

## Short description

**Status:** v1.0

**JIRA Task:** <https://support.zabbix.com/browse/ZBXNEXT-3493>

## Summary

Zabbix agent on Windows can be used to discover and monitor Windows services. Service startup type is significant for `service.discovery` and `service.info` keys. Currently the following startup types with corresponding value are handled by Zabbix:

0	automatic
1	automatic delayed
2	manual
3	disabled
4	unknown

Starting from *Windows Server 2008 R2* and *Windows 7* automatic and manual startup types can additionally be trigger started and new values should be added.

5	automatic trigger start
6	automatic delayed trigger start
7	manual trigger start

## Acceptance criteria

Properly handle Windows service startup type "Trigger Start" for `service.discovery` and `service.info` keys.

## Design Decisions made

1. Currently do not make any changes to `services[]` key.
2. Add a new LLD macro `{#SERVICE.STARTUPTRIGGER}`.

## Use cases

**Case 1:** Use key `service.info[service_name,startup]` to determine that service startup can be triggered.

Scenario (how to achieve it?):

1. Precondition 1 (whats required to start this scenario)
2. Install and start Zabbix agent on Windows Server 2012 or later
  - a. Open Services and lookup a service that has startup type "Trigger Start".
  - b. Use `zabbix_get.exe` to get the returning value.
- i. Example: `zabbix_get.exe -s localhost -k service.info["Software Protection", startup]`
3. Observed: Correct service startup type corresponding value.

## What's affected

- Agent

### Agent

Additional Windows service configuration check is required. Agent function `check_delay_start()` can be redesigned and renamed to `get_startup_type()`. Add check for service "Trigger Start" startup type. Use Windows API function `QueryServiceConfig2()` with **SERVICE\_CONFIG\_TRIGGER\_INFO** for `dwInfoLevel` parameter. More info here: [msdn](#). Agent function `get_startup_type()` with new additional pointer parameter can return any of the startup types from above tables. The returned value then can be processed by `SERVICE.DISCOVERY()` or `SERVICE.INFO()`.

- **SERVICE.DISCOVERY()**
- Add new macro for "Trigger Start" startup type `{#SERVICE.STARTUPTRIGGER}`. Additional macro is required to maintain backwards compatibility - values for macros `{#SERVICE.STARTUP}` and `{#SERVICE.STARTUPNAME}` has to remain unchanged. When the JSON is being constructed then add value for `{#SERVICE.STARTUPTRIGGER}` if it is know to be the "Trigger Start" startup type.

<b>{#SERVICE.STARTUPTRIGGER}</b>	
<b>Value</b>	<b>Description</b>
0	The service has not registered for any triggers.
1	The service has registered triggers.

- **SERVICE.INFO()**
- Change the case `ZBX_SRV_PARAM_STARTUP` to correctly process `get_startup_type()`.

<b>service.info[service,startup]</b>	
<b>Value</b>	<b>Service startup type</b>
0	automatic
1	automatic delayed
2	manual

3	disabled
4	unknown
5	automatic trigger start
6	automatic delayed trigger start
7	manual trigger start

## Documentation changes

- [What's new in 4.0](#)
- [Zabbix Manual](#)
- [Upgrade notes](#)

## Possible improvements

Here are list of possible improvements that are currently out of scope:

- Additionally detailed information can be retrieved about service triggers like trigger type, action, sub-type, data type.