

> LLD rule object

The following objects are directly related to the `discoveryrule` API.

LLD rule

The low-level discovery rule object has the following properties.

Property	Type	Description
<code>itemid</code>	string	(<i>readonly</i>) ID of the LLD rule.
delay (required)	string	Update interval of the LLD rule. Accepts seconds or time unit with suffix and with or without one or more custom intervals that consist of either flexible intervals and scheduling intervals as serialized strings. Also accepts user macros. Flexible intervals could be written as two macros separated by a forward slash. Intervals are separated by a semicolon.
hostid (required)	string	ID of the host that the LLD rule belongs to.
interfaceid (required)	string	ID of the LLD rule's host interface. Used only for host LLD rules. Optional for Zabbix agent (active), Zabbix internal, Zabbix trapper and database monitor LLD rules.
key_ (required)	string	LLD rule key.
name (required)	string	Name of the LLD rule.
type (required)	integer	Type of the LLD rule. Possible values: 0 - Zabbix agent; 2 - Zabbix trapper; 3 - simple check; 5 - Zabbix internal; 7 - Zabbix agent (active); 10 - external check; 11 - database monitor; 12 - IPMI agent; 13 - SSH agent; 14 - TELNET agent; 16 - JMX agent; 18 - Dependent item; 19 - HTTP agent; 20 - SNMP agent;
url (required)	string	URL string, required for HTTP agent LLD rule. Supports user macros, <code>{HOST.IP}</code> , <code>{HOST.CONN}</code> , <code>{HOST.DNS}</code> , <code>{HOST.HOST}</code> , <code>{HOST.NAME}</code> , <code>{ITEM.ID}</code> , <code>{ITEM.KEY}</code> .
<code>allow_traps</code>	integer	HTTP agent LLD rule field. Allow to populate value as in trapper item type also. 0 - (<i>default</i>) Do not allow to accept incoming data. 1 - Allow to accept incoming data.

Property	Type	Description
authtype	integer	Used only by SSH agent or HTTP agent LLD rules. SSH agent authentication method possible values: 0 - (default) password; 1 - public key. HTTP agent authentication method possible values: 0 - (default) none 1 - basic 2 - NTLM
description	string	Description of the LLD rule.
error	string	(readonly) Error text if there are problems updating the LLD rule.
follow_redirects	integer	HTTP agent LLD rule field. Follow response redirects while pooling data. 0 - Do not follow redirects. 1 - (default) Follow redirects.
headers	object	HTTP agent LLD rule field. Object with HTTP(S) request headers, where header name is used as key and header value as value. Example: { "User-Agent": "Zabbix" }
http_proxy	string	HTTP agent LLD rule field. HTTP(S) proxy connection string.
ipmi_sensor	string	IPMI sensor. Used only by IPMI LLD rules.
jmx_endpoint	string	JMX agent custom connection string. Default value: service:jmx:rmi:///jndi/rmi://{HOST.CONN}:{HOST.PORT}/jmxrmi
lifetime	string	Time period after which items that are no longer discovered will be deleted. Accepts seconds, time unit with suffix and user macro. Default: 30d.
master_itemid	integer	Master item ID. Recursion up to 3 dependent items and maximum count of dependent items equal to 999 are allowed. Discovery rule cannot be master item for another discovery rule. Required for Dependent item.
output_format	integer	HTTP agent LLD rule field. Should response converted to JSON. 0 - (default) Store raw. 1 - Convert to JSON.
params	string	Additional parameters depending on the type of the LLD rule: - executed script for SSH and Telnet LLD rules; - SQL query for database monitor LLD rules; - formula for calculated LLD rules.
password	string	Password for authentication. Used by simple check, SSH, Telnet, database monitor, JMX and HTTP agent LLD rules.

Property	Type	Description
post_type	integer	HTTP agent LLD rule field. Type of post data body stored in posts property. 0 - <i>(default)</i> Raw data. 2 - JSON data. 3 - XML data.
posts	string	HTTP agent LLD rule field. HTTP(S) request body data. Used with post_type.
privatekey	string	Name of the private key file.
publickey	string	Name of the public key file.
query_fields	array	HTTP agent LLD rule field. Query parameters. Array of objects with 'key': 'value' pairs, where value can be empty string.
request_method	integer	HTTP agent LLD rule field. Type of request method. 0 - <i>(default)</i> GET 1 - POST 2 - PUT 3 - HEAD
retrieve_mode	integer	HTTP agent LLD rule field. What part of response should be stored. 0 - <i>(default)</i> Body. 1 - Headers. 2 - Both body and headers will be stored. For request_method HEAD only 1 is allowed value.
snmp_oid	string	SNMP OID.
ssl_cert_file	string	HTTP agent LLD rule field. Public SSL Key file path.
ssl_key_file	string	HTTP agent LLD rule field. Private SSL Key file path.
ssl_key_password	string	HTTP agent LLD rule field. Password for SSL Key file.
state	integer	<i>(readonly)</i> State of the LLD rule. Possible values: 0 - <i>(default)</i> normal; 1 - not supported.
status	integer	Status of the LLD rule. Possible values: 0 - <i>(default)</i> enabled LLD rule; 1 - disabled LLD rule.
status_codes	string	HTTP agent LLD rule field. Ranges of required HTTP status codes separated by commas. Also supports user macros as part of comma separated list. Example: 200,200-{\$M},{\$M},200-400
templateid	string	<i>(readonly)</i> ID of the parent template LLD rule.
timeout	string	HTTP agent LLD rule field. Item data polling request timeout. Support user macros. default: 3s maximum value: 60s
trapper_hosts	string	Allowed hosts. Used by trapper LLD rules or HTTP agent LLD rules.

Property	Type	Description
username	string	Username for authentication. Used by simple check, SSH, Telnet, database monitor, JMX and HTTP agent LLD rules. Required by SSH and Telnet LLD rules.
verify_host	integer	HTTP agent LLD rule field. Validate host name in URL is in Common Name field or a Subject Alternate Name field of host certificate. 0 - (default) Do not validate. 1 - Validate.
verify_peer	integer	HTTP agent LLD rule field. Validate is host certificate authentic. 0 - (default) Do not validate. 1 - Validate.

LLD rule filter

The LLD rule filter object defines a set of conditions that can be used to filter discovered objects. It has the following properties:

Property	Type	Description
conditions (required)	array	Set of filter conditions to use for filtering results.
evaltype (required)	integer	Filter condition evaluation method. Possible values: 0 - and/or; 1 - and; 2 - or; 3 - custom expression.
eval_formula	string	(readonly) Generated expression that will be used for evaluating filter conditions. The expression contains IDs that reference specific filter conditions by its formulaid. The value of eval_formula is equal to the value of formula for filters with a custom expression.
formula	string	User-defined expression to be used for evaluating conditions of filters with a custom expression. The expression must contain IDs that reference specific filter conditions by its formulaid. The IDs used in the expression must exactly match the ones defined in the filter conditions: no condition can remain unused or omitted. Required for custom expression filters.

LLD rule filter condition

The LLD rule filter condition object defines a separate check to perform on the value of an LLD macro. It has the following properties:

Property	Type	Description
macro (required)	string	LLD macro to perform the check on.

Property	Type	Description
value (required)	string	Value to compare with.
formulaid	string	Arbitrary unique ID that is used to reference the condition from a custom expression. Can only contain capital-case letters. The ID must be defined by the user when modifying filter conditions, but will be generated anew when requesting them afterward.
operator	integer	Condition operator. Possible values: 8 - (<i>default</i>) matches regular expression; 9 - does not match regular expression.

To better understand how to use filters with various types of expressions, see examples on the [discoveryrule.get](#) and [discoveryrule.create](#) method pages.

LLD macro path

The LLD macro path has the following properties:

Property	Type	Description
lld_macro (required)	string	LLD macro.
path (required)	string	Selector for value which will be assigned to corresponding macro.

LLD rule preprocessing

The LLD rule preprocessing object has the following properties.

Property	Type	Description
type (required)	integer	The preprocessing option type. Possible values: 5 - Regular expression matching; 11 - XML XPath; 12 - JSONPath; 15 - Does not match regular expression; 16 - Check for error in JSON; 17 - Check for error in XML; 20 - Discard unchanged with heartbeat; 23 - Prometheus to JSON; 24 - CSV to JSON; 25 - Replace.
params (required)	string	Additional parameters used by preprocessing option. Multiple parameters are separated by LF (\n) character.
error_handler (required)	integer	Action type used in case of preprocessing step failure. Possible values: 0 - Error message is set by Zabbix server; 1 - Discard value; 2 - Set custom value; 3 - Set custom error message.

Property	Type	Description
error_handler_params (required)	string	Error handler parameters. Used with error_handler. Must be empty, if error_handler is 0 or 1. Can be empty if, error_handler is 2. Cannot be empty, if error_handler is 3.

The following parameters and error handlers are supported for each preprocessing type.

Preprocessing type	Name	Parameter 1	Parameter 2	Parameter 3	Supported error handlers
5	Regular expression	pattern ¹	output ²		0, 1, 2, 3
11	XML XPath	path ³			0, 1, 2, 3
12	JSONPath	path ³			0, 1, 2, 3
15	Does not match regular expression	pattern ¹			0, 1, 2, 3
16	Check for error in JSON	path ³			0, 1, 2, 3
17	Check for error in XML	path ³			0, 1, 2, 3
20	Discard unchanged with heartbeat	seconds ^{4, 5, 6}			
23	Prometheus to JSON	pattern ^{5, 7}			0, 1, 2, 3
24	CSV to JSON	character ²	character ²	0,1	0, 1, 2, 3
25	Replace	search string ²	replacement ²		

¹ regular expression

² string

³ JSONPath or XML XPath

⁴ positive integer (with support of time suffixes, e.g. 30s, 1m, 2h, 1d)

⁵ user macro

⁶ LLD macro

⁷ Prometheus pattern following the syntax: <metric name>{<label name>=<label value>“, ...} == <value>. Each Prometheus pattern component (metric, label name, label value and metric value) can be user macro.

⁸ Prometheus output following the syntax: <label name>.

LLD rule overrides

The LLD rule overrides object defines a set of rules (filters, conditions and operations) that are used to override properties of different prototype objects. It has the following properties:

Property	Type	Description
name (required)	string	Unique override name.
step (required)	integer	Unique order number of the override.

Property	Type	Description
stop	integer	Stop processing next overrides if matches. Possible values: 0 - <i>(default)</i> don't stop processing overrides; 1 - stop processing overrides if filter matches.
filter	object	Override filter.
operations	array	Override operations.

LLD rule override filter

The LLD rule override filter object defines a set of conditions that if they match the discovered object the override is applied. It has the following properties:

Property	Type	Description
evaltype (required)	integer	Override filter condition evaluation method. Possible values: 0 - and/or; 1 - and; 2 - or; 3 - custom expression.
conditions (required)	array	Set of override filter conditions to use for matching the discovered objects.
eval_formula	string	<i>(readonly)</i> Generated expression that will be used for evaluating override filter conditions. The expression contains IDs that reference specific override filter conditions by its <code>formulaid</code> . The value of <code>eval_formula</code> is equal to the value of <code>formula</code> for filters with a custom expression.
formula	string	User-defined expression to be used for evaluating conditions of override filters with a custom expression. The expression must contain IDs that reference specific override filter conditions by its <code>formulaid</code> . The IDs used in the expression must exactly match the ones defined in the override filter conditions: no condition can remain unused or omitted. Required for custom expression override filters.

LLD rule override filter condition

The LLD rule override filter condition object defines a separate check to perform on the value of an LLD macro. It has the following properties:

Property	Type	Description
macro (required)	string	LLD macro to perform the check on.
value (required)	string	Value to compare with.
formulaid	string	Arbitrary unique ID that is used to reference the condition from a custom expression. Can only contain capital-case letters. The ID must be defined by the user when modifying filter conditions, but will be generated anew when requesting them afterward.

Property	Type	Description
operator	integer	Condition operator. Possible values: 8 - (<i>default</i>) matches regular expression; 9 - does not match regular expression.

LLD rule override operation

The LLD rule override operation is combination of conditions and actions to perform on the prototype object. It has the following properties:

Property	Type	Description
operationobject (required)	integer	Type of discovered object to perform the action. Possible values: 0 - Item prototype; 1 - Trigger prototype; 2 - Graph prototype; 3 - Host prototype.
operator	integer	Override condition operator. Possible values: 0 - (<i>default</i>) equals; 1 - does not equal; 2 - contains; 3 - does not contain; 8 - matches; 9 - does not match.
value	string	Pattern to match item, trigger, graph or host prototype name depending on selected object.
opstatus	object	Override operation status object for item, trigger and host prototype objects.
opdiscover	object	Override operation discover status object (all object types).
opperiod	object	Override operation period (update interval) object for item prototype object.
ophistory	object	Override operation history object for item prototype object.
optrends	object	Override operation trends object for item prototype object.
opseverity	object	Override operation severity object for trigger prototype object.
optag	array	Override operation tag object for trigger and host prototype objects.
optemplate	array	Override operation template object for host prototype object.
opinVENTORY	object	Override operation inventory object for host prototype object.

LLD rule override operation status

LLD rule override operation status that is set to discovered object. It has the following properties:

Property	Type	Description
status (required)	integer	Override the status for selected object. Possible values: 0 - Create enabled; 1 - Create disabled.

LLD rule override operation discover

LLD rule override operation discover status that is set to discovered object. It has the following properties:

Property	Type	Description
discover (required)	integer	Override the discover status for selected object. Possible values: 0 - Yes, continue discovering the objects; 1 - No, new objects will not be discovered and existing ones will be marked as lost.

LLD rule override operation period

LLD rule override operation period is an update interval value (supports custom intervals) that is set to discovered item. It has the following properties:

Property	Type	Description
delay (required)	string	Override the update interval of the item prototype. Accepts seconds or a time unit with suffix (30s,1m,2h,1d) as well as flexible and scheduling intervals and user macros or LLD macros. Multiple intervals are separated by a semicolon.

LLD rule override operation history

LLD rule override operation history value that is set to discovered item. It has the following properties:

Property	Type	Description
history (required)	string	Override the history of item prototype which is a time unit of how long the history data should be stored. Also accepts user macro and LLD macro.

LLD rule override operation trends

LLD rule override operation trends value that is set to discovered item. It has the following properties:

Property	Type	Description
trends (required)	string	Override the trends of item prototype which is a time unit of how long the trends data should be stored. Also accepts user macro and LLD macro.

LLD rule override operation severity

LLD rule override operation severity value that is set to discovered trigger. It has the following

properties:

Property	Type	Description
severity (required)	integer	Override the severity of trigger prototype. Possible values are: 0 - <i>(default)</i> not classified; 1 - information; 2 - warning; 3 - average; 4 - high; 5 - disaster.

LLD rule override operation tag

LLD rule override operation tag object contains tag name and value that are set to discovered object. It has the following properties:

Property	Type	Description
tag (required)	string	New tag name.
value	string	New tag value.

LLD rule override operation template

LLD rule override operation template object that is linked to discovered host. It has the following properties:

Property	Type	Description
templateid (required)	string	Override the template of host prototype linked templates.

LLD rule override operation inventory

LLD rule override operation inventory mode value that is set to discovered host. It has the following properties:

Property	Type	Description
inventory_mode (required)	integer	Override the host prototype inventory mode. Possible values are: -1 - disabled; 0 - <i>(default)</i> manual; 1 - automatic.

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