

5th annual Zabbix Conference

11 - 12 September 2015 | Riga, Latvia
share your passion and search for new knowledge

ZABBIX 2015
Conference

Zabbix Tool for Graph Visualization

Serg Mescheryakov, D.Sc., Professor

Dmitry Shchemelinin, Ph.D.

Dmitry Tigrov, M.B.A.

RingCentral Inc., San Mateo, CA, USA



Zabbix Monitoring at RingCentral

2

Going global (USA, West Europe,
new data centers in South East Asia)



RC dynamics cause problems:

- Frequent updates and re-deployments via ADS (1 major release rollout per quarter, weekly security/swat/patch/fix updates, daily 4-hour maintenance)
 - New host IDs are created after ADS
 - Old graphs are lost in Zabbix history
 - Faster graph tool is required
- (10K hosts, 1M items, 300K triggers, 2K users, 3.5K VPS traffic)

10K+ hosts in 2015
30% annual growth



Background

What is not good enough in creating reports/graphs using Zabbix UI:

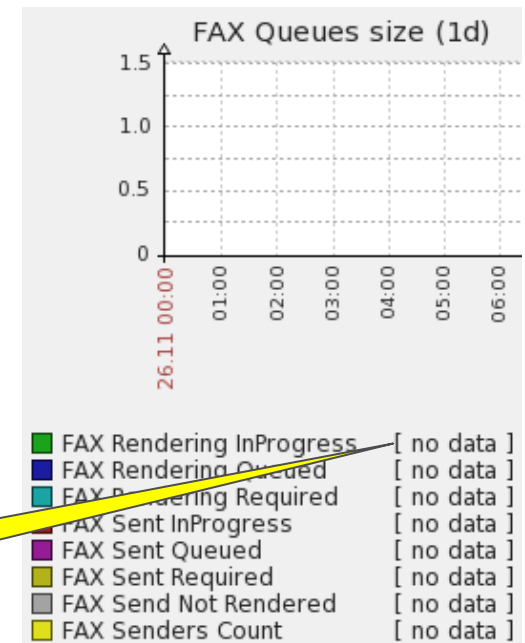
- ❑ Creating new reports/graphs/screens in Zabbix UI is not fast enough
- ❑ Read-write access to Zabbix is not secure to grant for all users
- ❑ Request to Zabbix admin gives more delay in creating new items/graphs

Other alternative solutions are investigated:

1. Grafana + Graphite
2. Riemann + InfluxDB

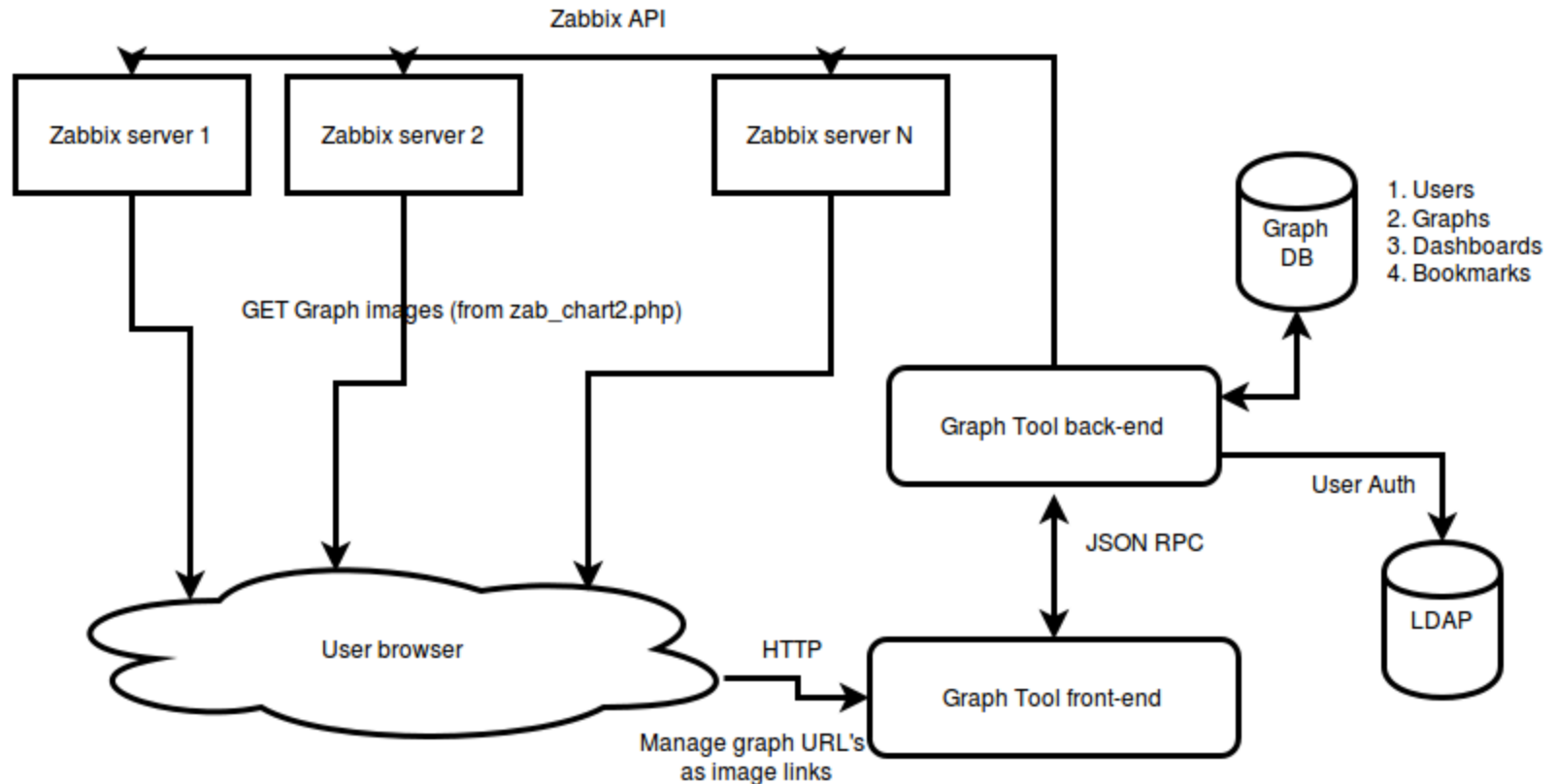
- ❑ Faster than Zabbix UI but still heavy solutions
- ❑ Separate DB is used to store custom reports/graphs
- ❑ Not enough powerful for big data analytics
- ❑ No major benefits in comparison with Zabbix

New host IDs after automatic redeployment cause data loss



Zabbix Graph Tool Architecture

4



The benefits of new graph tool:

- ✓ Not a replacement of Zabbix UI but a light weighted add-on app (JS + PERL)
- ✓ Read-write access for everyone using LDAP authorization
- ✓ Custom graphs from different servers are stored separately of Zabbix DB
- ✓ Graphs are stored as web links to Zabbix API using host items as parameters
- ✓ Web links can be safely shared to other users even without Zabbix access

Steps to Create New Graphs on the Fly

5

The screenshot shows a web application interface for creating graphs. It includes a list of hosts and items, a selection panel, and a graph preview area. Seven numbered callouts explain the steps to create a new graph:

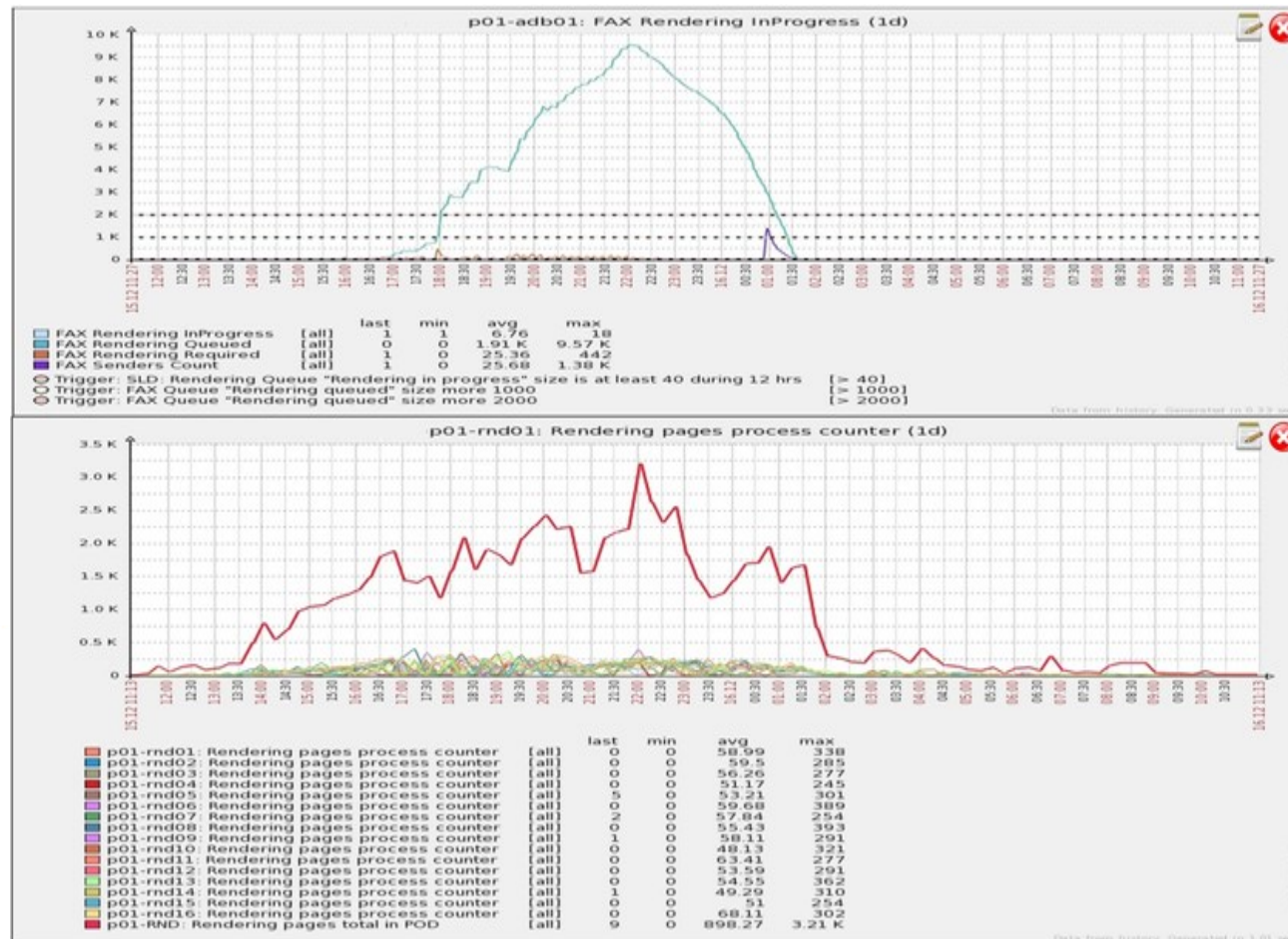
1. Pick up host from the list or begin typing host name
2. Pick up item from the list or begin typing item name
3. Multi-selection of hosts/items is allowed
4. Set time period and other options
5. Add items to graph, adjust line type/order
6. Auto-generate and preview graph
7. Put graph to the screen

The interface includes the following elements:

- Host filter:** A text input field containing "rnd".
- Item filter:** A text input field containing "render".
- Options:** A panel with various settings including "Graph type" (Normal), "Graph title", "Data period(hours)" (24), "Y axis min/max" (Calculated), "Show legend", "Show triggers", "Per item options" (Calc func: All, Line type: Line), and an "Update all graphs" button.
- Hosts list:** A list of hosts including p01-rnd01, p02-rnd01, p03-rnd01, p01-rnd01, p01-rnd02, p01-rnd03, p02-rnd01, p02-rnd02, and p02-rnd03.
- Items list:** A list of items including "(p02-rnd01) Rendering Check - PDF", "(p02-rnd02) Rendering Check - PDF", "(p02-rnd03) Rendering Check - PDF", "(p02-rnd01) Rendering pages process counter", "(p02-rnd02) Rendering pages process counter", and "(p02-rnd03) Rendering pages process counter".
- Legend:** A legend showing "Disabled" (red square), "Unsupported" (purple square), and "No data" (grey square).
- Graph items:** A section titled "Graph items(drag to change order):" containing a list of items and a table with columns for "All", "Line", and "Color".
- Buttons:** "Add to Workspace", "Get graph URL", "Clear list", "Graph preview", and "Save Project".
- Graph Preview:** A line graph titled "p02-rnd: Rendering pages process counter (1d)" showing data over time.

Example of Zabbix Tool Graphs

6



Advanced features:

- ✓ Combine multiple hosts and trigger thresholds in one axis
- ✓ Create multiple graphs on one dashboard
- ✓ Get graph URL and share with the other users

7

- **Using complex regex in host/item name filtering for faster lookup**
- **Monitoring dashboard to analyze Zabbix events like shown in figure**
- **Count distribution by hosts, components, dates, severity - good for analytics**

