

Open Source and the Future of Ada

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Introduction

- I have a copyrighted piece of software
- What can I do with it?



Do I Own the Software?

- No, you own a *copy* of the software, protected by the copyright
- Hmm, can I make copies?
 - **Dubious**
- Backup?
 - **OK**
- Load and run?
 - **OK**
- Anything else-
 - **Check the license!**

What Is a Software License?

- **Answer: It lets you do things that otherwise would be copyright violations**
- **Can I give the software to someone else?**
 - **No**
 - **Check the license!**
- **Can I run my copy on multiple machines simultaneously?**
 - **No**
 - **Check the license!**

What Is a Software License?

- **Can I modify the software**
 - **Maybe - for your own use only**
 - **This is the creation of a *derivative work***
 - **Check the license!**
- **What if I create a program that is part mine, part from the copy of the software in question? Will this “contaminate” the result?**
 - **You bet! This would be a copyright violation.**
 - **Check the license!**

What Is a Software License?

- **Aargh! So that software I got is like a virus?**
 - **More like a deadly poison. You *cannot* create derivative works this way**
 - **Check the license!**
- **Wait a moment... the program is a compiler. What about run-time code?**
 - **Same story. Cannot distribute your program!**
 - **Check the license!**

Software Licenses and Free/Open Software

- **But I thought free/open software was public domain**
 - **No! Usually it is copyrighted with full force of Berne Convention behind it**
 - gcc, emacs, linux, gnat, ...
 - also BSD, X, ...

Free/Open Software

➤ But there are lots of differences

- **Distribution of mods required?**
- **Restrictions on derivative works?**
- **Run-time restrictions?**
- **Ownership of mods?**
- **Check the license!**

What's the Difference between Free Software and Open Source?

➤ Different emphasis

- Free software- about *freedom*
- Open source- about *cooperative development*

➤ Licensing differences

- Free software- no restrictions on mods, no requirement to distribute
 - e.g. ACL = Open Source \neq Free Software

➤ So what is the difference?

- Free / open source licenses allow a lot more
- They are supersets of typical proprietary licenses

Common to All Free Software / Open Source Licenses

- **Redistribution allowed**
- **Modification allowed**
- **Sources always available**

Why Is Open Source Software Important for Ada?

- Ada is a fairly small niche
- So we have to be \$\$\$ efficient to survive!
- Niches are fine if the \$\$\$ works out
 - OS/2, PL/I, Pascal, Forth, Spitbol, ...

Take Advantage of Non-Ada Stuff

- **By modifying for Ada... creating derivative works**
 - **Modify gdb to be Ada aware**
 - **Modify gcc to add Ada front end**
- **Not easily done with non-open source stuff!**

But COTS Has Real Risks

- What if it does not do exactly what you want?
- Support being tied to one vendor?
 - **What if vendor disappears?**

Open-Source COTS Mitigates These Risks

- **Modify as required**
- **Support not tied to one vendor**
- **You have the sources**