

Introduction to FOSS

Software Freedom Day

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1 What is FOSS?

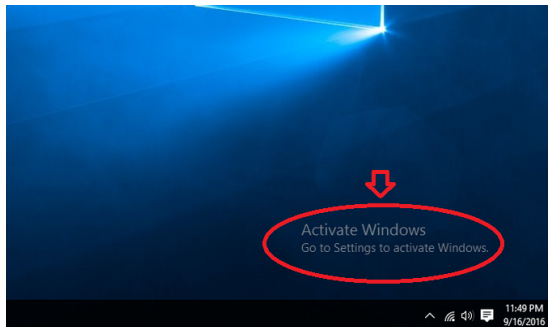
- Free Software
- Licenses
- Examples and Sources of FOSS projects

2 Why should you care?

- Cost
- Escape vendor lock in
- Ethical

3 How do you participate?

- Use
- Report bugs
- Contribute



Product Information




Activation Required

Microsoft Office Professional Plus 2016

This product contains:



Change Product Key

 This product is unlicensed. Connect to your corporate network or contact your system administrator for further assistance.

What is FOSS?

Free and Open Source Software == FOSS



Source code vs Executable

```
1  #include <stdio.h>
2
3  int main()
4  {
5      printf("Welcome to Software Freedom Day!");
6      return 0;
7  }
```

Figure: 1.Source code

```
contents of section .text:
401040 f30f1efa 31ed4989 d15e4889 e24883e4
401050 f0505449 c7c0b011 400048c7 c1401140
401060 0048c7c7 26114000 ff15822f 00001490
401070 f30f1efa c3662e0f 1f840000 00000090
401080 b8284040 00483d28 40400074 13b80000
401090 00004885 c07409bf 28404000 ffe06690
4010a0 c366662e 0f1f8400 00000000 0f1f4000
4010b0 be284040 004881ee 28404000 4889f048
4010c0 c1ee3f48 c1f80348 01c648d1 fe7411b8
4010d0 00000000 4885c074 07bf2840 4000ffe0
4010e0 c366662e 0f1f8400 00000000 0f1f4000
4010f0 f30f1efa 803d292f 00000075 13554889
401100 e5e87aff ffff605 172f0000 015dc390
401110 c366662e 0f1f8400 00000000 0f1f4000
401120 f30f1efa eb8a5548 89e5bf10 204000b8
401130 00000000 e8f77eff ffb80000 00005dc3
401140 f30f1efa 41574c8d 3dc32c00 00415649
401150 89d64155 4989f541 544189fc 55488d2d
401160 b42c0000 534c29fd 4883ec08 e88ffeff
401170 ff48c1fd 03741f31 db0f1f80 00000000
401180 4c89f24c 89ee4489 e741ff14 df4883c3
401190 014839dd 75ea4883 c4085b5d 415c415d
4011a0 415e415f c366662e 0f1f8400 00000000
```

Figure: 2.Executable

Free Speech, not Free Lunch or Beer

Free software does not necessarily imply zero monetary cost
However, most FOSS comes at no monetary cost to the user.

The Four Essential Freedoms making Software Free

- **Freedom 0: Run** — the program as you wish, for any purpose
- **Freedom 1: Study** — how the program works, and change it so it does your computing as you wish
Implies access to source code
- **Freedom 2: Share** — redistribute copies so you can help others
- **Freedom 3: Improve** — distribute copies of your modified versions to others

Open Source

- Source code available to user
- User able to modify

Licenses and Copyright

Copyright

- Original work of an author is protected from unauthorized use
- Original author can do almost anything he wants with his/her work
- He/She can sell off the work to others

Licenses

Due to Copyright law, software is non-free by default

GNU GPL

GNU GPLv3

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- Private use

Conditions

- Disclose source
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- State changes

Limitations

- Liability
- Warranty

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Permissions

- Commercial use
- Distribution
- Modification
- Private use

Conditions

- License and copyright notice

Limitations

- Liability
- Warranty

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Examples of FOSS projects

- GCC,Codeblocks,VSCode — for devs
- OpenOffice,LibreOffice —for Office productivity
- GIMP — for graphics designers
- GNU Octave —for Scientists and Engineers
- Thunderbird — a mail client
- GNU/Linux OS and the various distributions
- The *BSDs
- The Android project
- Apache Web server
- PostgreSQL, MySQL — DBMS
- Perl, PHP, Python — Scripting languages
- Wordpress — Blogging



Free ride



Sources of FOSS projects

- gnu.org
- github.com — software is provided in source code format
- sourceforge.net
- framadvd.org

Why should you care?

Cost

- Usually free
- Significantly cheaper than proprietary software

Escape Vendor Lock in

- Use software from whichever company you are comfortable with
- Switch technologies when you wish

Ethical

- Percentage of softwares in this country are pirated
- With FOSS, that figure goes right to Zero percent
- Saves firms/users from litigation over permission to do stuff with the bought software

Legal computing power

- Anyone can use it without any legal issues

Promotes Education

- Students interested in such things can peruse the code running on real world systems
- Students everywhere can access cutting edge technology

Trust worthy

- You know what your software does
- No hidden agenda
- Bugs are easily identified and resolved**

How do you participate?

Use

- It is usually devoid of monetary cost
- Significantly cheaper than proprietary software
- Tell others too

Report bugs

- Tell the dev challenges with the current version
- Suggest features

Contribute

- Source code
- Write documentation
- Translate
- Sponsor

What have we learnt?

What FOSS is.



0. RUN



1. STUDY



3. SHARE



4. IMPROVE

Why you should care.

- Significantly cheaper than alternatives
- Ethical and Legal
- Trustworthy

How you can participate.

- Use FOSS
- Report bugs
- Contribute

References

- <https://choosealicense.com/licenses/>
- gnu.org
- opensource.org

Tux says:



Tux says: **THANK YOU!**