Fudo PAM 4.2 - API documentation

Release is not supported

Fudo Security

07.09.2021

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.

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

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

CHAPTER 2

Authentication

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

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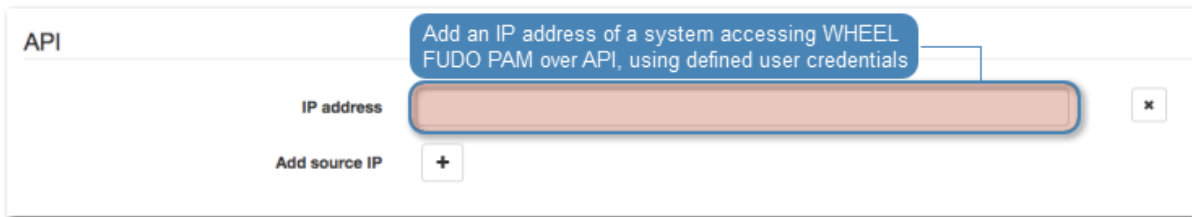
Request

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`
id	bigserial	object identifier
name	string	required
ocr_enabled	bool	
ocr_lang	string	
retention	int	
server_id	int	required
type	string{anonymous, forward, regular}	required

Table 2: `AccountCredentialsAttributes`

Parameter	Type	Description
domain	string	
login	string	
method	string{password, ssh-key, account}	required
secret	string	- write only - required if `method == password`
password_change_policy	int	write only
private_key	string	- write only - required if `method == ssh-key`
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	• write only • required
account	Read only	
id	int	
name	string	
listener_id	int	• write only • reqiured
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 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/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 7: Pagination parameters

page	int
page_size	int

Response

Status	
	200 OK

Headers	
	Content-Type: Application/JSON

Body	
| | ```
[
        AccountSafeAssignmentModel,
        ...
]
``` |

3.11 Creating an account-safe assignments

Request

Method	
	POST

Path	
	/api/system/safes/:safe_id/accounts

Body	
	AccountSafeAssignmentModel

Response

Status	
	201 CREATED

Headers	
	Content-Type: 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	
email	EMail	
external_sync	bool	
full_name	string	
language	string{en, pl, ru}	
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	- write only - required
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`
`pattern`	Optional parameter allowing for narrowing down the users list based on user login.

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	
| | ```
[
    UserModel,
    ...
]
``` |

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	
	`404` `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	
	`200 OK`

Headers	
	`Content-Type: 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; - default == `nla`
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: `ServerAddressModel`

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

Table 6: `SubnetModel`

Parameter	Type	Description
ip	IPv4/string	Subnetwork IP address, e.g. `10.0.255.255`.
mask	int	Subnet mask in CIDR notation.

Table 7: `HTTPServerAddressAttributes`

Parameter	Type	Description
host	string	
tls_certificate	string	

Table 8: `RDPServerAddressAttributes`

Parameter	Type	Description
tls_certificate	PEM	
public_key	PEM	

Table 9: `SSHServerAddressAttributes`

Parameter	Type	Description
public_key	PEM	

Table 10: `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`

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 11: Pagination parameters

page	int
page_size	int

Response

Status	
	`200 OK`

Headers	
	`Content-Type: Application/JSON`

Body	
| | ```
[
        ServerModel,
        ...
]
``` |

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 12: 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 13: 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	• write only • required
safe		Read only
id	int	
name	string	
use_time_policy	bool	

Table 6: `AccountSafeListenerAssignment`

Parameter	Type	Description
account_id	int	• write only • required
account	Read only	
id	int	
name	string	
listener_id	int	• write only • required
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`

<div align="center">Table 1: Pagination parameters</div>

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

CHAPTER 8

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/sessions/: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	- write only - required if secproto == `std` - pass `null` to generate
std_public_key	PEM	Read only
tls_private_key	PEM	- write only - required if secproto in (`tls`, `nla`) - pass `null` to generate
tls_certificate	PEM	Read only

Table 3: `ListenerSSHAttributes`

Parameter	Type	Description
private_key	PEM	- write only - required
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	- write only - required if `use_tls` - pass `null` to generate
tls_certificate	PEM	Read only

Table 5: `ListenerSafeAssignment`

Parameter	Type	Description
listener_id	int	- write only - required
listener		Read only
id	int	
name	string	

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

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	
	`[`
	`        ListenerSafeAssignmentModel,`
	`        ...`
	`]`

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	- write only - required
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/
↪WpRSFjk5wQ1PR33FMZWnSnxSOQ8qkJqIrF+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"}
```