# FUDO PAM 3.10 – API documentation

*Release 1.0*

Fudo Security

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# Contents

## About documentation

**Conventions and symbols**

This section covers conventions used throughout this documentation.

*italic*

Uster interface elements.

`example`

Example value of a parameter, API method name or code example.

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**Note:**  Note. Additional information closely reletad with described topic, e.g. suggestion concerning given procedure step; additional conditions which have to be met.

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> **Warning:**  Warning. Essential information concerning system's operation. Not adhering to this information may have irreversible consequences.
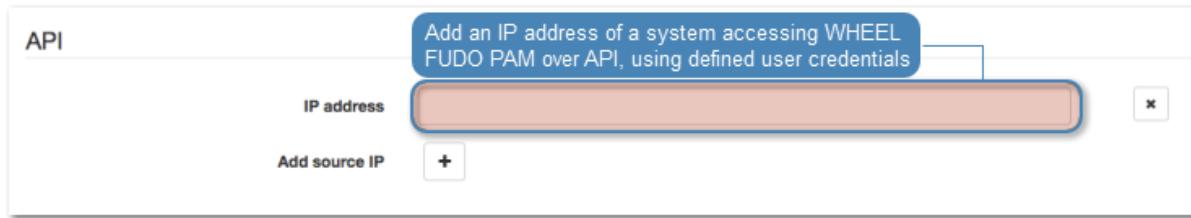
CHAPTER 2

Authentication

Accessing WHEEL FUDO PAM data structures over API interface requires a *user* object defined in the local database. The same access rights restrictions apply to the API interface as in case of administration panel access.

| Role | Access rights |
| --- | --- |
| user | <ul><li>Connecting to servers through assigned safes.</li><li>Loggin to the User Portal (requires adding the user to the `portal` safe)</li><li>Fetching servers' passwords (requires additional access right).</li></ul> |
| service | Accessing SNMP information. |
| operator | <ul><li>Logging in to the administration panel.</li><li>Browsing objects: servers, users, safes, accounts, to which the user has been assigned sufficient access permisions.</li><li>Blocking/unblocking objects: servers, users, safes, listeners, accounts, to which the user has been assigned sufficient access permisions.</li><li>Generating reports on demand and subscribing to periodic reports.</li><li>Activating/deactivating email notifications.</li><li>Viewing live and archived sessions involving objects (user, safe, account, server), to which the user has been assigned sufficient access permissions.</li><li>Converting sessions and downloading converted content involving objects (user, safe, account, server), to which the user has been assigned sufficient access permissions.</li></ul> |
| admin | <ul><li>Logging in to the administration panel.</li><li>Managing objects: servers, users, safes, listeners, accounts, to which the user has been assigned sufficient access permissions.</li><li>Blocking/unblocking objects: servers, users, safes, listeners, accounts, to which the user has been assigned sufficient access permisions.</li><li>Generating reports on demand and subscribing to periodic reports.</li><li>Activating/deactivating email notifications.</li><li>Viewing live and archived sessions involving objects (user, safe, account, server), to which the user has been assigned management privileges.</li><li>Converting sessions and downloading converted content involving objects (user, safe, account, server), to which the user has been assigned sufficient access permissions.</li><li>Managing policies.</li></ul> |
| superadmin | <ul><li>Full access rights to objects management.</li><li>Full access rights to system configuration options.</li></ul> |

**Note:** For API access purposes, the user must have an IP address defined in the API section of the user properties form.

API

Add an IP address of a system accessing WHEEL
FUDO PAM over API, using defined user credentials

IP address

Add source IP    +

## Request

| Method | |
|---|---|
| | POST |

| Path | |
|---|---|
| | /api/system/login |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ``` { username: username, password: password } ``` |

## Response

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ``` { sessionid: ygmd2env50zgr2nblypmrfcvarggn0uf } ``` |

## Response

| Status | |
|---|---|
| | 401 UNAUTHORIZED |

Accounts

Account defines the privileged account existing on the monitored server. It specifies the actual login credentials, user authentication mode: anonymous (without user authentication), regular (with login credentials substitution) or forward (with login and password forwarding); password changing policy as well as the password changer itself.

## 3.1 Data structures

Table 1: `AccountModel`

| Parameter | Type | Description |
|---|---|---|
| changer | PasswordChangerAttributes | |
| credentials | AccountCredentialsAttributes | required if `type == regular` |
| ocr_enabled | bool | |
| ocr_lang | string | |
| retention | int | |
| server_id | int | |
| type | string{anonymous, forward, regular} | required |

Table 2: `AccountCredentialsAttributes`

| Parameter | Type | Description |
|---|---|---|
| domain | string | |
| login | string | |
| method | string{password, ssh-key} | required |
| secret | string | <ul><li>write only</li><li>required if `method == password`</li></ul> |
| password_change_policy | int | write only |
| private_key | string | <ul><li>write only</li><li>required if `method == ssh-key`</li></ul> |
| public_key | string | read only |

Table 3: `PasswordChangerAttributes`

| Parameter | Type | Description |
|---|---|---|
| changer_id | int | required |
| privileged_mode_password | string | required if `changer_id in (5, 6, 7, 8)` (`PC_TELNET_CISCO`, `PC_TELNET_CISCO_ENABLE`, `PC_SSH_CISCO`, `PC_SSH_CISCO_ENABLE`) |
| privileged_username | string | |
| privileged_password | string | |
| ssh_username | string | required if `changer_id == 4` (`PC_SSH_UNIX_MYSQL`) |
| ssh_password | string | required if `changer_id == 4` (`PC_SSH_UNIX_MYSQL`) |
| ssh_host | string | required if `changer_id == 4` (`PC_SSH_UNIX_MYSQL`) |
| ssh_port | string | required if `changer_id == 4` (`PC_SSH_UNIX_MYSQL`) |

Table 4: `AccountSafeListenerAssignment`

| Parameter | Type | Description |
|---|---|---|
| account_id | int | <ul><li>write only</li><li>required</li></ul> |
| account | Read only | |
| id | int | |
| name | string | |
| listener_id | int | <ul><li>write only</li><li>reqiured</li></ul> |
| listener | Read only | |
| id | int | |
| name | string | |

## 3.2 Creating an account

**Request**

| Method | |
|---|---|
| | `POST` |

| Path | |
|---|---|
| | `/api/system/accounts` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | `AccountModel` |

**Response**

| Status | |
|---|---|
| | `201 CREATED` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | `AccountModel` |

| Description | |
|---|---|
| | `Object successfully created. Resultant object's attributes`<br>`are included in response body.` |

**Response**

---

Status

> `400 BAD REQUEST`

---

Headers

> `Content-Type: Application/JSON`

---

Body

> `ValidationErrors`

---

Description

> `Validation didn't pass.`

---

## 3.3 Retrieving accounts list

**Request**

---

Method

> `GET`

---

Path

> `/api/system/accounts`

---

**Note:** Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

> `/api/system/objects?page=3&page_size=10`

Table 5: Pagination parameters

| | |
|---|---|
| page | int |
| page_size | int |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ```
[
AccountModel,
...
]
``` |

## 3.4  Retrieving an account

**Request**

| Method | |
|---|---|
| | GET |

| Path | |
|---|---|
| | /api/system/accounts/:account_id |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | AccountModel |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | No account with given id. |
|---|---|

## 3.5  Modifying accounts

**Request**

| Method | |
|---|---|
| | PUT, PATCH |

| Path | |
|---|---|
| | /api/system/accounts/:account_id |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | AccountModel |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | AccountModel |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | No account with given id. |
|---|---|

# 3.6 Deleting an account

**Request**

| Method | |
|---|---|
| | DELETE |

| Path | |
|---|---|
| | /api/system/accounts/:account_id |

**Response**

| Status | |
|---|---|
| | 204 NO CONTENT |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | Object with specified identifier was not found. |
|---|---|

## 3.7 Retrieving users allowed to manage accounts

**Request**

| Method | |
|---|---|
| | GET |

| Path | |
|---|---|
| | /api/system/accounts/:account_id/granted_users |

**Note:** Results pagination

Every GET request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

    /api/system/objects?page=3&page_size=10

Table 6: Pagination parameters

| page | int |
|---|---|
| page_size | int |

**Response**

| Status | |
|---|---|
| | 200 OK |
| Headers | |
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | ```
[
    {
        'name': 'username'
        'id': 'id'
    }, ...
]
``` |

## 3.8 Granting management privileges

**Request**

| Method | |
|---|---|
| | `POST` |

| Path | |
|---|---|
| | `/api/system/accounts/:account_id/granted_users` |

| Body | |
|---|---|
| | ```
{
user_id: user_id
}
``` |

**Response**

| Status | |
|---|---|
| | `201 CREATED` |

## 3.9 Revoking management privileges

**Request**

| Method | |
|---|---|
| | `DELETE` |

| Path | |
|---|---|
| | `/api/system/accounts/:account_id/granted_users/:user_id` |

**Response**

| Status | |
|---|---|
| | 204 NO CONTENT |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

## 3.10 Retrieving account-safe assignments list

**Request**

| Method | |
|---|---|
| | GET |

| Path | |
|---|---|
| | /api/system/accountss |

**Note:** Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

    /api/system/objects?page=3&page_size=10

Table 7: Pagination parameters

| page | int |
|---|---|
| page_size | int |

**Response**

| Status | |
|---|---|
| | <span style="color:green">200</span> OK |

| Headers | |
|---|---|
| | Content-<span style="color:blue">Type</span>: Application/JSON |

| Body | |
|---|---|
| | ```<br>[<br>    AccountSafeAssignmentModel,<br>    ...<br>]<br>``` |

## 3.11 Creating an account-safe assignments

**Request**

| Method | |
|---|---|
| | POST |

| Path | |
|---|---|
| | /api/system/safes/:safe_id/accountss |

| Body | |
|---|---|
| | AccountSafeAssignmentModel |

**Response**

| Status | |
|---|---|
| | <span style="color:green">201</span> CREATED |

| Headers | |
|---|---|
| | Content-<span style="color:blue">Type</span>: Application/JSON |

| Body | |
|---|---|
| | AccountSafeAssignmentModel |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ValidationErrors |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

## 3.12 Deleting an account-safe assignment

**Request**

| Method | |
|---|---|
| | DELETE |

| Path | |
|---|---|
| | /api/system/safes/:safe_id/accounts/:account_id |

**Response**

| Status | |
|---|---|
| | 204 NO CONTENT |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

# Users

User defines a subject entitled to connect to servers within monitored IT infrastructure. Detailed object definition (i.e. unique login and domain combination, full name, email address etc.) enables precise accountability of user actions when login and password are substituted with a shared account login credentials.

## 4.1 Data structures

Table 1: `UserModel`

| Parameter | Type | Description |
|---|---|---|
| ad_domain | string | |
| blocked | bool | required |
| email | EMail | |
| external_sync | bool | |
| full_name | string | |
| language | string{en, pl, ru} | required |
| ldap_base | string | |
| name | string | required |
| phone | string | |
| reason | string | |
| role | string{superadmin, admin, operator, user} | required |
| valid_since | string | |
| valid_to | DateTime | |

Table 2: `UserSafeAssignment`

| Parameter | Type | Description |
|---|---|---|
| password_visible | bool | |
| position | int | |
| safe_id | int | <ul><li>write only</li><li>required</li></ul> |
| safe | | Read only |
| id | int | |
| name | string | |
| use_time_policy | bool | |

## 4.2 Creating a user

**Request**

| | |
|---|---|
| Method | POST |
| Path | /api/system/users |
| Headers | Content-Type: Application/JSON |
| Body | UserModel |

**Response**

| | |
|---|---|
| Status | 201 CREATED |
| Headers | Content-Type: Application/JSON |
| Body | UserModel |
| Description | Object successfully created. Resultant object's attributes are included in response body. |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ValidationErrors |

| Description | Validation didn't pass. |
|---|---|

## 4.3 Retrieving users list

**Request**

| Method | |
|---|---|
| | GET |

| Path | |
|---|---|
| | /api/system/users |

**Note:** Results pagination

Every GET request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

    /api/system/objects?page=3&page_size=10

Table 3: Pagination parameters

| page | int |
|---|---|
| page_size | int |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | `[`<br>`    UserModel,`<br>`    ...`<br>`]` |

## 4.4 Retrieving a user

**Request**

| Method | |
|---|---|
| | GET |

| Path | |
|---|---|
| | /api/system/users/:user_id |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | UserModel |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | No user with given id. |
|---|---|

## 4.5 Modifying a user

**Request**

| Method | |
|---|---|
| | PUT, PATCH |

| Path | |
|---|---|
| | /api/system/users/:user_id |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | UserModel |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | UserModel |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | No user with given id. |
|---|---|

## 4.6 Deleting a user

**Request**

| Method | |
|---|---|
| | DELETE |

| Path | |
|---|---|
| | /api/system/users/:user_id |

**Response**

| Status | |
|---|---|
| | 204 NO CONTENT |

**Response**

| Status | |
|---|---|
| | <span style="color:green">404</span> `NOT FOUND` |
| Description | Object with specified identifier was not found. |

## 4.7 Retrieving users allowed to manage users

**Request**

| Method | |
|---|---|
| | `GET` |
| Path | |
| | `/api/system/users/:user_id/granted_users` |

**Note:** Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

`/api/system/objects?page=3&page_size=10`

Table 4: Pagination parameters

| page | int |
|---|---|
| page_size | int |

**Response**

| Status | |
|---|---|
| | <span style="color:green">200</span> `OK` |
| Headers | |
| | `Content-`<span style="color:blue">`Type`</span>`: Application/JSON` |
| Body | |

```
[
    {
        'name': 'username',
        'id': :id
    }, ...
]
```

## 4.8 Granting management privileges

**Request**

| | |
|---|---|
| Method | |
| | POST |

| | |
|---|---|
| Path | |
| | /api/system/users/:user_id/granted_users |

| | |
|---|---|
| Body | |
| | ``` { ''user_id'': :user_id } ``` |

**Response**

| | |
|---|---|
| Status | |
| | 201 CREATED |

## 4.9 Revoking management privileges

**Request**

| | |
|---|---|
| Method | |
| | DELETE |

| | |
|---|---|
| Path | |
| | /api/system/users/:user_id/granted_users/:user_id |

**Response**

| | |
|---|---|
| Status | |
| | 204 NO CONTENT |

**Response**

| | |
|---|---|
| Status | |
| | 404 NOT FOUND |

## 4.10 Retrieving user-safe assignments list

**Request**

| Method | |
|---|---|
| | `GET` |

| Path | |
|---|---|
| | `/api/system/users/:user_id/safes` |

**Note:** Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

`/api/system/objects?page=3&page_size=10`

Table 5: Pagination parameters

| page | int |
|---|---|
| page_size | int |

**Response**

| Status | |
|---|---|
| | `200 OK` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | `[` |
| | `        UserSafeAssignment,` |
| | `        ...` |
| | `]` |

## 4.11 Creating a user-safe assignment

**Request**

| Method | |
|---|---|
| | `POST` |

| Path | |
|---|---|
| | `/api/system/users/:user_id/safes` |

| Body | |
|---|---|
| | `UserSafeAssignment` |

**Response**

| Status | |
|---|---|
| | `201 CREATED` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | `UserSafeAssignment` |

**Response**

| Status | |
|---|---|
| | `400 BAD REQUEST` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | `ValidationErrors` |

**Response**

| Status | |
|---|---|
| | `404 NOT FOUND` |

## 4.12 Deleting a user-safe assignment

**Request**

Method

DELETE

Path

`/api/system/users/:user_id/safes/:safe_id`

## Response

Status

`204` `NO CONTENT`

## Response

Status

`404` `NOT FOUND`

Servers

Server is a definition of the IT infrastructure resource, which can be accessed over one of the specified protocols.

## 5.1 Data structures

Table 1: `ServerModel`

| Parameter | Type | Description |
|-----------|------|-------------|
| address | IPv4/string | write only, required if subnetmask is empty (static server) |
| addresses | string | read only, a list of IP addresses |
| bind_ip | IPv4 | required |
| blocked | bool | |
| description | string | object description |
| http | HTTPServerAttributes | |
| id | bigserial | object identifier |
| name | string | required |
| port | int | required |
| protocol | string{http, modbus, mysql, oracle, rdp, ssh, telnet, tn3270, vnc} | required |
| rdp | RDPServerAttributes | required if protocol == `rdp` |
| reason | string | reason for blocking object |
| subnet | SubnetModel | required if not address |
| tls | TLSServerAttributes | |

Table 2: `HTTPServerAttributes`

| Parameter | Type | Description |
|---|---|---|
| timeout | int | Default 900 |

Table 3: `RDPServerAttributes`

| Parameter | Type | Description |
|---|---|---|
| security | string{std, tls, nla} | required |
| ca_certificate | PEM | |

Table 4: `TLSServerAttributes`

| Parameter | Type | Description |
|---|---|---|
| sslv2 | boolean | |
| sslv3 | boolean | |
| ca_certificate | PEM | required if `use_tls` |
| use_tls | boolean | |

Table 5: `HTTPServerAttributes`

| Parameter | Type | Description |
|---|---|---|
| timeout | int | =900 |

Table 6: `RDPServerAttributes`

| Parameter | Type | Description |
|---|---|---|
| security | string{std,tls,nla} | required |
| ca_certificate | PEM | |

Table 7: `TLSServerAttributes`

| Parameter | Type | Description |
|---|---|---|
| sslv2 | boolean | |
| sslv3 | boolean | |
| ca_certificate | PEM | required if use_tls |
| use_tls | boolean | |

Table 8: `ServerAddressModel`

| Parameter | Type | Description |
|---|---|---|
| host | IPv4 | required |
| http | HTTPServerAddressAttributes | |
| rdp | RDPServerAddressAttributes | |
| tls | TLSServerAddressAttributes | |
| ssh | SSHServerAddressAttributes | |

Table 9: `HTTPServerAddressAttributes`

| Parameter | Type | Description |
|---|---|---|
| host | string | |

**5.1. Data structures**

Table 10: `RDPServerAddressAttributes`

| Parameter | Type | Description |
|---|---|---|
| tls_certificate | PEM | |
| public_key | PEM | |

Table 11: `SSHServerAddressAttributes`

| Parameter | Type | Description |
|---|---|---|
| public_key | PEM | |

Table 12: `TLSServerAddressAttributes`

| Parameter | Type | Description |
|---|---|---|
| tls_certificate | PEM | |

## 5.2 Creating a server

**Request**

| Method | |
|---|---|
| | POST |

| Path | |
|---|---|
| | /api/system/servers |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ServerModel |

**Response**

| Status | |
|---|---|
| | 201 CREATED |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ServerModel |

| Description | Object successfully created. Resultant object's attributes are included in response body. |
|---|---|

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ValidationErrors |

| Description | Validation didn't pass. |
|---|---|

## 5.3 Retrieving servers list

**Request**

| Method | |
|---|---|
| | GET |

| Path | |
|---|---|
| | /api/system/servers |

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | `[`<br>`        ServerModel,`<br>`        ...`<br>`]` |

## 5.4 Retrieving a server

**Request**

| Method | |
|---|---|
| | GET |

| Path | |
|---|---|
| | /api/system/servers/:server_id |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ServerModel |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | No server with given id. |
|---|---|

## 5.5  Modifying a server

**Request**

| Method | |
|---|---|
| | PUT, PATCH |

| Path | |
|---|---|
| | /api/system/servers/:server_id |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ServerModel |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ServerModel |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | No server with given id. |
|---|---|

## 5.6 Deleting a server

**Request**

| Method | |
|---|---|
| | DELETE |

| Path | |
|---|---|
| | /api/system/servers/:server_id |

**Response**

| Status | |
|---|---|
| | 204 NO CONTENT |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | Object with specified identifier was not found. |
|---|---|

## 5.7 Retrieving users allowed to manage given server

**Request**

| Method | |
|---|---|
| | `GET` |

| Path | |
|---|---|
| | `/api/system/servers/:server_id/granted_users` |

**Note:** Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

`/api/system/objects?page=3&page_size=10`

Table 13: Pagination parameters

| page | int |
|---|---|
| page_size | int |

**Response**

| Status | |
|---|---|
| | `200 OK` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | ```
[
        {
        'name': 'username',
        'id': :id
        }, ...
]
``` |

## 5.8 Granting management privileges

**Request**

Method

```
POST
```

Path

```
/api/system/servers/:server_id/granted_users
```

Body

```
{
        ''user_id'': :user_id
}
```

**Response**

Status

```
201 CREATED
```

## 5.9 Revoking management privileges

**Request**

Method

```
DELETE
```

Path

```
/api/system/servers/:server_id/granted_users/:user_id
```

**Response**

Status

```
204 NO CONTENT
```

**Response**

Status

```
404 NOT FOUND
```

## 5.10 Listing server addresses

**Request**

| Method | |
|---|---|
| | `GET` |

| Path | |
|---|---|
| | `/api/system/servers/:server_id/addresses` |

**Note:** Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

`/api/system/objects?page=3&page_size=10`

Table 14: Pagination parameters

| page | int |
|---|---|
| page_size | int |

### Response

| Status | |
|---|---|
| | `204 NO CONTENT` |

### Response

| Status | |
|---|---|
| | `200 OK` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | ```
[
        ServerAddressModel
        ...
]
``` |

### Response

| Status | |
|---|---|
| | `404 NOT FOUND` |

## 5.11 Creating a server address

**Request**

| Method | |
|---|---|
| | POST |

| Path | |
|---|---|
| | /api/system/servers/:server_id/addresses |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ServerAddressModel |

**Response**

| Status | |
|---|---|
| | 201 CREATED |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ServerAddressModel |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ValidationErrors |

**Response**

| Status | |
|---|---|
| | `404 NOT FOUND` |

| Description | |
|---|---|
| | `No server with given :server_id.` |

## 5.12 Updating a server address

**Request**

| Method | |
|---|---|
| | `PATCH, PUT` |

| Path | |
|---|---|
| | `/api/system/servers/:server_id/addresses/:address_id` |

| Body | |
|---|---|
| | `ServerAddressModel` |

**Response**

| Status | |
|---|---|
| | `200 OK` |

| Headers | |
|---|---|
| | Content-`Type`: Application/JSON |

| Body | |
|---|---|
| | `ServerAddressModel` |

**Response**

| Status | |
|---|---|
| | `400 BAD REQUEST` |

| Headers | |
|---|---|
| | Content-`Type`: Application/JSON |

| Body | |
|---|---|
| | `ValidationErrors` |

**Response**

---

Status

404 NOT FOUND

---

Description

No server with given :server_id.

---

---

Description

No server address with given :address_id

---

## 5.13 Deleting a server address

**Request**

---

Method

DELETE

---

Path

/api/system/servers/:server_id/addresses/:address_id

---

**Response**

---

Status

204 NO CONTENT

---

**Response**

---

Status

404 NOT FOUND

---

Description

No server with given :server_id.

---

---

Description

No server address with given :address_id

---

Safes

Safe directly regulates user access to monitored servers. It specifies available protocols' features, policies and other details concerning users and servers relations.

## 6.1 Data structures

Table 1: `SafeModel`

| Parameter | Type | Description |
|---|---|---|
| blocked | bool | |
| login_reason | bool | |
| name | string | required |
| rdp | SafeRDPAttributes | |
| reason | string | |
| ssh | SafeSSHAttributes | |
| vnc | SafeVNCAttributes | |

Table 2: `SafeRDPAttributes`

| Parameter | Type | Description |
|---|---|---|
| audio | bool | Default `true` |
| clipboard | bool | Default `true` |
| depth | int{8,1,24,32} | Default '' |
| device | bool | Default `true` |
| driver_dvc | bool | Default `false` |
| multimedia | bool | Default `true` |
| resolution | Resolution | Default '' |
| sound | bool | Default `true` |

Table 3: `SafeSSHAttributes`

| Parameter | Type | Description |
|---|---|---|
| public_key | PEM | |

Table 4: `SafeVNCAttributes`

| Parameter | Type | Description |
|---|---|---|
| client_clip | bool | Default `true` |
| server_clip | bool | Default `true` |

Table 5: `UserSafeAssignment`

| Parameter | Type | Description |
|---|---|---|
| password_visible | bool | |
| position | int | |
| safe_id | int | <ul><li>write only</li><li>required</li></ul> |
| safe | | Read only |
|     id | int | |
|     name | string | |
| use_time_policy | bool | |

Table 6: `AccountSafeListenerAssignment`

| Parameter | Type | Description |
|---|---|---|
| account_id | int | <ul><li>write only</li><li>required</li></ul> |
| account | Read only | |
|     id | int | |
|     name | string | |
| listener_id | int | <ul><li>write only</li><li>reqired</li></ul> |
| listener | Read only | |
|     id | int | |
|     name | string | |

## 6.2 Creating a safe

**Request**

| Method | |
|---|---|
| | `POST` |

| Path | |
|---|---|
| | `/api/system/safes` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | `SafeModel` |

**Response**

| Status | |
|---|---|
| | `201 CREATED` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | `SafeModel` |

**Response**

| Status | |
|---|---|
| | `400 BAD REQUEST` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | `ValidationErrors` |

| Description | Validation didn't pass. |
|---|---|

# 6.3 Retrieving safes list

**Request**

| Method | |
|---|---|
| | `GET` |

| Path | |
|---|---|
| | `/api/system/safes` |

**Note:** Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

> `/api/system/objects?page=3&page_size=10`

Table 7: Pagination parameters

| page | int |
|---|---|
| page_size | int |

**Response**

| Status | |
|---|---|
| | `200 OK` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | `[` |
| | `        SafeModel,` |
| | `        ...` |
| | `]` |

## 6.4 Retrieving a safe

**Request**

| Method | |
|---|---|
| | `GET` |

| Path | |
|---|---|
| | `/api/system/safes/:safe_id` |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | SafeModel |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | No safe with given id. |
|---|---|

## 6.5 Modifying a safe

**Request**

| Method | |
|---|---|
| | PUT, PATCH |

| Path | |
|---|---|
| | /api/system/safes/:safe_id |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | SafeModel |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | SafeModel |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | No safe with given id. |
|---|---|

## 6.6 Deleting a safe

**Request**

| Method | |
|---|---|
| | DELETE |

| Path | |
|---|---|
| | /api/system/safes/:safe_id |

**Response**

| Status | |
|---|---|
| | 204 NO CONTENT |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | Object with specified identifier was not found. |
|---|---|

## 6.7 Retrieving users allowed to manage selected safe

**Request**

| Method | |
|---|---|
| | `GET` |

| Path | |
|---|---|
| | `/api/system/safes/:safe_id/granted_users` |

**Note:** Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

> `/api/system/objects?page=3&page_size=10`

Table 8: Pagination parameters

| page | int |
|---|---|
| page_size | int |

**Response**

| Status | |
|---|---|
| | `200` `OK` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | ```
[
    {
        'name': 'safename',
        'id': :id
    } , ...
]
``` |

## 6.8 Granting management privileges

**Request**

| Method | |
|---|---|
| | POST |

| Path | |
|---|---|
| | /api/system/safes/:safe_id/granted_users |

| Body | |
|---|---|
| | ``` { ''user_id'': :user_id } ``` |

**Response**

| Status | |
|---|---|
| | 201 CREATED |

## 6.9 Revoking management privileges

**Request**

| Method | |
|---|---|
| | DELETE |

| Path | |
|---|---|
| | /api/system/safes/:safe_id/granted_users/:safe_id |

**Response**

| Status | |
|---|---|
| | 204 NO CONTENT |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

# Safe members (account-safe-listener) management

## 7.1 Retrieving account-safe-listener assignments list

**Request**

| Method | |
|---|---|
| | `GET` |

| Path | |
|---|---|
| | `/api/system/safes/:safe_id/account_listeners` |

**Note:** Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

`/api/system/objects?page=3&page_size=10`

Table 1: Pagination parameters

| page | int |
|---|---|
| page_size | int |

**Response**

| Status | |
|--------|--|
| | 200 OK |

| Headers | |
|---------|--|
| | Content-Type: Application/JSON |

| Body | |
|------|--|
| | ```
[
        AccountSafeListenerAssignment,
        ...
]
``` |

## 7.2 Creating account-safe-listener assignment

**Request**

| Method | |
|--------|--|
| | POST |

| Path | |
|------|--|
| | /api/system/safes/:safe_id/account_listeners |

| Body | |
|------|--|
| | AccountSafeListenerAssignment |

**Response**

| Status | |
|--------|--|
| | 201 CREATED |

| Headers | |
|---------|--|
| | Content-Type: Application/JSON |

| Body | |
|------|--|
| | AccountSafeListenerAssignment |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ValidationErrors |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

## 7.3 Deleting account-safe-listener assignment

**Request**

| Method | |
|---|---|
| | DELETE |

| Path | |
|---|---|
| | /api/system/safes/:safe_id/account_listeners/:assoc_id |

**Response**

| Status | |
|---|---|
| | 204 NO CONTENT |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

## 7.4 Updating account-safe-listener assignment

**Request**

Method

PATCH, PUT

Path

/api/system/safes/:safe_id/account_listeners/:assoc_id

Body

AccountSafeListenerAssignment

## Response

Status

200 OK

Headers

Content-Type: Application/JSON

Body

AccountSafeListenerAssignment

## Response

Status

400 BAD REQUEST

Headers

Content-Type: Application/JSON

Body

ValidationErrors

## Response

Status

404 NOT FOUND

Sessions management

## 8.1 Data structures

Table 1: `SessionCommandModel`

| Parameter | Type | Description |
|-----------|------|-------------|
| command | string{kill, suspend, resume} | required |

Table 2: `SessionModel`

| Parameter | Type | Description |
|---|---|---|
| account | | required |
| safe | | Read only |
|     id | int | |
|     name | string | |
| destination_ip | IPv4 | |
| description_port | int | |
| dump_mode | string{all,none,raw} | |
| finished_at | DateTime | |
| listener | | |
|     id | int | |
|     name | string | |
| paused | bool | |
| protocol | string{http,modbus,mysql,oracle,rdp,ssh,telnet,tn3270,vnc} | |
| safe | | |
|     id | int | |
|     name | string | |
| source_ip | IPv4 | |
| source_port | int | |
| started_at | DateTime | |
| user | | |
|     id | int | |
|     name | string | |

## 8.2 Retrieving sessions list

**Request**

| | |
|---|---|
| Method | |
| | `GET` |
| Path | |
| | `/api/system/sessions` |

**Note:** Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

```
/api/system/objects?page=3&page_size=10
```

Table 3: Pagination parameters

| | |
|---|---|
| page | int |
| page_size | int |

**Response**

Status

200 OK

Headers

Content-Type: Application/JSON

Body

```
[
        SessionModel,
        ...
]
```

## 8.3 Retrieving session

**Request**

Method

GET

Path

/api/system/session/:session_id

**Response**

Status

200 OK

Headers

Content-Type: Application/JSON

Body

SessionModel

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

## 8.4 Sending commands to session

**Request**

| Method | |
|---|---|
| | GET |

| Path | |
|---|---|
| | /api/system/users/:session_id/command |

| Body | SessionCommandModel |
|---|---|

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | SessionCommandModel |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | ValidationErrors |
|---|---|

**Response**

Status

   404 NOT FOUND

## Listeners

Listener determines server connection mode (proxy, gateway, transparent, bastion) as well as its specifics.

## 9.1 Data structures

Table 1: `ListenerModel`

| Parameter | Type | Description |
|-----------|------|-------------|
| blocked | bool | |
| name | string | required |
| listen_interface | string | required if mode in (`gateway`, `transparent`) |
| listen_ip | IPv4 | required if mode in (`proxy`, `bastion`) |
| listen_port | int | required if mode in (`proxy`, `bastion`) |
| prompt | string | |
| protocol | string{http, modbus, mysql, oracle, rdp, ssh, telnet, tn3270, vnc} | required |
| rdp | ListenerRDPAttributes | required if protocol == `rdp` |
| reason | | |
| ssh | ListenerSSHAttributes | required if protocol == `ssh` |
| tls | ListenerTLSAttributes | |

Table 2: `ListenerRDPAttributes`

| Parameter | Type | Description |
|---|---|---|
| common_name | string | required if `secproto` in (`tls`, `nla`) and `tls_private_key == null` |
| security | string{std, tls, nla} | required |
| std_private_key | PEM | <ul><li>write only</li><li>required if secproto == `std`</li><li>pass `null` to generate</li></ul> |
| std_public_key | PEM | Read only |
| tls_private_key | PEM | <ul><li>write only</li><li>required if secproto in (`tls`, `nla`)</li><li>pass `null` to generate</li></ul> |
| tls_certificate | PEM | Read only |

Table 3: `ListenerSSHAttributes`

| Parameter | Type | Description |
|---|---|---|
| private_key | PEM | <ul><li>write only</li><li>required</li></ul> |
| public_key | PEM | Read only |

Table 4: `ListenerTLSAttributes`

| Parameter | Type | Description |
|---|---|---|
| common_name | string | required if `use_tls` and `tls_private_key == null` |
| use_tls | bool | |
| tls_private_key | PEM | <ul><li>write only</li><li>required if `use_tls`</li><li>pass `null` to generate</li></ul> |
| tls_certificate | PEM | Read only |

Table 5: `ListenerSafeAssignment`

| Parameter | Type | Description |
|---|---|---|
| listener_id | int | <ul><li>write only</li><li>required</li></ul> |
| listener | | Read only |
|     id | int | |
|     name | string | |

**9.1. Data structures**

## 9.2 Creating a listener

**Request**

| | |
|---|---|
| Method | |
| | POST |
| Path | |
| | /api/system/listeners |
| Headers | |
| | Content-Type: Application/JSON |
| Body | |
| | ListenerModel |

**Response**

| | |
|---|---|
| Status | |
| | 201 CREATED |
| Headers | |
| | Content-Type: Application/JSON |
| Body | |
| | ListenerModel |
| Description | Object successfully created. Resultant object's attributes are included in response body. |

**Response**

| | |
|---|---|
| Status | |
| | 400 BAD REQUEST |
| Headers | |
| | Content-Type: Application/JSON |
| Body | |
| | ValidationErrors |
| Description | Validation didn't pass. |

## 9.3 Retrieving listeners list

**Request**

| Method | |
|---|---|
| | `GET` |

| Path | |
|---|---|
| | `/api/system/listeners` |

**Note:**   Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

> `/api/system/objects?page=3&page_size=10`

Table 6: Pagination parameters

| | |
|---|---|
| page | int |
| page_size | int |

**Response**

| Status | |
|---|---|
| | `200` `OK` |

| Headers | |
|---|---|
| | `Content-`Type`: Application/JSON` |

| Body | |
|---|---|
| | `[` |
| | `        ListenerModel,` |
| | `        ...` |
| | `]` |

## 9.4  Retrieving a listener

**Request**

| Method | |
|---|---|
| | `GET` |

| Path | |
|---|---|
| | `/api/system/listeners/:listener_id` |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ListenerModel |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | No listener with given id. |
|---|---|

## 9.5 Modifying a listener

**Request**

| Method | |
|---|---|
| | PUT, PATCH |

| Path | |
|---|---|
| | /api/system/listeners/:listener_id |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ListenerModel |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ListenerModel |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | No listener with given id. |
|---|---|

## 9.6 Deleting a listener

**Request**

| Method | |
|---|---|
| | DELETE |

| Path | |
|---|---|
| | /api/system/listeners/:listener_id |

**Response**

| Status | |
|---|---|
| | 204 NO CONTENT |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | Object with specified identifier was not found. |
|---|---|

## 9.7 Retrieving users allowed to manage given listener

**Request**

| Method | |
|---|---|
| | `GET` |

| Path | |
|---|---|
| | `/api/system/listeners/:listener_id/granted_users` |

**Note:** Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

`/api/system/objects?page=3&page_size=10`

Table 7: Pagination parameters

| page | int |
|---|---|
| page_size | int |

**Response**

| Status | |
|---|---|
| | `200` `OK` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | ```
[
    {
        'name': 'username',
        'id': :id
    } , ...
]
``` |

## 9.8 Granting management privileges

**Request**

| Method | |
|---|---|
| | POST |

| Path | |
|---|---|
| | /api/system/listeners/:listener_id/granted_users |

| Body | |
|---|---|
| | ```<br>{<br>        ''user_id'': :user_id<br>}<br>``` |

**Response**

| Status | |
|---|---|
| | 201 CREATED |

## 9.9 Revoking management privileges

**Request**

| Method | |
|---|---|
| | DELETE |

| Path | |
|---|---|
| | /api/system/listeners/:listener_id/granted_users/:user_id |

**Response**

| Status | |
|---|---|
| | 204 NO CONTENT |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

## 9.10 Retrieving listener-safe assignments list

**Request**

| Method | |
|---|---|
| | `GET` |

| Path | |
|---|---|
| | `/api/system/listeners` |

**Note:**   Results pagination

Every `GET` request, which returns a collection of objects can be optionally paginated. To achieve it add a pagination parameter to the request path:

> `/api/system/objects?page=3&page_size=10`

Table 8: Pagination parameters

| page | int |
|---|---|
| page_size | int |

**Response**

| Status | |
|---|---|
| | `200` `OK` |

| Headers | |
|---|---|
| | `Content-Type: Application/JSON` |

| Body | |
|---|---|
| | ```[<br>        ListenerSafeAssignmentModel,<br>        ...<br>]``` |

## 9.11 Creating a listener-safe assignment

**Request**

| Method | |
|---|---|
| | `POST` |

| Path | |
|---|---|
| | `/api/system/safes/:safe_id/listeners` |

| Body | |
|---|---|
| | `ListenerSafeAssignmentModel` |

**Response**

| Status | |
|---|---|
| | 201 CREATED |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ListenerSafeAssignmentModel |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | ValidationErrors |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

## 9.12 Deleting a listener-safe assignment

**Request**

| Method | |
|---|---|
| | DELETE |

| Path | |
|---|---|
| | /api/system/safes/:safe_id/listeners/:listener_id |

**Response**

| Status | |
|---|---|
| | 204 NO CONTENT |

**Response**

Status

```
404 NOT FOUND
```

User authentication methods management

Table 1: `UserAuthenticationMethodModel`

| Parameter | Type | Description |
| --- | --- | --- |
| position | int | required |
| secret | string | <ul><li>write only</li><li>required</li></ul> |
| type | string{password, sshkey} | required |

## 10.1 Listing user authentication methods

**Request**

Method

GET

Path

/api/system/users/:user_id/methods

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ```
[
        UserAuthenticationMethodModel,
        ...
]
``` |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

## 10.2 Creating user authentication method

**Request**

| Method | |
|---|---|
| | POST |

| Path | |
|---|---|
| | /api/system/users/:user_id/methods |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | UserAuthenticationMethodModel |

**Response**

| Status | |
|---|---|
| | 201 CREATED |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | UserAuthenticationMethodModel |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ValidationErrors |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

| Description | No user with given user_id. |
|---|---|

## 10.3 Retrieving user authentication method

**Request**

| Method | |
|---|---|
| | GET |

| Path | |
|---|---|
| | /api/system/users/:user_id/methods/:method_id |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | UserAuthenticationMethodModel |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

**Updating user authentication method**

**Request**

| Method | |
|---|---|
| | PATCH, PUT |

| Path | |
|---|---|
| | /api/system/users/:user_id/methods/:method_id |

| Body | |
|---|---|
| | UserAuthenticationMethodModel |

**Response**

| Status | |
|---|---|
| | 200 OK |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | UserAuthenticationMethodModel |

**Response**

| Status | |
|---|---|
| | 400 BAD REQUEST |

| Headers | |
|---|---|
| | Content-Type: Application/JSON |

| Body | |
|---|---|
| | ValidationErrors |

**Response**

| Status | |
|---|---|
| | 404 NOT FOUND |

## 10.4 Deleting user authentication method

**Request**

| Method | |
|---|---|
| | `DELETE` |

| Path | |
|---|---|
| | `/api/system/users/:user_id/methods/:method_id` |

## Response

| Status | |
|---|---|
| | 204 `NO CONTENT` |

## Response

| Status | |
|---|---|
| | 404 `NOT FOUND` |

CHAPTER 11

AAPM communication

Description pending.

API usage examples

## 12.1 Logging in and retrieving session key

```
curl -X POST -H "Accept:application/json" -H "Content-Type:application/json" https://
→fudo/api/system/login -d '{"username": "api_user", "password": "api_password"}'

{"sessionid":"oz2jfky042kz7d3zc2gos1ahxouxehk3"}
```

## 12.2 Fetching users list

```
curl -k -X GET -H "Accept:application/json" -H "Content-Type:application/json"
→"https://fudo.whl/api/system/users?sessionid=oz2jfky042kz7d3zc2gos1ahxouxehk3&page_
→size=2&page=1"

{

"count":110,"next":"https://fudo.whl/api/system/users?page=2&page_size=2&
→sessionid=oz2jfky042kz7d3zc2gos1ahxouxehk3","
previous":null,"results":

[{"id":688817234205737171,"email":"","language":"en","blocked":true,"reason":"","name
→":"Administrator","full_name":"","organization":null,"phone":"","ad_domain":"",
→"ldap_base":"","failures":0,"external_sync":false,"valid_since":"0001-01-01T00:00:00
→","valid_to":"9999-12-31T23:59:59.999999","role":"user"},

{"id":688817234205737275,"email":"","language":"en","blocked":false,"reason":"","name
→":"User20000","full_name":"test user","organization":"test organization","phone":"",
→"ad_domain":"test.ad","ldap_base":"","failures":0,"external_sync":false,"valid_since
→":"2017-05-19T09:23:14","valid_to":"2017-07-18T09:23:14","role":"user"}]

}
```

## 12.3 Adding a user

```
curl -X POST -H "Accept:application/json" -H "Content-Type:application/json" https://
→fudo/api/system/users?sessionid=oz2jfky042kz7d3zc2gos1ahxouxehk3 -d '{"role": "user
→",  "name": "test-user", "language":"en"}'

{"id":688817234205737277,"email":"","language":"en","blocked":false,"reason":"","name
→":"test-user-admin","full_name":"","organization":null,"phone":"","ad_domain":"",
→"ldap_base":"","failures":0,"external_sync":false,"valid_since":"0001-01-01T00:00:00
→","valid_to":"9999-12-31T23:59:59.999999","role":"user"}
```

## 12.4 Setting user authentication method - static password

```
curl -k -X POST -H "Accept:application/json" -H "Content-Type:application/json"␣
→https://fudo/api/system/users/688817234205737277/methods?
→sessionid=oz2jfky042kz7d3zc2gos1ahxouxehk3 -d '{"type": "password", "secret": "test-
→password", "position":0}'

{"id":688817234205751316,"needs_change":false,"position":0,"type":"password"}
```

## 12.5 Setting user authentication method - SSH key

```
curl -k -X POST -H "Accept:application/json" -H "Content-Type:application/json"␣
→https://fudo.whl/api/system/users/688817234205737277/methods?
→sessionid=lqt6wpz2z8zatcsh8fnigv4l1zxd6bx2 -d '{"type": "sshkey", "secret": "ssh-
→rsa␣
→AAAAB3NzaC1yc2EAAAADAQABAAABAQDS7xsCHfD+bnAoKytzwnxCmTfGEvUuAJTjYOWTZwgtodBCh1poTBYuQ8.
→..
...HpWyBUYVcN8Ob7Y5bTq8CZO+iPTFKBfzMILu3VDyBRvjuLhCgz5f1UPhbMWE2/
→WpRSFjk5wQ1PR33FMZWnSnxS0Q8qkJqIrF+9mkz2fu/
→oSQCOkz0IIqrPUYQoMlYKxGslrSyT+M7TenDxyDsJgBhsyjosLXjbIbwLI/HnPgL...
...TproWWh/wHS2faPHRH1DcSlep4SYfSWqNh59FYE+r12hzkpNwaE/
→gLEM9XLUyNImQ+bkJ5KO+2dyvu80avg89WD8V2KP7Qn59gcxJCnweQ+wXO+GpCsAL", "position":0}'

{"id":688817234205752136,"needs_change":false,"position":1,"type":"sshkey"}
```

## 12.6 Fetching user authentication methods list

```
curl -k -X GET -H "Accept:application/json" -H "Content-Type:application/json" https:/
→/fudo.whl/api/system/users/688817234205737277/methods?
→sessionid=lqt6wpz2z8zatcsh8fnigv4l1zxd6bx2

{"id":688817234205751316,"needs_change":false,"position":0,"type":"password"},{"id
→":688817234205752136,"needs_change":false,"position":1,"type":"sshkey"}]
```

## 12.7 Deleting user authentication method

```
curl -k -X DELETE -H "Accept:application/json" -H "Content-Type:application/json"␣
↪https://fudo.whl/api/system/users/688817234205737277/methods/688817234205751316?
↪sessionid=lqt6wpz2z8zatcsh8fnigv4l1zxd6bx2
```

## 12.8 Changing user login

```
curl -k -X PATCH -H "Accept:application/json" -H "Content-Type:application/json"␣
↪https://fudo.whl/api/system/users/688817234205737277?
↪sessionid=lqt6wpz2z8zatcsh8fnigv4l1zxd6bx2 -d '{"name": "new-user"}'

{"id":688817234205737277,"email":"","language":"en","blocked":false,"reason":"","name
↪":"new-user","full_name":"","organization":null,"phone":"","ad_domain":"","ldap_base
↪":"","failures":0,"external_sync":false,"valid_since":"0001-01-01T00:00:00","valid_
↪to":"9999-12-31T23:59:59.999999","role":"user"}
```

## 12.9 Blocking user

```
curl -k -X PATCH -H "Accept:application/json" -H "Content-Type:application/json"␣
↪https://fudo.whl/api/system/users/688817234205737277?
↪sessionid=lqt6wpz2z8zatcsh8fnigv4l1zxd6bx2 -d '{"blocked": "True"}'

{"id":688817234205737277,"email":"","language":"en","blocked":true,"reason":"","name":
↪"new-user","full_name":"","organization":null,"phone":"","ad_domain":"","ldap_base":
↪"","failures":0,"external_sync":false,"valid_since":"0001-01-01T00:00:00","valid_to
↪":"9999-12-31T23:59:59.999999","role":"user"}
```