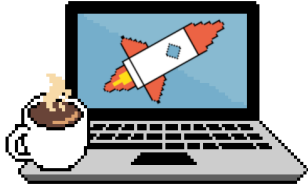




Architecture & Deployment

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A Media Engineering Course

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In this course you will learn:

- How to deploy applications on a Linux server on an IaaS platform ([Microsoft Azure](#)).
- How to deploy applications on a PaaS platform ([Render](#)).

In pursuit of this goal, you will learn:

- How to use the command line and version control.
- The basics of Unix system administration and cloud computing architectures.
- Good security practices related to system administration and web applications.

This course is a [Media Engineering](#) web development course taught at [HEIG-VD](#).

What you will need

- A Unix CLI

- Linux/macOS users can use their standard Terminal
- Windows users should install the [Windows Subsystem for Linux \(WSL\)](#).
- [Git](#)
 - macOS users should [install the command-line tools](#)
 - Windows users should install [Git for Windows](#)
 - Linux users on Debian/Ubuntu-based systems can [install Git with the](#) `sudo apt install git` [command](#), or with their other distributions' package managers.
- A free [GitHub](#) account
- [Google Chrome](#) (recommended, any browser with developer tools will do)
 - [Firefox](#) (optional, required for one network exercise)
- A free [Render](#) account

Resources

- [Last year's course](#) which contains most of the material at this time. We have not yet finished migrating to this site.
- [All the course's subjects, slides & cheatsheets as PDF](#)

Warning

These PDFs are not final. They are **not** the reference material for this course. Course material **will change** until the end of the semester. The only up-to-date material is what is on this site.

References

These are the main references used throughout this course. More detailed and additional links to various online articles and documentation can be found at the end of each subject.

- [The Linux Documentation Project](#)
 - [Advanced Bash-Scripting Guide](#)
- [Building the Future of the Command Line](#)
- [SSH, The Secure Shell: The Definitive Guide - Daniel J. Barrett, Richard E. Silverman, Robert G. Byrnes](#)
- [The Git Book](#)
 - [Chapter 1 - Getting Started](#)
 - [Chapter 2 - Git Basics](#)
 - [Chapter 3 - Git Branching](#)
 - [Chapter 5 - Distributed Git](#)
 - [Chapter 8 - Customizing Git - Git Hooks](#)
- [Open Web Application Security Project](#)
 - [OWASP Top Ten](#)
- [Ops School Curriculum](#)
 - [Sysadmin 101](#)
 - [Unix Fundamentals 101](#)
 - [Unix Fundamentals 201](#)
 - [Networking 101](#)
 - [Networking 201](#)

- [The Internet Explained From First Principles](#)
- [The Twelve-Factor App](#)
- [Systemd Manual](#)
 - [Unit Configuration](#)
 - [Service Configuration](#)
- [nginx documentation](#)
 - [Beginner's Guide](#)
 - [Configuring HTTPS Servers](#)
- [Render Documentation](#)

[Wikipedia](#) is also often referenced, namely these and related articles:

- [Secure Shell](#)
- [Cloud Computing](#)
- [Internet Protocol](#)
 - [IP Address](#)
 - [Port \(Computer Networking\)](#)
- [Domain Name System](#)
- [Environment Variable](#)
- [Reverse Proxy](#)
- [Public Key Certificate](#)

Credits & thanks

- *Me*

- Simon Pinkas contributed the Docker subject, the Hello Shell command line exercise and various other material. He sometimes teaches parts of the course when I feel too lazy (his words), and helps students navigate through this mess along with me during exercise sessions.
- My ~~test subjects~~ early adopters: students who helped test, debug and improve the course.
- David Goetschmann, my current boss at Square Services, who encourages me to continue to teach this course.
- Daniel Rappo, director of the Media Engineering Institute, allowed me to work a lot more time than I was supposed to on the material for this course when developing the initial version while I was working there.
- Mathias Oberson, former colleague at MEI and Square Services, wrote the command line subject and various other material.
- Sarah Composto reread the material, suggested a significant amount of corrections and improvements, and hand-pixelated the funny logo.
- All my former colleagues at MEI who suggested various improvements.
- Nicolas Chabloz and the Helpdesk & IT team at HEIG-VD who helped me debug last-minute issues.
- All the teachers who taught me.
- All the students of the Media Engineering classes who participated in the course since 2019 and suggested various fixes and improvements.
- All the giants who built great things, whose shoulders I stand on.
- Douglas Adams, who taught us the meaning of life.
- My laptop, who is currently dying, but still compiles the course every day.
- My coffee machine, who never stopped supporting me, and provided all the raw material that was turned into code.
- All the people I undoubtedly forgot to mention (let me know).

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