



Nausf_UEAuthentication

The Authentication Server Function (AUSF) acts as NF Service Producer. It provides UE authentication service to the requester NF. The NF Service Consumer is the AMF.

For this service, the following service operations are defined

- Authenticate

This service permits to authenticate the UE and to provide one or more master keys which are used by the AMF to derived subsequent keys.

Reference: 3GPP TS 33.501 v15.5.0

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OpenAPI

OpenAPI Version: 3.0.0

Info

Version: 1.0.0

Title: AUSF API

Description: OpenAPI specification for AUSF

Servers

URL: '{apiRoot}/nausf-auth/v1'

Variables:**API Root:****Default:** https://example.com**Description:** apiRoot as defined in subclause subclause 4.4 of 3GPP TS 29.501.

Security

```
- {}
- oAuth2ClientCredentials:
  - nausf-auth
```

Paths

/ue-authentications

Method: Post**Request Body:****Content:****Application/JSON:****Schema:****Reference:** '#/components/schemas/AuthenticationInfo'**Required/Optional:** true**Responses:****'201':****Description:** UEAuthenticationCtx**Content:****application/3gppHal+json:****Schema:****Reference:** '#/components/schemas/UEAuthenticationCtx'**Headers:****Location:****description:** 'Contains the URI of the newly created resource according to the structure: {apiRoot}/nausf-auth/v1/ue-authentications/{authCtxId}'**Required/Optional:** true**Schema:****Type:** string**'400':****Description:** Bad Request from the AMF**Content:****application/problem+json:****Schema:****Reference:** 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'**'403':****Description:** Forbidden due to serving network not authorized**Content:**

```
    application/problem+json:
      Schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
  '500':
    Description: Internal Server Error
    Content:
      application/problem+json:
        Schema:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
```

/ue-authentications/{authCtxId}/5g-aka-confirmation

put:

Parameters:

```
- Name: authCtxId
  In: path
  Required/Optional: true
  Schema:
    Type: string
```

Request Body:

```
Content:
  Application/JSON:
    Schema:
      Reference: '#/components/schemas/ConfirmationData'
```

Responses:

```
'200':
  Description: Request processed (EAP success or Failure)
  Content:
    Application/JSON:
      Schema:
        Reference: '#/components/schemas/ConfirmationDataResponse'
'400':
  Description: Bad Request
  Content:
    application/problem+json:
      Schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
'500':
  Description: Internal Server Error
  Content:
    application/problem+json:
      Schema:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'
```

/ue-authentications/{authCtxId}/eap-session

Method: Post

Operation ID: EapAuthMethod

Parameters:

- **Name:** authCtxId
 - In:** path
 - Required/Optional:** true
 - Schema:**
 - Type:** string

Request Body:

- Content:**
 - Application/JSON:**
 - Schema:**
 - Reference:** '#/components/schemas/EapSession'

Responses:

- '200':
 - Description:** Use to handle or close the EAP session
 - Content:**
 - Application/JSON:**
 - Schema:**
 - Reference:** '#/components/schemas/EapSession'
 - application/3gppHal+json:**
 - Schema:**
 - Type:** object
 - Properties:**
 - eapPayload:**
 - Reference:** '#/components/schemas/EapPayload'
 - _links:**
 - Type:** object
 - description:** 'URI : /{eapSessionUri}'
 - additionalProperties:**
 - Reference:**
 - 'TS29571_CommonData.yaml#/components/schemas/LinksValueSchema'
 - minProperties:** 1
 - Required/Optional:**
 - eapPayload
 - _links

- '400':
 - Description:** Bad Request
 - Content:**
 - application/problem+json:**
 - Schema:**
 - Reference:** 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'

- '500':
 - Description:** Internal Server Error
 - Content:**
 - application/problem+json:**
 - Schema:**
 - Reference:** 'TS29571_CommonData.yaml#/components/schemas/ProblemDetails'

Components

```

securitySchemes:
  oAuth2ClientCredentials:
    Type: oauth2
    Flows:
      clientCredentials:
        tokenUrl: '{nrfApiRoot}/oauth2/token'
        scopes:
          nausf-auth: Access to Nausf_UEAuthentication API

schemas:
  AuthenticationInfo:
    Type: object
    Properties:
      supiOrSuci:
        Reference: 'TS29503_Nudm_UEAU.yaml#/components/schemas/SupiOrSuci'
      servingNetworkName:
        Reference: 'TS29503_Nudm_UEAU.yaml#/components/schemas/ServingNetworkName'
      resynchronizationInfo:
        Reference: 'TS29503_Nudm_UEAU.yaml#/components/schemas/ResynchronizationInfo'
      traceData:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/TraceData'
    Required:
      - supiOrSuci
      - servingNetworkName
  UEAuthenticationCtx:
    Type: object
    Properties:
      authType:
        Reference: '#/components/schemas/AuthType'
      5gAuthData:
        oneOf:
          - $ref: '#/components/schemas/Av5gAka'
          - $ref: '#/components/schemas/EapPayload'
      _links:
        Type: object
        additionalProperties:
          Reference: 'TS29571_CommonData.yaml#/components/schemas/LinksValueSchema'
      servingNetworkName:
        Reference: 'TS29503_Nudm_UEAU.yaml#/components/schemas/ServingNetworkName'
    Required:
      - authType
      - 5gAuthData
      - _links
  Av5gAka:
    Type: object
    Required:
      - rand
      - hxresStar
      - autn

```

```

Properties:
  rand:
    Reference: 'TS29503_Nudm_UEAU.yaml#/components/schemas/Rand'
  hxresStar:
    Reference: '#/components/schemas/HxresStar'
  autn:
    Reference: 'TS29503_Nudm_UEAU.yaml#/components/schemas/Autn'
ConfirmationData:
  Type: object
  Required:
    - resStar
  Properties:
    resStar:
      Reference: '#/components/schemas/ResStar'
ConfirmationDataResponse:
  Type: object
  Properties:
    authResult:
      Reference: '#/components/schemas/AuthResult'
    supi:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Supi'
    kseaf:
      Reference: '#/components/schemas/Kseaf'
  Required:
    - authResult
EapSession:
  Type: object
  Properties:
    eapPayload:
      Reference: '#/components/schemas/EapPayload'
    kSeaf:
      Reference: '#/components/schemas/Kseaf'
    _links:
      Type: object
      additionalProperties:
        Reference: 'TS29571_CommonData.yaml#/components/schemas/LinksValueSchema'
    authResult:
      Reference: '#/components/schemas/AuthResult'
    supi:
      Reference: 'TS29571_CommonData.yaml#/components/schemas/Supi'
  Required:
    - eapPayload
AuthResult:
  Type: string
  enum:
    - AUTHENTICATION_SUCCESS
    - AUTHENTICATION_FAILURE
    - AUTHENTICATION_ONGOING
EapPayload:
  Type: string
  format: base64
  Description: contains an EAP packet
Kseaf:

```

```
    Type: string
    Pattern: '[A-Fa-f0-9]{64}'
  ResStar:
    Type: string
    Pattern: '[A-Fa-f0-9]{32}'
  HxresStar:
    Type: string
    Pattern: "[A-Fa-f0-9]{32}"
  AuthType:
    anyOf:
      - type: string
        enum:
          - 5G_AKA
          - EAP_AKA_PRIME
          - EAP_TLS
      - type: string
```

External Docs

Description: 3GPP TS 29.509 V15.2.0; 5G System; 3GPP TS Authentication Server services.

URL: http://www.3gpp.org/ftp/Specs/archive/29_series/29.509

