

# Gentoo Linux

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<http://www.uwyn.com>

# Summary

- Installing Gentoo
- Benefits of Gentoo
- Using Portage
- Who is UWYN?

# Installing Gentoo

- Boot from CD
- Setup networking
- Create partitions and mount them
- Extract stage1, stage2 or stage3
- Setup compilation flags and bootstrap (stage2)
- Emerge system (stage3)
- Compile kernel and configure machine  
development code, no smp, buslogic scsi, amd pcnet, devfs, virtual ram, ext3
- Setup grub and reboot

# Benefits of Gentoo

- Everything is compiled from source
- You're in control
- Powerful ports-based package manager
- Easy package format
- Centralized internet repository of packages
- Intelligent and dependency-based init scripts

# Everything is compiled from source

- Optimized for your hardware
- Packages are built from the original sources
- Fast package updates when new version appear
- Can be turned into binary packages during or after package installation

# You're in control

- Minimal installation
- No services are activated by default
- No configuration is done automatically
- Default configurations are available but have to be performed explicitly
- Your configurations are protected and will never be overwritten

# Powerful package manager 1/2

- Packages are first installed in a staging directory, and are only then merged into your live system
- Performs installations in a protecting sandbox
- Safe library updates on a running system
- Resolves dependencies automatically
- Keeps you informed about new updates
- Updates your repository from the internet
- Allows you to safely remove outdated packages

# Powerful package manager 2/2

- Can create and use binary packages
- Lowlevel (developer) tool : ebuild
- Highlevel (user) tool : emerge
- System-wide configuration of your usage preferences (use-flags)
- Virtual packages



# Easy package format

- Closely mimics the bash commands you'd execute to install manually
- Clearly separated installation phases : unpack, compile, install, merge
- Pre and post actions for each installation phase
- Additional configuration is done through the definition of variables : description, homepage, download url, dependencies, binary compatibility

# Centralized internet repository of packages

- Immediate access to new versions
- Intuitive synchronization of your local package tree
- Direct access by developers to the same repository

# Intelligent and dependency-based init scripts

- Not numbered
- Scripts use or need each-other
- Stopping a service auto-stops all services that need it
- Services can be paused (stop function in other distribs)
- Services can't be started or stopped multiple times
- Easy tool to manage services

# Using Portage

- emerge
- ebuild
- quickpkg
- rc-update
- etc-update
- /var/db/pkg

# emerge

- High-level functions to handle packages
- Merge packages
- Update packages
- Query the portage package tree
- Safely remove outdated packages
- Forceably erase packages
- Create a binary packages during installation
- Expressive package selection syntax

# ebuild

- Direct access to ebuilds
- Execution of individual package stages : fetch, unpack, compile, install, merge (qmerge), unmerge, clean

# quickpkg

- Creates a binary package of an already installed package

# rc-update

- Manages the activated/desactivated init scripts for each runlevel
- Add
- Remove



# etc-update

- Manages upgrades of configuration files
- Shows differences with installed config files
- Allows you to merge differences
- Allows you to replace to current version with the new one

## `/var/db/pkg`

- Tree of the installed packages
- Contains meta-data about each package installation
- Category, compilation flags and host, contents, license, virtual package it provides, dependencies, binary compatibility slot, use flags

# Who is UWYN?

- Computer software company, specialized in custom application development
- Development of high-performance portage in C++ with robust embedded database and expressive and versatile Portage Query Language.
- Developed the Portage protective sandbox.
- Developed distinct parts of the current portage.
- All projects are open-source and we maintain an independent framework with associated tools.