Term "free" can lead to negative marketing connoctations especially to business and corporate users.

[How can anything be good if it is free (i.e. has no monetary value to it)?]

Term open-source software was coined to refer to free software.

Other Categories of Software

Freeware - Non-chargeable copyrighted software

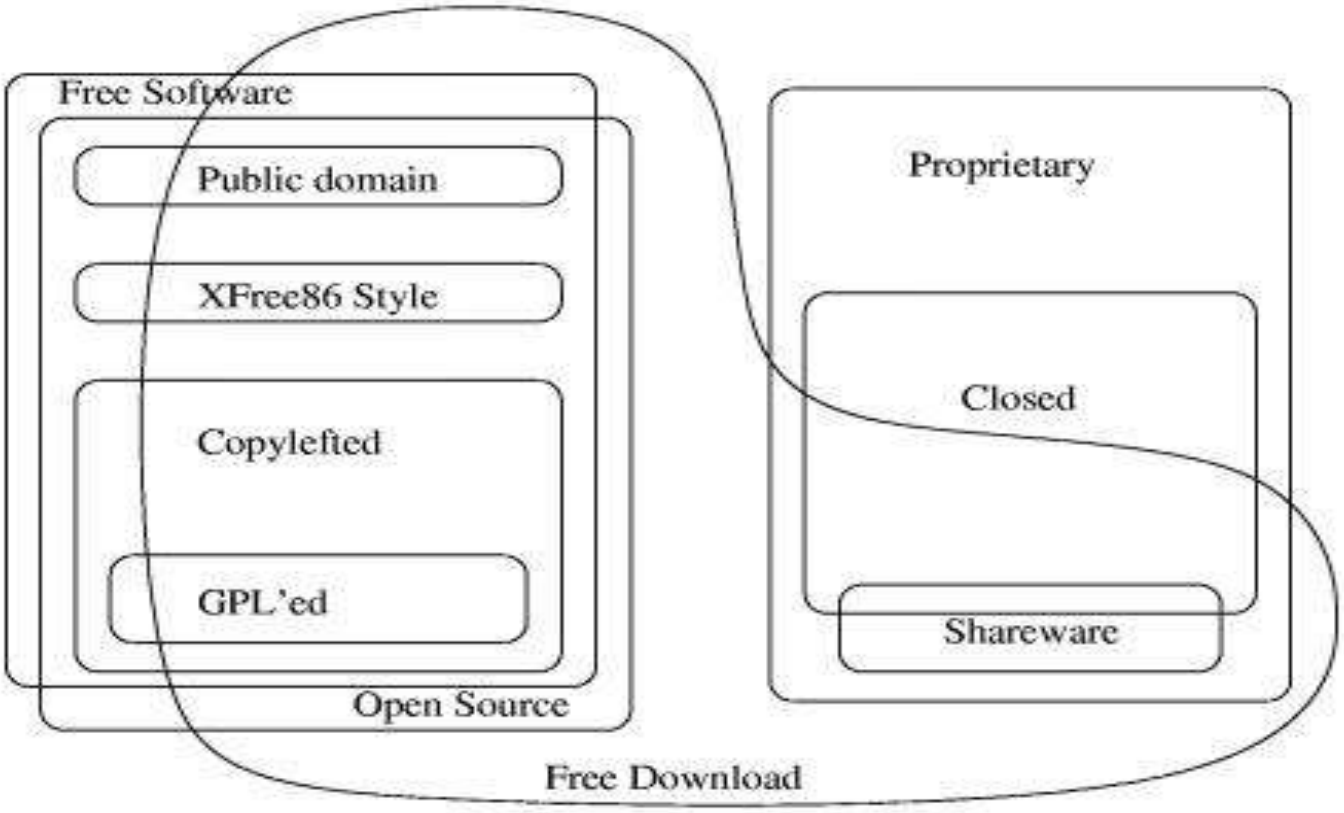
Shareware - Software delivered without charge but continued usage subject to payment

Proprietary Software - non-Free Software

Public domain Software - non-copyrighted

Reference:
Free Software Foundation
www.fsf.org

Relationships Among the Categories



Source: http://www.fsf.org/philosophy/categories.html

Free/Open-Source Software Licensing

Free/Open-Source software licensing falls into 2 main types:

- Copylefted
- Non-copylefted

Copylefted Software

What is there to stop someone from converting a free software to non-free software?

Copyleft is used to prevent this.

- Copyright a software and add in certain distribution restrictions to prevent conversion into non-free.
- Anyone who redistributes the software, with or without changes, must pass along the freedom to further copy and change it.
- Guarantees that every user has freedom.
- E.g. GNU General Public License (GPL) - free software and copyleft license
- Linux is distributed under a GNU GPL license.

Non-copylefted Software

- Much more permissive licensing than GPL
- Permission to redistribute and modify
- Permission to *add additional restrictions* to its further distributrion and modification

  This means that it is possible for someone to take such software and make it proprietary with or without modifications.
- e.g. X11 (and XFree86) license, BSD License, Apache License

Importance and Benefits of Open Source

Importance of Open Source

- Freedom to learn, redistribute and enhance
- Prevents single vendor and technology lock-in
- Promotion and preservation of open standards
- Peer review and feedback will lead to:
  - **More robust and reliable software**
  - **Better security and faster bug fixes**
- Promotes environment for positive competition, self-learning, exploring and co-operation
- Benefits poorer societies - affordable and accessible software running on affordable computers and networks

Benefits of Open Source to Developing Countries

Promotes an environment which a society (like Malaysia), striving to become a technology-driven one, should have:

- Ability to "look under the hood" and learn
- Condusive for technical and system development
- Ability to learn, innovate and invent (LIVE)
- Encourages positive competition, self-help, and mutual co-operation
- Less dependence on software and technologies where we can have no control/say

Benefits of Open Source to Malaysia

For Malaysia, open source provides unique opportunities to:

- Local developers to learn and participate in systems software development
- Build up a critical mass of good coders
- Produce localised versions of software
- Stimulate and build up the local software industry
- Promote a research-based mind-set for both public and private sectors

Open Source Usage - Server

E-Commerce **E-Business** **E-Community**
Others ....

Applications

Apache Tomcat

JBOSS

Development Platforms, Middleware, Databases

Apache

PHP

Zope **Perl** **Python**

MySQL

PostgreSQL

Networking Services

FreeBSD

Linux

OpenBSD

Operating Systems

Open Source Usage - Desktop

Applications

Ximian **OpenOffice** **Mozilla** **KOffice** **GNOME-Office**

KDE **GNOME**

XFree86 (X-Windows)

GUI and Windowing System

Networking Services

FreeBSD **Linux**

Operating Systems

Common Fears, Uncetainties and Doubts (FUDs) Regarding OSS

No Accountability

FUD: Developed/maintained on best effort basis, volunteers, no single party fully accountable

Fact: Tightly knit developer community. Legally established non-profit foundation or normal businesses supporting the software

Fact: Most close-source software licenses come with disclaimers - exempt the vendor from any liabilities arising from the use and misuse of the software

Open source has basically same level of accountability as close source!!

No Support

FUD: No technical support

Fact: Software author may not offer support but support available from many sources:

- Local vendors
- User communtities worldwide
- Internet resources

Fact: Commercial proprietary software users still mainly rely on local vendor for support

Not Secure

FUD: OSS insecure as source code is available

Fact: Inavailability of source code does not mean vulnerabilities cannot be discovered - use modern debugging and software development tools

Fact: Source code availability facilitates:

- Scrutiny by many people to flush out weaknesses in design and code
- Independent check and 3rd party audit

Hidden Backdoors

FUD: Possibility of hidden backdoors in OSS

Fact:

- *Possible but not vulnerable if download software from well known/trustworthy sites*
- *Ensure software secuirty checksum corresponds with published value*
- *Ability to examine source and re-compile*

Fact:

- *Commercial proprietary software known to ship infected with virus and backdoor*
- *Backdoors possible in close source too and more difficult to detect*

Not User-friendly

FUD: UNIX-legacy - CLI, need to remember archaic comands

Fact: Possibilly true in the past. In recent times GUI Windowing system very much the default interface.

Fact: User has a choice of using either GUI or CLI to run most of the applications where applicable

State of Open Source in Malaysia

Server Deployment

- Internet web, mail, DNS servers for many organisations, attracted to the $0.00 side of OSS
- Popular in small to medium-sized business organisations and non-profit organisations
- May be set up and configured by vendors not well-versed with the software and so may not be set up properly or securely!
- Main platform used: Linux running Apache, OpenSSL, BIND, Sendmail, PHP, MySQL
- ISPs

Corporate Deployment

- Awareness is there, many questions still being asked
- Still locked in by close source in most cases
- Not officially sanctioned to use open source but technical people in IT dept may put in some non-critical apps running on OSS or use open source security applications e.g. snort, nmap
- Senior management mind-set is now open at least, so if can demonstrate enough advantages to switch over to OSS, willing to try

SMI Deployment

- Use as Internet servers for Internet presence
- Use office solutions based on open source e.g.
  - **file, print and fax servers**
  - **Internal email, webmail**
  - **security products: web proxy, firewall, IDS**
  - **desktop office applications**
- Software price important and so will try open source if vendor proposes it and can support it
- Usually go for the cheapest solution/vendor, improper or poor setup/configuration may be an issue

Academia

- Awareness high, usage high among academic staff in comp science, IT and engineering faculties
- Some public universities do expose students to OSS, mainly in projects
- Private colleges - most still promote close source training; exposure and usage driven mainly by market demands for such skills

Public Sector

- Government studying OSS deployment in public sector seriously mainly because concerned about:
  - **rising software licensing costs and faster hardware obsolescence**
  - **over-dependence on foreign proprietary software (USA-centric)**
- Key government agencies tasked with producing deployment and roll-out plans for introducing OSS usage in government depts and agencies
- Several important government-led national ICT initiatives may use OSS as platform

Schools

- Not much activity in open source
- Efforts to get Ministry of Education to push for more OSS activities and training in schools

Local Open Source Community

- Several Linux User Groups exist
- Not much co-operation among the LUGs
- Few people involved in OSS development activity, culture of sharing and OSS development not there

PIKOM and MNCC have Open-Source SIGs

- Both quite active, assist in govt. working groups, task force and committees on OSS
- MNCC-OSSIG: organisation of talks/lectures, OSS101 training materials
- PIKOM-OSSIG: white paper on Open Source to MECM, working with MAMPU for deployment

Current State

Summary:

- Deployment mainly on server side especially as Internet servers
- More and more corporations taking notice of OSS and asking questions.
- Some OSS penetration in SMIs
- In academia, usage high in IT, Computer Science and Engineering Faculties
- Government considering OSS deployment in public sector seriously
- MOE may push for more OSS penetration in schools
- Not much development work in local OSS community

The Way Forward -
Some Proposed Initiatives

Government Initiatives

Open source strategy and deployment

- Establish a national open source policy
- Establish an open source strategy and implementation roadmap for public sector
- Take lead in implementing OSS in government agencies and departments where feasible
- Set up open source resource centre in key government agencies and departments

Government Initiatives

Insist on open standards and technologies in ICT procurement

- Ensure that file, data and communication formats remain open
- Technology and protocols used remain free and open
- No vendor or proprietary technology/format lock-in

Government Initiatives

Encourage OSS usage and training in schools, public universities and institutions of higher learning

- Incalcate open source sharing and self-help ideals in students
- Encourage them to learn, innovate and invent (LIVE) using open source
- Recognise talented students and build up pool of good programmers and software developers
- Encourage usage of open source in R&D

Government Initiatives

Encourage (possibly with incentives) private sector participation in training and supply of open source resources/skills

- Private training supplements Government training as is currently the case
- Shortage of skilled open source support and development people may affect public sector projects and deployment
- The more people trained on open source technologies the easier to ensure widespread usage and less dependence on proprietary software

Private Sector Initiatives

Develop products which can use open source as software base e.g. embedded systems

Develop products/services which build upon existing open source ones

- Draws upon expertise and experience of international open source community
- Contribute some modifications back
- Faster learning curve
- Faster time to market
- Make money with OSS!!

Private Sector Initiatives

Engage in open source businesses. Possible business models:

- Charge for services, support, customisation, training, etc. but not the software
- Develop application using OSS platforms and tools. Product developed is not open source.
- Develop tools and/or generic applications and open source them. Charge for enhanced version.
- Dual licensing approach to software developed, one is open source, the other is commercial close source licensed.

Private Sector Initiatives

Set up human resource and skills training centres on open source

- Widespread open source adoption by Government will result in high demand for workers with various open source skillsets
- Baseline skillsets availability will instill confidence all round
- Easier for corporate adoption of open source if skilled personnel available

Private Sector Initiatives

Drive the development process

- Sponsor open source projects
- Company gains technology and/or product from output of project
- Encourage local people to participate
- Encourage local developers to participate in international OSS projects/development

Non-Business Initiatives

Non-profit professional and industry organisations like MNCC, PIKOM

- Promotion and awareness programs, dispel FUDs
- Set up SIGs to facilitate communications and exchange of ideas
- Start development projects for local OSS community
- Participate in government OSS WGs, task-force etc.
- Act as link between industry and government. Feedback from industry viewpoint.

Summary

- Open source offers a viable alternative to proprietary software
- FUDs abou open source unfounded
- Adherence to open standards and open technologies allow users the freedom to choose the appropriate software - open source or proprietary
- Developing countries have numerous benefits if they use open source
- Government and private sectors have prominent roles to play to encourage open source usage and acceptance