

Zabbix 2.0

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About me

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It is -20C outside :)

What is my talk about?

- What is Zabbix?
- Current situation
- Let's talk about Zabbix 2.0!
- Looking further: Zabbix 2.x
- New development process

What is Zabbix?

I'm sure most of you know this already.

What is Zabbix?

- Zabbix - is enterprise level Open Source (Free!) monitoring software
- One of the most popular monitoring systems
- Competes with commercial tools from HP, IBM, other vendors and Open Source alternatives
- Estimated number of users is more than **30.000**
- Scales up-to **100.000** of devices and **1.000.000** of checks
- Large-scale distributed monitoring
- Can monitor absolutely all platforms and devices!

What do we have now?

Software, company, community

Zabbix Software

- Zabbix 1.8.3 released, 1.8.4 is on the way



- One of the most popular Open Source monitoring systems
- One of the most complete solutions according to Wikipedia:

Zabbix	Yes	Yes	Yes	Yes	Yes	Supported	Yes	Yes	Yes	Yes	Full Control	Yes	Yes	Oracle, MySQL, PostgreSQL, SQLite	GPL	Yes	Yes	Yes
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Zabbix Company

- Our team grew to **15** people
- Customers with more than **100.000** of monitored devices
- We have **4** Premium Partners (Japan, UK, Austria, Spain)
- More than **20** Partners and Resellers around the World



Zabbix Community

- I am **very very proud** of our community
- Two books on Zabbix are available: in English and **in Japanese**
- Around 15.000 users registered in Zabbix Forums (English, Russian, Spain)
- Very active Zabbix community in Japan: www.zabbix.jp
 - Maintained by Mr. Kodai and Zabbix friends!
 - Hey, most of Zabbix-related tweets are in Japanese! :-)
- More and more people know about Zabbix, it's not longer a stranger

So, what's next? Zabbix 2.0!

Well, maybe 1.10 :-)

General Directions

- Simplify everything: initial setup and maintenance
- Official packages for all platforms (DEB, RPM, binaries)
- Appliances (images for VMWare, ISO images, installation CDs)
- Listen what users say, but implement **even better solutions**
- Better Quality Assurance: Release Candidates, Unit testing, string freeze phase for translators, etc

Roadmap

- Database integrity
- Low-level auto discovery (Agent, SNMP)
 - Filesystems, network interfaces
- Screens in a template
- Multiple network interfaces for a host
- JMX remote monitoring
- Centralized management of agent configuration
- Automatic collection of hardware profiles

Database integrity

- Why it is important
 - Consistency of data
 - It help to catch all sorts of bugs at very early stage
- Drawbacks
 - Lower performance
- What it is all about
 - Foreign keys
 - Cascade operations (deletes, updates)

Low level discovery

- Current situation
 - Host level discovery only
 - Difficult to use templates for hosts having different file systems, network interfaces, etc
- Zabbix 2.0
 - Automatic discovery of [network devices, file systems, processes, etc](#)
 - Discovery of SNMP interfaces and JMX counters
 - One template for hosts having different resources!

How it works

Template_Linux

- Monitor all mounted filesystems
- Check if free disk space < 10%
- Monitor all network interfaces

Linux Box A

- Filesystems
 - /
 - /samba
- Network
 - eth0
 - eth1

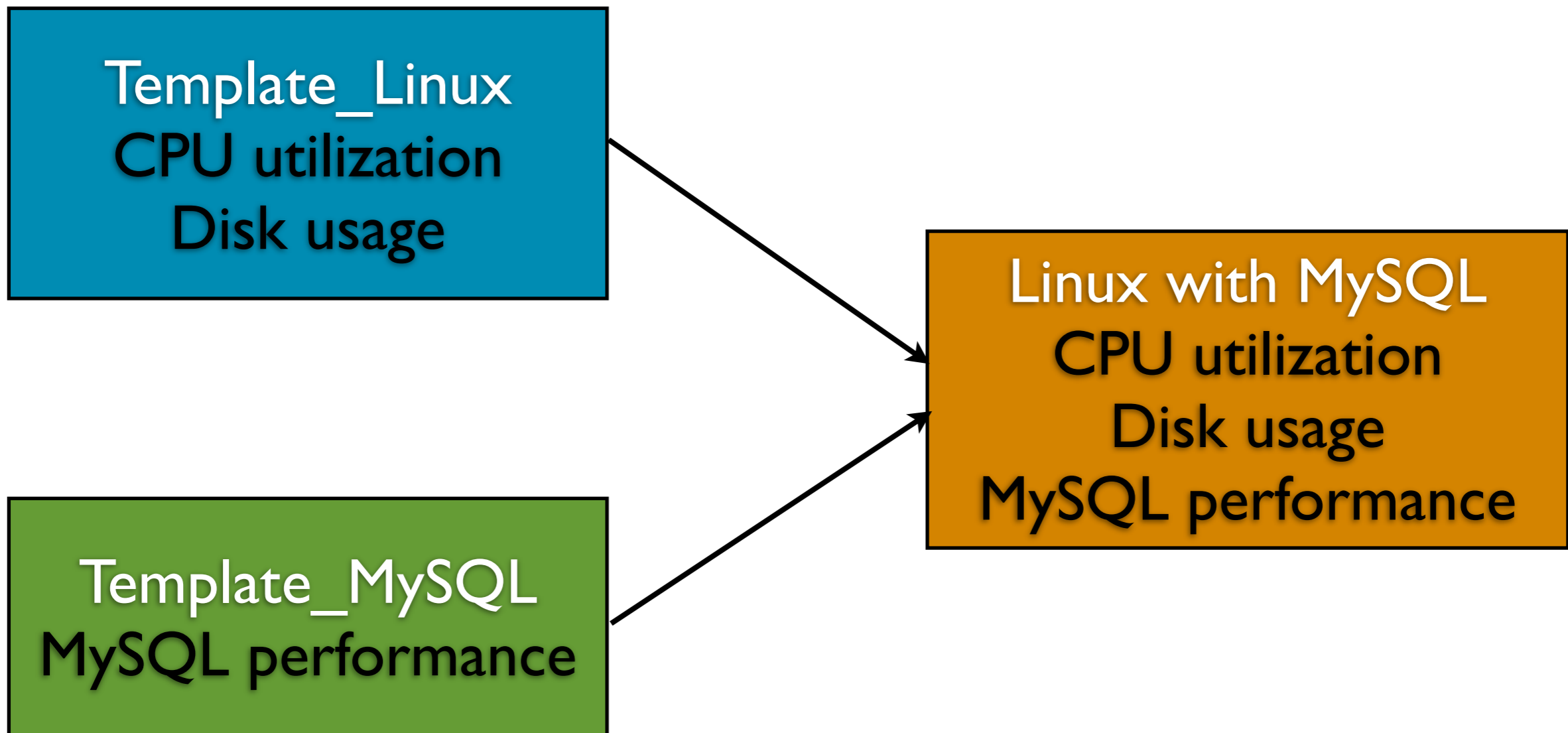
Linux Box B

- Filesystems
 - /
 - /nfs
- Network
 - eth1
 - eth2

Screens in a template

- Current situation
 - Screens cannot be linked to a template
 - Dynamic screen element can be used, hard to use
- Zabbix 2.0
 - A screen can be linked to a host template

How it works



Multiple network interfaces

- Current situation
 - One IP address per monitored device
 - Unable to monitor different resources on different IPs
- Zabbix 2.0
 - Monitored device to support multiple IPs
 - One IP: monitoring by SNMP, another: Zabbix Agent

JMX remote monitoring

- Current situation
 - Use of ZapCat or other 3rd party tool
- Zabbix 2.0
 - Native support of JMX monitoring
 - Discovery of JMX counters
 - Monitoring of Java infrastructure: JBoss, WebLogic, WEBSphere, Tomcat
 - Monitoring of Java Applications



Management of agent configs

- Current situation
 - Unable to manage agent configuration files
- Zabbix 2.0
 - Agent configuration **can be managed from Zabbix GUI**
 - No need to connect to individual hosts via Telnet, SSH, etc
 - It **can be restricted** on per agent level for security reasons

Automatic update of Hardware profiles

- Current situation
 - Host profiles should be **manually updated**
- Zabbix 2.0
 - Can be **automatically collected**
 - Manual processing as well



By camknowns, Flickr

WHEN???

No promises!

To be released **when ready**

Initial estimate: **end of 2010**

Zabbix 2.x

Something to expect soon

Ideas, ideas, ideas...

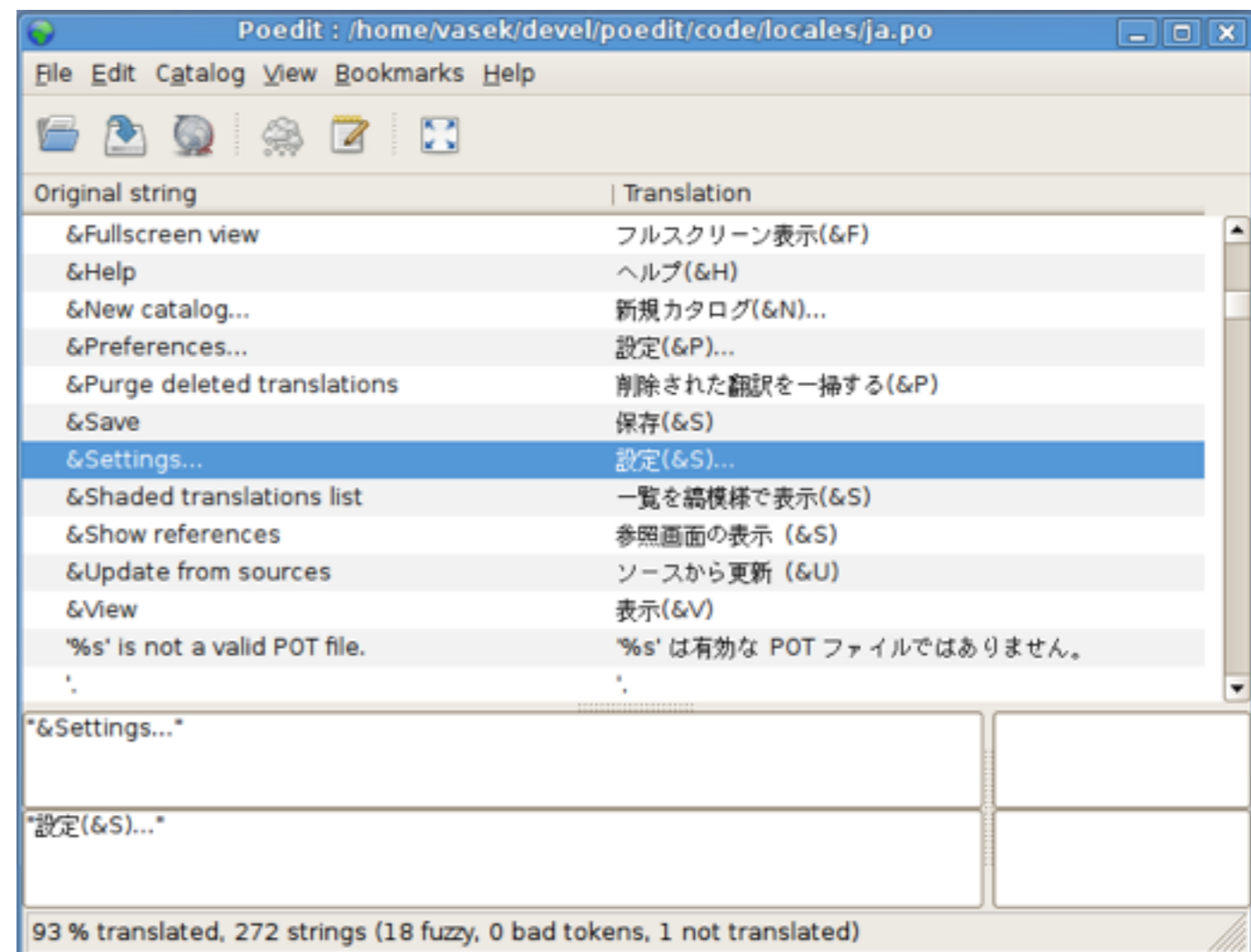
- Support of high-performance NoSQL storages
- Translation framework
- Integration with cloud APIs
- Integration with XEN, KVM, etc
- Task scheduler
- Remote commands based on Telnet and SSH
- Encryption
- Hooks to make all components extensible
- Better Zabbix Interface

NoSQL storages

- Zabbix Supports: MySQL, PostgreSQL, Oracle, SQLite
 - Problem: maximum **15.000** of values per second
 - Cannot scale!
 - Performance drop significantly when size of historical data increases
- Solution:
 - Use NoSQL storages for historical data (Cassandra, Hadoop, Hbase, Hypertable, MongoDB, CouchDB, Neo4j)
 - Performance can be higher than **100.000** of values per second
 - Can be horizontally scaled. **More servers - more performance!**
 - API for history data, you can choose any engine!

GNU Translation framework

- Zabbix Interface
- Server, Proxy and Agents
- GNU Translation framework
- Obligatory **string freeze phase**



Zabbix in a Cloud

- Integration with cloud APIs
 - Amazon EC2
 - Rackspace Cloud
 - VMWare
- Monitoring
- Management (add or remove resources on demand)
 - **High CPU load** -> add a new cloud server
 - **Lack of disk storage** -> add a new cloud storage



Zabbix for virtual environments

- Virtual environments

- KVM

- XEN

- VMWare



- Monitoring

- Management (add or remove resources on demand)

- **High CPU load** -> add a new cloud server

- **Lack of disk storage** -> add a new cloud storage

Global task scheduler

- I took the idea from a question during IT Expo 2009 in Tokyo :)
- We already have everything to make it possible
- Kind of **global CRONTAB** for the whole monitored environment
- Can be used to:
 - Schedule backups and other periodical tasks
 - Start/shut down physical and virtual servers, cloud resources
 - Conditional execution of commands depending on existing problems. Example: **Turn off cluster nodes at night only if CPU load is low.**

Remote commands

- Remote commands based on Telnet and SSH
 - Can already be scripted but not natively supported
 - Will simplify automatic actions on network devices
- For devices having no Zabbix or SNMP agent running

Encryption and Authentication

- Long-awaited feature, everyone wants it!
- Will be implemented at some point, no doubt
- For Server-Server, Server-Proxy and Agent communications
- Must be easy to setup and maintain. It is a challenge!

Easier to extend

- Make it easier for users to contribute
 - Zabbix users are very smart
- Hooks to make all components extensible
 - User could create and share their extensions
 - Way to extend Zabbix agent
 - Way to extend alerting
 - Way to extend remote commands
 - Write your own GUI modules

Zabbix Interface

- MVC (Model-View-Controller) model for GUI
 - Strict separation of logic and presentation levels
 - Better scalability
 - Easy to make unit tests
- Make it more user friendly
 - Usable with all information interconnected
 - Personalization (a user can create his own resources)

Development policy

Quality is our priority number one.

New development policy

- A new branch is created for each new feature or a bug fix. [Already in place!](#)
- Independent testing. [Already in place!](#)
- Obligatory Release Candidates. [Already in place!](#)
- Coding standards. [Nearly done!](#)
- C and PHP string freeze phases. [We start it from 1.8.4.](#)
- Unit testing to cover most of the code. API helps!
- Release when ready
 - Agile approach: Zabbix is ready to be released anytime
 - Do not try to put as much features as possible
 - Release in time, tested and stable

WWW.ZABBIX.COM

The presentation will be available
on www.zabbix.jp soon!