Hands on eZ Components – A practical guide

- International PHP Conference
- Möhrfelden, 4th of November 2007
- Tobias Schlitt <ts@ez.no>

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Overall agenda

- Welcome
- Introduction to eZ Components
- Code browsing / hacking session
- Feedback

Who am I?

- Tobias Schlitt
  - More than 6 years of PHP experience
  - Qualified IT specialist
  - Studying computer science at the Technical University Dortmund
  - Working for eZ systems on the eZ Components project
  - Contributing to multiple open source projects: PHPUnit, PEAR, Serendipity,...
  - Author of the brand new eZ Components book

Workshop 2.0 (beta)

- Let's create a little social network
  - Who are you?
  - What are you doing with PHP?
  - Do you have experiences with eZ Components?
  - What do you expect from this workshop?
- Conferences are all about getting to know people!

Some rules

- Questions
  - Ask as much as you can
  - And if there is nothing to ask, ask why there is nothing to ask
- Breaks
  - No fixed time schedule
  - Breaks held when they occur
- Notebooks
  - Are welcome

Code Browsing / Hacking

- What would you like to do?
  - Browse code of example application
  - Dig into dedicated components and discuss them
  - Start something from scratch and let me hack
  - Hack something yourself and let me assist you
- You have the choice

Anything else?

- Open questions?
- Ideas / critics?
- Wishes?

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Agenda

- What are eZ Components?
- Overview
- Setup
- Architecture
- Licensing & Contributing
- Support

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What are eZ Components?

- Library for PHP 5 applications
- Loosely coupled components
- General purpose
- Enterprise directed
- Open Source

Project target

- Migration to PHP 5.X (5.1.1)
- Thoroughly plan to get a top notch API
- Test driven development approach
- Proper docs from the start
- Flexibility and openness for the future

Project goals

- Solid platform for PHP application development
- Clean and simple API
- Excellent docs
- Few regressions
- Clean IP
- Open Source friendly

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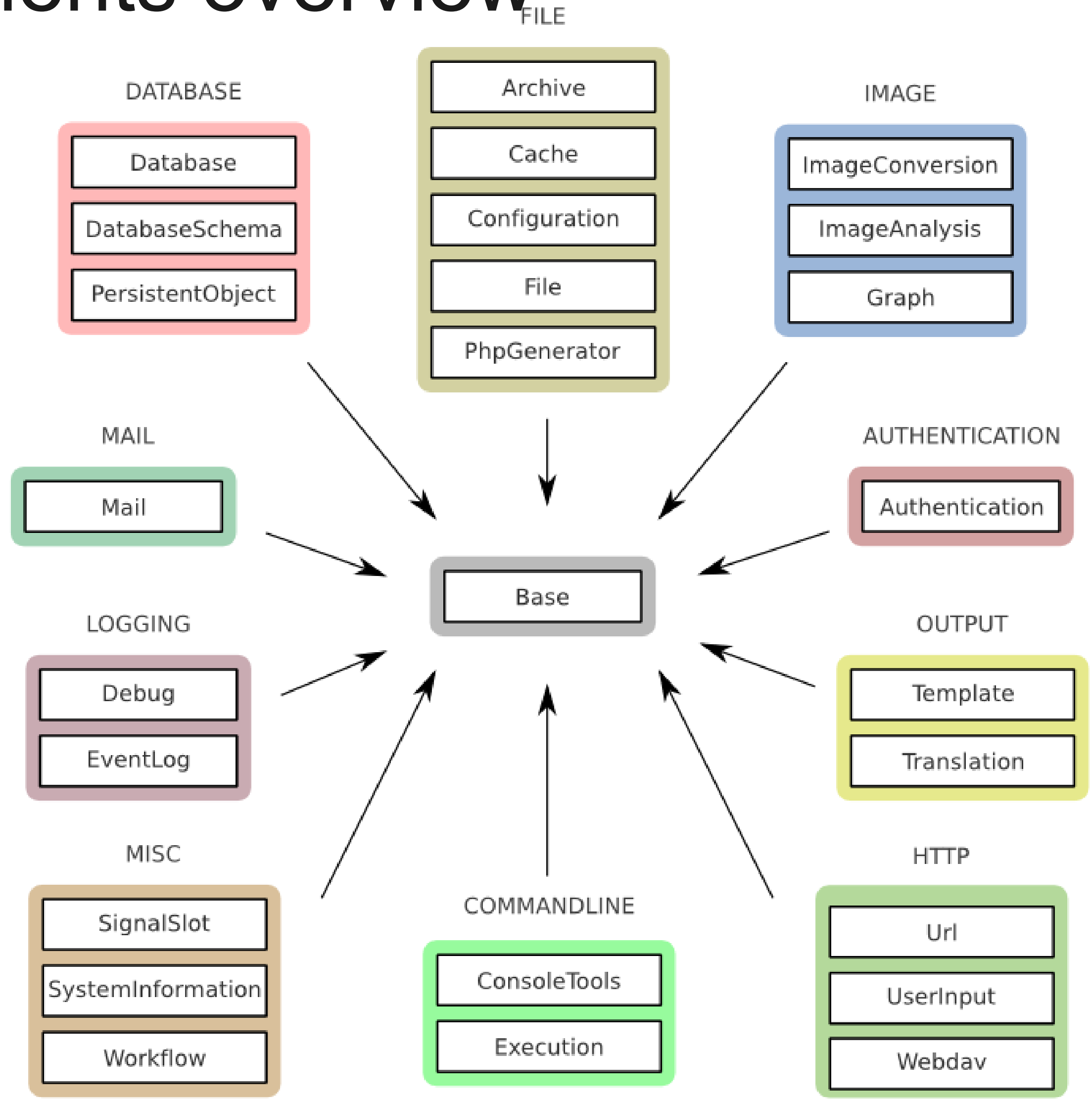
Components overview



Status

- Latest stable
  - 2007.1.1
- Upcoming stable
  - 2007.2
  - around X-mas
- Alpha releases
  - Authentication, Base, File, Graph, Mail, Url, Webdav, Workflow

What is next

- New components in 2007.2
  - Webdav
  - Tree
- Additions in 2007.2
  - A lot...
  - We can browse the change logs, later

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Obtaining

- 3 possible methods
  - Download bundle package
    - Convenient
    - Needs manual updates
  - Use PEAR Installer
    - Very convenient
    - Updates can be automated
  - Checkout from SVN
    - Convenient
    - Possibly contains unstable code

Bundle package

- http://ez.no/ezcomponents/download
  - Download the package you desire
  - Stable version recommended
  - Unstable releases found at the bottom (marked as unsupported)
- Extract the package
- Follow common steps...

PEAR Installer

- Check that PEAR is working
  - `$ pear`
- Discover ezc PEAR channel
  - `$ pear channel-discover components.ez.no`
- Choose your installation and install
  - `$ pear install -a ezc/eZComponents`
  - `$ pear install -a ezc/<component name>`
- Follow common steps...

SVN checkout 1/2

- Checkout component repository
  - $ svn co http://svn.ez.no/svn/ezcomponents/trunk
- Checkout scripts
  - $ svn co http://svn.ez.no/svn/ezcomponents/scripts
- Perform setup
  - $ scripts/setup-env.sh
  - $ scripts/setup-env.bat
    Should be re-run on every update on Windows!
- Follow common steps...

SVN checkout 2/2

- More interesting stuff in SVN
  - Upcoming components
    - http://svn.ez.no/svn/ezcomponents/experimental
  - Articles, internal documentation,...
    - http://svn.ez.no/svn/ezcomponents/docs
  - All components releases, by component
    - http://svn.ez.no/svn/ezcomponents/releases

Common steps

- Check your include_path
  - Either in php.ini
  - Or in the script using ini_set()
- Include Base component
  - Beware: PEAR structure differs!
- Setup __autoload()

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A component

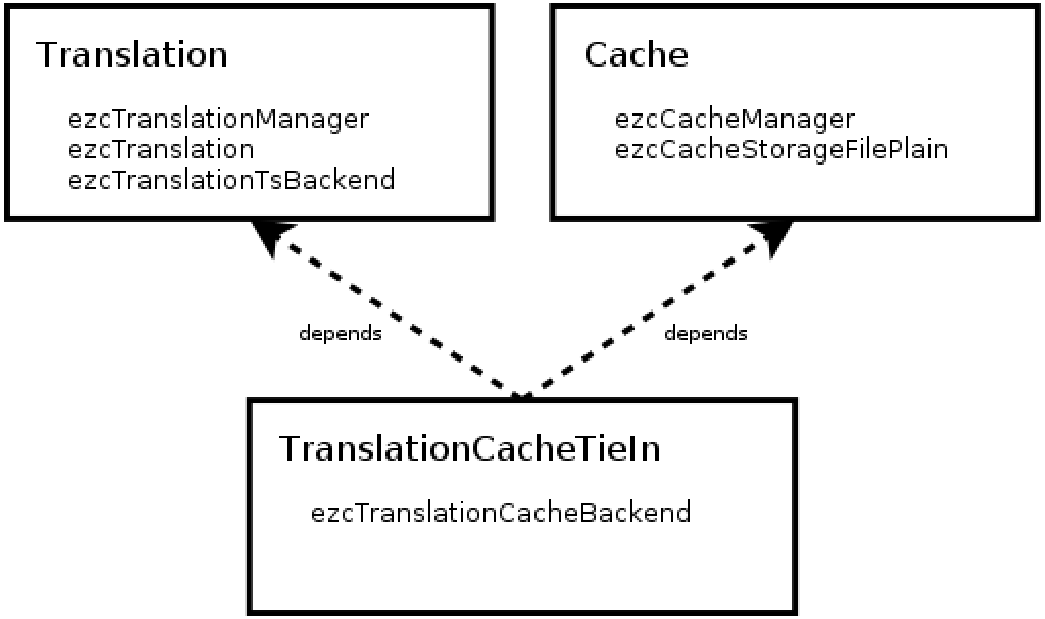
- Fulfills a certain purpose
- Collection of PHP Classes
- Important classes marked as @mainclass
- Directory structure
  - design/
  - docs/
  - src/
  - tests/

Dependencies

- PHP version
  - At last 5.1.1
  - 5.2.x recommended
- Extensions / 3rd party apps
  - General
    - SPL
    - DOM
  - Component specific
    - PDO (Database components)
    - GD / ImageMagick (Image* components)

Tie-Ins

- All components depend on Base
- Inter-component deps discouraged
- Integration of components through Tie-Ins



Translation

ezcTranslationManager
ezcTranslation
ezcTranslationTsBackend

Cache

ezcCacheManager
ezcCacheStorageFilePlain

TranslationCacheTieIn

ezcTranslationCacheBackend

Base component

- Basic functionalities
  - Autoload
  - Dependency checks
  - File operations
- Common features
  - Common base classes
    - Structs
    - Options
    - Exceptions
  - Lazy initialization

Struct classes

- Extending `ezcBaseStruct`
- No functionality
- Just public properties
- Used instead of hash tables
  - Readability
  - Type check possibilities using `instanceof`

Settings and options

- Settings
  - Only provided during construction of an object
  - Cannot be changed later
  - Define global behavior of the object
- Options
  - Can be provided during construction of an object
  - Can be changed at any time
  - Access through `$options` property of the object
  - Options container class extending `ezcBaseOptions` using virtual properties

Virtual properties

- Used in every component
- Access of properties through interceptors
  - __get() / __set() / __isset()
- Provided type and value checks on the fly
- Exceptions instead of warnings/notices/nothing
  - ezcBaseValueException
  - ezcBasePropertyNotFoundException
  - ezcBasePropertyPermissionException

Lazy initialization

- Configure objects without instantiation
- Instantiate objects when needed
- Saves resources
- Supported by several components

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Documentation 1/2

- API docs
  - Online
    - http://ez.no/doc/components/overview/latest
  - For download
    - http://ez.no/ezcomponents/download
  - Generate yourself
    - phpDocumentor (http://phpdoc.org)
    - Restructured Text (http://docutils.sourceforge.net/rst.html)

Documentation 2/2

- Tutorials
  - Shipped with each component
  - In the online API docs
- Articles online
  - http://ez.no/developer/articles
- Magazine articles
  - PHP Magazin (German / international)
  - php|arch
  - PHP Solutions
  - ...

Support

- Community
  - Mailinglist
    - <components@lists.ez.no>
  - Forum
    - http://ez.no/developer/forum/ez_components
  - IRC
    - #ezcomponents@Freenode
- Professional
  - http://ez.no/support/total_product_responsibility_from_ez

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License

- New BSD License
  - http://ez.no/ezcomponents/license
- Very permissive
  - Even ship eZ Components with your product
- GPL friendly

Contributing

- Open Source
  - Feel invited to contribute!
- Contributor License Agreement (CLA)
  - Signed by every contributer
  - Secures all involved parties
    - Customer
    - Contributor
    - eZ
  - Leaves copyright untouched

Next step

- Now it's your decision
- What would you like to do?

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Archive

- Create / extract / manipulate archives
- Multiple formats
  - TAR
  - ZIP
- Multiple compressions through stream wrappers
  - GZ
  - BZIP2

Authentication

- Multiple authentication back ends
- Internal services
  - Database
  - htpasswd
  - IMAP
- External services
  - OpenID
  - TypeKey

Cache

- Multiple back-ends
  - Plain file
  - PHP array in file
  - APC (2007.2)
  - Memcache (2007.2)
- Attribute searching
- Multiple directory levels in file caches

Configuration

- Read & write config files
- Flexible back-end design
  - INI
  - PHP Array
- Maintains comments

ConsoleTools

- Class suite for console applications
  - Output / format text
  - Table generation
  - Status widget rendering
    - Progress bar and more
  - Simple dialog system

Database

- Extends PDO
  - Unified exceptions
  - Identifier quoting
- SQL abstraction
  - Generates database independent SQL
  - Emulates LIMIT
- Support for MySQL, SQLite, Oracle, PostgreSQL, MS SQL

DatabaseSchema

- Save structure, database independent (XML)
- Create database schema from XML
- Diff between DB structures
- PEAR::MDB2 compliant schema
- Generate PersistentObject definitions and classes

EventLog

- Multiple back-ends
  - File
  - Database
- Severities
- Log filtering

Execution

- “Catches” fatal errors
- Allows to display at least some info instead of a error to the user

Feed

- Parse and create feeds
- Multiple formats
  - RSS
  - Atom
- Not stable so far, maybe 2007.2

Graph

- Data visualization and charting tool
- Different chart types
  - Bar, line, pie, radar
- Fully customizable
- 3D effects
- Multiple output formats
  - SVG, PNG/JPEG/..., Flash

ImageConversion

- Multiple back-ends
  - ext/GD
  - ImageMagick
- Transformation / filter architecture
- Supports filters like scale, crop, colorspace
- Effects like watermark, border, noise, swirl,...

Mail

- Create & parse mail
  - Plain Text / HTML / Attachments / Digest / ...
  - Report / delivery status
- Send mail
  - SMTP / mail()
- Retrieve mail
  - POP / IMAP / MBOX / File / Variable

PersistentObject

- Object relational mapping on top of the Database component
- No inheritance required (similar to Java Hibernate)
- Database independent support for
  - Relations
  - Cascading
- Definition and class stub generation supported by DatabaseSchema

SignalSlot

- Qt inspired object communication system
- Enable plug-in designs
- Static and dynamic signals
- Slot priorities

Template

- Compiling to PHP
- Scoping and includes
- Output contexts (XSS prevention)
- Custom extensions
  - Blocks
  - Functions
- Dynamic locations

Translation

- Store and retrieve translated content
- Uses Qt linguist files (XML)
- Filter system
- Caching

Tree

- Classes to represent tree structures
- Working with trees
  - Manipulation, Visiting, ...
- Storage backends
  - Memory, XML
- Tieins
  - Database, PersistentObject
- New in 2007.2

UserInput

- Filters user input
- Built upon ext/filter
- Intuitive OO API

Workflow

- Abstract workflow engine
- Define workflows in code or XML
- Run, suspend/resume workflows
- Allows graph orientied programming

Webdav

- Allows online editing through HTTP
- Extension of the HTTP protocol
- Many applications support WebDAV
  - InternetExplorer
  - Nautilus
  - Konqueror
  - Finder
- New in 2007.2

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The end

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The end

- Thanks for listening!
- I hope you learned what you expected...
- ... or propably slept well. ;)
- Any questions left?
- Feedback / critics / ideas?

Contact info

- eZ Systems website
  - http://ez.no
- My blog
  - http://blog.schlitt.info
- Email me
  - ts@ez.no
- Buy our book!
  - Get it right at the eZ Systems booth
  - http://www.galileocomputing.de/katalog/buecher/titel/gp/titelID-1545

Tobias Schlitt
Kore Nordmann
eZ Components
Das Entwickler-Handbuch
PHP-Anwendungen mit eZ Components entwickeln
• Installation, Grundlagen, Praxiseinsatz
• Datenbankabstraktion, ORM, Fehlerbehandlung
• Feeds, Datenvisualisierung, Sicherheit, Integration
Galileo Computing