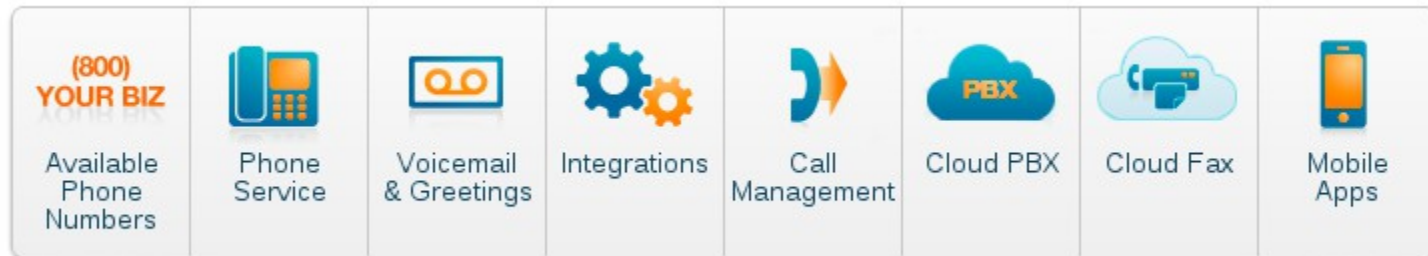


Service Health Monitoring

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 - Advantages and disadvantages of implementation with Zabbix tools

Service health monitoring goals

Section 1

Information delivery improvement

With usual OS/Application data collection

sp02-002-sp002	HTTP ping to 80 port lost	29 Aug 2012 08:11:49	5h 46m 6s	No	1
sp02-001-sp002	No record 'Expiration completed' in expiry-1.log file during 10 minutes	29 Aug 2012 03:44:00	10h 13m 55s	No	1
sp02-001-sp002	Disk volume / < 1% free	29 Aug 2012 02:25:36	11h 32m 19s	No	1
sp02-001-sp002	Disk volume / less 10% during 3 hours	28 Aug 2012 20:57:12	17h 43s	No	-
sp02-002-sp001	Service [W3SVC] stopped	28 Aug 2012 15:31:07	22h 26m 48s	No	1
sp02-002-sp001	Service [SNMP] stopped	28 Aug 2012 15:13:22	22h 44m 33s	No	-
sp02-002-sp001	Service [SNMP] stopped	28 Aug 2012 15:13:16	22h 44m 39s	No	-
sp02-002-sp002	Service [SNMP] stopped	28 Aug 2012 15:13:08	22h 44m 47s	No	-
sp02-001-sp002	CPU load > 80%	28 Aug 2012 12:02:54	1d 1h 55m	No	-
sp02-001-sp002	Process number > 300	28 Aug 2012 11:55:13	1d 2h 2m	No	-

Information delivery improvement

- After implementation of high level monitoring

	SLD: Service web login success in pool failed	29 Aug 2012 12:04:31	1h 56m 1s	Yes	-
	JEDI Numbers & Locations story	29 Aug 2012 12:04:02	1h 56m 30s	Yes	-
	Signin FAILED	29 Aug 2012 12:01:11	1h 59m 21s	Yes	-
	SLD: Service web login success in pool failed	29 Aug 2012 11:54:33	2h 5m 59s	Yes	-

Visualization of fast outage/issues detection

Building high level monitoring

Section 2

Multilevel monitoring approach

Items determination and hierarchy

- **Quantitative data**
 - **Host level** (collected by zabbix agent active/passive, externalscripts, snmp, etc.)
 - OS data – CPU, memory, I/O, etc.
 - Application data – 2xx,4xx,5xx responses, telephone lines busy, media ports opened, etc
 - **Pool level** (aggregated on the basis of host data with group aggregated and calculated items)
 - Number of hosts alive in pool
 - Pool capacity free/busy on the basis of hosts alive
 - **Service level** (aggregated on the basis of pool data with group aggregated and calculated items)
 - Service capacity
 - Service health
- **Functional checks**
 - Check host
 - Check pool
 - Check service

Host level “functional checks” items example

Functional check items

If return value is a text

Script signin	04 Sep 2012 13:47:34	0 200 OK
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Host level “functional checks” items example

Then use calculated item with str() function

Pool level “quantitative data” items example

Group aggregated items

Combination of group aggregated and calculated items

Pool level “quantitative data” items example

Calculated item formula

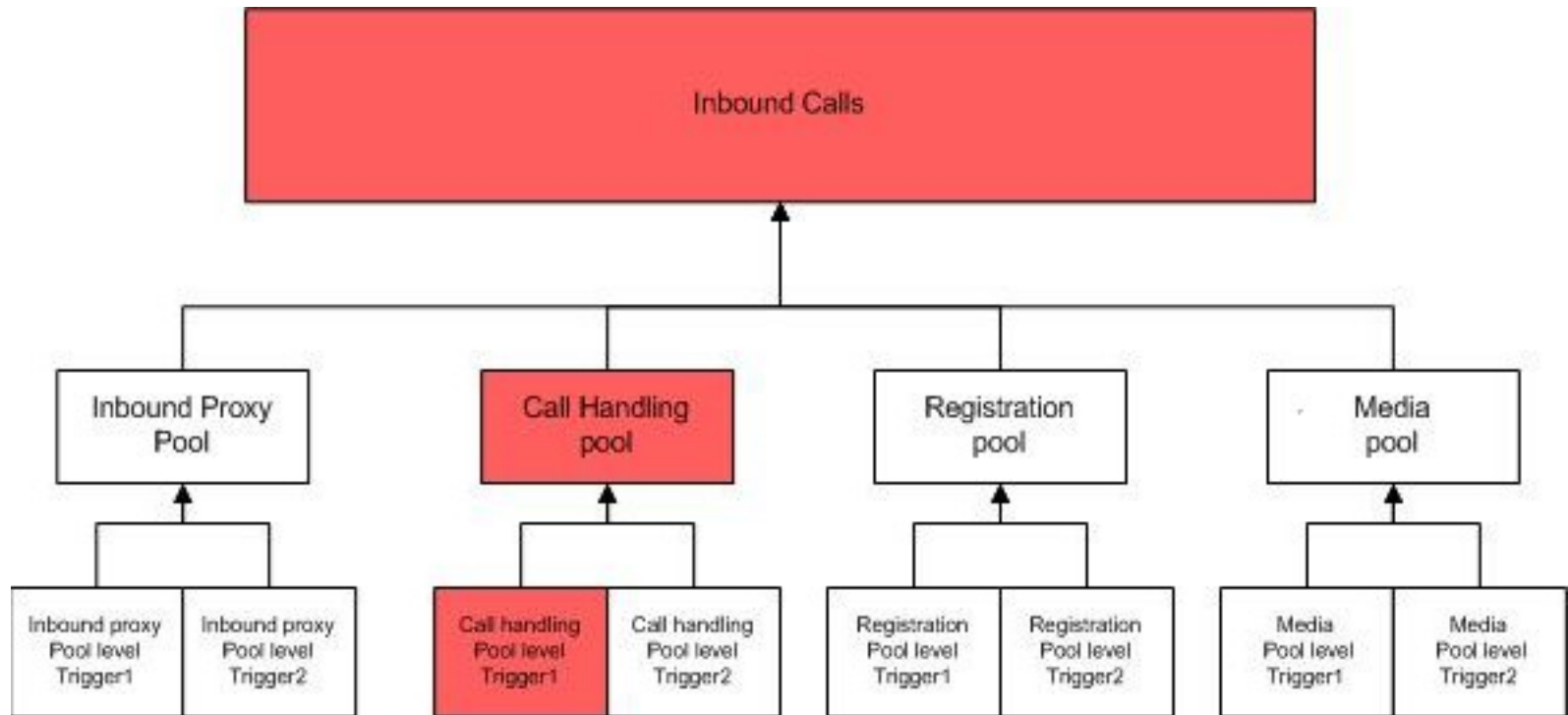
Host	192.168.1.100 Select
Description	TAS pool IPLINES free in %
Type	Calculated
Key	iplines.free Select
Formula	<pre>(last("grpsum["{\$HOSTGROUP}","\get_res_snmp.pl[2339.12.255.0]","\last","\0"]")) / ({\$MAX_IPLINES}*(last("grpsum["{\$HOSTGROUP}","\icmping","\last","\0"]")))</pre>
Type of information	Numeric (float)
Units	%
Use custom multiplier	☒ 100

Service state criteria

- Service capacity
- $\text{Service_capacity1} = \text{avg}(\text{pool1_load} + \text{pool2_load} + \dots + \text{poolN_load})$
- $\text{Service_capacity2} = \text{avg}(\text{pool1_load} * j + \text{pool2_load} * k + \dots + \text{poolN_load} * w)$

Service state criteria

- Service Health
 - Service is healthy until at least on of its pools goes down



Visualization

Section 3

What is Service Health Dashboard in Zabbix?

- This is a map

What is inside?

- Map's important options
 - Icon label type – nothing
 - Mark elements on triggers status change – disabled
- Each cell of dashboard is a submap (with custom status images)
- There are two levels of submaps under dashboard
 - Service level
 - Pool level

What is inside?

Map's element options

What is inside?

Going deeper

How to create service level maps

- This is one service in one unit
- These are Submaps
- One of the components have problem, service is affected

How to create pool level maps

- On host level map, use triggers, not hosts

Dashboard in action. Advantages and disadvantages

Section 4

Dashboard in action

Advantages and disadvantages

- +
 - No need to develop any additional tools, or custom pages
 - Unambiguous identification, which service is affected
 - Immediate state change – depends only on items
- “Interval” option
- - Has only two states Ok & Problem (or smth like that) due to Zabbix maps implementation
 - Background image dependent
 - Big amount of submaps
 - Not able to see history of service health

Questions

Thank you!

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