Appendix 1. Reference commentary

Notation

Data types

The Zabbix API supports the following data types:

Type	Description
boolean	A boolean value, accepts either `true` or `false`.
flag	The value is considered to be `true` if it is passed and not equal to `null` and `false` otherwise.
integer	A whole number.
float	A floating point number.
string	A text string.
text	A longer text string.
timestamp	A Unix timestamp.
array	An ordered sequence of values, that is, a plain array.
object	An associative array.
query	A value which defines, what data should be returned. Can be defined as an array of property names to return only specific properties, or as one of the predefined values: `extend` - returns all object properties; `count` - returns the number of retrieved records, supported only by certain subselects.

Property labels

Some of the objects properties are marked with short labels to describe their behavior. The following labels are used:

- *readonly* - the value of the property is set automatically and cannot be defined or changed by the client;
- *constant* - the value of the property can be set when creating an object, but cannot be changed after.

Reserved ID value "0"

Reserved ID value "0" can be used to filter elements and to remove referenced objects. For example, to remove a referenced proxy from a host, proxy_hostid should be set to 0 ("proxy_hostid": "0") or to filter hosts monitored by server option proxyids should be set to 0 ("proxyids": "0").

Common "get" method parameters

The following parameters are supported by all `get` methods:

Parameter	Type	Description
countOutput	boolean	Return the number of records in the result instead of the actual data.
editable	boolean	If set to `true` return only objects that the user has write permissions to. Default: `false`.
excludeSearch	boolean	Return results that do not match the criteria given in the `search` parameter.
filter	object	Return only those results that exactly match the given filter. Accepts an array, where the keys are property names, and the values are either a single value or an array of values to match against. Doesn't work for `text` fields.
limit	integer	Limit the number of records returned.
output	query	Object properties to be returned. Default: `extend`.
preservekeys	boolean	Use IDs as keys in the resulting array.
search	object	Return results that match the given wildcard search (case-insensitive). Accepts an array, where the keys are property names, and the values are strings to search for. If no additional options are given, this will perform a `LIKE "%…%"` search. Works only for `string` and `text` fields.
searchByAny	boolean	If set to `true` return results that match any of the criteria given in the `filter` or `search` parameter instead of all of them. Default: `false`.
searchWildcardsEnabled	boolean	If set to `true` enables the use of "*" as a wildcard character in the `search` parameter. Default: `false`.
sortfield	string/array	Sort the result by the given properties. Refer to a specific API get method description for a list of properties that can be used for sorting. Macros are not expanded before sorting. If no value is specified, data will be returned unsorted.
sortorder	string/array	Order of sorting. If an array is passed, each value will be matched to the corresponding property given in the `sortfield` parameter. Possible values are: ASC - *(default)* ascending; DESC - descending.
startSearch	boolean	The `search` parameter will compare the beginning of fields, that is, perform a `LIKE "…%"` search instead. Ignored if `searchWildcardsEnabled` is set to `true`.

Examples

User permission check

Does the user have permission to write to hosts whose names begin with “MySQL” or “Linux” ?

Request:

```
{
    "jsonrpc": "2.0",
    "method": "host.get",
    "params": {
        "countOutput": true,
        "search": {
            "host": ["MySQL", "Linux"]
        },
        "editable": true,
        "startSearch": true,
        "searchByAny": true
    },
    "auth": "766b71ee543230a1182ca5c44d353e36",
    "id": 1
}
```

Response:

```
{
    "jsonrpc": "2.0",
    "result": "0",
    "id": 1
}
```

Zero result means no hosts with read/write permissions.

Mismatch counting

Count the number of hosts whose names do not contain the substring “ubuntu”

Request:

```
{
    "jsonrpc": "2.0",
    "method": "host.get",
    "params": {
        "countOutput": true,
        "search": {
            "host": "ubuntu"
        },
        "excludeSearch": true
```

```
    },
    "auth": "766b71ee543230a1182ca5c44d353e36",
    "id": 1
}
```

Response:

```
{
    "jsonrpc": "2.0",
    "result": "44",
    "id": 1
}
```

Searching for hosts using wildcards

Find hosts whose name contains word “server” and have interface ports “10050” or “10071”. Sort the result by host name in descending order and limit it to 5 hosts.

Request:

```
{
    "jsonrpc": "2.0",
    "method": "host.get",
    "params": {
        "output": ["hostid", "host"],
        "selectInterfaces": ["port"],
        "filter": {
            "port": ["10050", "10071"]
        },
        "search": {
            "host": "*server*"
        },
        "searchWildcardsEnabled": true,
        "searchByAny": true,
        "sortfield": "host",
        "sortorder": "DESC",
        "limit": 5
    },
    "auth": "766b71ee543230a1182ca5c44d353e36",
    "id": 1
}
```

Response:

```
{
    "jsonrpc": "2.0",
    "result": [
        {
```

```
            "hostid": "50003",
            "host": "WebServer-Tomcat02",
            "interfaces": [
                {
                    "port": "10071"
                }
            ]
        },
        {
            "hostid": "50005",
            "host": "WebServer-Tomcat01",
            "interfaces": [
                {
                    "port": "10071"
                }
            ]
        },
        {
            "hostid": "50004",
            "host": "WebServer-Nginx",
            "interfaces": [
                {
                    "port": "10071"
                }
            ]
        },
        {
            "hostid": "99032",
            "host": "MySQL server 01",
            "interfaces": [
                {
                    "port": "10050"
                }
            ]
        },
        {
            "hostid": "99061",
            "host": "Linux server 01",
            "interfaces": [
                {
                    "port": "10050"
                }
            ]
        }
    ],
    "id": 1
}
```

Searching for hosts using wildcards with "preservekeys"

If you add the parameter “preservekeys” to the previous request, the result is returned as an associative array, where the keys are the id of the objects.

Request:

```
{
    "jsonrpc": "2.0",
    "method": "host.get",
    "params": {
        "output": ["hostid", "host"],
        "selectInterfaces": ["port"],
        "filter": {
            "port": ["10050", "10071"]
        },
        "search": {
            "host": "*server*"
        },
        "searchWildcardsEnabled": true,
        "searchByAny": true,
        "sortfield": "host",
        "sortorder": "DESC",
        "limit": 5,
        "preservekeys": true
    },
    "auth": "766b71ee543230a1182ca5c44d353e36",
    "id": 1
}
```

Response:

```
{
    "jsonrpc": "2.0",
    "result": {
        "50003": {
            "hostid": "50003",
            "host": "WebServer-Tomcat02",
            "interfaces": [
                {
                    "port": "10071"
                }
            ]
        },
        "50005": {
            "hostid": "50005",
            "host": "WebServer-Tomcat01",
            "interfaces": [
                {
```

```
                    "port": "10071"
                }
            ]
        },
        "50004": {
            "hostid": "50004",
            "host": "WebServer-Nginx",
            "interfaces": [
                {
                    "port": "10071"
                }
            ]
        },
        "99032": {
            "hostid": "99032",
            "host": "MySQL server 01",
            "interfaces": [
                {
                    "port": "10050"
                }
            ]
        },
        "99061": {
            "hostid": "99061",
            "host": "Linux server 01",
            "interfaces": [
                {
                    "port": "10050"
                }
            ]
        }
    },
    "id": 1
}
```