

# Icinga – Open Source Monitoring

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Icinga Development Team

@ Open Source Monitoring Conference

28.10.2009 - Nuremberg



## Agenda

- **The Icinga Project**
- **Project Structure**
- **Tools and Plattform**
- **Icinga Development Team**
- **History**
- **Project Status Update**
- **Live-Demo**
- **Roadmap**
- **Questions & Answers**

## The Project Structure

- Biweekly Skype session (short night for Scott)
- Team Mailinglist for communication
- Ticketing und project-management (dev.icinga.org)

Icinga Quality, Testing and Community Support

Icinga-Core

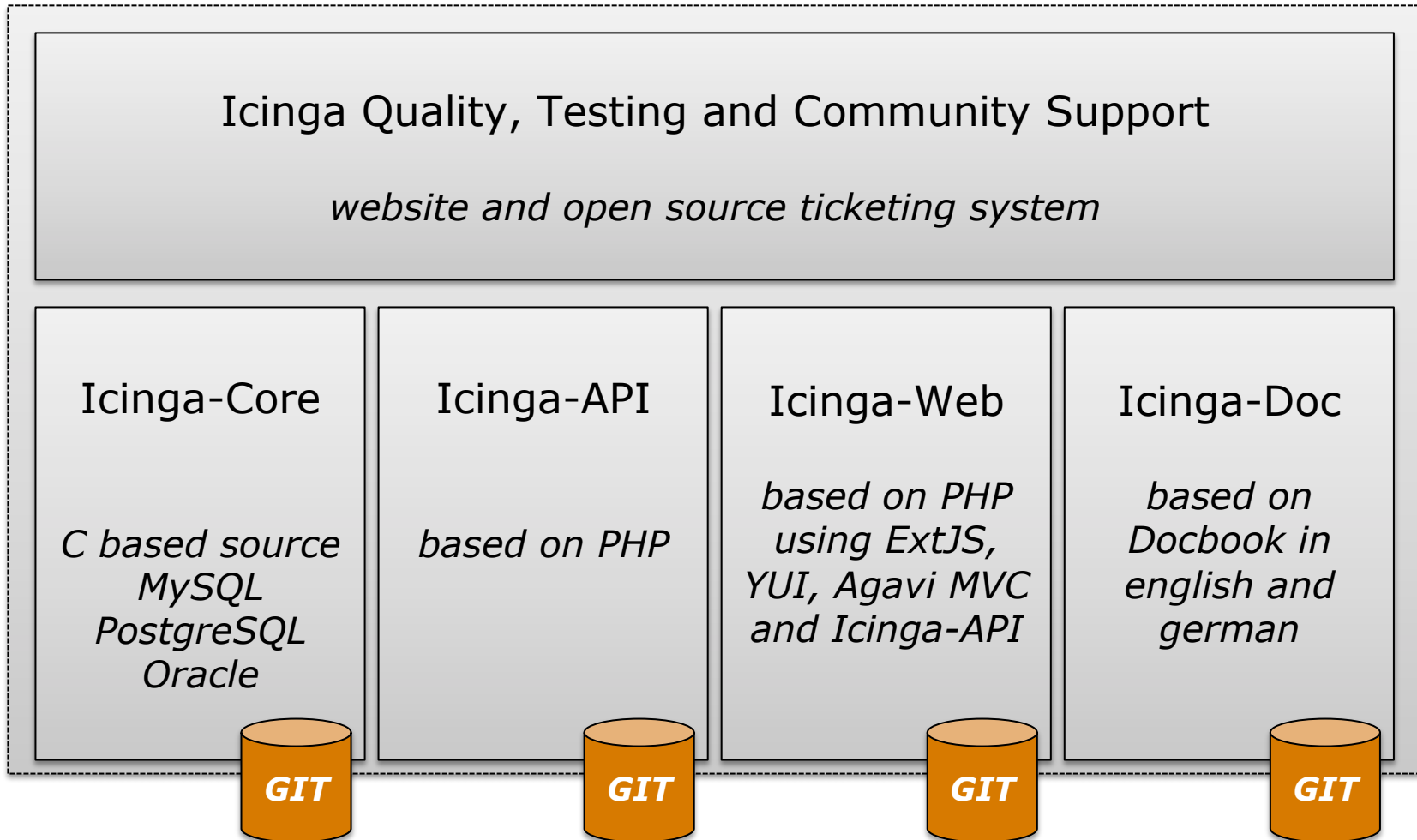
Icinga-API

Icinga-Web

Icinga-Docu



## Tools and Platform





## The Icinga Development Team

- **Core Team**
  - Hendrik Bäcker
  - Michael Friedrich
  - Christoph Maser
- **API Team**
  - Christian Döbler / Marius Hein
  - Michael Lübben
- **Web Team**
  - Marius Hein / Christian Döbler
  - Michael Lübben
- **Docu Team**
  - Lara Berdelmann
  - Wolfgang Nieder
- **Organisation and Community-Support**
  - Scott Evans
  - Bernd Erk
  - Karolina Kalisz



## Semi-annual History

- Release of 5 Icinga Versions (currently 0.8.4)
- Integrated IDOMod and IDOUtils
- Migration to libdbi for database access
- Additional database-support for PostgreSQL and Oracle
- PHP based API for core-data access
- Complete Docbook manual (currently 2 languages)

## Project Status Update - Doc

- Why migrate to Docbook
  - create various formats based on a single technical base
  - layout is independent from content
  - transformation into various formats using XSLT, XSL-FO
    - HTML, XHTML, PDF, PostScript, RTF, MANPAGES
  - use different stylesheets like
    - XSL, FOSIs, DSSSL and CSS
  - modularity using includes
  - two languages (en, de) available now on [docs.icinga.org](http://docs.icinga.org) and more to come (es)



# Project Status Update – docs.icinga.org



Home Community Development



# ICINGA

Open Source Monitoring

## Icinga Documentation

Welcome to Icinga-Docs. Please select your preferred language on the right.

Built on proven technologies and concepts as well as progressive frameworks and standards, Icinga is a product of the community - their ideas, needs and combined passion for innovation.

### Additional Information

Visit our website: [Icinga Website](#)

Visit our online-demo: [Icinga Demo-System](#)

Download actual version: [Icinga @ Sourceforge](#)

### Available Documentation

- Latest Icinga documentation
  - English - Online
  - German - Online
- 0.8.4 Icinga documentation
  - English - Online
- 0.8.3 Icinga documentation
  - English - Online
- 0.8.2 Icinga documentation
  - English - Online
- 0.8.1 Icinga documentation
  - English - Online
- 0.8.0 Icinga documentation
  - English - Online

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## Project Status Update – Core

- Renamed core
- Fetched Nagios patches to stay compatible
- Renamed IDOUtills; version handling like core
- Added IDOUtills as core module during install
- Applied Patches from NDOUtills
- Introduced new DB Abstraction layer: libdbi
- Added SSL support over TCP sockets
- Added initial support for more RDBMs
  - PostgreSQL
  - Oracle



## Project Status Update – Core: IDOUtils

- Rewritten ido2db using libdbi as DB layer
- Normalized SQL-Queries
- Rewritten INSERT OR UPDATE queries
  - Data array handed to function
  - Function decides upon RDBM which query is executed
- Experiment with housekeeping
  - Lower DB trimming intervals
  - Test partial DELETE based on COMMIT with cursors



## Project Status Update – Core: IDOUtils Postgresql

- First approach to INSERT OR UPDATE
  - Extract unique constraints
  - Try update
  - If no rows affected try insert
- Last insert ID based on table sequence ID
- Experiment with string escaping
- Does not perform very well
  - Needs procedures for INSERT OR UPDATE
  - Try INSERT
  - If unique constraint exception, do UPDATE



## Project Status Update – Core: IDOUtils Oracle

- Libdbi Oracle driver is broken
- Introduce ocilib as addon driver
- Integrate into configure
  - --enable-oracle
  - Set LD\_LIBRARY\_PATH in initscript
  - Link ocilib at runtime
  - #define USE\_ORACLE, #include ocilib.h
- Break up code with #ifdef USE\_ORACLE
  - If stepping back to libdbi, full reinstall required



## Project Status Update – Core: IDOUtils Oracle

- INSERT OR UPDATE approach from PostgreSQL
  - MERGE ON DUAL trick
- Last insert ID based on
  - INSERT INTO trigger
  - Setting new current sequence ID
- Oracle specific changes
  - No AUTOCOMMIT
  - NOW() → SYSDATE
  - Drop table\_prefix, rename one table (30 char max)
  - PK is id instead of [table]\_id
  - Use CLOB (varchar2 supports 4000 bytes max)

## Project Status Update – API

- fetches information from icinga
- sends commands to icinga
- no dependencies to other libraries or frameworks
- opportunity to be free from complex data schemas
- available interfaces
  - output: database (PHP-PDO)
  - input: pipe, ssh

## Project Status Update – API Example I – Connect Icinga

```
$apiFile = 'icinga-api/IcingaApi.php';  
$idoConfig = array (  
    'type'           => 'mysql',  
    'host'          => 'database_master',  
    'database'      => 'icinga_db',  
    'user'          => 'icinga_user',  
    'password'      => 'very_secret',  
    'table_prefix'  => 'icinga_',  
);
```



## Project Status Update – API Example II – Search Data

```
require_once($apiFile);

$api = IcingaApi::getConnection(IcingaApi::CONNECTION_IDO, $idoConfig);

$apiRes = $api->createSearch()
    ->setSearchTarget(IcingaApi::TARGET_SERVICE)
    ->setResultColumns(array(
        'SERVICE_NAME',
        'SERVICE_OUTPUT',
        'SERVICE_PERFDATA',
        'SERVICE_CURRENT_STATE'
    ))
    ->setSearchFilter(array(
        array('CONTACTGROUP_NAME', '%', IcingaApi::MATCH_LIKE),
        array('HOST_NAME', 'localhost')
    ))
    ->setSearchGroup('SERVICE_NAME')
    ->setSearchOrder(array('SERVICE_NAME'))
    ->fetch();
```



## Project Status Update – API Example III – Send Data

```
$config = array (
    'ssh_bin'           => '/usr/bin/ssh',
    'ssh_user'         => 'icinga',
    'ssh_host'        => 'monitoring_server',
    'ssh_port'        => 22,
    'ssh_timeout'     => 20,
    'ssh_pipe'        => '/usr/local/icinga/var/rw/icinga.cmd'
);

$cmd = IcingaApi::getCommandObject();

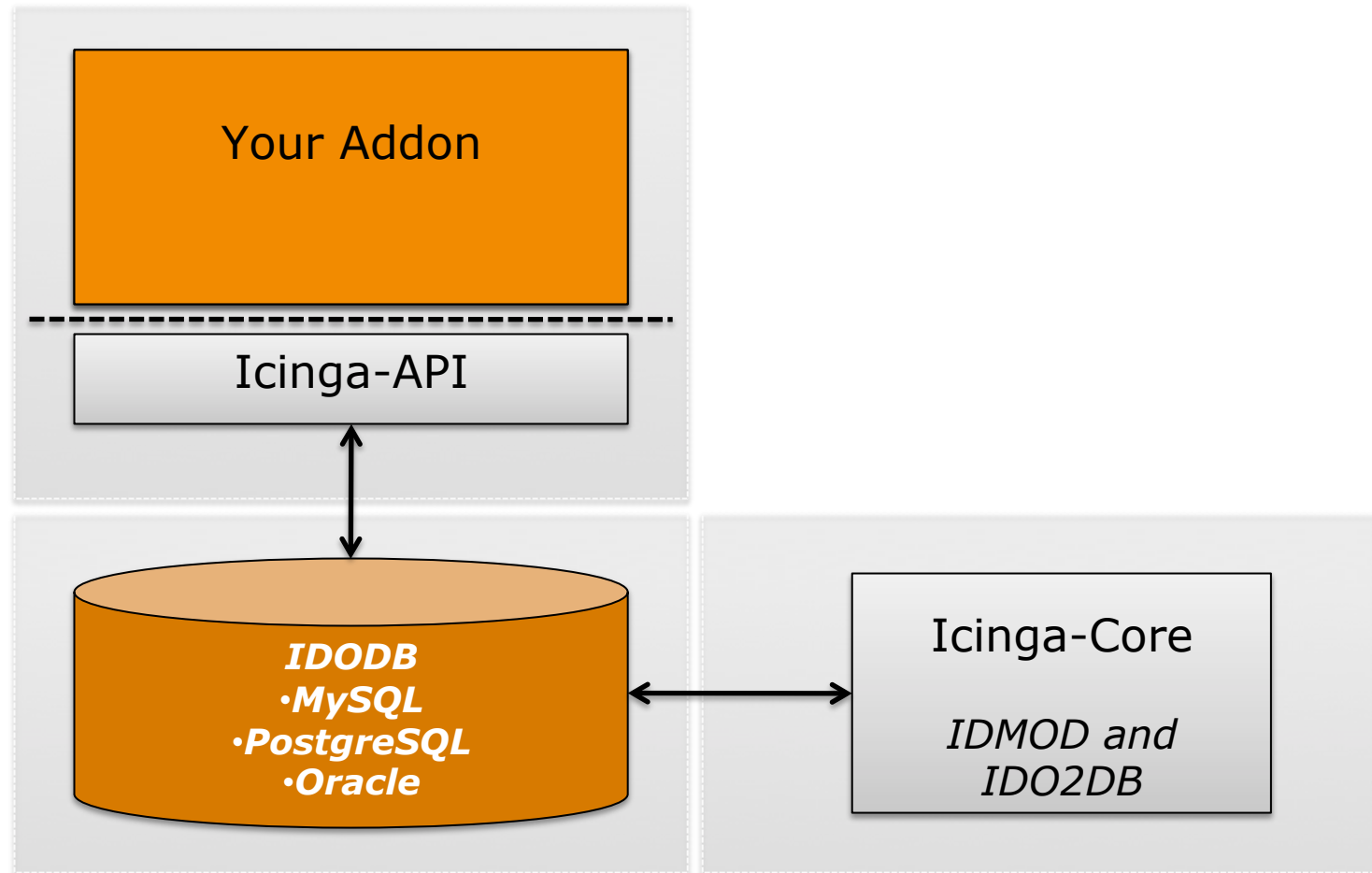
$cmd->setCommand('SCHEDULE_SVC_CHECK')
    ->setTarget(IcingaApi::COMMAND_INSTANCE, '1')
    ->setTarget(IcingaApi::COMMAND_HOST, 'linux-www-20')
    ->setTarget(IcingaApi::COMMAND_SERVICE, 'apache-procs')
    ->setTarget(IcingaApi::COMMAND_CHECKTIME, '1251449262');

$cmdDisp = IcingaApi::getCommandDispatcher();

$cmdDisp->setInterface(IcingaApi::COMMAND_SSH, $config)
    ->setCommand(array($cmd))
    ->send();
```



## Project Status Update – Web architecture





## Project Status Update – Web Features

- persistent user settings
- multiple authentication adapters
  - BasicAuth
  - LDAP
  - Database
- easy extendable using custom cronks
- create custom views on all monitoring items
- state of the art web 2.0 interface

Live Demo



# Demo

## Project Compatibility

- downward compatible to Nagios®
  - configuration
  - plugins
  - addons
- compatible database schemas
- similar libdbi implementation planned for Nagios®

## Roadmap

### ● Core-Roadmap

- 28. Oct - Core RC 1.0
- 16. Dec - Core 1.0 Stable
- 03. March - Core 1.0.1
- 30. June - Core 1.0.2

### ● Web-Roadmap

- 28. Oct- Web Alpha 0.9
- 16. Dec - Web Alpha 0.9.1
- 03. March - Web 0.9.1 Beta
- 30. June - Web 1.0 RC

unified Icinga roadmap



## Questions and Answers



# Q & A