

# Fighting against tivoization with the GPLv3

Speech at the course “Il software libero”

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# Presentation overview

- 1 Introduction
- 2 Tivoization
  - Definitions and audience
  - In practice
- 3 Conclusions

## A quick recap – What is the GPL?

### GNU General Public License (GPL)

- the most widely used **free software** license
- by **Richard Stallman**, *GNU project*
- grants the recipient of a computer program the rights to **run, change, redistribute** and **improve** it
- “*free as in freedom, not as in free beer*”
- **GPLv3** was released on **June 29, 2007**
  - *is this date familiar to you?*



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# GPLv3 impact on the world

June 29, 2007 – United States



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People crowding for the release of the **GPLv3**  
People crowding for the release of the **iPhone**, **willing to pay to give away the freedom** that the **GPLv3** grants them

# TiVo, by TiVo Inc.

**TiVo** is a **digital video recorder** with advanced functionalities:

- **electronic** television programming schedule
- find and record shows **matching user criteria**
- film and television show **downloads**
- personal **photo viewing** and **music** offerings

Many people have organized to *hack* the TiVo box to improve the service:

- install additional/larger **hard drives**
- add an **Ethernet card** to the box
- a **web interface** to the recorder (*TiVoWeb*)
- **transfer** video among different TiVo boxes.



# What is tivoization?

## Definition of **tivoization**:

The practice of creating a system that uses *free software*, but uses **hardware restrictions** to **prevent** users from running **modified versions** of the software on that hardware.

The name was invented by *Richard Stallman* because of the hardware restrictions deployed on the **TiVo**.

Why the **tivoization**?

- **DRM**: Digital Rights (*Restrictions?*) Management
- security
- customer lock-in

It might be good practice if it can be **overridden** (*OLPC, Chrome OS*); a **bad move** otherwise (*as it is usually*).



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# Who cares about tivoization?

- **Hackers**, or “power users”
  - The hardware is **bought**, not “*licensed*”. I want to **use** it, **peruse** it, even **destroy** it. The vendor takes no harm.
  - I cannot **improve** the system, nor block **unwanted updates**.
  - If the vendor is not trusted (*backdoors?*), the system cannot be **rebuilt** and **redeployed**.
- **Normal** users
  - Imagine a **car** that works only with a brand of **gasoline**. Or with a specific **MP3 player**.
  - If you were **not aware** about it, how would you react?
  - If you were **aware**, would you buy it? And for a **lower price?**
- **Ethical** issues
  - Stop using **for free** what other people have sweat over.  
**Contribute back** to the community.

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# GPLv3

One of the **explicit goals** of the GPLv3 is to **avoid tivoization**.

*“Installation Information” for a User Product means any **methods, procedures, authorization keys, or other information** required to install and execute **modified versions** of a covered work [...]. The information **must suffice** to ensure that the continued functioning of the modified object code is **in no case prevented or interfered with** solely because modification has been made.*

*GNU General Public License, version 3, section 6*

## An example of GPLv3 violation – Boxee

**Boxee Box**, *D-Link's* solution to **watch videos** from the Internet on the TV

- Announced as an **“open box”**
  - *“it must be open”*
  - *[D-Link] will make it “hacker friendly”*
  - many other quotes ...
- Contains GPLv3 software (*coreutils, gnupg, ...*)



... but enforces **cryptographic controls** to **block you** from using **modified software** on the Boxee Box.

- D-Link should **remove** from the Boxee the code licensed under the GPLv3
- When customers make **buying decisions**, they should be able to receive enough **information** from the vendor

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## What if people don't care?

Many devices (smartphones, gaming consoles, ...) employ tivoization, but many people **buy them nevertheless**.

- “**Walled garden**” as tivoization ...
- ... but **jailbreak!**
  - Any DRM scheme will be **cracked**, sooner or later



People do not care about their **freedom**? Or are they willing to give away their freedom (... *and money*) for **entertainment** and **ease of use**?

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It's a **tradeoff**. You decide.