



EXTENDED OUT OF THE BOX MONITORING  
WITH

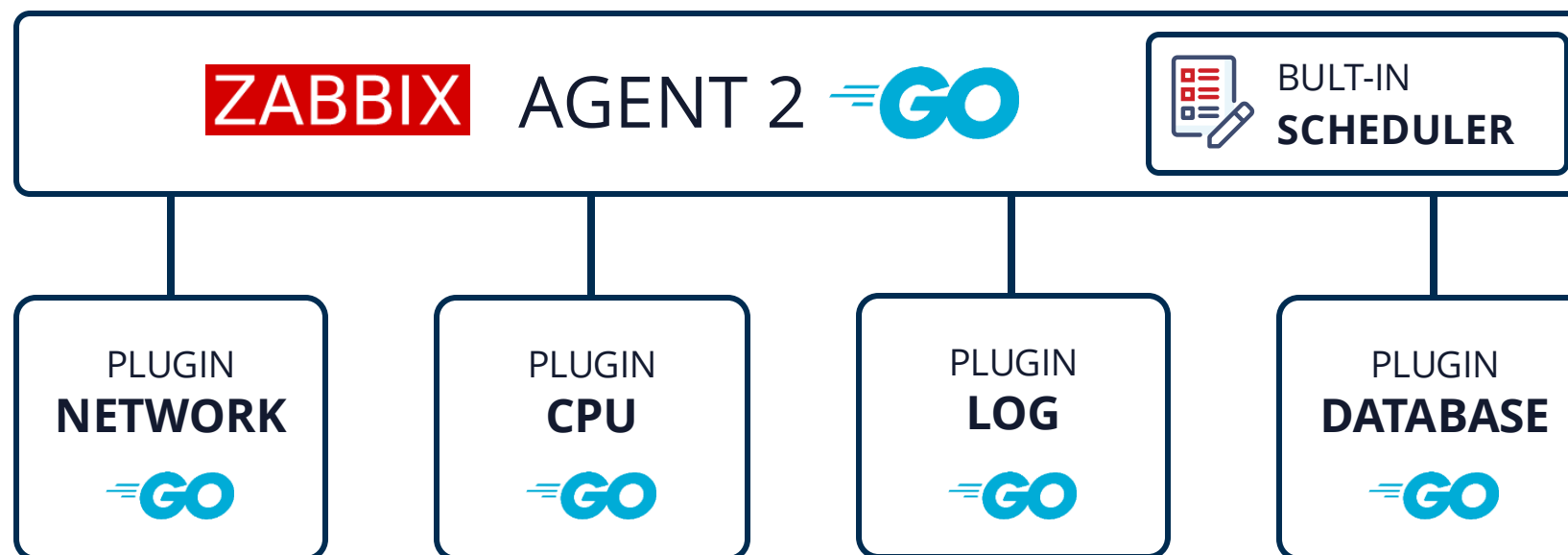
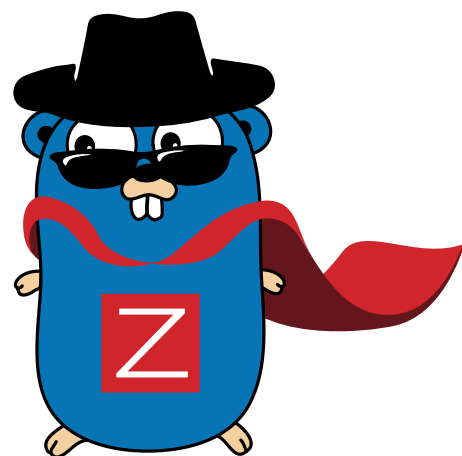
# AGENT 2

all your microphones are muted

ask your questions in Q&A, not in the Chat

use Chat for discussion, networking or applause

# AGENT 2 OVERVIEW



-  scheduled/flexible intervals
-  written in Go
-  less TCP connections
-  older configuration file support
-  easily extendable
-  out-of-the-box systemd monitoring

## Zabbix Agent 2

# About Zabbix Agent 2

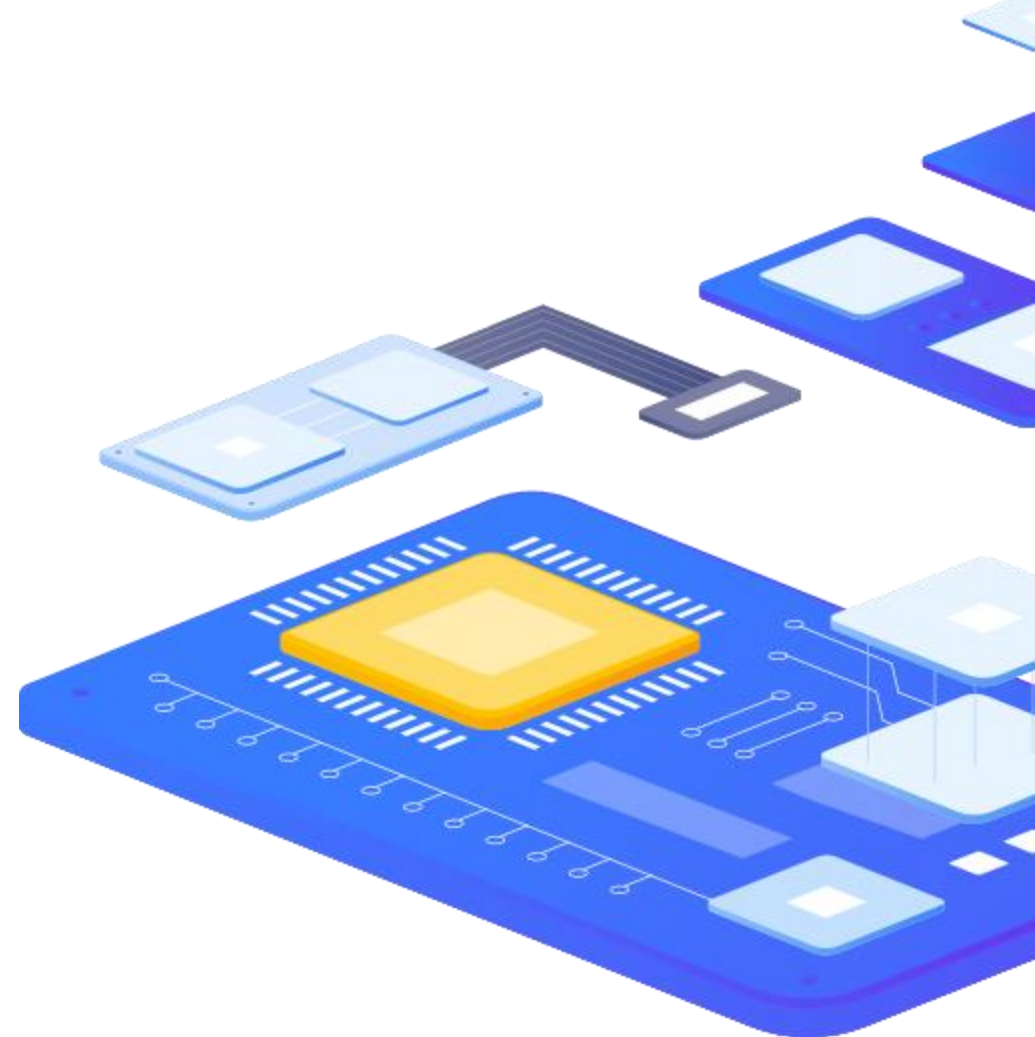
Zabbix Agent 2 is written in Go (Golang)

Drop-in replacement for Zabbix agent

- › Supports all previous functionality (same item keys)
- › Supports old configuration file format

Has been developed to

- › Reduce the number of TCP connections
- › Be easily extendable with plugins
- › Support for complex monitoring scenarios
- › SNMPv3 Hot reload after auth/privacy settings



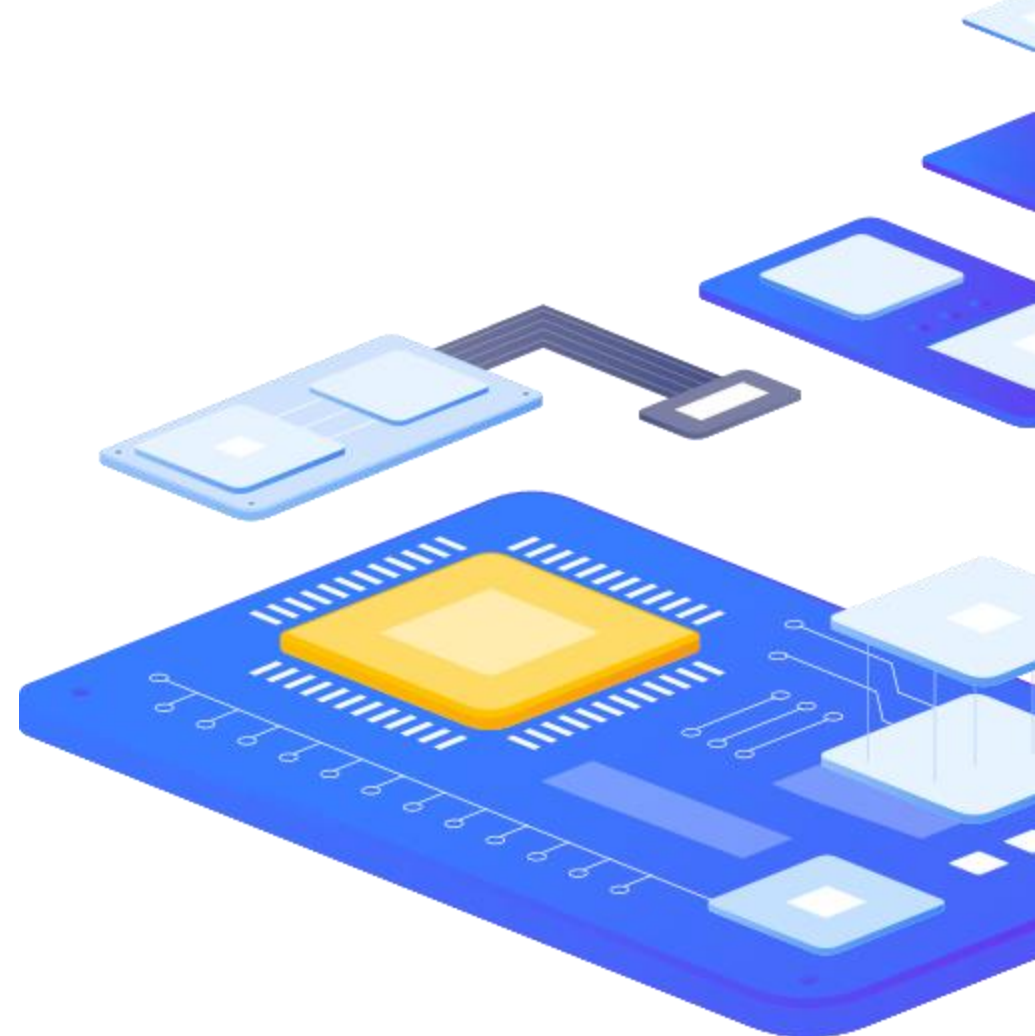
## Zabbix Agent 2

# About Zabbix Agent 2

### Improved active checks

- ▶ Active checks support scheduled/flexible intervals
- ▶ Parallel execution of multiple active checks for each ServerActive

* Name	<input type="text" value="Cpu utilization during peak hours"/>			
Type	<input type="text" value="Zabbix agent (active)"/>			
* Key	<input type="text" value="system.cpu.util"/>	<input type="button" value="Select"/>		
Type of information	<input type="text" value="Numeric (float)"/>			
Units	<input type="text"/>			
* Update interval	<input type="text" value="0"/>			
Custom intervals	Type	Interval	Period	Action
	<input type="button" value="Flexible"/> <input type="button" value="Scheduling"/>	<input type="text" value="10s"/>	<input type="text" value="1-5, 09:00-10:00"/>	<input type="button" value="Remove"/>
	<a href="#">Add</a>			



# AGENT 2 BUFFER

Two types of buffer are supported by Agent2 in active mode

- ▶ Memory buffer
- ▶ Buffer using SQLite engine

Persistent buffer is supported both on Unix-like systems and Windows hosts

Configurable via Agent 2 configuration file

- ▶ Enable persistent buffer:


```
EnablePersistentBuffer=1
```

- ▶ Specify the location of the buffer file:

```
PersistentBufferFile=C:\temp\buffer
```

# AGENT 2 BUFFER

The buffer file is created on agent startup in your specified location

Name	Date modified	Type	Size
 buffer	30/09/2020 10:18	File	28 KB

Additionally, persistent buffer period can be configured

- ▶ Default is 1 hour

```
PersistentBufferPeriod=1h
```

Remember that persistent buffer is used only for active checks

If persistent buffer is disabled, then in memory buffer is used

# AGENT 2 BUFFER

We can always take a look at what data is stored in the persistent buffer

```
sqlite> select * from data_1;  
9|1601470098|31578|-1|-1|-1|491974656||-1|-1|-1|1601470098|461886  
10|1601470099|31579|-1|-1|-1|47.336478||-1|-1|-1|1601470099|683697  
11|1601470100|31580|-1|-1|-1|1039331328||-1|-1|-1|1601470100|605187  
12|1601470155|31575|-1|-1|-1|859828224||-1|-1|-1|1601470155|973576  
13|1601470156|31576|-1|-1|-1|100.000000||-1|-1|-1|1601470156|1253467
```

- ▶ Using persistent buffer adds a layer of redundancy
- ▶ If server for some reason is unreachable, the data is still stored in the persistent buffer
- ▶ The data is still preserved after the agent restart, as opposed to in memory buffer

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Installation



## Zabbix Agent 2

# AGENT 2 INSTALLATION

### Install Zabbix Agent2

```
# rpm -Uvh rpm -Uvh https://repo.zabbix.com/zabbix/8.0/release/alma/10/noarch/zabbix-release-  
latest-8.0.el10.noarch.rpm  
# dnf install zabbix-agent2 zabbix-agent2-plugin-*
```

### Start Zabbix Agent2

```
# systemctl start zabbix-agent2
```

### Enable auto start

```
# systemctl enable zabbix-agent2
```

# AGENT 2 INSTALLATION

## Configuration

```
Server=<IP/DNS> for passive agent checks
```

```
ServerActive=<IP/DNS> for active agent checks  
Hostname=Name of host for active checks
```

```
# systemctl restart zabbix-agent2
```

# AGENT 2 INSTALLATION on Windows - command line

- ▶ Available for download as archive or MSI install
- ▶ To install a single instance of Zabbix agent with the default configuration file `c:\zabbix_agentd.conf`:

```
zabbix_agent2.exe --install
```

- ▶ If you wish to use a configuration file other than `c:\zabbix_agentd.conf`, you should use the following command for service installation:

```
zabbix_agent2.exe --config <your_configuration_file> --install
```

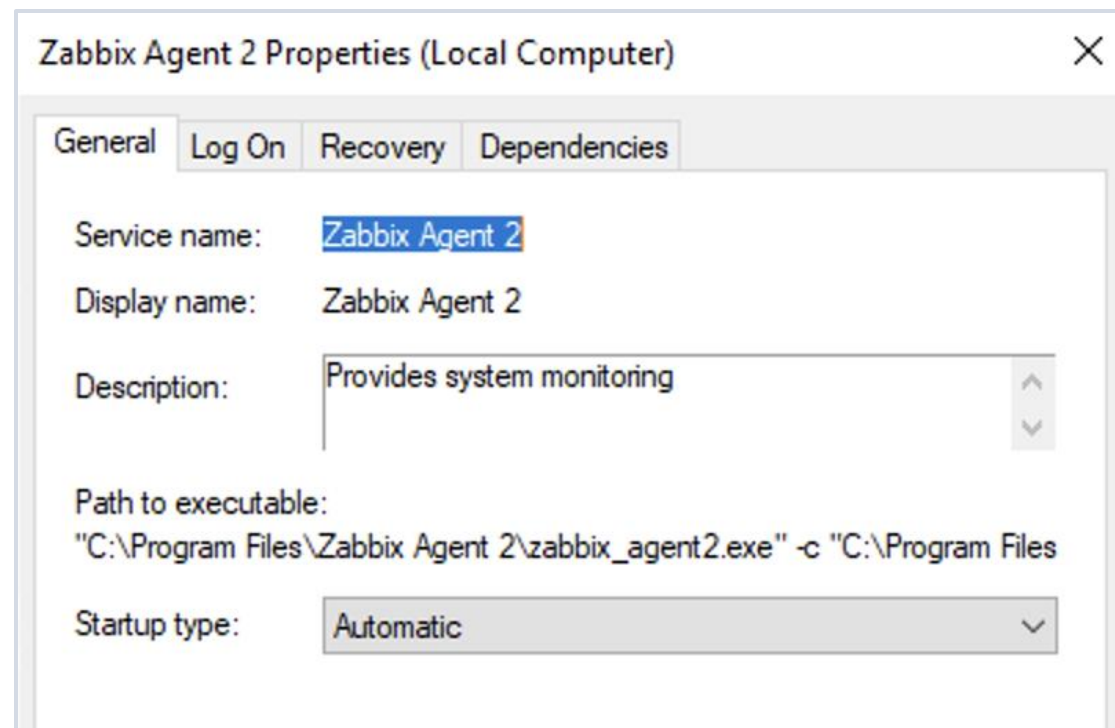
```
"C:\Agent 2 8.0.0alpha2\bin\zabbix_agent2.exe" --install --config "C:\Agent 2  
8.0.0alpha2\conf\zabbix_agent2.conf"
```

## Zabbix Agent 2

# AGENT 2 INSTALLATION on Windows – command line

Once installed, runs as a service under Local System account

```
zabbix_agent2 [20268]: 'Zabbix Agent 2' installed successfully
```



## Zabbix Agent 2

# AGENT 2 INSTALLATION on Windows – MSI

MSI Installer can be downloaded from Zabbix website

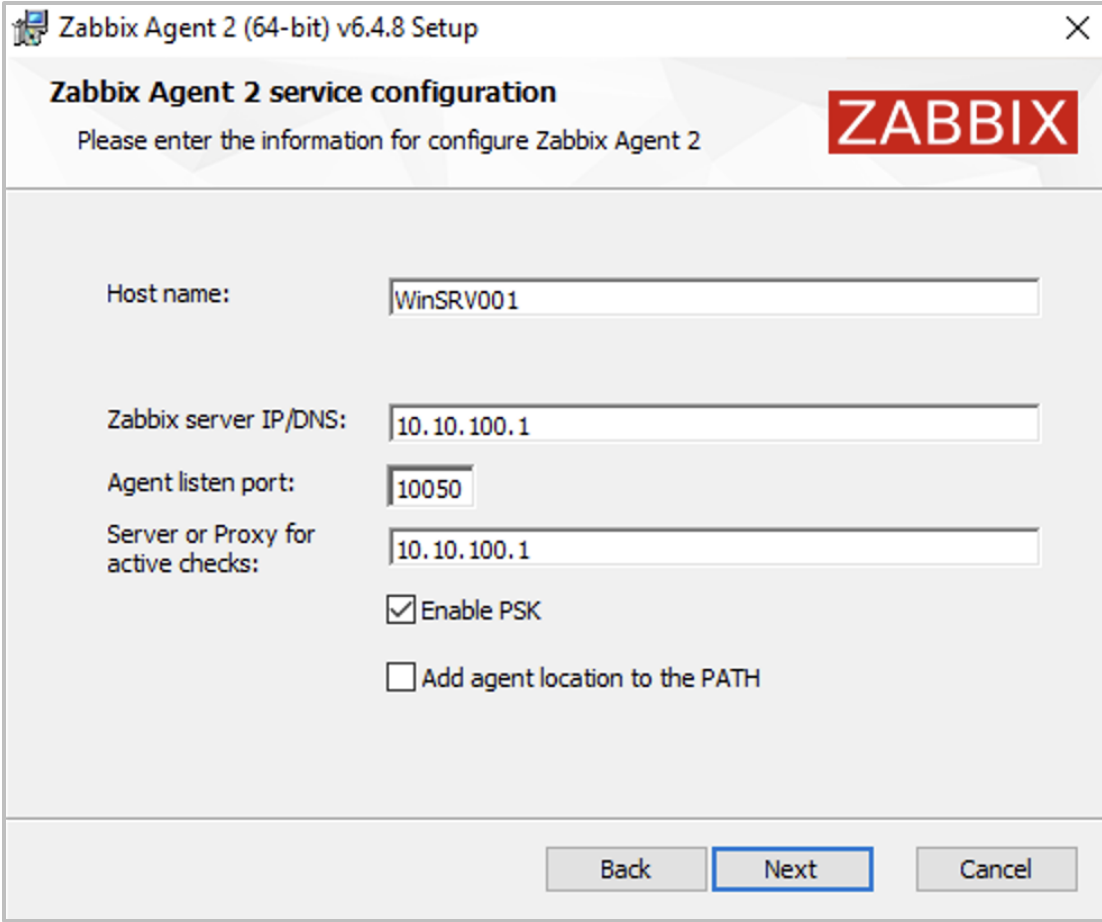
Show legacy downloads

OS DISTRIBUTION	OS VERSION	HARDWARE	ZABBIX VERSION	ENCRYPTION	PACKAGING
Windows	11, 10	amd64	7.4	OpenSSL	MSI
Linux	Server 2016 +	i386	7.0 LTS	No encryption	Archive
macOS	Server 2003 +		6.0 LTS		
AIX	XP (64bit) +				
FreeBSD					
OpenBSD					
Solaris					

## Zabbix Agent 2

# AGENT 2 INSTALLATION on Windows – MSI

- ▶ Host name – Hostname parameter for active agent checks
- ▶ Zabbix server IP/DNS – Server parameter for passive checks
- ▶ Agent listen port - port on which the agent will listen for passive check requests
- ▶ Server or Proxy for active checks – ServerActive parameter for sending active agent data



**Zabbix Agent 2 (64-bit) v6.4.8 Setup**

**Zabbix Agent 2 service configuration**

Please enter the information for configure Zabbix Agent 2

**ZABBIX**

Host name: WinSRV001

Zabbix server IP/DNS: 10.10.100.1

Agent listen port: 10050

Server or Proxy for active checks: 10.10.100.1

Enable PSK

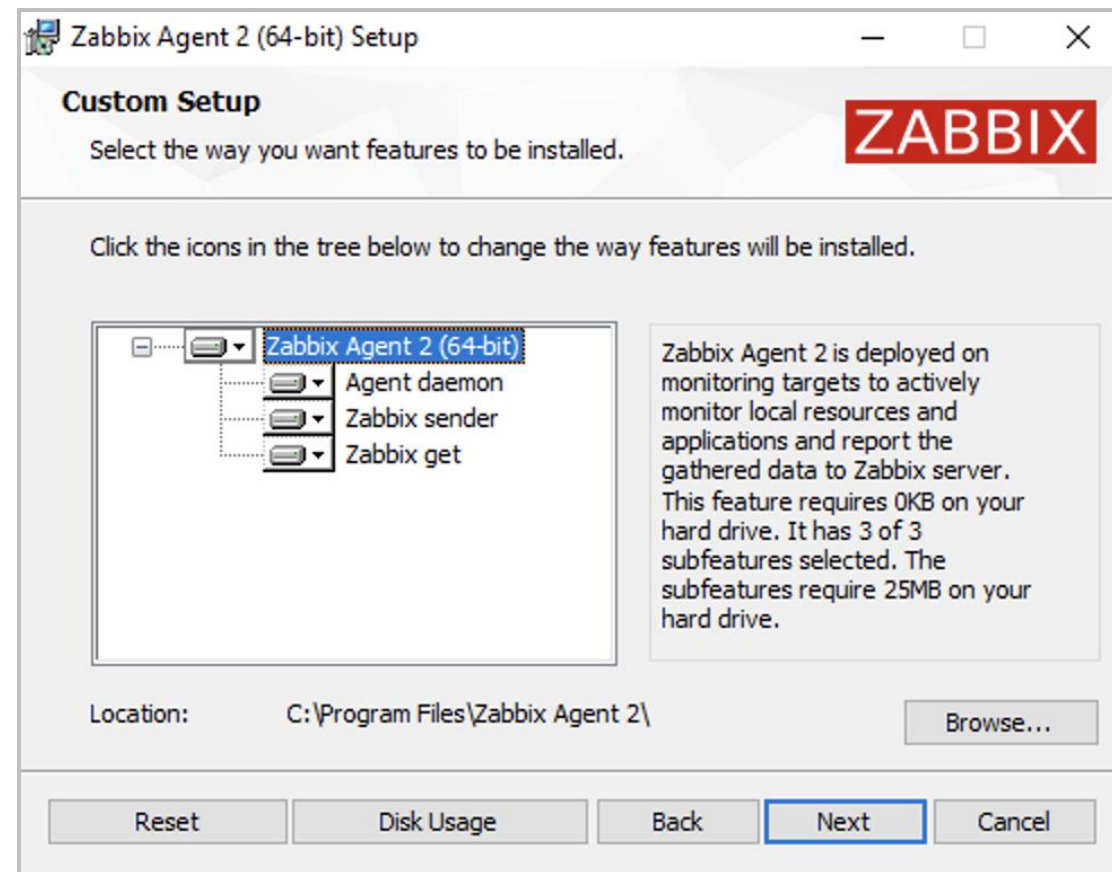
Add agent location to the PATH

Back Next Cancel

## Zabbix Agent 2

# AGENT 2 INSTALLATION on Windows – MSI

- › Location – Agent 2 install location
- › Disk Usage – disk space usage statistics
- › Agent 2 takes up ~17MB of disk space
- › Zabbix Sender and Zabbix Get also can be installed in newest versions



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Command line options



# AGENT 2 COMMAND LINE OPTIONS

```
# zabbix_agent2 -R help
Remote control interface, available commands:
  log_level_increase      Increase log level
  log_level_decrease     Decrease log level
  userparameter_reload   Reload user parameters
  metrics                 List available metrics
  version                 Display Agent version
```

- ▶ Zabbix Agent2 Full help output

```
#zabbix_agent2 -h
```

- ▶ Other C agent parameters such as `-p` (print), `-t` (test) etc. are also fully supported by Agent 2

```
#zabbix_agent2 -t agent.hostname
agent.hostname                [s|LinuxHost]
```

# AGENT 2 PLUGIN STATUS

Available metric list is divided into plugin sections

- ▶ Displays per plugin statistics

```
# zabbix_agent2 -R metrics
[NetIf]
active: true
capacity: 0/100
tasks: 2
net.if.in: Returns incoming traffic statistics on network interface.
net.if.out: Returns outgoing traffic statistics on network interface.
net.if.total: Returns sum of incoming and outgoing traffic statistics on network interface.
```

## Zabbix Agent 2

# AGENT 2 PLUGIN STATUS

Status of running agent can be viewed via web browser

- ▶ Status page will be accessible from anywhere
- ▶ Can be set to any unused port
- ▶ No default port setting
- ▶ Agent restart is still required after making configuration changes

```
### Option: StatusPort  
#       Agent will listen on this port for HTTP status requests.  
StatusPort=8888
```

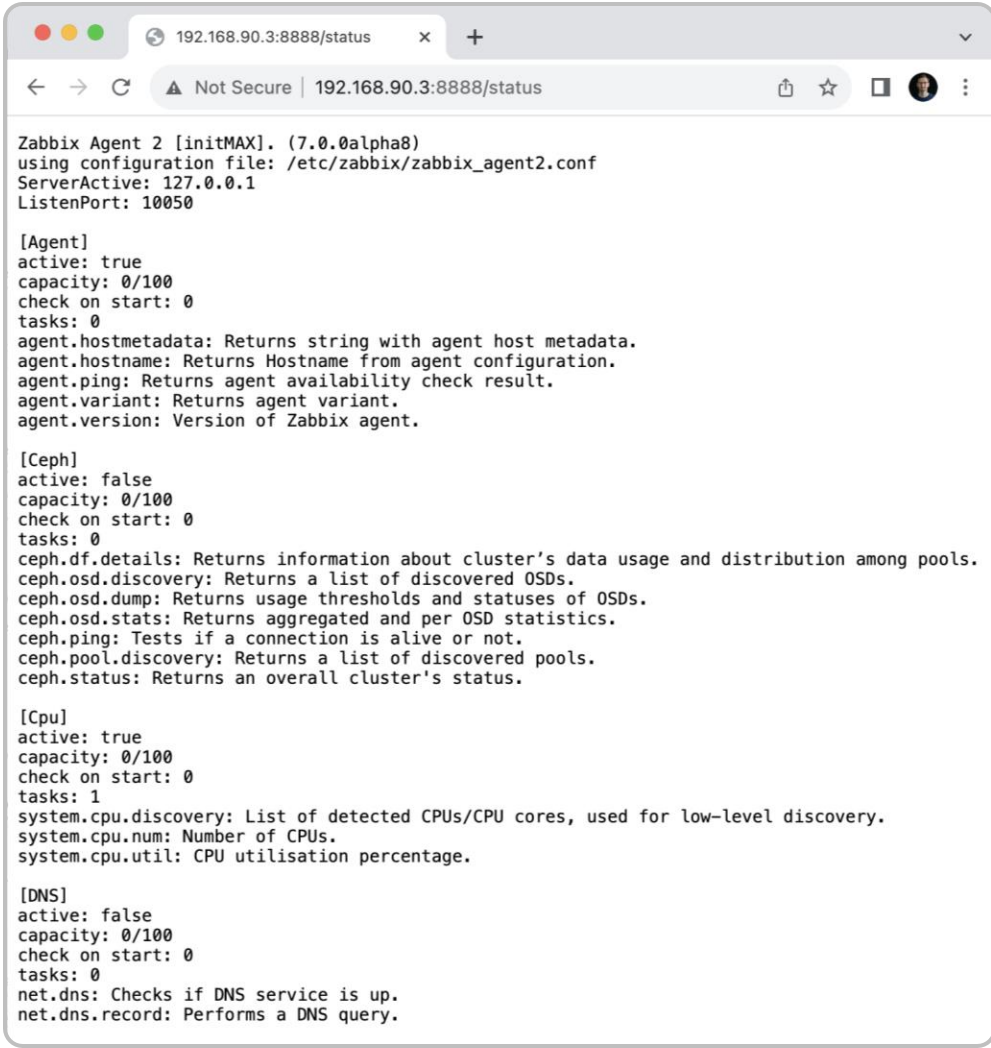
## Zabbix Agent 2

# AGENT 2 PLUGIN STATUS

In browser navigate to:

▶ <http://<IP/DNS>:8888/status>

Same as from the command line



```
Zabbix Agent 2 [initMAX]. (7.0.0alpha8)
using configuration file: /etc/zabbix/zabbix_agent2.conf
ServerActive: 127.0.0.1
ListenPort: 10050

[Agent]
active: true
capacity: 0/100
check on start: 0
tasks: 0
agent.hostmetadata: Returns string with agent host metadata.
agent.hostname: Returns Hostname from agent configuration.
agent.ping: Returns agent availability check result.
agent.variant: Returns agent variant.
agent.version: Version of Zabbix agent.

[Ceph]
active: false
capacity: 0/100
check on start: 0
tasks: 0
ceph.df.details: Returns information about cluster's data usage and distribution among pools.
ceph.osd.discovery: Returns a list of discovered OSDs.
ceph.osd.dump: Returns usage thresholds and statuses of OSDs.
ceph.osd.stats: Returns aggregated and per OSD statistics.
ceph.ping: Tests if a connection is alive or not.
ceph.pool.discovery: Returns a list of discovered pools.
ceph.status: Returns an overall cluster's status.

[Cpu]
active: true
capacity: 0/100
check on start: 0
tasks: 1
system.cpu.discovery: List of detected CPUs/CPU cores, used for low-level discovery.
system.cpu.num: Number of CPUs.
system.cpu.util: CPU utilisation percentage.

[DNS]
active: false
capacity: 0/100
check on start: 0
tasks: 0
net.dns: Checks if DNS service is up.
net.dns.record: Performs a DNS query.
```

## Zabbix Agent 2

# AGENT 2 PLUGIN CONFIGURATION

- › Each Agent 2 item belongs to a specific plugin
- › Plugins can be individually configured by changing plugin parameters
- › All plugins are configured using "Plugins.\*" parameter in "zabbix\_agent2.conf"

C Agent MaxLines configuration (plugin-less):

```
MaxLinesPerSecond=20
```

«Go Agent MaxLines configuration – Via Log Plugin:

```
Plugins.Log.MaxLinesPerSecond=20
```

# AGENT 2 PLUGINS

All of Zabbix agent 2 items utilize some sort of a plugin written by Zabbix developers

Plugins provide an option to extend the monitoring capabilities of Zabbix

- ▶ Written in Go programming language and supported for Zabbix agent 2 only
- ▶ Alternative to "loadable modules" (written in C)

Each plugin can be configured by editing the plugin specific parameters in Zabbix agent 2 configuration file

- ▶ Syntax: `Plugins.<PluginName>.<Parameter>=<Value>`

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Named sessions

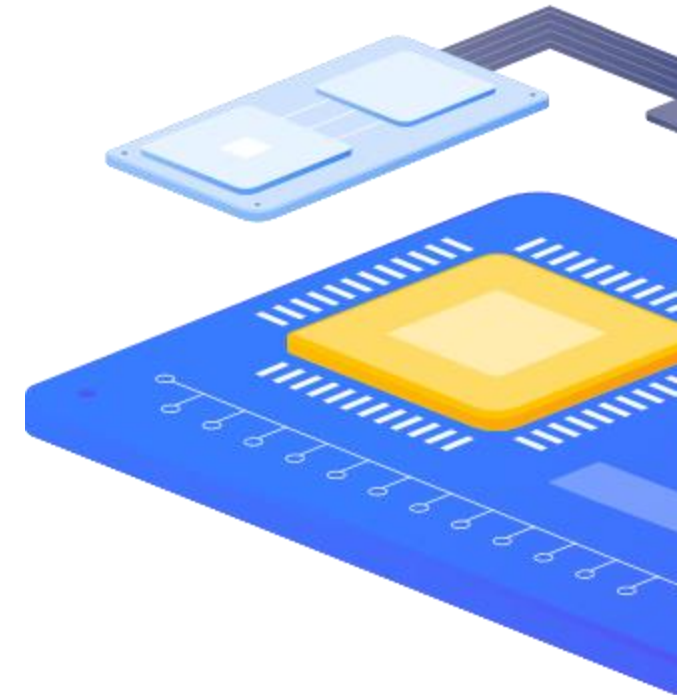


## Zabbix Agent 2

# AGENT 2 NAMED SESSIONS

### Named sessions

- › Represent an additional level of plugin parameters
- › Can be applied only to specific plugins
  - › Mysql
  - › Postgres
  - › Redis
  - › Memcached
  - › More as they are released in the future
- › Mostly related to Agent 2 DB monitoring plugins
- › Used to define separate sets of authentication parameters
  - › URI - Uniform Resource Identifier
  - › User – Username which is used for obtaining the metrics from the resource
  - › Password – Password for the specified user



# AGENT 2 NAMED SESSIONS

Example:

- ▶ Monitoring of two sessions "MySQL1" and "MySQL2"

```
Plugins.Mysql.Sessions.MySQL1.Uri=tcp://127.0.0.1:3306
Plugins.Mysql.Sessions.MySQL1.User=<UsernameForMySQL1>
Plugins.Mysql.Sessions.MySQL1.Password=<PasswordForMySQL1>
Plugins.Mysql.Sessions.MySQL2.Uri=tcp://127.0.0.1:3307
Plugins.Mysql.Sessions.MySQL2.User=<UsernameForMySQL2>
Plugins.Mysql.Sessions.MySQL2.Password=<PasswordForMySQL2>
```

- ▶ We can now use the defined session names – "MySQL1" and "MySQL2" as connString parameters in our mysql agent 2 item keys

## Zabbix Agent 2

# AGENT 2 NAMED SESSIONS

Example keys:

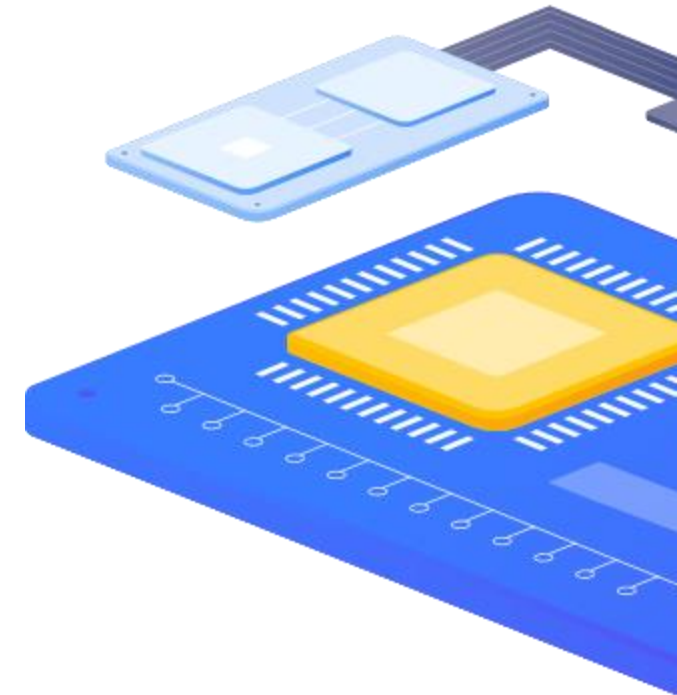
- › `mysql.db.size[connString,username,password,dbName]`
- › `mysql.ping[connString,username,password]`
- › `mysql.db.discovery[connString,username,password]`

Using named session names in key parameters:

- › `mysql.db.size[MySQL1,,,productionDB]`
- › Note that we still need to specify the DB name "productionDB" directly in the key

Parameters also can be specified directly if needed:

- › `mysql.db.size[tcp://localhost,root,P445W0RD,productionDB]`



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Templates

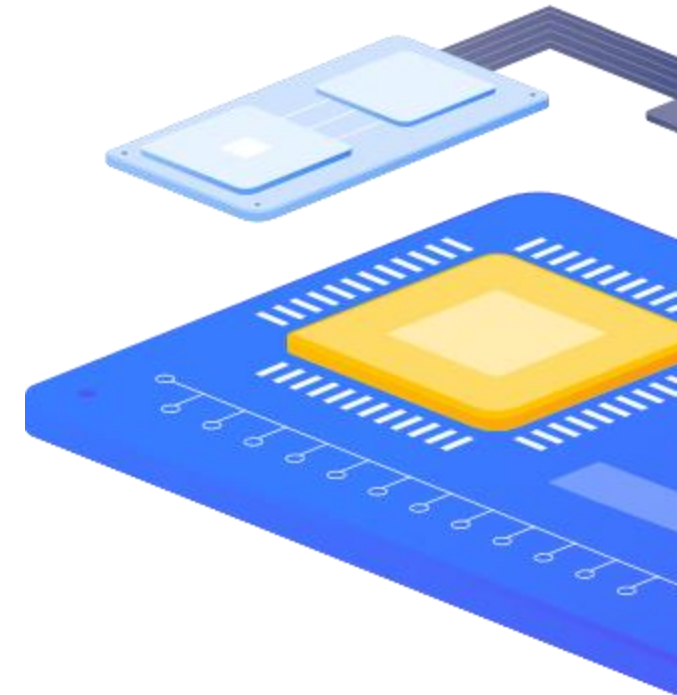


## Zabbix Agent 2

# AGENT 2 TEMPLATES

Integrated plugins and templates are available out of the box

- › DB MySQL
- › DB PostgreSQL
- › DB Redis
- › DB Oracle
- › DB MSSQL
- › App Docker
- › App Memcached
- › App Systemd
- › App Ceph
- › Certificate
- › NVIDIA
- › Systemd
- › **More templates will be published in the future**



## Zabbix Agent 2

# AGENT 2 TEMPLATES

- ▶ Zabbix agent 2 out of box templates can be further configured by customizing User Macros or Plugin parameters
- ▶ Basic configuration can be done by simply adjusting the user macros

### Template

Templates Tags **Macros 11** Value mapping 1

Template macros Inherited and template macros

Macro	Value		Description	
{MYSQL.ABORTED_CONN.MAX.WARN}	3	T	Number of failed attempts to connect to the MySQL server for trigger expression.	<a href="#">Remove</a>
{MYSQL.BUFF_UTIL.MIN.WARN}	50	T	The minimum buffer pool utilization percentage for trigger expression.	<a href="#">Remove</a>
{MYSQL.CREATED_TMP_DISK_TABLES.MAX.WARN}	10	T	The maximum number of created tmp tables on a disk per second for trigger expressions.	<a href="#">Remove</a>
{MYSQL.CREATED_TMP_FILES.MAX.WARN}	10	T	The maximum number of created tmp files on a disk per second for trigger expressions.	<a href="#">Remove</a>
{MYSQL.CREATED_TMP_TABLES.MAX.WARN}	30	T	The maximum number of created tmp tables in memory per second for trigger expressions.	<a href="#">Remove</a>
{MYSQL.DSN}	<Put your DSN>	T	System data source name such as <tcp://host:port or unix:/path/to/socket/>.	<a href="#">Remove</a>
{MYSQL.INNODB_LOG_FILES}	2	T	Number of physical files in the InnoDB redo log for calculating innodb_log_file_size.	<a href="#">Remove</a>
{MYSQL.PASSWORD}	value	T	MySQL user password.	<a href="#">Remove</a>
{MYSQL.REPL_LAG.MAX.WARN}	30m	T	The lag of slave from master for trigger expression.	<a href="#">Remove</a>
{MYSQL.SLOW_QUERIES.MAX.WARN}	3	T	The number of slow queries for trigger expression.	<a href="#">Remove</a>
{MYSQL.USER}	value	T	MySQL user name.	<a href="#">Remove</a>

[Add](#)

[Update](#) [Clone](#) [Delete](#) [Delete and clear](#) [Cancel](#)

# AGENT 2 TEMPLATES

Deeper customization can be achieved by configuring the plugin itself

Use `/etc/zabbix/zabbix_agentd.d/plugins.d/` for detailed configuration

```
### Option: Plugins
#       A plugin can have one or more plugin specific configuration parameters in format:
#       Plugins.<PluginName>.<Parameter1>=<value1>
#       Plugins.<PluginName>.<Parameter2>=<value2>
```

```
### Option: Plugins.Redis.Uri
#       Connection string. Can be overwritten by the first parameter of an item's key.
#
# Mandatory: no
# Range: Must matches the URI format.
# Default:
# Plugins.Redis.Uri=tcp://localhost:6379
```

## Zabbix Agent 2

# AGENT 2 Exclusive keys

Zabbix agent 2 has many new built-in keys

For Docker

- › `docker.data_usage` - Information about current data usage
- › `docker.containers.discovery` - A list of containers. Used for low-level discovery

For MySQL

- › `mysql.get_status_variables` – get mysql variable data
- › `mysql.db.discovery` - Result of the “show databases” SQL query in LLD JSON format

For PostgreSQL

- › `pgsql.dbstat` - Collects statistics per database
- › `pgsql.db.discovery` - List of the PostgreSQL databases

## Zabbix Agent 2

# AGENT 2 Exclusive keys

- ▶ Many more Agent 2 keys are available
- ▶ Many of those keys are used as master items
- ▶ Dependent items preprocess the obtained values and provide more granular and detailed data overview

Item Tags 1 Preprocessing 2

\* Name

Type

\* Key

Type of information

\* Master item

Item Tags 1 Preprocessing 2

Preprocessing steps ?

	Name	Parameters	Custom on fail	Actions
1:	<input type="text" value="JSONPath"/>	<input type="text" value="\$.Aborted_clients"/>	<input type="checkbox"/>	<a href="#">Test</a> <a href="#">Remove</a>
2:	<input type="text" value="Change per second"/>		<input type="checkbox"/>	<a href="#">Test</a> <a href="#">Remove</a>

[Add](#) [Test all steps](#)

# AGENT 2 Master/dependent items - Docker

Items <span style="float: right;">Create item</span>									
All templates / Docker by Zabbix agent 2 <span>Items 44</span> <span>Triggers 3</span> <span>Graphs 5</span> <span>Dashboards 1</span> <span>Discovery rules 2</span> <span>Web scenarios</span> <span style="float: right;">Filter</span>									
<input type="checkbox"/>	Name ▲	Triggers	Key	Interval	History	Trends	Type	Status	Tags
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: Architecture</a>		docker.architecture		7d		Dependent item	Enabled	component: os
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: Cgroup driver</a>		docker.cgroup_driver		7d		Dependent item	Enabled	component: os
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: Containers paused</a>		docker.containers.paused		7d	365d	Dependent item	Enabled	component: containers
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: Containers running</a>		docker.containers.running		7d	365d	Dependent item	Enabled	component: containers
<input type="checkbox"/>	... <a href="#">Docker: Get data_usage: Docker: Containers size</a>		docker.containers_size		7d	365d	Dependent item	Enabled	component: containers component: storage
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: Containers stopped</a>		docker.containers.stopped		7d	365d	Dependent item	Enabled	component: containers
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: Containers total</a>		docker.containers.total		7d	365d	Dependent item	Enabled	component: containers
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: CPU CFS Period enabled</a>		docker.cpu_cfs_period.enabled		7d	365d	Dependent item	Enabled	component: cpu
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: CPU CFS Quota enabled</a>		docker.cpu_cfs_quota.enabled		7d	365d	Dependent item	Enabled	component: cpu
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: CPU Set enabled</a>		docker.cpu_set.enabled		7d	365d	Dependent item	Enabled	component: cpu
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: CPU Shares enabled</a>		docker.cpu_shares.enabled		7d	365d	Dependent item	Enabled	component: cpu
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: Debug enabled</a>		docker.debug.enabled		7d	365d	Dependent item	Enabled	component: application
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: Default runtime</a>		docker.default_runtime		7d		Dependent item	Enabled	component: application
<input type="checkbox"/>	... <a href="#">Docker: Get info: Docker: Docker root dir</a>		docker.root_dir		7d		Dependent item	Enabled	component: system
<input type="checkbox"/>	... <a href="#">Docker: Get containers</a>		docker.containers		1m	0	Zabbix agent	Enabled	component: raw
<input type="checkbox"/>	... <a href="#">Docker: Get data_usage</a>		docker.data_usage		1m	0	Zabbix agent	Enabled	component: raw

# AGENT 2 Master/dependent items - PostgreSQL

Items											Create item						
All templates / PostgreSQL by Zabbix agent 2											Items 65	Triggers 6	Graphs	Dashboards 1	Discovery rules 2	Web scenarios	Filter
<input type="checkbox"/>	Name ▲	Triggers	Key	Interval	History	Trends	Type	Status	Tags								
<input type="checkbox"/>	... PostgreSQL: Get archive: Archive: Count of archived files		pgsql.archive.count_archived_files		7d	365d	Dependent item	Enabled	component: archive								
<input type="checkbox"/>	... PostgreSQL: Get archive: Archive: Count of failed attempts to archive files		pgsql.archive.failed_trying_to_archive		7d	365d	Dependent item	Enabled	component: archive								
<input type="checkbox"/>	... PostgreSQL: Get archive: Archive: Count of files in archive_status need to archive		pgsql.archive.count_files_to_archive		7d	365d	Dependent item	Enabled	component: archive								
<input type="checkbox"/>	... PostgreSQL: Get archive: Archive: Size of files need to archive		pgsql.archive.size_files_to_archive		7d	365d	Dependent item	Enabled	component: archive								
<input type="checkbox"/>	... PostgreSQL: Get bgwriter: Bgwriter: Buffers allocated per second		pgsql.bgwriter.buffers_alloc.rate		7d	365d	Dependent item	Enabled	component: bgwriter								
<input type="checkbox"/>	... PostgreSQL: Get bgwriter: Bgwriter: Buffers written directly by a backend per second		pgsql.bgwriter.buffers_backend.rate		7d	365d	Dependent item	Enabled	component: bgwriter								
<input type="checkbox"/>	... PostgreSQL: Get bgwriter: Bgwriter: Number of bgwriter cleaning scan stopped per second		pgsql.bgwriter.maxwritten_clean.rate		7d	365d	Dependent item	Enabled	component: bgwriter								
<input type="checkbox"/>	... PostgreSQL: Get bgwriter: Bgwriter: Times a backend executed its own fsync per second		pgsql.bgwriter.buffers_backend_fsync.rate		7d	365d	Dependent item	Enabled	component: bgwriter								
<input type="checkbox"/>	... PostgreSQL: Get bgwriter: Checkpoint: Buffers written by the background writer per second		pgsql.bgwriter.buffers_clean.rate		7d	365d	Dependent item	Enabled	component: bgwriter								
<input type="checkbox"/>	... PostgreSQL: Get bgwriter: Checkpoint: Buffers written during checkpoints per second		pgsql.bgwriter.buffers_checkpoint.rate		7d	365d	Dependent item	Enabled	component: bgwriter								

# AGENT 2 Master/dependent items - MySQL

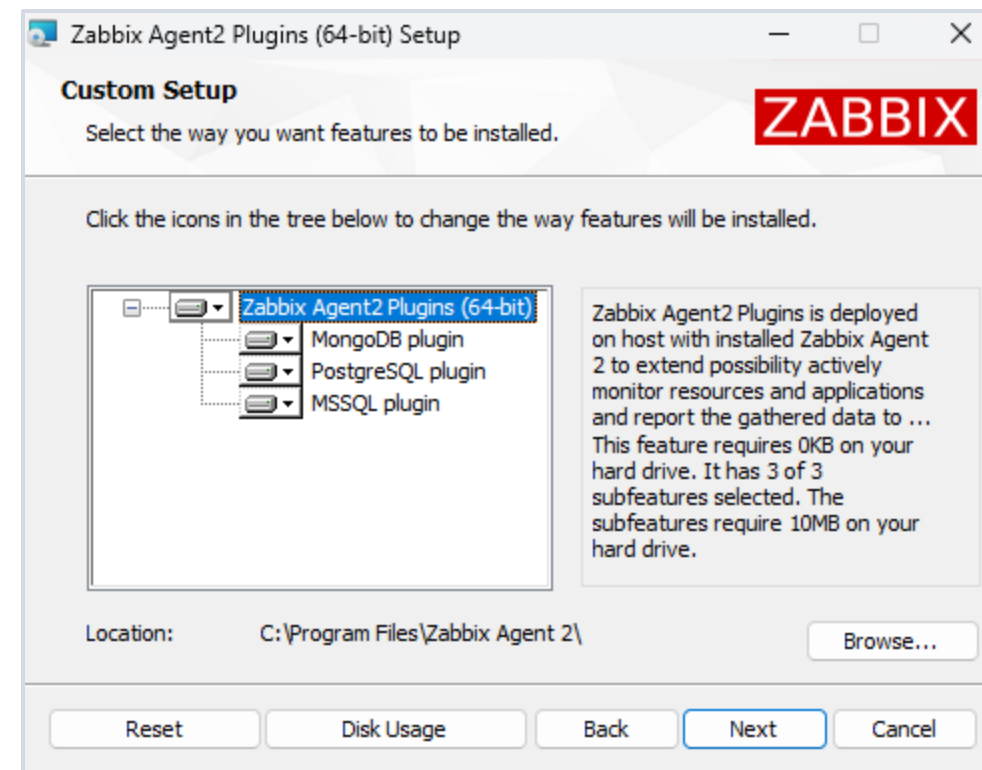
Items											Create item						
All templates / MySQL by Zabbix agent 2											Items 48	Triggers 11	Graphs 6	Dashboards 1	Discovery rules 3	Web scenarios	Filter
<input type="checkbox"/>	Name ▲	Triggers	Key	Interval	History	Trends	Type	Status	Tags								
<input type="checkbox"/>	... <a href="#">MySQL: Get status variables: MySQL: Aborted clients per second</a>		mysql.aborted_clients.rate		7d	365d	Dependent item	Enabled	Application: MySQL								
<input type="checkbox"/>	... <a href="#">MySQL: Get status variables: MySQL: Aborted connections per second</a>	<a href="#">Triggers 1</a>	mysql.aborted_connects.rate		7d	365d	Dependent item	Enabled	Application: MySQL								
<input type="checkbox"/>	... <a href="#">MySQL: Get status variables: MySQL: Binlog cache disk use</a>		mysql.binlog_cache_disk_use		7d	365d	Dependent item	Enabled	Application: MySQL								
<input type="checkbox"/>	... <a href="#">MySQL: Buffer pool efficiency</a>		mysql.buffer_pool_efficiency	1m	7d	365d	Calculated	Enabled	Application: MySQL								
<input type="checkbox"/>	... <a href="#">MySQL: Buffer pool utilization</a>	<a href="#">Triggers 1</a>	mysql.buffer_pool_utilization	1m	7d	365d	Calculated	Enabled	Application: MySQL								
<input type="checkbox"/>	... <a href="#">MySQL: Get status variables: MySQL: Bytes received</a>		mysql.bytes_received.rate		7d	365d	Dependent item	Enabled	Application: MySQL								
<input type="checkbox"/>	... <a href="#">MySQL: Get status variables: MySQL: Bytes sent</a>		mysql.bytes_sent.rate		7d	365d	Dependent item	Enabled	Application: MySQL								
<input type="checkbox"/>	... <a href="#">MySQL: Calculated value of innodb_log_file_size</a>		mysql.innodb_log_file_size	1m	7d	365d	Calculated	Enabled	Application: MySQL								
<input type="checkbox"/>	... <a href="#">MySQL: Get status variables: MySQL: Command Delete per second</a>		mysql.com_delete.rate		7d	365d	Dependent item	Enabled	Application: MySQL								
<input type="checkbox"/>	... <a href="#">MySQL: Get status variables: MySQL: Command Insert per second</a>		mysql.com_insert.rate		7d	365d	Dependent item	Enabled	Application: MySQL								
<input type="checkbox"/>	... <a href="#">MySQL: Get status variables: MySQL: Command Select per second</a>		mysql.com_select.rate		7d	365d	Dependent item	Enabled	Application: MySQL								

## Zabbix Agent 2

# MSSQL by Zabbix agent 2

### MSSQL by Zabbix agent 2

- ▶ Zabbix agent 2 plugin extension
- ▶ [https://www.zabbix.com/integrations/mssql#mssql\\_agent2](https://www.zabbix.com/integrations/mssql#mssql_agent2)



## Zabbix Agent 2

# MSSQL by Zabbix agent 2

<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL: Total log file size</a> <span>?</span>	7m 24s	21.45 MB	
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL: Total log file used size</a> <span>?</span>	25s	4.16 MB	
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL: Total server memory</a> <span>?</span>	25s	286.22 MB	+936 KB
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL: Total transactions number</a> <span>?</span>	25s	9	
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL: Total transactions per second</a> <span>?</span>	25s	0.08334	+0.03333
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL: Unsafe auto-params per second</a> <span>?</span>	25s	0	
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL: Uptime</a> <span>?</span>	25s	00:19:40	+00:01:00
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL: Version</a> <span>?</span>	7m 33s	16.0.1000.6 RTM ...	
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL: Work files created per second</a> <span>?</span>	25s	1.4667	-0.00005531
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL: Work tables created per second</a> <span>?</span>	25s	0.5667	+0.01665
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL: Worktables from cache ratio</a> <span>?</span>			
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL Cluster ": Quorum state</a> <span>?</span>	7m 36s	Normal quorum (1)	
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL Cluster ": Quorum type</a> <span>?</span>	7m 36s	Node Majority (0)	
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL Cluster member 'WIN-KKAK52FNK8H': Me...</a> <span>?</span>	7m 36s	Online (1)	
<input type="checkbox"/>	<a href="#">MSSQL01</a>	<a href="#">MSSQL Cluster member 'WIN-KKAK52FNK8H': Me...</a> <span>?</span>	7m 36s	WSFC node (0)	

## Zabbix Agent 2

# AGENT 2 TEMPLATES

### Documentation

› [https://www.zabbix.com/documentation/current/en/manual/config/items/itemtypes/zabbix\\_agent/zabbix\\_agent2](https://www.zabbix.com/documentation/current/en/manual/config/items/itemtypes/zabbix_agent/zabbix_agent2)

### GIT

› <https://git.zabbix.com/projects/ZBX/repos/zabbix/browse/templates>



The screenshot shows the Zabbix Git repository page for the `postgresql_agent2` template. The page is titled "Zabbix / Zabbix" and shows the "Source" view for the `postgresql_agent2` directory. The breadcrumb path is "Zabbix / templates / db / postgresql\_agent2 /". The file list shows two files: `README.md` (35.38 KB, 19 Oct 2023) and `template_db_postgresql_agent2.yaml` (99.33 KB, 19 Oct 2023). The `README.md` file is selected, and its content is displayed below. The content includes the title "PostgreSQL by Zabbix agent 2", an "Overview" section, and "Requirements" and "Tested versions" sections.

**PostgreSQL by Zabbix agent 2**

**Overview**

This template is designed for the deployment of PostgreSQL monitoring by Zabbix via Zabbix agent 2 and uses a loadable plugin to run SQL queries.

**Requirements**

Zabbix version: 7.0 and higher.

**Tested versions**

This template has been tested on:

- PostgreSQL 10-15

# 4

## Developing plugins



# DEVELOPING an AGENT 2 PLUGIN

The Go agent features multiple plugin interfaces which can be used for different types of tasks

- › **Exporter interface** – returns metric values on request
- › **Watcher interface** – subscribes to push-based data streams
- › **Collector interface** – periodically gathers and caches data
- › **Runner interface** – manages plugin startup and shutdown
- › **Configurator interface** – receives configuration from agent settings

A Go agent plugin must implement one or several plugin interfaces.

ZABBIX BLOG

<https://blog.zabbix.com/developing-plugins-for-zabbix-agent-2/9682/>

[https://www.zabbix.com/documentation/current/en/devel/plugins/how\\_to](https://www.zabbix.com/documentation/current/en/devel/plugins/how_to)

# DEVELOPING AN AGENT 2 plugin

Exporter is a very simple interface that polls metrics and returns a value, several values, an error, or nothing at all. It accepts a prepared key, its parameters and context

```
type Exporter interface {  
    Export(key string, params []string, context ContextProvider) (result interface{}, err error)  
}
```

# DEVELOPING AN AGENT 2 plugin

With `Watcher` you can implement a metric polling process without using `Scheduler`. This interface is mostly used to wait for data and upon receiving it send the results to the server, e.g. log file monitoring.

```
type Watcher interface {  
    Watch(requests []*Request, context ContextProvider)  
}
```

# DEVELOPING AN AGENT 2 plugin

Collector is used for plugins that need to collect data regularly. However, it can't return data, so you'll need Exporter for that.

```
type Collector interface {  
    Collect() error  
    Period() int  
}
```

- ▶ The main use case for this interface is when we need to collect data often and store it in cache until Zabbix server requests it.

# DEVELOPING AN AGENT 2 plugin

Runner provides a way to perform initialization when a plugin is activated (the Start() function) and deinitialization when it is stopped (the Stop() function).

```
type Runner interface {  
    Start()  
    Stop()  
}
```

- ▶ With this interface a plugin can, for example, start or stop a background thread, release unused resources, close connections, etc.
- ▶ Activates plugins when there are metrics ready to be processed for passive checks or a task is assigned to it for active checks.

# DEVELOPING AN AGENT 2 plugin

Configurator serves for configuring plugins.

```
type Configurator interface {  
    Configure(globalOptions *GlobalOptions, privateOptions interface{})  
    Validate(privateOptions interface{}) error  
}
```

- ▶ Configure() loads configuration parameters in a structure defined by the developer.
- ▶ Validate() checks the configuration file for errors. If it finds any, the agent won't start, and we'll get an error notification.

## Zabbix Agent 2

# FAQ

Should I use the C agent or the Go agent?

- ▶ Use the Go agent if you need the extra monitoring features or want to implement your own custom plugin
- ▶ `systemctl` won't report back the agent status on startup

Will you still support the C agent?

- ▶ Yes, of course! C agent will still get updates, fixes, etc. We have no plans to deprecate it.

Can I use both agents in my environment?

- ▶ Yes! You can use the Go agent in environments where you need the new features and keep the C agent on all other hosts.

## Zabbix Agent 2

# Tips and tricks

Check our wiki and social networks regularly for tips and updates

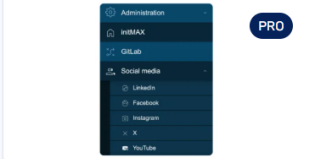
Tips and tricks on our webpage:

- › <https://www.initmax.com/wiki/frontend-scripts-and-sudo-in-zabbix/>
- › <https://www.initmax.com/wiki/zabbix-java-gateway-installation-with-tomcat-monitoring/>
- › <https://www.initmax.com/wiki/zabbix-7-0-instructions-for-installation-in-5-minutes/>
- › <https://www.initmax.com/wiki/zabbix-7-0-and-increasing-system-limits/>
- › <https://www.initmax.com/wiki/zabbix-migration-from-mysql-to-postgresql/>
- <https://www.initmax.com/wiki/how-to-set-up-snmp-trap-in-zabbix/>
- <https://www.initmax.com/wiki/microsoft-teams-integration-in-five-steps/>
- <https://www.initmax.com/wiki/reporting-in-zabbix-7-0/>

## Zabbix Agent 2

# initMAX E-Shop

- › Custom visualization widgets
- › UX Improvement Modules
- › AI Integration with Zabbix
- › Both **FREE** and PRO Versions
  
- › initMAX e-shop  
<https://www.initmax.com/eshop/>

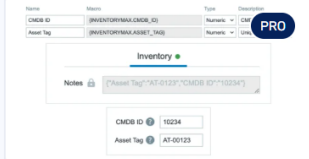


**Custom menu buttons**

ZABBIX Module

This module enables creation of custom navigation menu buttons and groups with user-defined URL links, allowing for personalized interface navigation.

→

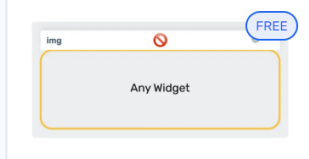


**inventoryMAX**

ZABBIX Module

inventoryMAX adds custom fields to Zabbix inventory for flexible, structured metadata management and seamless macro-based integration.

→

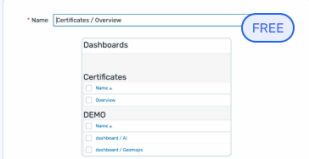


**Hide widget header**

ZABBIX Module

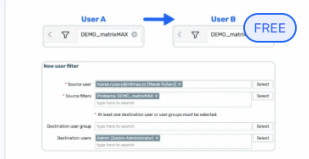
This module prevents widget headers from being displayed when dashboards are not in edit mode, improving visual clarity and user experience.

→



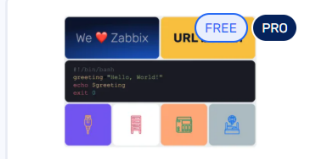
**Structured dashboards**

ZABBIX Module



**User filter manager**

ZABBIX Module



**headerMAX**

ZABBIX Widget

- › Video explanation of widgets and modules  
[https://www.youtube.com/watch?v=fpW6TR7DQdU&list=PLF7Hh\\_ikyQDpHiHhXwLtw57OCDF9jn7zL](https://www.youtube.com/watch?v=fpW6TR7DQdU&list=PLF7Hh_ikyQDpHiHhXwLtw57OCDF9jn7zL)

# Free Zabbix template builder

- › FREE template builder from JSON
  - › Tag support
  - › Low-Level Discovery support
  - › Zabbix 7.0 / 7.2 / 7.4 support
  - › Extract simple JSONPath
  - › Download a ready-to-apply template
- 
- › [www.dmitrylambert.com](http://www.dmitrylambert.com)



**Zabbix Template Generator**

Transform JSON data into Zabbix monitoring templates

**Simple JSONPATH**

**Output:** Individual JSONPath expressions for manual item creation.

**Features:** JSON beautifier, single-click path extraction.

**Template Builder**

**Output:** Complete, ready-to-import Zabbix Template.

**Features:** Automatic Template & LLD Generation + Tag Management.

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Questions?



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