Teamcenter & OKTA MFA

Briefly: Here, we will try to integrate two-factor authentication based on OKTA with Teamcenter.

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Disclaimer:

No guarantees or responsibilities are provided. You perform all actions at your own risk!

Introduction

Here we will try to implement two-factor authentication based on OKTA for Teamcenter. Guys, be prepared that this document might not work in your specific conditions, as there are too many uncertainties. However, I hope that it will provide the right directions for your research.

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Prerequisites

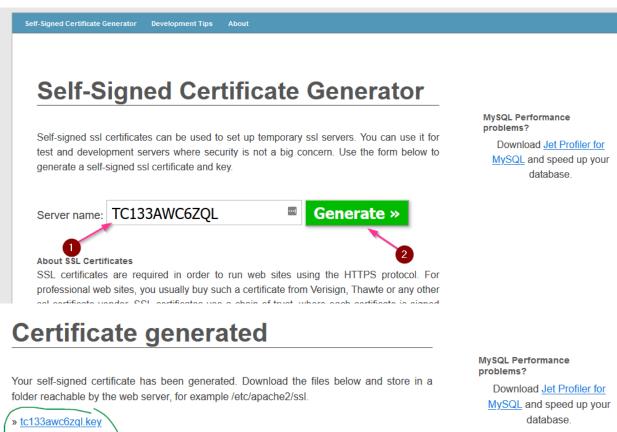
- Teamcenter 13.3 (TcSS 13.3) + AWC 6
- Tomcat 9.0+
- Single server for all of TC components
- Hostname: *TC133AWC6ZQL
- All software installed in C:\Siemens
- OneLogin (okta.com) dev account:
 - *siemensdisrus-admin.okta.com
- Will be used SAML as technology for provide authorize data
- We will not use LDAP catalog on-premise!

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Steps on the Teamcenter Infrastructure Side

1. Generating self-signed certificates - https://www.selfsignedcertificate.com/



)

» tc133awc6zql.cert

Download that

Apache Configuration

You need the following ssl configuration in your VirtualHost:

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2. Convert key and cert to PEM format

- a. Download https://hohnstaedt.de/xca
- b. Via XCA application, convert cert and key to PEM files



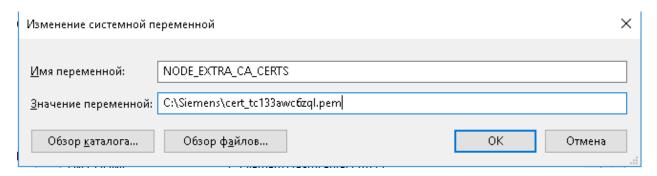
3. Move the:

key_tc133awc6zql.pem

 $cert_tc133awc6zql.pem$

files to C:\Siemens and c:\Siemens\Tomcat9SSO\conf\

Create the next system variable (it needs for AWC)



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4. Configuring AWC for access via HTTPS

```
Open config.json (c:\Siemens\Teamcenter13\microservices\gateway-1.6.0\config.json)
},
"sso": {
    "tcSSOAppID": "AWCSSO",
    "tcSSOURL": "https://TCl33AWC6ZQL:8001/LoginService",
    "tcSSORedirectMethod": "GET",
    "tcSSOLogoutURL": "",
    "proxyServerUrl": "",
    "queryParams": ""
},
"fms": {
    "bootstrapFSCURLs": [ ],
},
 "csurf": {
    "cookie": true
 },
 "csurfExclusions": [
    "/AWSSOLogin",
    "/graphql",
    "/LoginService/sso_login_callback",
    "siemensdisrus.okta.com",
    "/siemensdisrus.okta.com"
 ],
 "userAgentWhiteList": [
    "Apache-HttpClient",
```

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5. Configuring Tomcat for deploying TcSS components

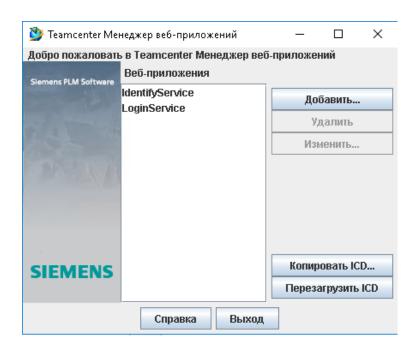
Open server.xml (c:\Siemens\Tomcat9SSO\conf\server.xml)

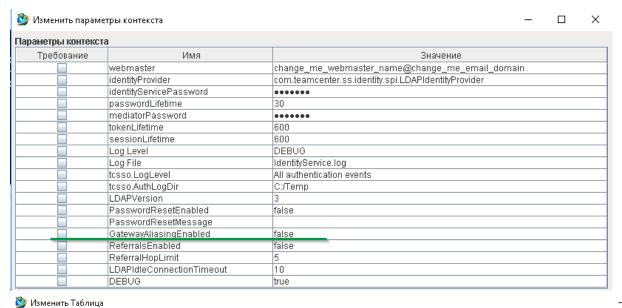
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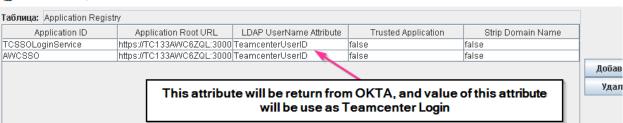
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6. Creating Login and Identify Services

Ohhh, for details go to: https://docs.sw.siemens.com/en-us/product/282219420/doc/PL20210421143201885.tss00001/html/xid373993



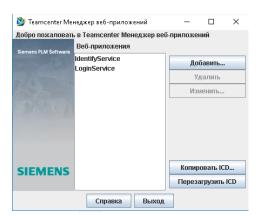


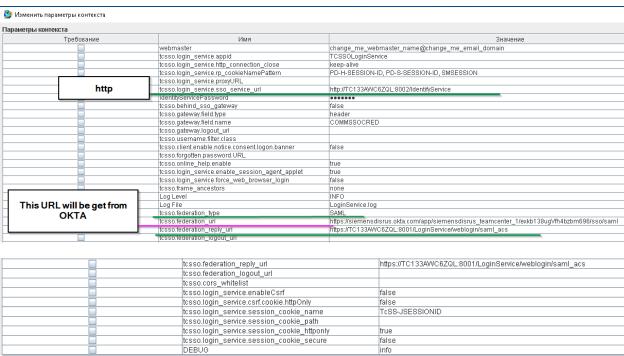


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7. Creating Login and Identify Services





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8. Configuring federation.properties (1)

Open **federation.properties**(c:\Siemens\SSOSrv\LoginService\webapp_root\WEB-INF\classes**federation.properties**)

```
# SAML2 properties
35
    # Issuer ID is a unique string that identifies TcSS as a SAML2 Service Provider
36
37
    # and must be provided to the SAML2 Identity Provider
    tcsso.saml.issuer_id=TCSS2022SAML
                                                                     The unique ID, it will be use in OKTA
40 # Validate signature on SAML Response, default is true
41
    tcsso.saml.validate.response.signature=false
42
43
    # The file location of certificate containing the public key of the SAML2
44
    # Identity Provider
45
    tcsso.saml.idp_public_key_file=c:/Siemens/okta.cert 
46
                                                                                             It will be get from OKTA
47
    # Defines whether or not to require encrypted Assertions from Identity Provider
    # If true, the decryption_private_jks and decryption_private_key properties below
    # must be set
    tcsso. \, saml. \, want. \, assertion. \, encrypted \!\!=\!\! false
51
52
    # A JKS formatted keystore containing the private key used to decrypt a SAML2
53
    # Assertion coming from the SAML2 Identity Provider
54
    tcsso.saml.decryption_private_jks_file=</secure/path/sp_decryption_key.jks>
    # WARNING: Sensitive value
    tcsso.saml.decryption_private_jks_file_pwd=<password>
    # The name of the private key in the keystore used to decrypt the SAML2 Assertion
    tcsso.saml.decryption_private_key_name=<key name>
59
    # WARNING: Sensitive value
60
    tcsso.saml.decryption\_private\_key\_pwd\!\!=\!\!<\!\!password\!\!>
61
62
    # Defines whether or not we sign SAML2 AuthnRequest sent to Identity Provider
63
    # If true, the sigming_private_jks and sigming_private_key properties below
65
    tcsso.saml.sign authn request=false
66
67
68
    # Note that the following signing private keystore/key properties may be
    # set to the same values as the decryption private keystore/key properties
69 # above.
70
71
    # A JKS formatted keystore containing the private key used to sign a SAML2
     # Request sent to the SAML2 Identity Provider (if enabled)
     tcsso.saml.signing_private_jks_file=</secure/path/sp_signing_key.jks>
    # WARNING: Sensitive value
     tcsso.saml.signing\_private\_jks\_file\_pwd\!\!=\!\!\!<\!\!password\!\!>
76
    # The name of the private key in the keystore used to sign the SAML2 Reques
    # (if enabled)
                                                                                     This attribute will be get from OKTA,
    tcsso.saml.signing_private_key_name=<key_name>
                                                                                          and it uses in IdentifyService
     # WARNING: Sensitive value
                                                                                              (Application Registry)
    tcsso.saml.signing_private_key_pwd=<password>
    # The SAML2 name attribute that will contain the trusted Teamcenter UserID
     tcsso.saml.userid attribute name=TeamcenterUserID
     # The requested authentication method to be used at the SAML2 Identity Provider
85
     tcsso.saml.authn_context_class=urn:oasis:names:tc:SAML:2.0:ac:classes:PasswordProtectedTransport
86
87
     # OTDC properties
```

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9. Configuring Teamcenter core

Open tc_profilevars.bat (C:\Siemens\tcdata\tc_profilevars.bat)

```
24 @rem TC LOG VOLUME DIR=
25
    @rem TC_LOG_VOLUME_NAME=
    @rem set TCI=
27
    @rem set TC_ZEUS_ACCESS_KEY_ID=
                        <del>PROS_PASSWORD</del>_FILE=
    set TC_SSO_LOGIN_URL=http://TC133AWC6ZQL:8002/LoginService
    set TC_SSO_SERVICE=http://TCl33AWC6ZQL:8002/IdentifyService
    set TC_SSO_APP_ID=AWCSSO
33
    if not defined TEMINSTALL goto :SKIP_TEM_SETTINGS
34
35
   set TC_BIN=%TC ROOT%\bin
36
   set TC_PERL=%TC ROOT%\perl\bin\perl.exe
    set TC_PERL_BIN=%TC ROOT%\perl\bin
38 set TC_INCLUDE=%TC_ROOT%\include
39 set TC LIBRARY=%TC ROOT%\lib
```

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10. Deploying TcSS services

Copy these files:

 $c: \siemens \signs \s$

to:

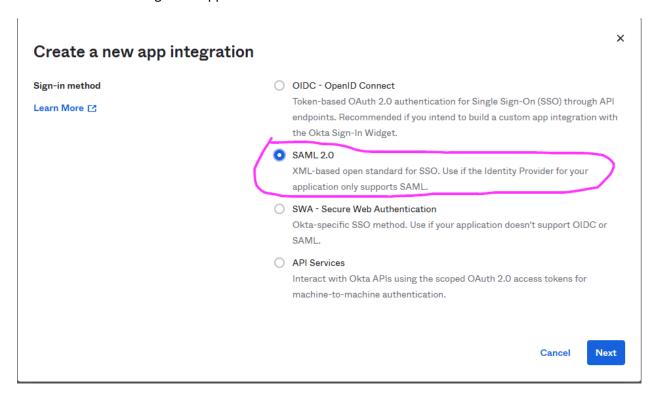
c:\Siemens\Tomcat9SSO\webapps

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Steps on the OKTA service side

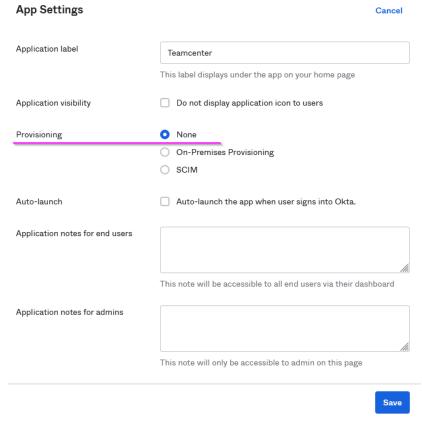
1. You should have dev account, it is free for developing purpose after get it you should create new SAML integration application

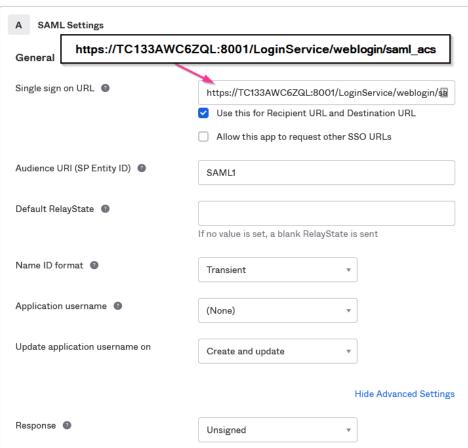


Disclaimer:

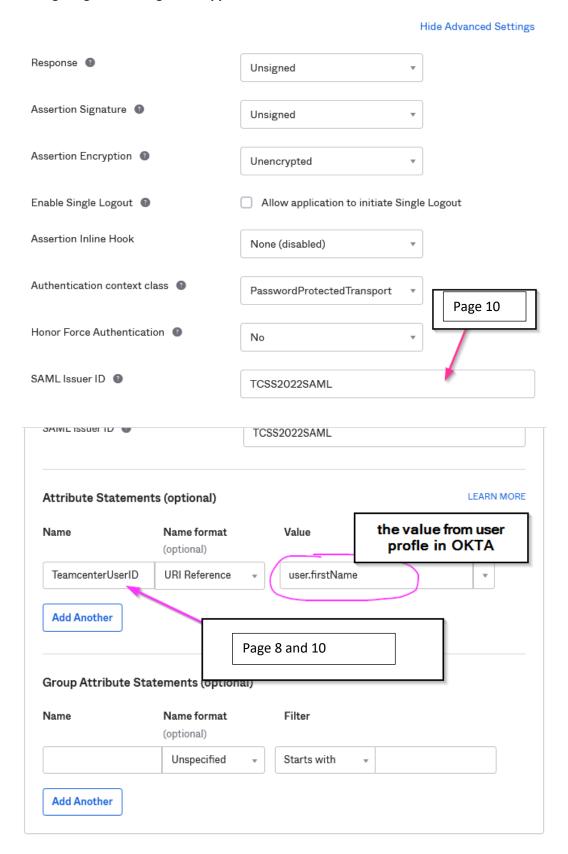
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2. Configuring SAML integration application





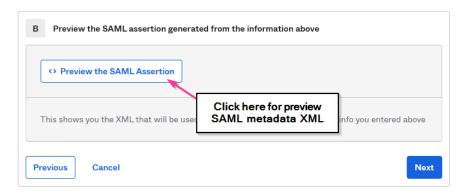
Configuring SAML integration application



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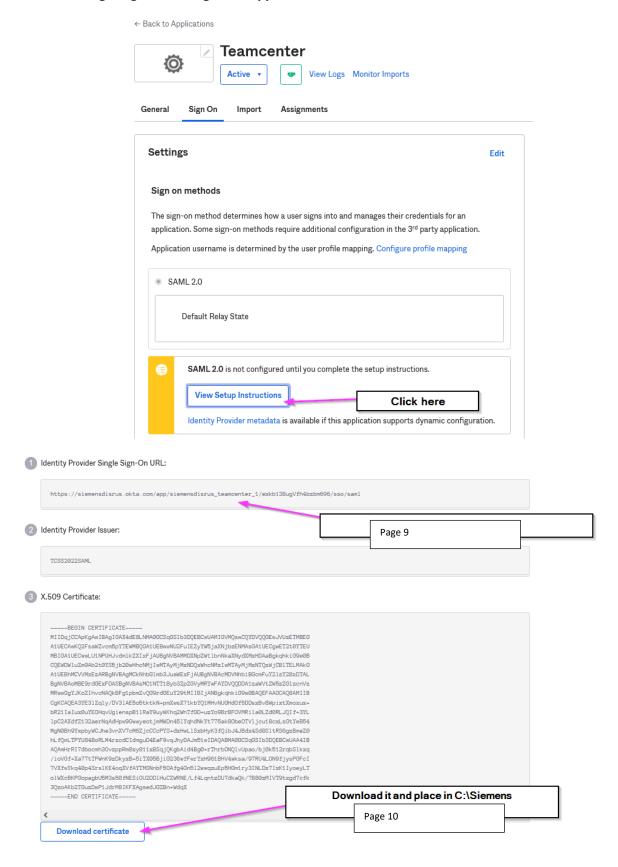
Configuring SAML integration application



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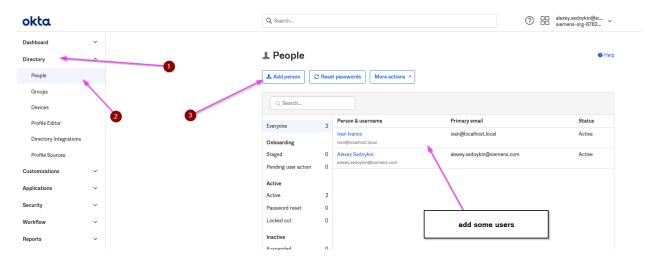
Configuring SAML integration application



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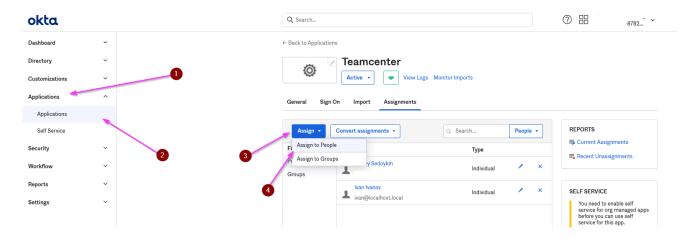
3. Adding users at OKTA account



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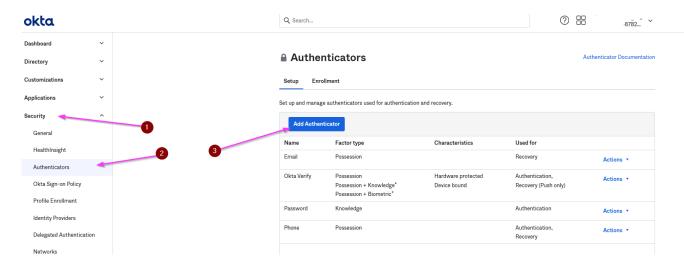
4. Assigning users at SAML integration application



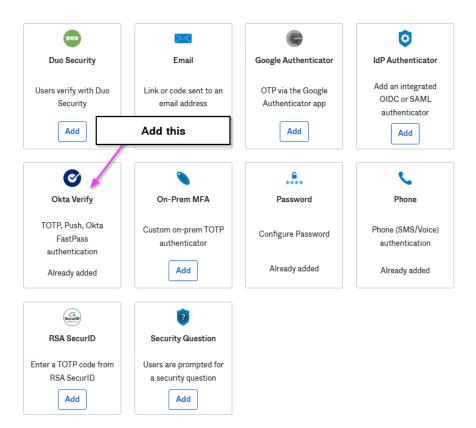
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5. Adding MFA feature



Add Authenticator

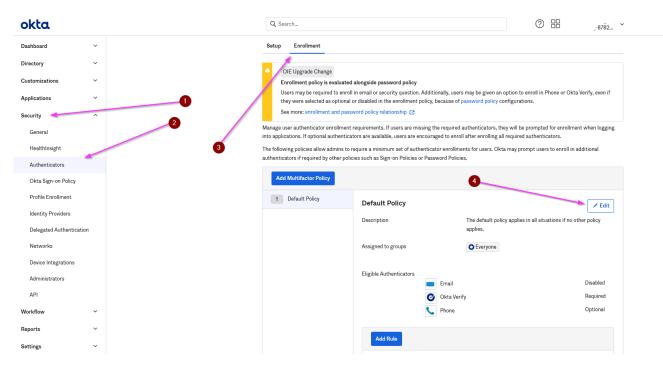


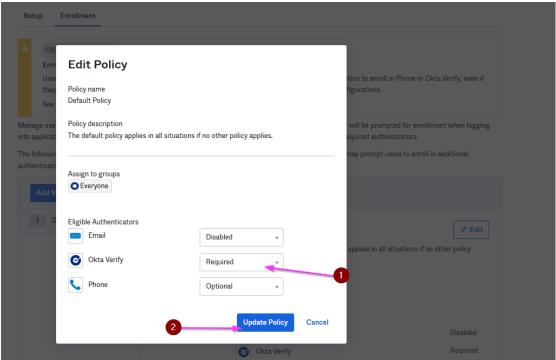
Cancel

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Adding MFA feature

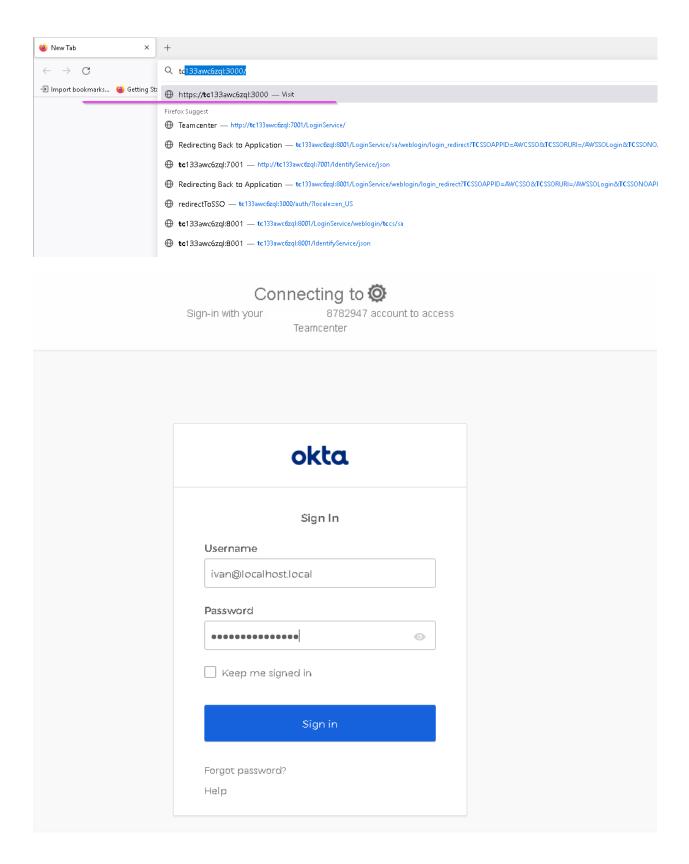




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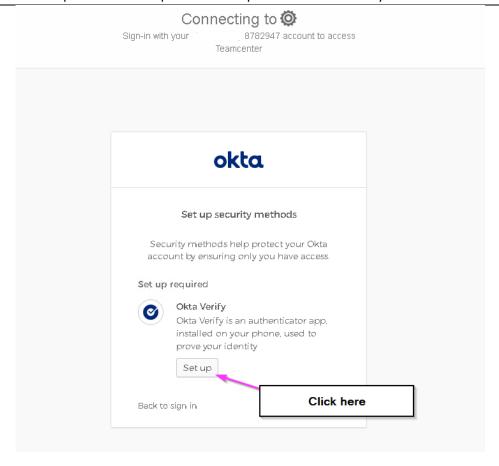
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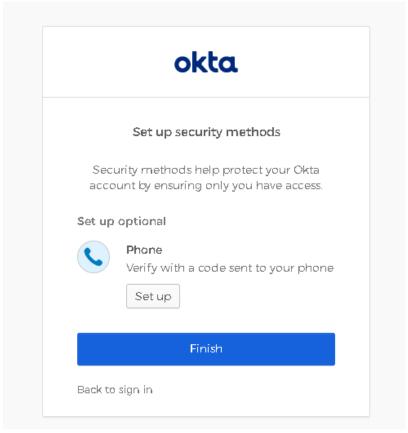
How can I check all this?!



Disclaimer:

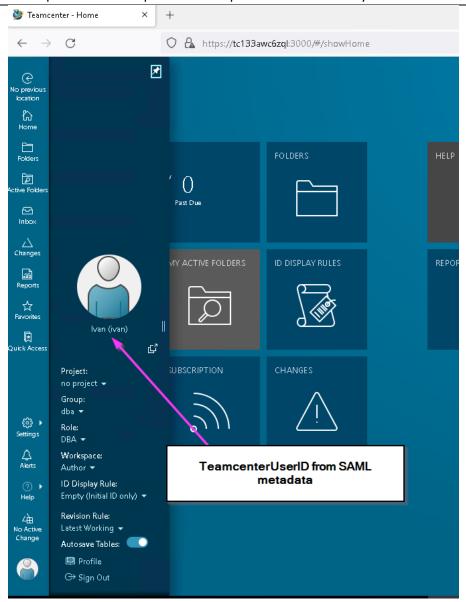
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THAT'S ALL, gOOd LUCK!