The Action Simulator revisited

9th of September 2016, Zabbix Conference, Riga

Volker Fröhlich
Who I am

- Volker Fröhlich — volter on IRC
- System administrator at geizhals.at
- Fedora package maintainer
- Openstreetmap mapper
- Some frontend patches
Wait, I have seen this before!

Why On Earth Was I Not Notified?! Retrofitting Zabbix With An Action Simulator
hello everybody my name is Coco foolish
The Action Simulator is telling you ...

- Which actions apply to an event
- Which operations will take place and when
- What was not considered and why

Why you want the Action Simulator

- Peace of mind
- Don't ridicule yourself
- 2.0, 2.2, now for 3.0, eventually!
Why is this even necessary?

- People rely on Zabbix actions
- No reliable way to know what will happen
- Zabbix is complex and abstract at times
- ZBXNEXT-97 — Testing an action in the frontend

**Action audit log**

- Hindsight
- Only helps with operations
How does it work?

- A frontend implementation of the server code
- API method
- It will not actually do anything!
- Button in trigger list, showing a table

<table>
<thead>
<tr>
<th>SEVERITY</th>
<th>NAME</th>
<th>EXPRESSION</th>
<th>STATUS</th>
<th>INFO</th>
<th>ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning</td>
<td>Template OS Linux /etc/passwd has been changed on (HOST.NAME)</td>
<td>{Zabbix server:vfs.file.cksu}</td>
<td>Disabled</td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>Information</td>
<td>Template OS Linux Configured max number of opened files is too low on (HOST.NAME)</td>
<td>{Zabbix server:kernel.max}</td>
<td>Enabled</td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>Information</td>
<td>Template OS Linux Configured max number of processes is too low on (HOST.NAME)</td>
<td>{Zabbix server:kernel.max}</td>
<td>Enabled</td>
<td></td>
<td>?</td>
</tr>
</tbody>
</table>
### Event details

- Hosts: Zabbix server

### Notifications

- Remote commands

### Action and condition matches

#### Action condition matches

<table>
<thead>
<tr>
<th>MATCH</th>
<th>LABEL</th>
<th>CONDITION TYPE</th>
<th>TRIGGER VALUE</th>
<th>OPERATOR</th>
<th>CONDITION VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALSE</td>
<td>A</td>
<td>Maintenance status</td>
<td>notIn</td>
<td></td>
<td>is</td>
</tr>
<tr>
<td>TRUE</td>
<td>B</td>
<td>Template</td>
<td>Template OS-Linux = Template App Zabbix Agent</td>
<td>=</td>
<td>Template App Zabbix Agent</td>
</tr>
<tr>
<td>TRUE</td>
<td>C</td>
<td>Trigger value</td>
<td>P</td>
<td>PR</td>
<td>BE,EN</td>
</tr>
<tr>
<td>FALSE</td>
<td>D</td>
<td>Trigger name</td>
<td>!Host name of zabbix_agent was changed on Zabbix server</td>
<td>!=</td>
<td>whatever</td>
</tr>
<tr>
<td>TRUE</td>
<td>E</td>
<td>Expression-based conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUE</td>
<td>F</td>
<td>Maintenance status</td>
<td>notIn</td>
<td></td>
<td>is</td>
</tr>
<tr>
<td>TRUE</td>
<td>G</td>
<td>Trigger value</td>
<td>P</td>
<td>PR</td>
<td>BE,EN</td>
</tr>
<tr>
<td>FALSE</td>
<td>H</td>
<td>Trigger name</td>
<td>!Host name of zabbix_agent was changed on Zabbix server</td>
<td>!=</td>
<td>whatever</td>
</tr>
</tbody>
</table>
The Action Simulator allows you to ...

Spot and solve configuration issues

- Wrong action conditions
- Missing permissions
- Missing media settings
- Duplicate messages

Assure yourself or create a list of operations

- In particular after changing something
- Answer a notification inquiry
Wrong conditions: Inadvertent miss

- Host name of zabbix_agentd was changed on {HOST.NAME}
- 4 and-connected conditions
- Typo in a string match
Wrong conditions: Inadvertent match

- Host name of zabbix_agentd was changed on `{HOST.NAME}`
- Expression
- Template assigned through inheritance

### Action condition matches

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<tr>
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</thead>
<tbody>
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<td>Maintenance status</td>
<td>not in</td>
<td>is</td>
<td>not in</td>
</tr>
<tr>
<td>TRUE</td>
<td>B</td>
<td>Trigger value</td>
<td>PROBLEM</td>
<td>=</td>
<td>PROBLEM</td>
</tr>
<tr>
<td>FALSE</td>
<td>C</td>
<td>Trigger name</td>
<td>Host name of zabbix_agentd was changed on Zabbix server</td>
<td>like</td>
<td>whatever</td>
</tr>
<tr>
<td>FALSE</td>
<td>D</td>
<td>Application</td>
<td>Zabbix agent, Configuration</td>
<td>=</td>
<td>My weird app</td>
</tr>
<tr>
<td>TRUE</td>
<td>E</td>
<td>Template</td>
<td>Template OS Linux → Template App Zabbix Agent</td>
<td>=</td>
<td>Template App Zabbix Agent</td>
</tr>
<tr>
<td>DISABLED</td>
<td></td>
<td>Site availability</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Permissions, media settings and duplicates

### Messages

<table>
<thead>
<tr>
<th>ACTION</th>
<th>TIME PASSED</th>
<th>TIME</th>
<th>STEP</th>
<th>STEP CONFIG</th>
<th>OPERATION</th>
<th>TYPE</th>
<th>RECIPIENT</th>
<th>INFO</th>
</tr>
</thead>
<tbody>
<tr>
<td>A generic action</td>
<td>0</td>
<td>2016-09-06 02:29:00</td>
<td>1</td>
<td>1</td>
<td>To user group: Zabbix administrators</td>
<td>Email</td>
<td>Admin (Zabbix Administrator)</td>
<td><a href="mailto:zabbi-admin@example.com">zabbi-admin@example.com</a></td>
</tr>
<tr>
<td>A generic action</td>
<td>0</td>
<td>2016-09-06 02:29:00</td>
<td>1</td>
<td>1</td>
<td>To user group: Another Group</td>
<td>Email</td>
<td>User A (John Doe)</td>
<td></td>
</tr>
<tr>
<td>A generic action</td>
<td>0</td>
<td>2016-09-06 02:29:00</td>
<td>1</td>
<td>1</td>
<td>To user group: Another Group</td>
<td>Email</td>
<td>User B (Frank Blank)</td>
<td><a href="mailto:user_b@example.com">user_b@example.com</a></td>
</tr>
<tr>
<td>A generic action</td>
<td>0</td>
<td>2016-09-06 02:29:00</td>
<td>1</td>
<td>1</td>
<td>To user</td>
<td>Email</td>
<td>User A (John Doe)</td>
<td></td>
</tr>
</tbody>
</table>

### Operation Details

- **To user group: Zabbix administrators**
  - **Type**: Email
  - **Recipient**: Admin (Zabbix Administrator)
  - **Info**: zabbi-admin@example.com

- **To user group: Another Group**
  - **Type**: Email
  - **Recipient**: User A (John Doe)

- **To user group: Another Group**
  - **Type**: Email
  - **Recipient**: User B (Frank Blank)
  - **Info**: user_b@example.com

- **To user**
  - **Type**: Email
  - **Recipient**: User A (John Doe)

- **Media type not defined for user**

- **Host permissions**

- **Media type not defined for user**
What is new?

First version for 3.0 — 5.1.4

- June 2016
- Limited, but working

New release — 5.2.0

- Supports expression-based conditions

AND/OR: A and (B or C or D)
Expression: A and (B or C and D)
What is new? (continued)

- Display the conditions in a more legible way
- Better for colour blind people

<table>
<thead>
<tr>
<th>Site availability</th>
<th>And/Or</th>
<th>Maintenance status</th>
<th>=</th>
<th>not in</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site availability</td>
<td>And/Or</td>
<td>Trigger value</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Site availability</td>
<td>And/Or</td>
<td>Trigger severity</td>
<td>1</td>
<td>&gt;=</td>
<td>1</td>
</tr>
<tr>
<td>Site availability</td>
<td>And/Or</td>
<td>Host group</td>
<td>2,14</td>
<td>=</td>
<td>18</td>
</tr>
</tbody>
</table>

### Site availability

<table>
<thead>
<tr>
<th>Status</th>
<th>A and B and C and D</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintenance status</td>
</tr>
<tr>
<td>TRUE</td>
<td>Trigger value</td>
</tr>
<tr>
<td>TRUE</td>
<td>Trigger severity</td>
</tr>
<tr>
<td>FALSE</td>
<td>Host group</td>
</tr>
</tbody>
</table>
What is new? (continued)

- Make the tables more on point
- Button for disabled triggers in list ⇒ "What if?"

<table>
<thead>
<tr>
<th>OPERATION</th>
<th>TYPE</th>
<th>RECIPIENT</th>
<th>INFO</th>
</tr>
</thead>
<tbody>
<tr>
<td>To user</td>
<td>Email</td>
<td>Admin (Zabbix Administrator)</td>
<td><a href="mailto:zabbix-admin@example.com">zabbix-admin@example.com</a></td>
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</tbody>
</table>
But it still remains a hack!

- Important to have
- Code duplication, performance
- 3.2 introduces changes again
- Rumours about the API leaving the frontend
References

• Thanks to Mikhail "bios" Okhotin
• http://www.zabbix.org/wiki/Docs/action_simulator
• http://www.geofrogger.net/actionsim/action_sim.txt
• volter on Freenode IRC
• #zabbix, #zabbix-de
• volker.froehlich@geizhals.at