# Secure Authentication Flow Using PingFederate with SAML, Composite Adapters, CIDR Selector, and PingID MFA

## Introduction:-

- This mini project demonstrates the implementation of a secure, dynamic authentication flow using PingFederate.
- The system uses SAML 2.0 to connect as a Service Provider (SP) and supports multiple login methods through a Composite Adapter.
- It integrates PingID for multi-factor authentication (MFA) and uses a CIDR Authentication Selector to intelligently route users based on their IP address:
    - Internal users bypass MFA.
    - External users are required to authenticate through PingID.
- This document outlines the full step-by-step configuration process in the following order:
    1. Configuring the Datastore
    2. Setting up the Password Credential Validator (PCV)
    3. Creating and configuring Adapters (HTML Form, HTTP Basic, PingID)
    4. Defining the CIDR Authentication Selector
    5. Creating the CIDR-based Authentication Policy
    6. Setting up the Service Provider (SP) Connection
    7. Testing the complete SAML login flow
- This hands-on project demonstrates practical skills in modern Identity and Access Management (IAM) using PingFederate.

## Project Overview:-

This mini project focuses on implementing a secure and flexible authentication system using **PingFederate**, a powerful Identity and Access Management (IAM) solution. The goal is to demonstrate how to set up a federated authentication flow that adapts to different user contexts by integrating multi-factor authentication (MFA) selectively based on the user's IP address.

The system uses **SAML 2.0** protocol to connect as a Service Provider (SP), supports multiple login methods through a Composite Adapter, and enforces MFA via PingID for external users while allowing internal users to bypass MFA for convenience.

This project illustrates how organizations can enhance security without compromising user experience by leveraging CIDR-based routing and modern authentication adapters.

## Technologies Used:-

**PingFederate:** Identity provider software used to manage authentication flows and policies.

**SAML 2.0:** Security Assertion Markup Language protocol used for federated Single Sign-On (SSO).

**PingID:** Multi-Factor Authentication (MFA) service integrated to strengthen security.

**CIDR Authentication Selector:** Mechanism to route authentication based on user IP address ranges.

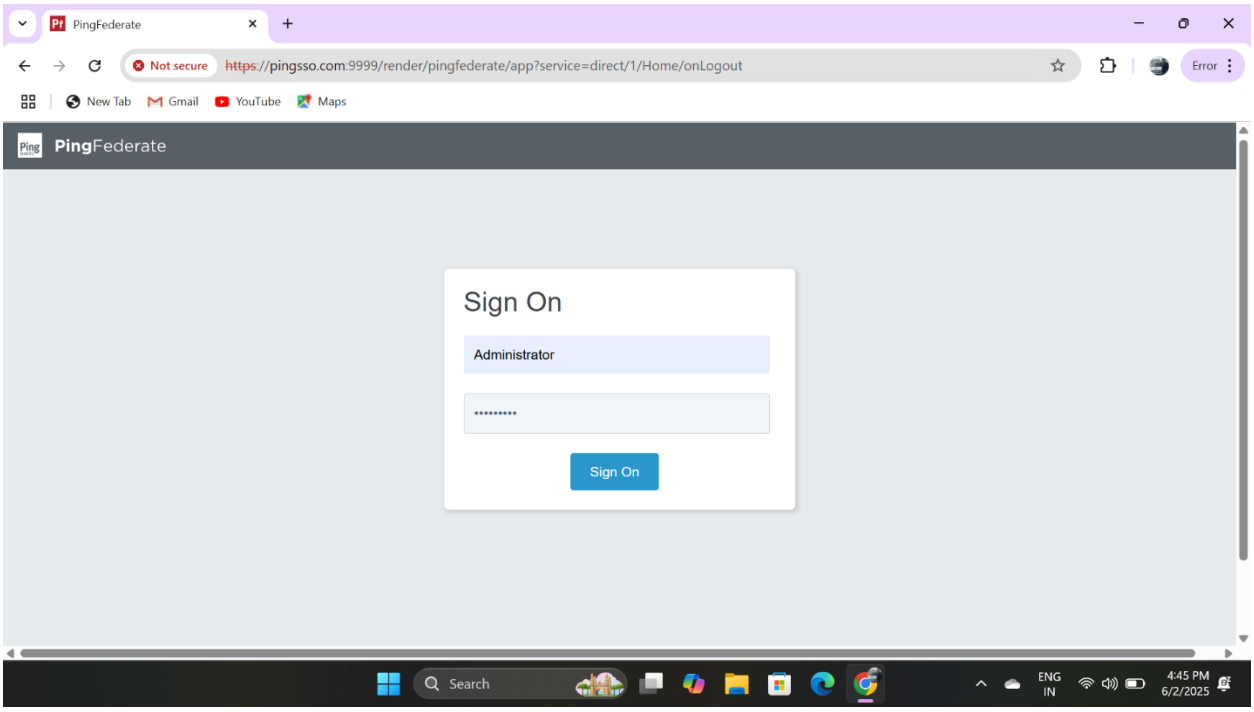
**Composite Adapter:** A PingFederate feature that combines multiple authentication adapters (HTML Form, HTTP Basic, PingID) into one flow.

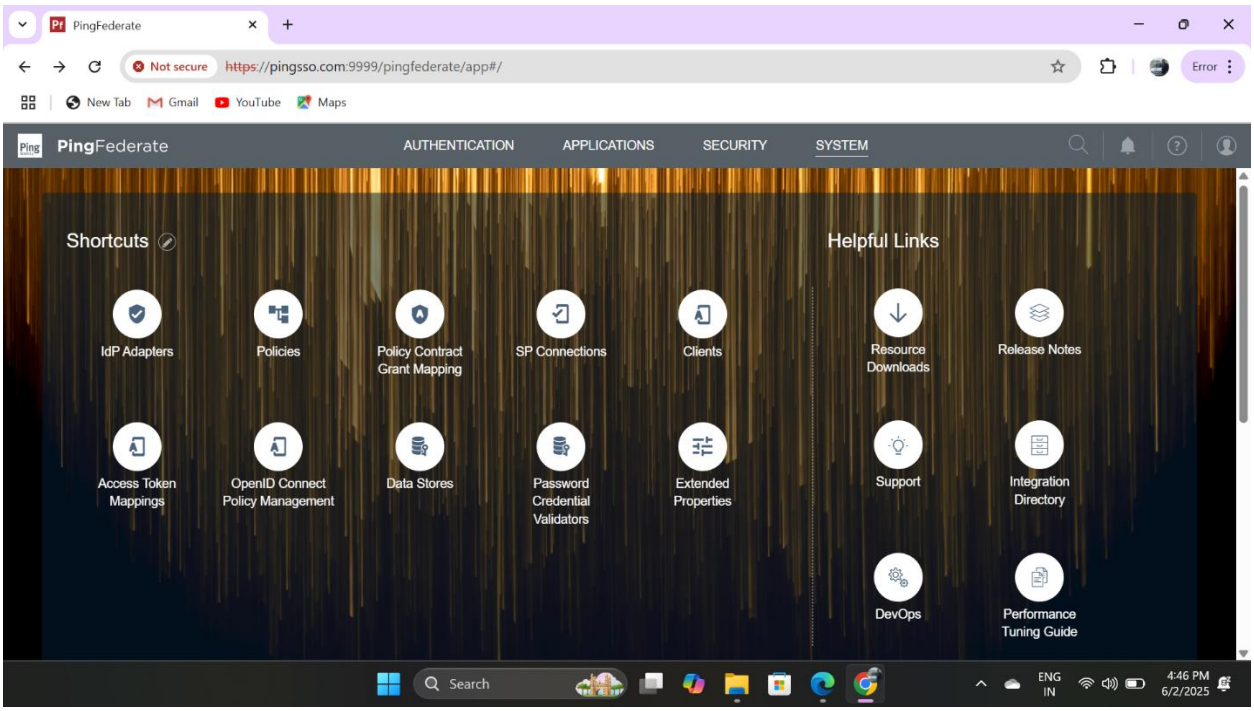
**Datastore:** Backend user repository used for validating credentials (e.g., LDAP or database).

## Step-by-Step Configuration:-

### Step-1:- Configure Datastore

1. Log in to the PingFederate Admin Console.
2. Navigate to Authentication → Data Stores.
3. Click Create New Data Store.
4. Select the appropriate datastore type (e.g., LDAP, JDBC).
5. Enter connection details such as hostname, port, credentials, and base DN.
6. Test the connection to verify it works.
7. Save the datastore.

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APPLICATIONS
SECURITY
SYSTEM
Shortcuts
IdP Adapters
Policies
Policy Contract Grant Mapping
SP Connections
Clients
Access Token Mappings
OpenID Connect Policy Management
Data Stores
Password Credential Validators
Extended Properties
Helpful Links
Resource Downloads
Release Notes
Support
Integration Directory
DevOps
Performance Tuning Guide
Search
ENG
IN
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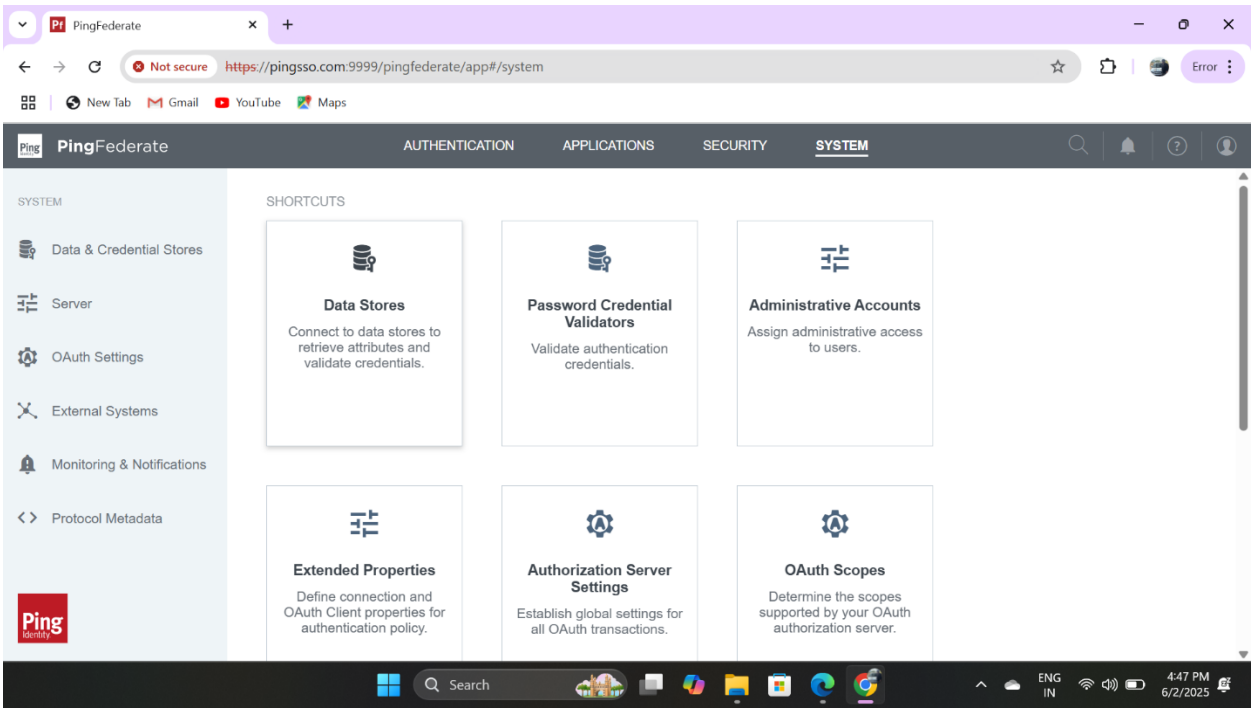
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AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
SYSTEM
Data & Credential Stores
Server
OAuth Settings
External Systems
Monitoring & Notifications
Protocol Metadata
SHORTCUTS
Data Stores
Connect to data stores to retrieve attributes and validate credentials.
Password Credential Validators
Validate authentication credentials.
Administrative Accounts
Assign administrative access to users.
Extended Properties
Define connection and OAuth Client properties for authentication policy.
Authorization Server Settings
Establish global settings for all OAuth transactions.
OAuth Scopes
Determine the scopes supported by your OAuth authorization server.
Search
ENG
IN
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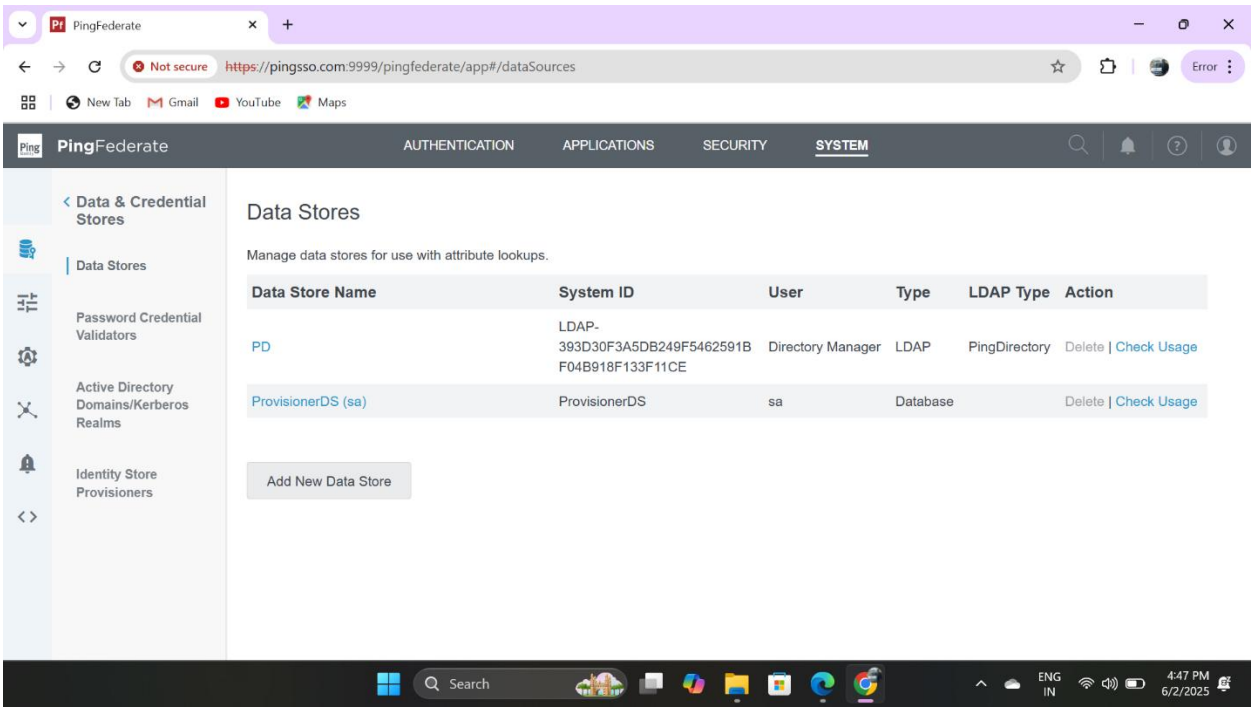
PingFederate
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AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Data & Credential Stores
Data Stores
Password Credential Validators
Active Directory Domains/Kerberos Realms
Identity Store Provisioners
Data Stores
Manage data stores for use with attribute lookups.
Data Store Name
System ID
User
Type
LDAP Type
Action
PD
LDAP-393D30F3A5DB249F5462591BF04B918F133F11CE
Directory Manager
LDAP
PingDirectory
Delete | Check Usage
ProvisionerDS (sa)
ProvisionerDS
sa
Database
Delete | Check Usage
Add New Data Store
Search
ENG
IN
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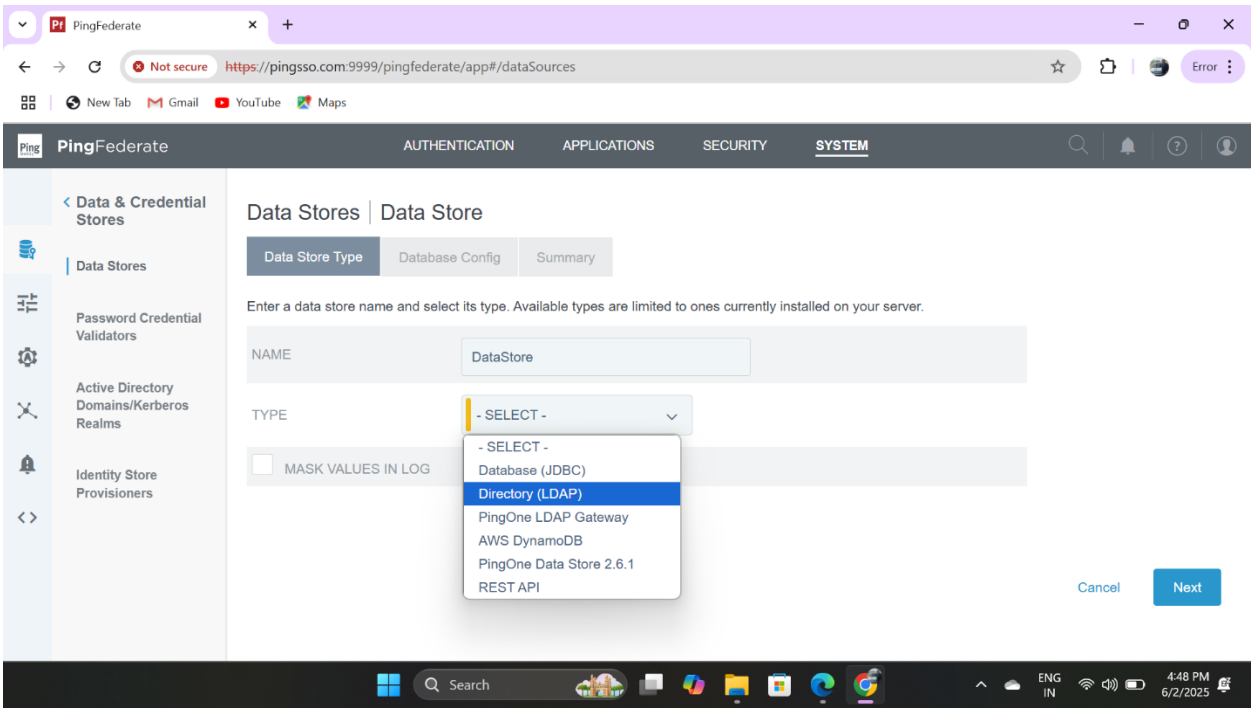
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AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Data & Credential Stores
Data Stores
Password Credential Validators
Active Directory Domains/Kerberos Realms
Identity Store Provisioners
Data Stores | Data Store
Data Store Type
Database Config
Summary
Enter a data store name and select its type. Available types are limited to ones currently installed on your server.
NAME
DataStore
TYPE
- SELECT -
- SELECT -
Database (JDBC)
Directory (LDAP)
PingOne LDAP Gateway
AWS DynamoDB
PingOne Data Store 2.6.1
REST API
MASK VALUES IN LOG
Cancel
Next
Search
ENG
IN
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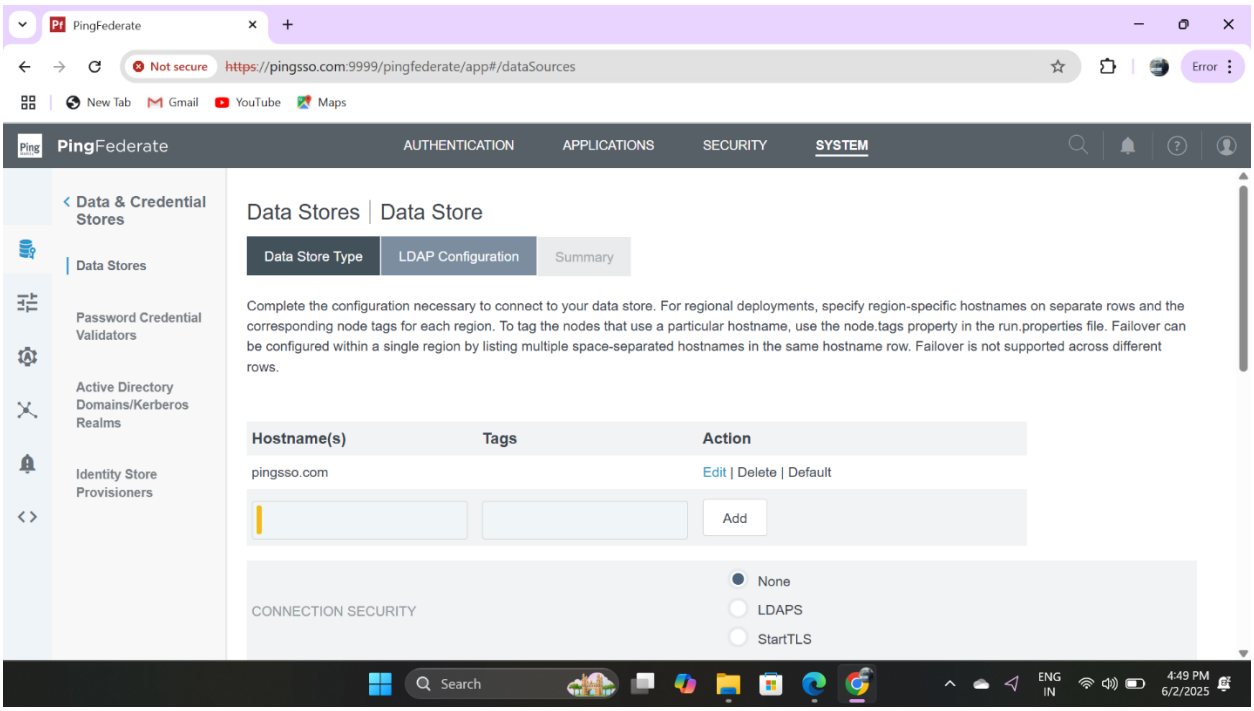
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AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Data & Credential Stores
Data Stores
Password Credential Validators
Active Directory Domains/Kerberos Realms
Identity Store Provisioners
Data Stores | Data Store
Data Store Type
LDAP Configuration
Summary
Complete the configuration necessary to connect to your data store. For regional deployments, specify region-specific hostnames on separate rows and the corresponding node tags for each region. To tag the nodes that use a particular hostname, use the node.tags property in the run.properties file. Failover can be configured within a single region by listing multiple space-separated hostnames in the same hostname row. Failover is not supported across different rows.
Hostname(s)
Tags
Action
pingsso.com
Edit | Delete | Default
Add
CONNECTION SECURITY
None
LDAPS
StartTLS
Search
ENG
IN
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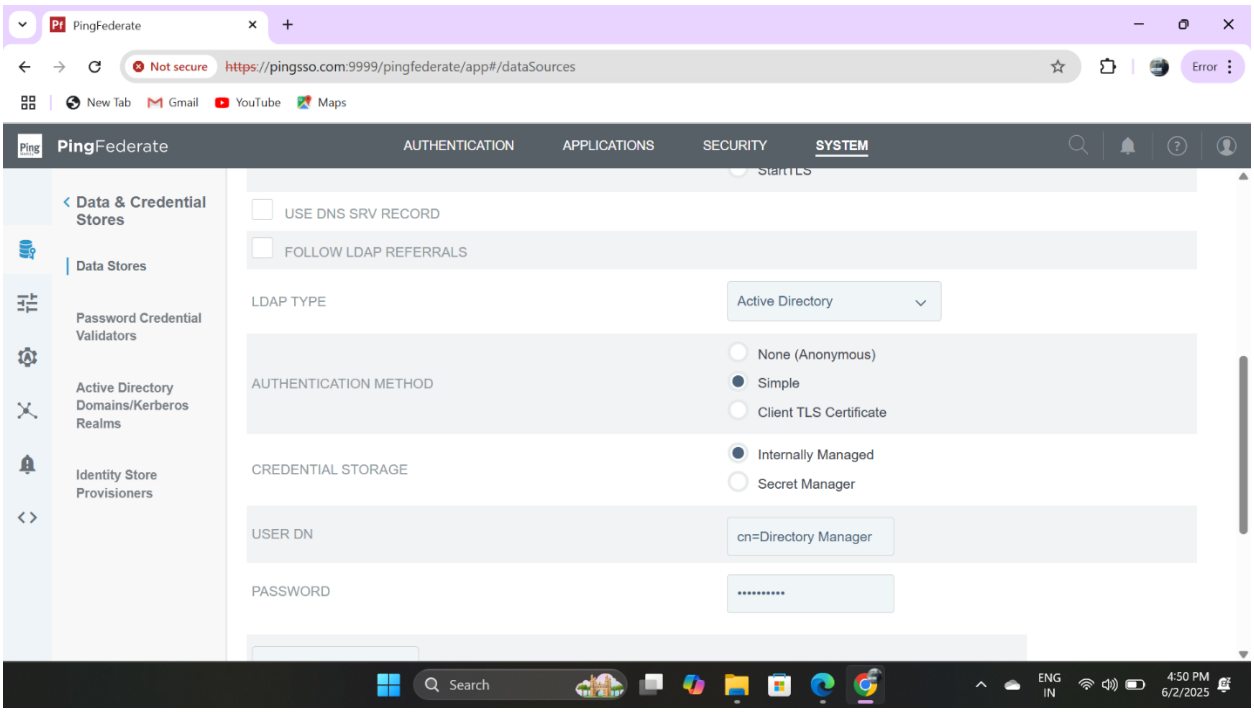
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AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Data & Credential Stores
Data Stores
Password Credential Validators
Active Directory Domains/Kerberos Realms
Identity Store Provisioners
StartTLS
USE DNS SRV RECORD
FOLLOW LDAP REFERRALS
LDAP TYPE
Active Directory
AUTHENTICATION METHOD
None (Anonymous)
Simple
Client TLS Certificate
CREDENTIAL STORAGE
Internally Managed
Secret Manager
USER DN
cn=Directory Manager
PASSWORD
Search
ENG
IN
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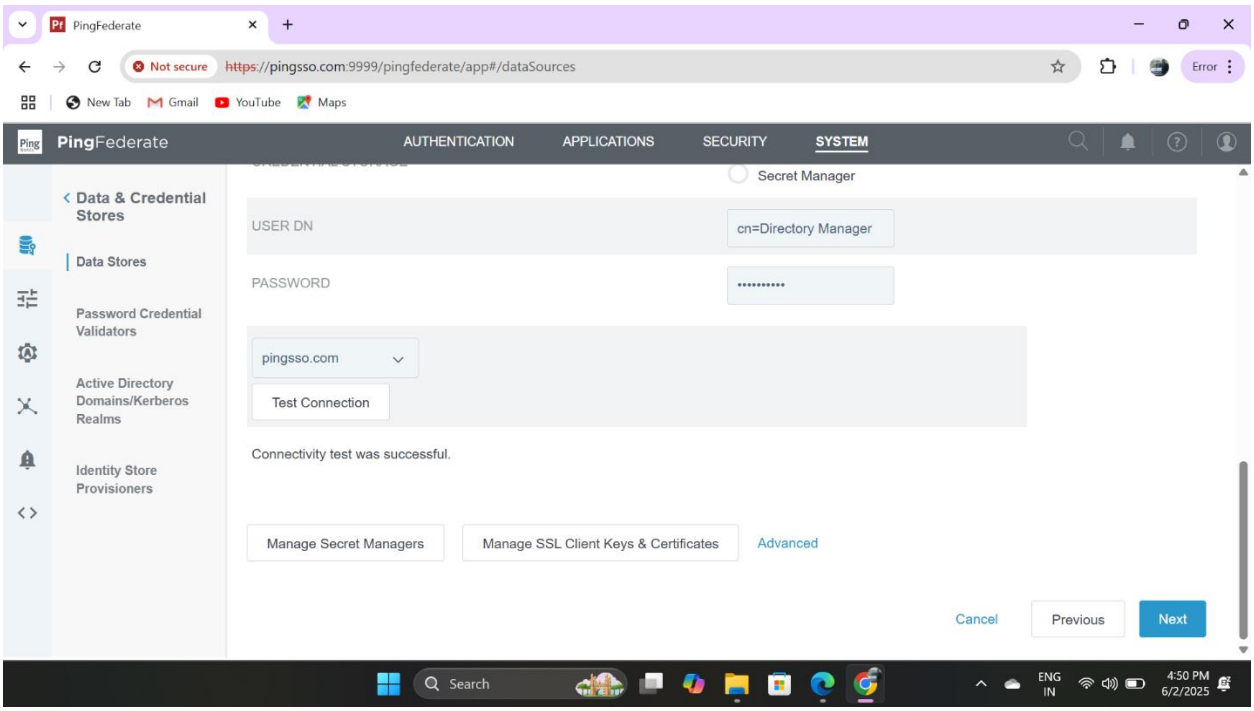
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Password Credential Validators
Active Directory Domains/Kerberos Realms
Identity Store Provisioners
Secret Manager
USER DN
cn=Directory Manager
PASSWORD
pingsso.com
Test Connection
Connectivity test was successful.
Manage Secret Managers
Manage SSL Client Keys & Certificates
Advanced
Cancel
Previous
Next
Search
ENG
IN
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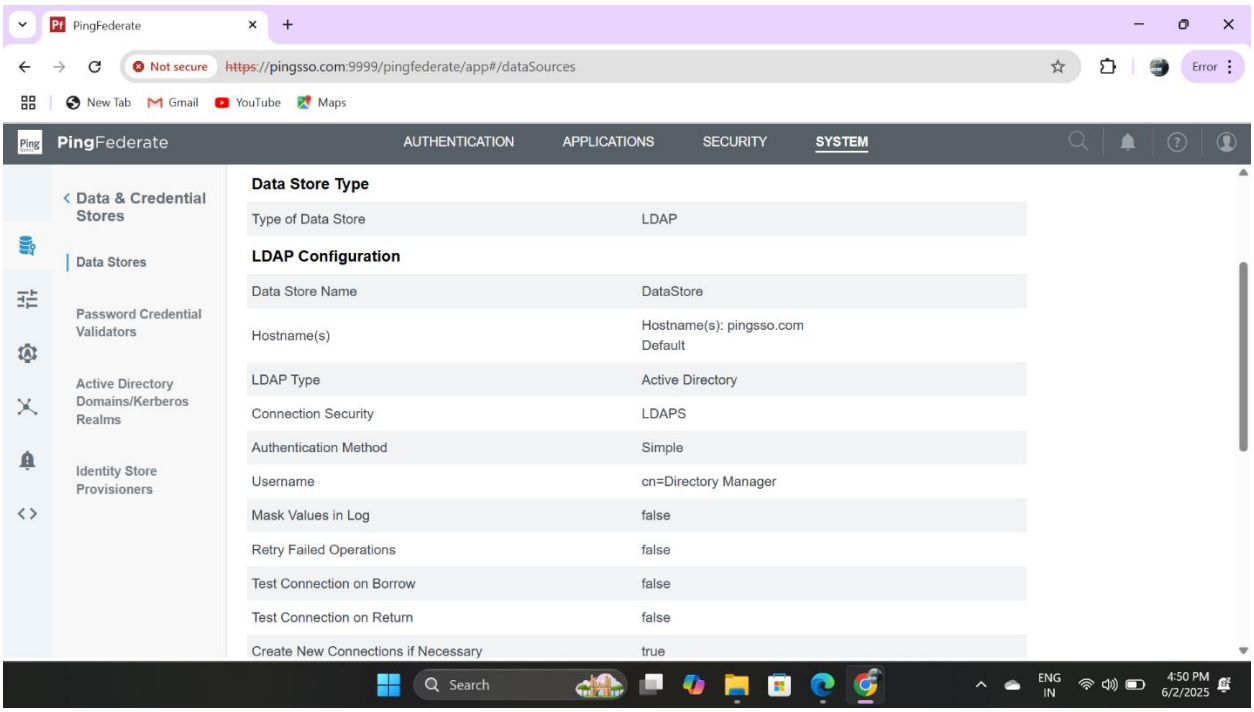
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Data & Credential Stores
Data Stores
Password Credential Validators
Active Directory Domains/Kerberos Realms
Identity Store Provisioners
Data Store Type
Type of Data Store
LDAP
LDAP Configuration
Data Store Name
DataStore
Hostname(s)
Hostname(s): pingsso.com
Default
LDAP Type
Active Directory
Connection Security
LDAPS
Authentication Method
Simple
Username
cn=Directory Manager
Mask Values in Log
false
Retry Failed Operations
false
Test Connection on Borrow
false
Test Connection on Return
false
Create New Connections if Necessary
true
Search
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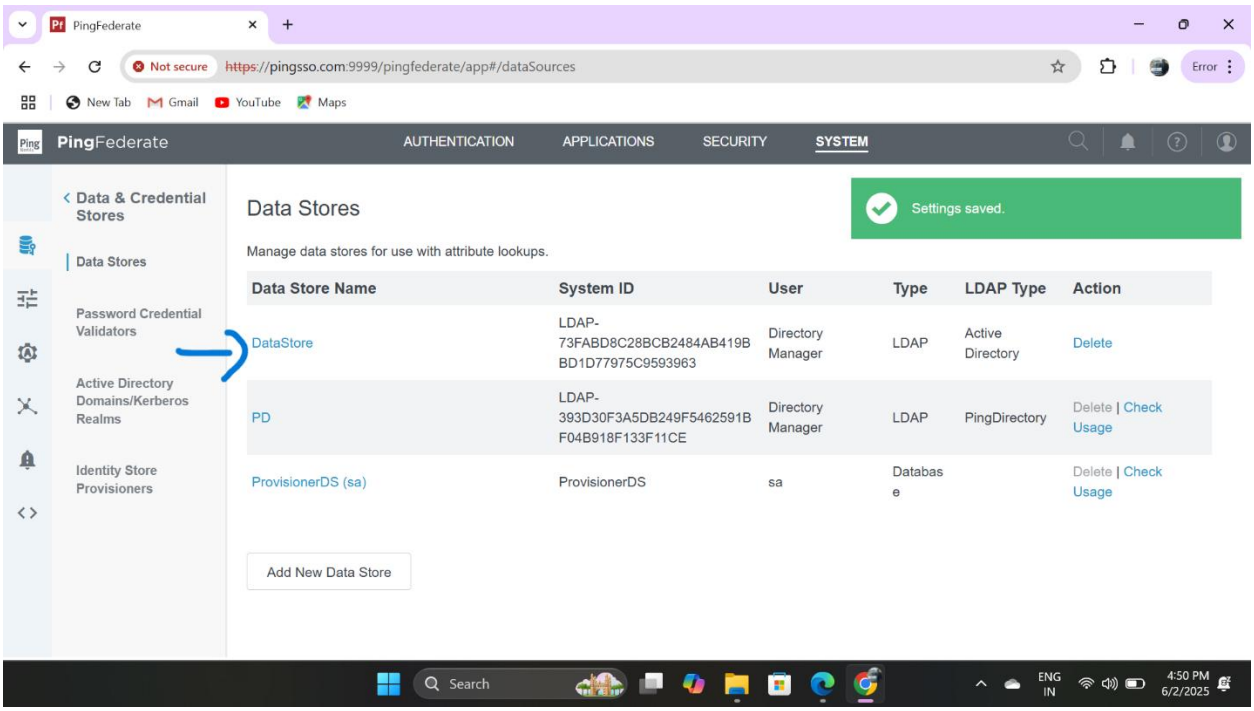
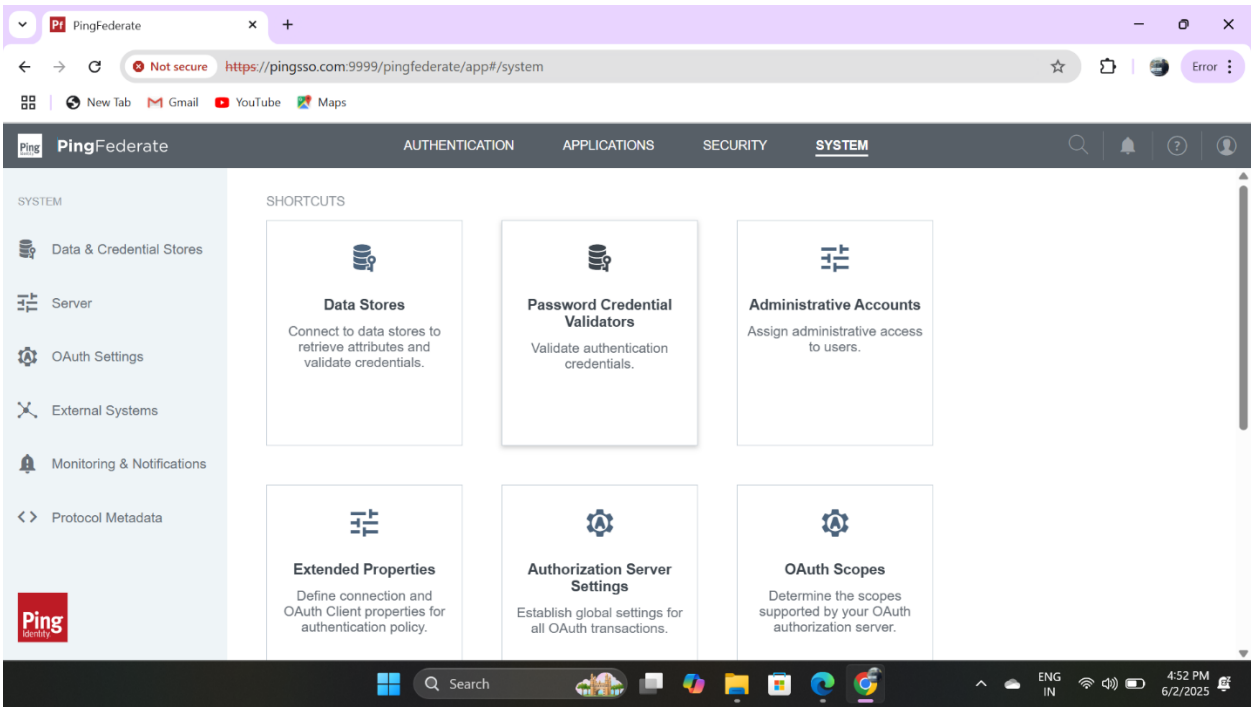



**<u>Step 2</u>:- Set Up Password Credential Validator (PCV)**

1. Go to Authentication → Credential Validators.
2. Click Create New Credential Validator.
3. Choose the validator type (e.g., LDAP Password Validator).
4. Name the validator (e.g., “LDAP-PCV”).
5. Link it to the datastore configured in Step 1.
6. Save the credential validator.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SYSTEM
Data & Credential Stores
Server
OAuth Settings
External Systems
Monitoring & Notifications
Protocol Metadata
SHORTCUTS
Data Stores
Connect to data stores to retrieve attributes and validate credentials.
Password Credential Validators
Validate authentication credentials.
Administrative Accounts
Assign administrative access to users.
Extended Properties
Define connection and OAuth Client properties for authentication policy.
Authorization Server Settings
Establish global settings for all OAuth transactions.
OAuth Scopes
Determine the scopes supported by your OAuth authorization server.
Search
ENG
IN
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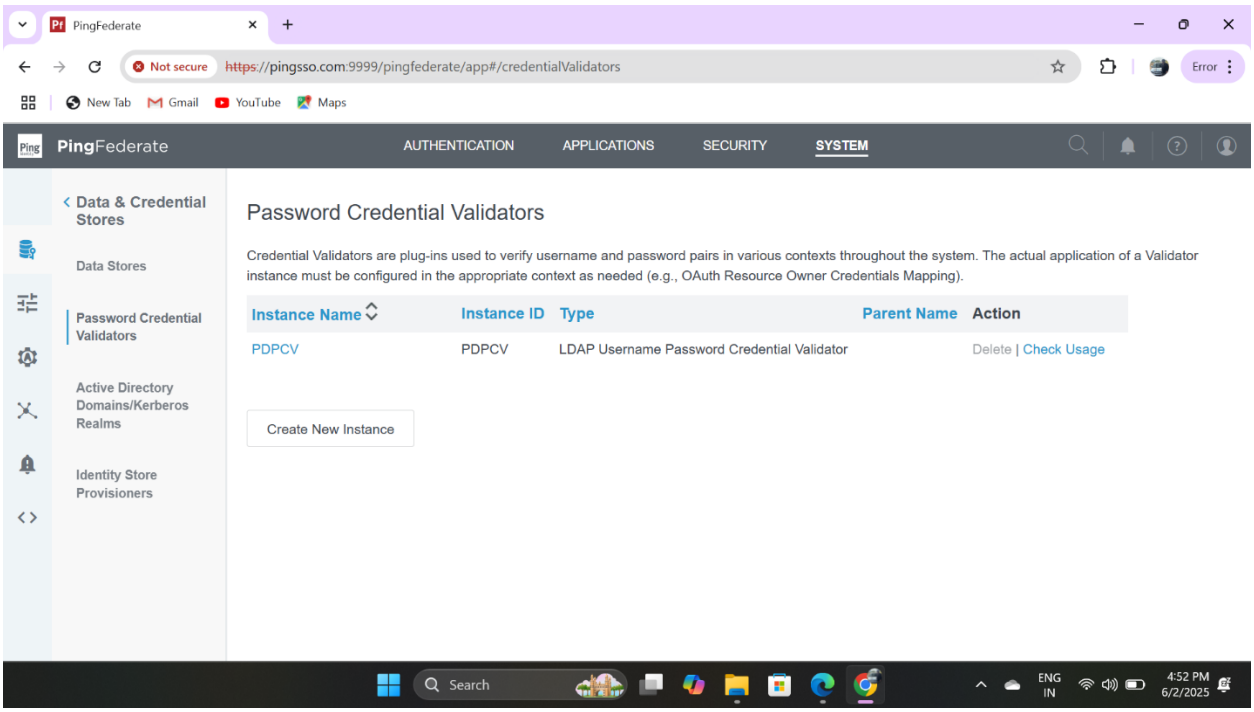
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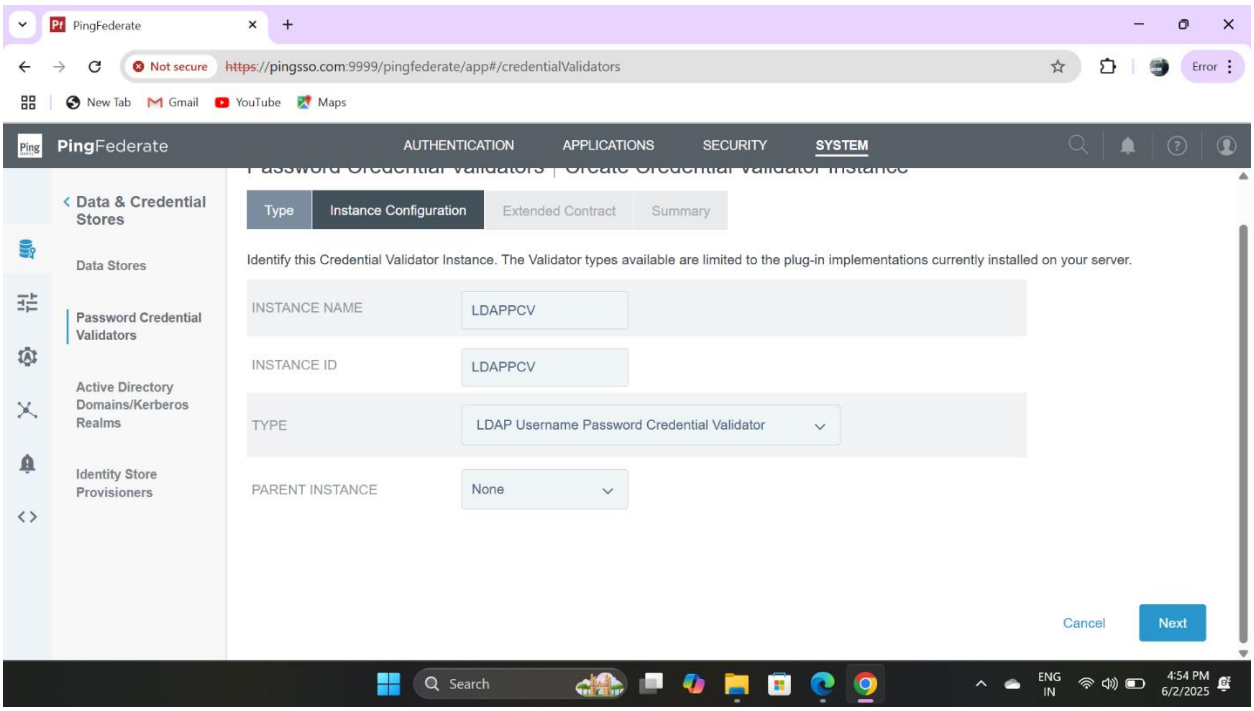
SECURITY
SYSTEM
Data & Credential Stores
Data Stores
Password Credential Validators
Active Directory Domains/Kerberos Realms
Identity Store Provisioners
Password Credential Validators
Credential Validators are plug-ins used to verify username and password pairs in various contexts throughout the system. The actual application of a Validator instance must be configured in the appropriate context as needed (e.g., OAuth Resource Owner Credentials Mapping).
Instance Name
Instance ID
Type
Parent Name
Action
PDPCV
PDPCV
LDAP Username Password Credential Validator
Delete | Check Usage
Create New Instance
Search
ENG
IN
4:52 PM
6/2/2025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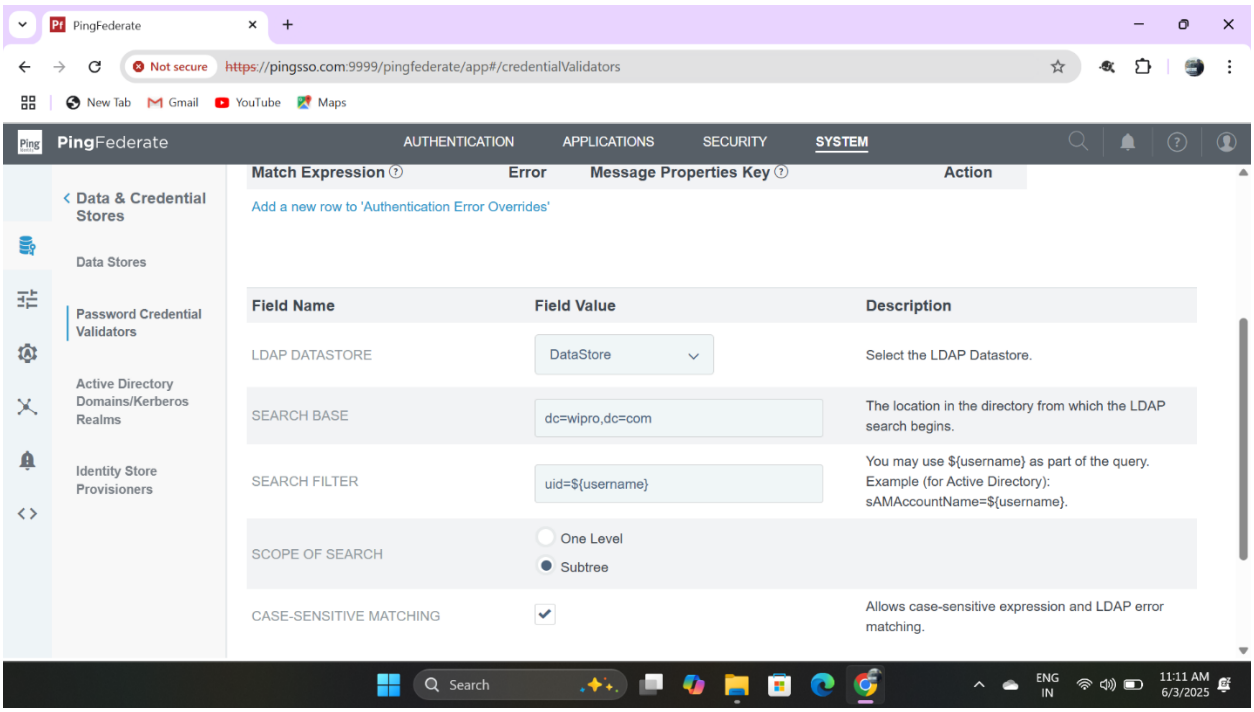
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Data & Credential Stores
Data Stores
Password Credential Validators
Active Directory Domains/Kerberos Realms
Identity Store Provisioners
Type
Instance Configuration
Extended Contract
Summary
Identify this Credential Validator Instance. The Validator types available are limited to the plug-in implementations currently installed on your server.
INSTANCE NAME
LDAPPCV
INSTANCE ID
LDAPPCV
TYPE
LDAP Username Password Credential Validator
PARENT INSTANCE
None
Cancel
Next
Search
ENG
IN
4:54 PM
6/2/2025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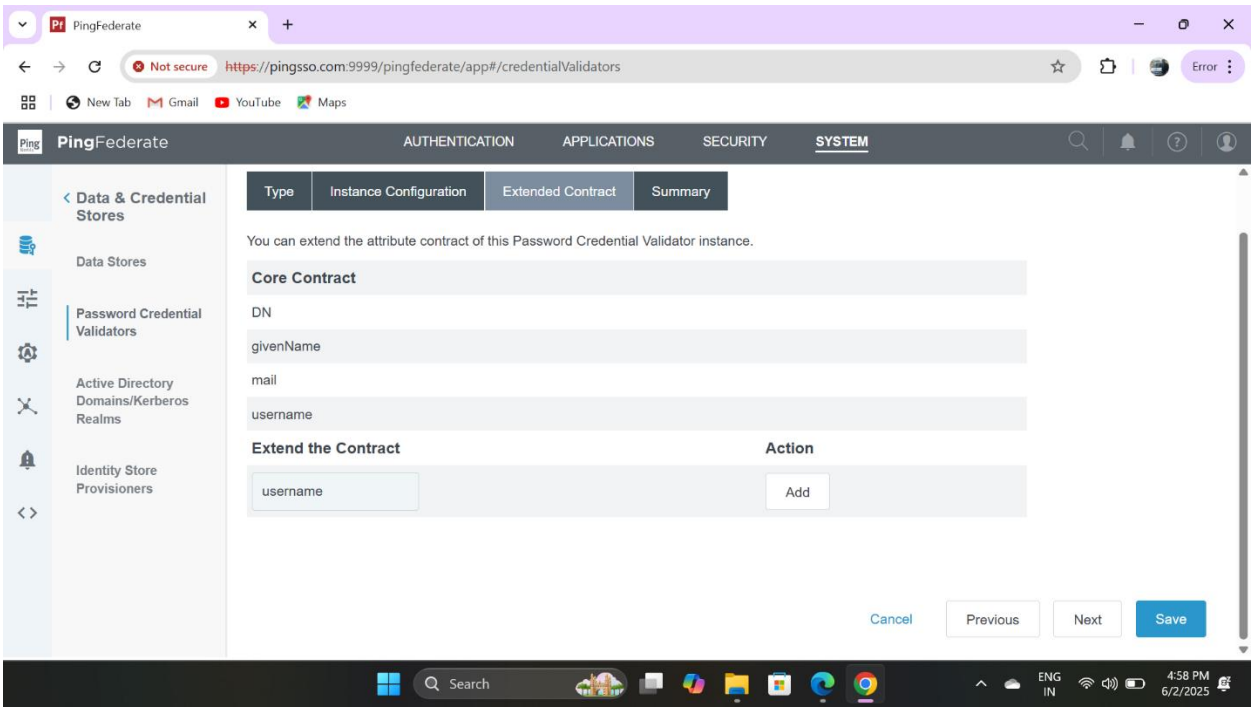
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Match Expression
Error
Message Properties Key
Action
Add a new row to 'Authentication Error Overrides'
Data & Credential Stores
Data Stores
Password Credential Validators
Active Directory Domains/Kerberos Realms
Identity Store Provisioners
Field Name
Field Value
Description
LDAP DATASTORE
DataStore
Select the LDAP Datastore.
SEARCH BASE
dc=wipro,dc=com
The location in the directory from which the LDAP search begins.
SEARCH FILTER
uid=${username}
You may use ${username} as part of the query. Example (for Active Directory): sAMAccountName=${username}.
SCOPE OF SEARCH
One Level
Subtree
CASE-SENSITIVE MATCHING
Allows case-sensitive expression and LDAP error matching.
Search
ENG
IN
11:11 AM
6/3/2025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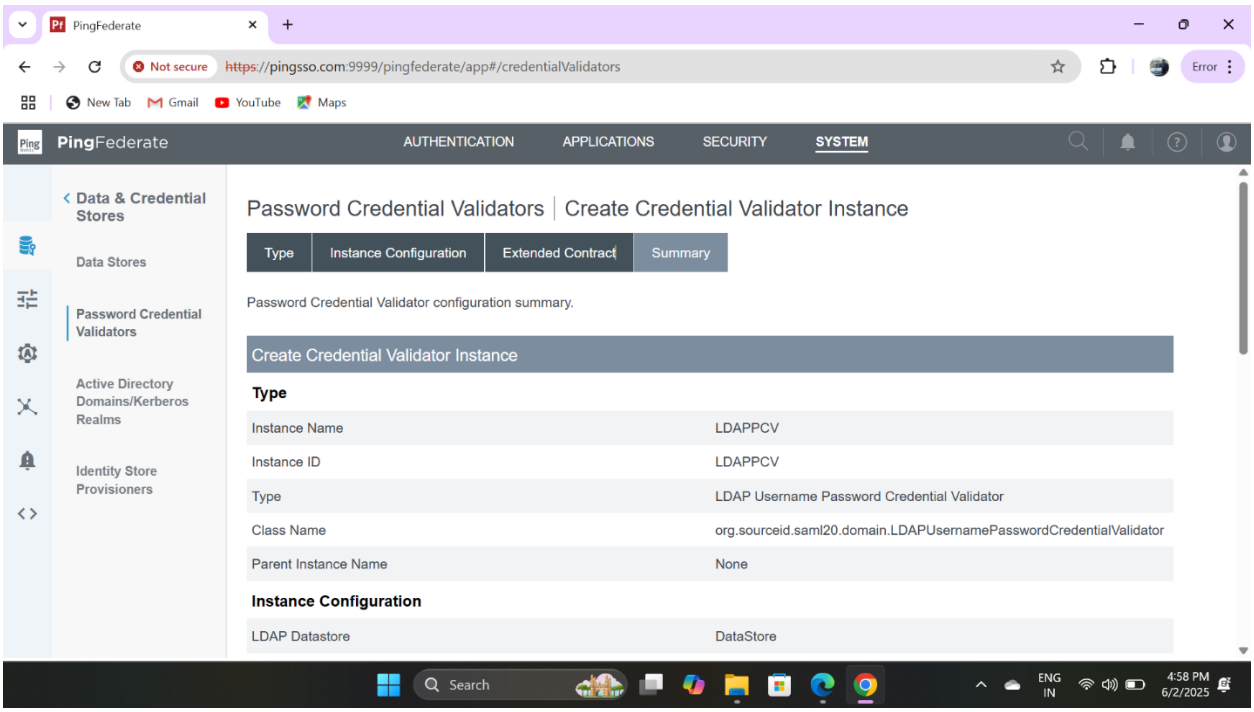
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Data & Credential Stores
Data Stores
Password Credential Validators
Active Directory Domains/Kerberos Realms
Identity Store Provisioners
Type
Instance Configuration
Extended Contract
Summary
You can extend the attribute contract of this Password Credential Validator instance.
Core Contract
DN
givenName
mail
username
Extend the Contract
Action
username
Add
Cancel
Previous
Next
Save
Search
ENG
IN
4:58 PM
6/2/2025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Data & Credential Stores
Data Stores
Password Credential Validators
Active Directory Domains/Kerberos Realms
Identity Store Provisioners
Password Credential Validators | Create Credential Validator Instance
Type
Instance Configuration
Extended Contract
Summary
Password Credential Validator configuration summary.
Create Credential Validator Instance
Type
Instance Name
LDAPPCV
Instance ID
LDAPPCV
Type
LDAP Username Password Credential Validator
Class Name
org.sourceid.saml20.domain.LDAPUsernamePasswordCredentialValidator
Parent Instance Name
None
Instance Configuration
LDAP Datastore
DataStore
Search
ENG
IN
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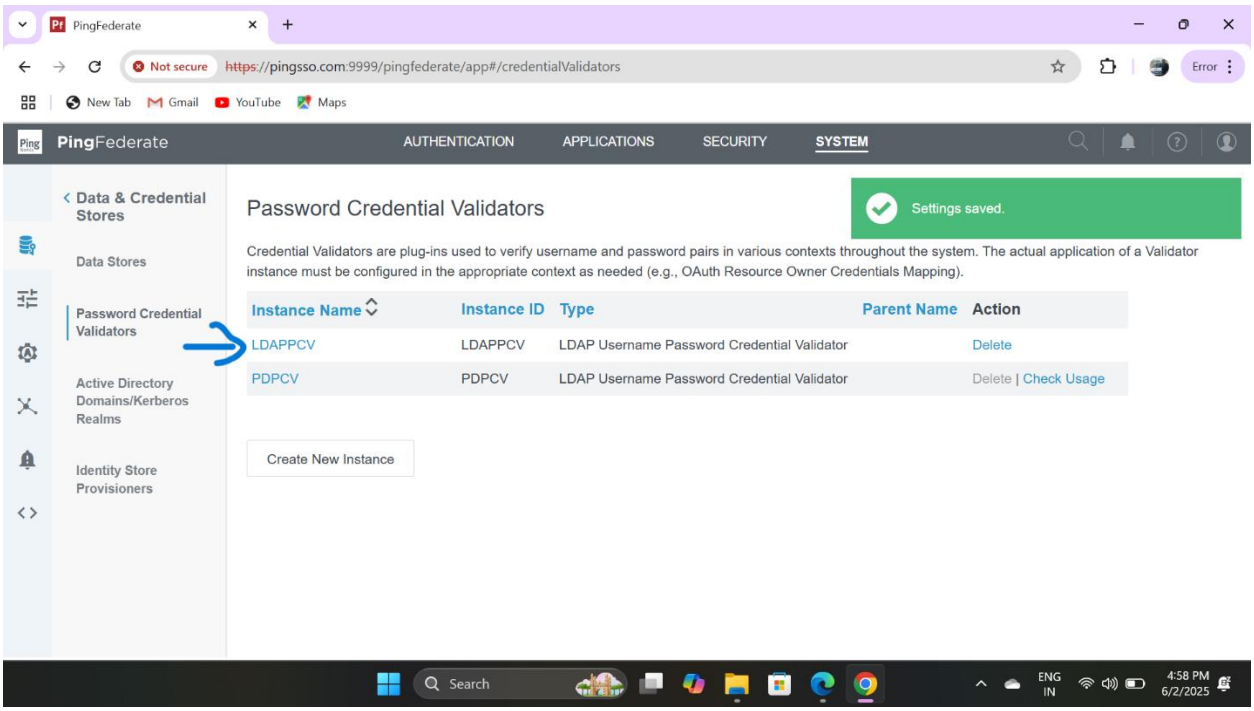
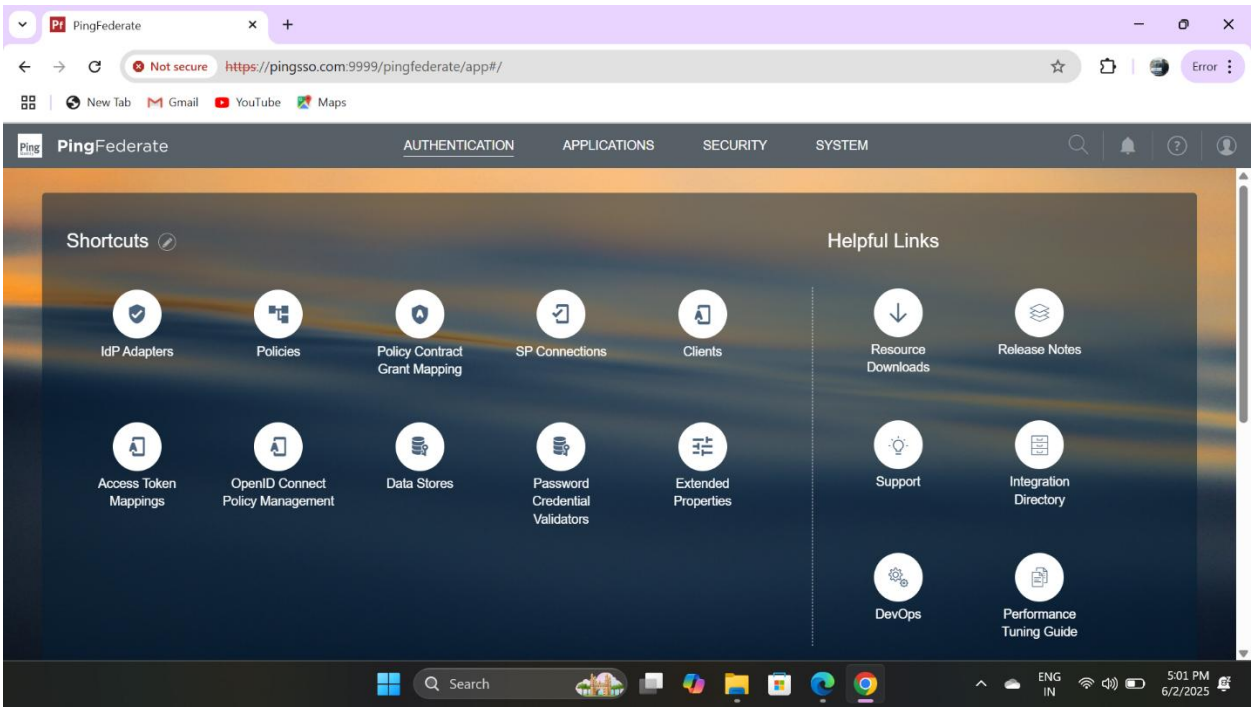



**<u>Step 3</u>:- Create Authentication Adapters**

1. Navigate to Authentication → Adapters.
2. Click Create New Adapter.
3. Choose HTML Form adapter. Name it (e.g., “HTML-Form-Adapter”).
4. Associate it with the PCV created in Step 2.
5. Configure form fields such as username and password.
6. Save the adapter.

Repeat similar steps to create HTTP Basic, PingID and Composite adapters.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SYSTEM
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Helpful Links
IdP Adapters
Policies
Policy Contract Grant Mapping
SP Connections
Clients
Resource Downloads
Release Notes
Access Token Mappings
OpenID Connect Policy Management
Data Stores
Password Credential Validators
Extended Properties
Support
Integration Directory
DevOps
Performance Tuning Guide
Search
ENG IN
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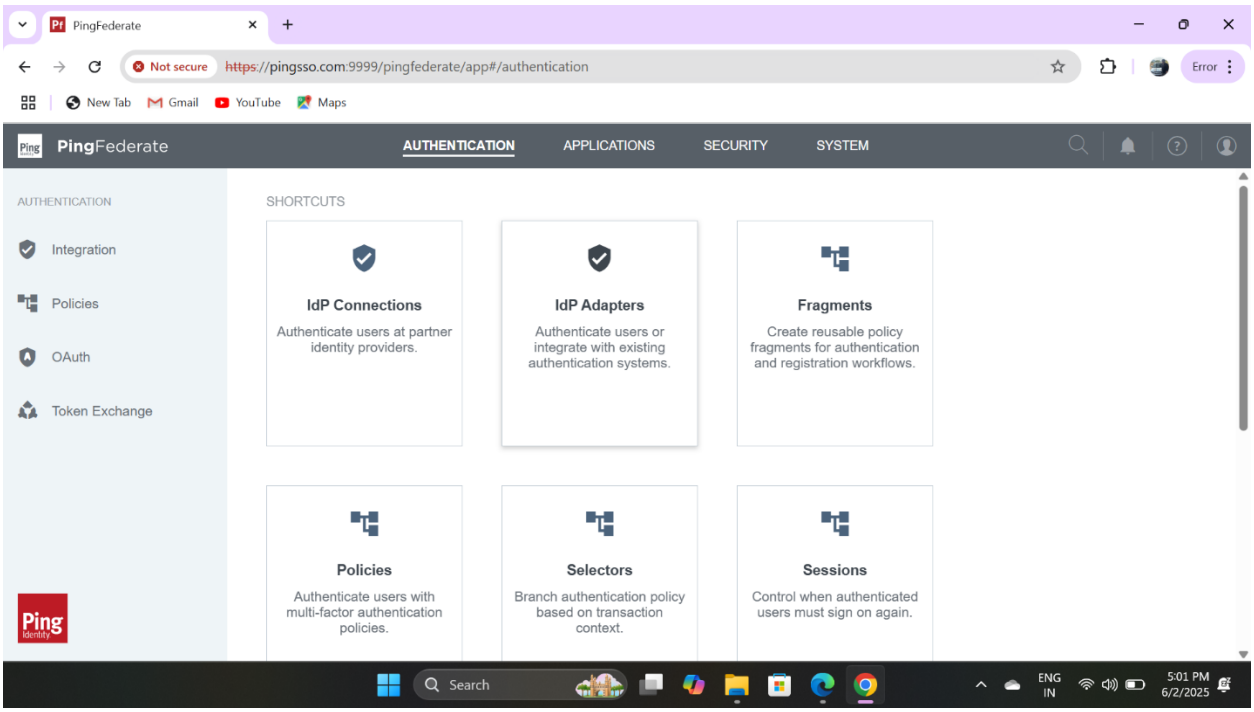
PingFederate
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PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
AUTHENTICATION
Integration
Policies
OAuth
Token Exchange
SHORTCUTS
IdP Connections
Authenticate users at partner identity providers.
IdP Adapters
Authenticate users or integrate with existing authentication systems.
Fragments
Create reusable policy fragments for authentication and registration workflows.
Policies
Authenticate users with multi-factor authentication policies.
Selectors
Branch authentication policy based on transaction context.
Sessions
Control when authenticated users must sign on again.
Ping Identity
Search
ENG IN
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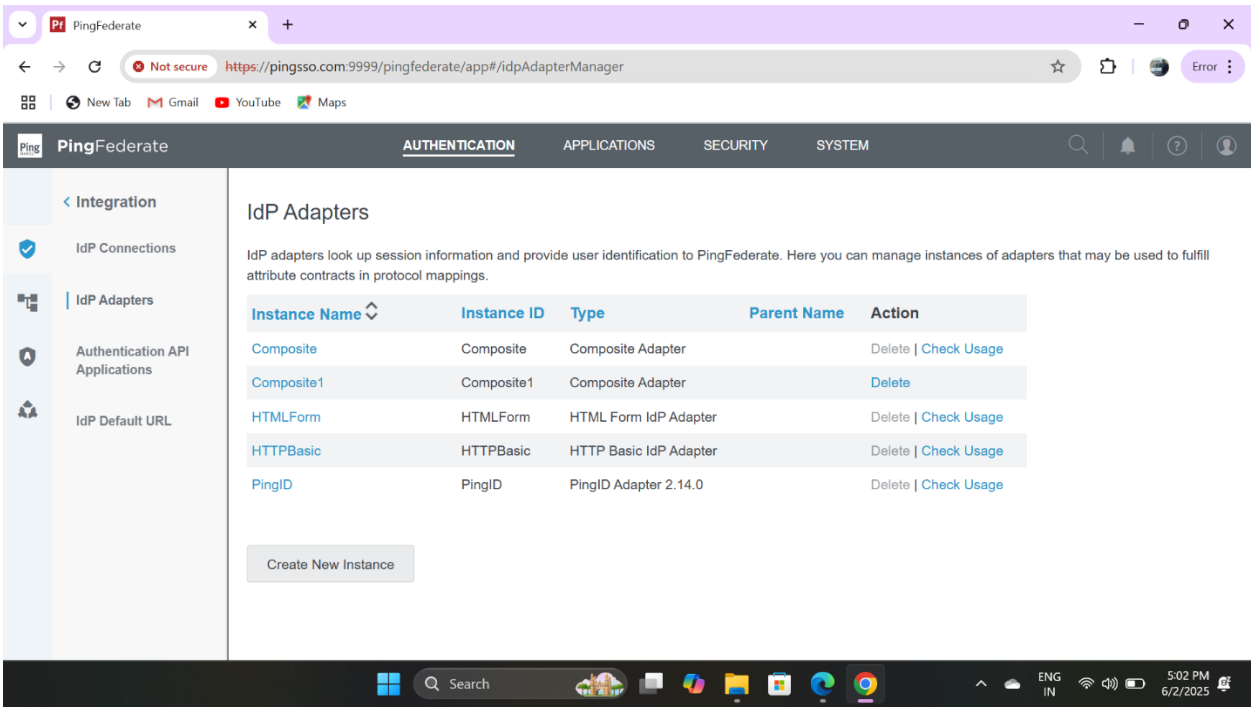
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AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
IdP Connections
IdP Adapters
Authentication API Applications
IdP Default URL
IdP Adapters
IdP adapters look up session information and provide user identification to PingFederate. Here you can manage instances of adapters that may be used to fulfill attribute contracts in protocol mappings.
Instance Name
Instance ID
Type
Parent Name
Action
Composite
Composite
Composite Adapter
Delete | Check Usage
Composite1
Composite1
Composite Adapter
Delete
HTMLForm
HTMLForm
HTML Form IdP Adapter
Delete | Check Usage
HTTPBasic
HTTPBasic
HTTP Basic IdP Adapter
Delete | Check Usage
PingID
PingID
PingID Adapter 2.14.0
Delete | Check Usage
Create New Instance
Search
ENG
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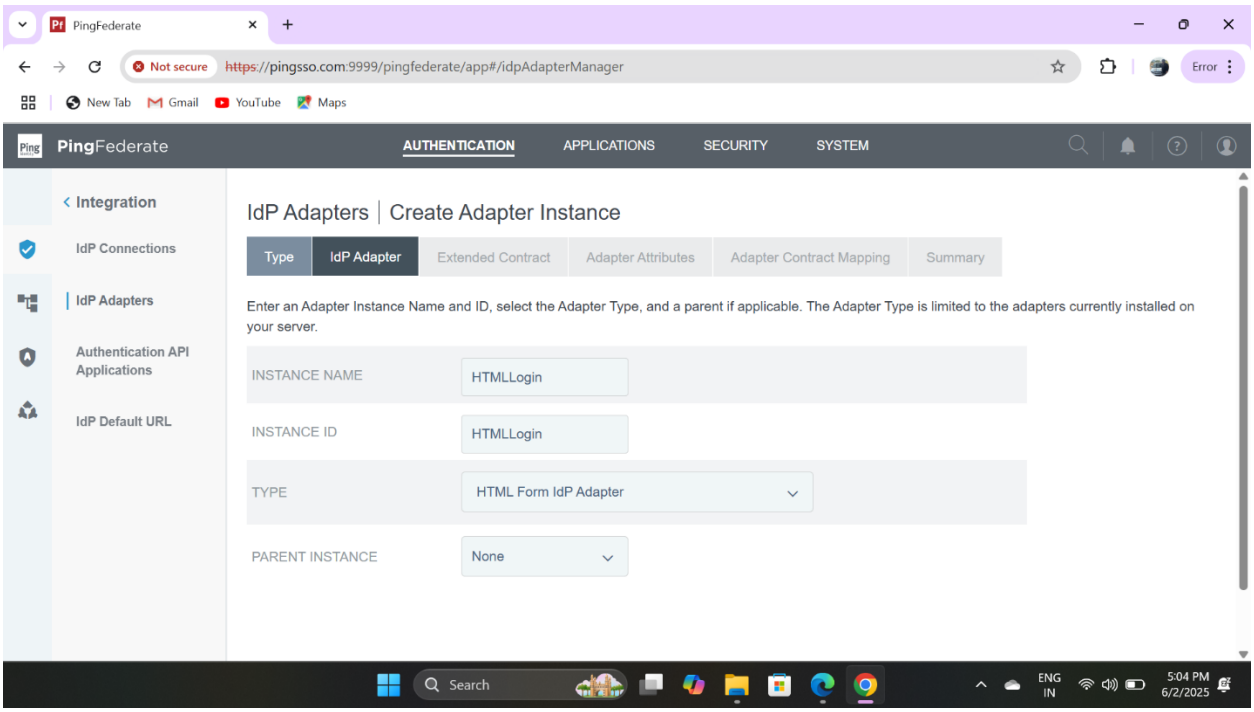
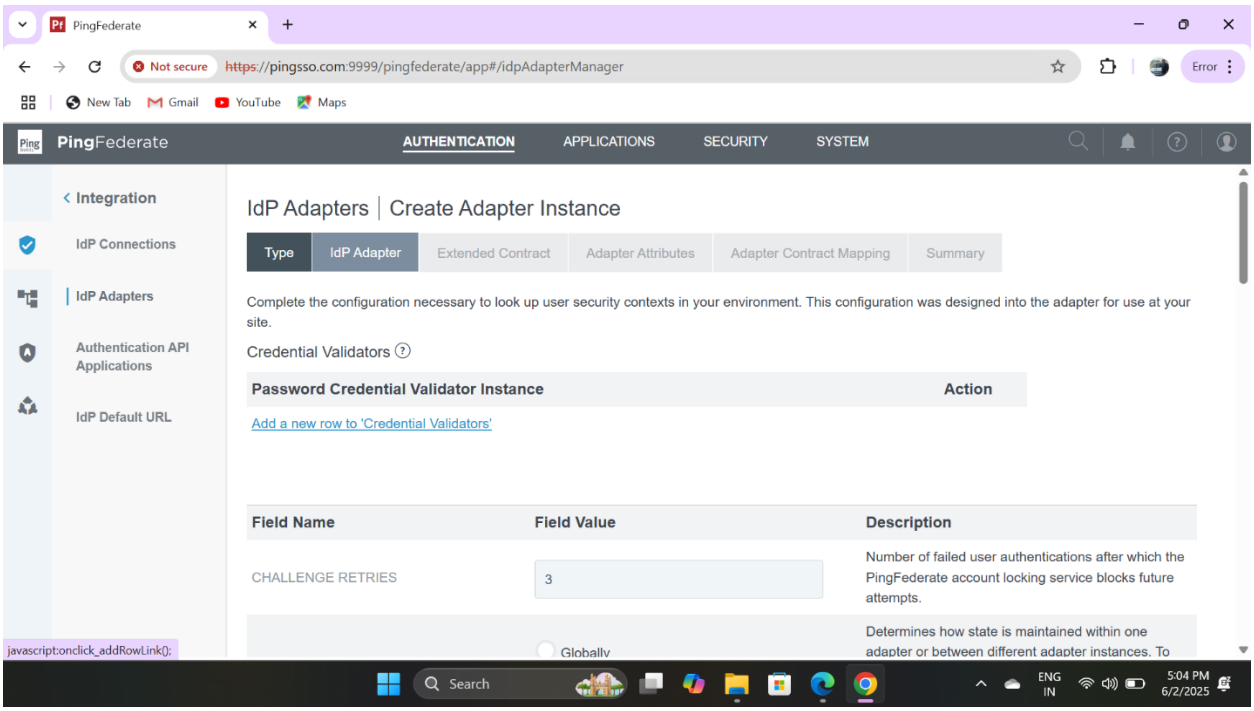
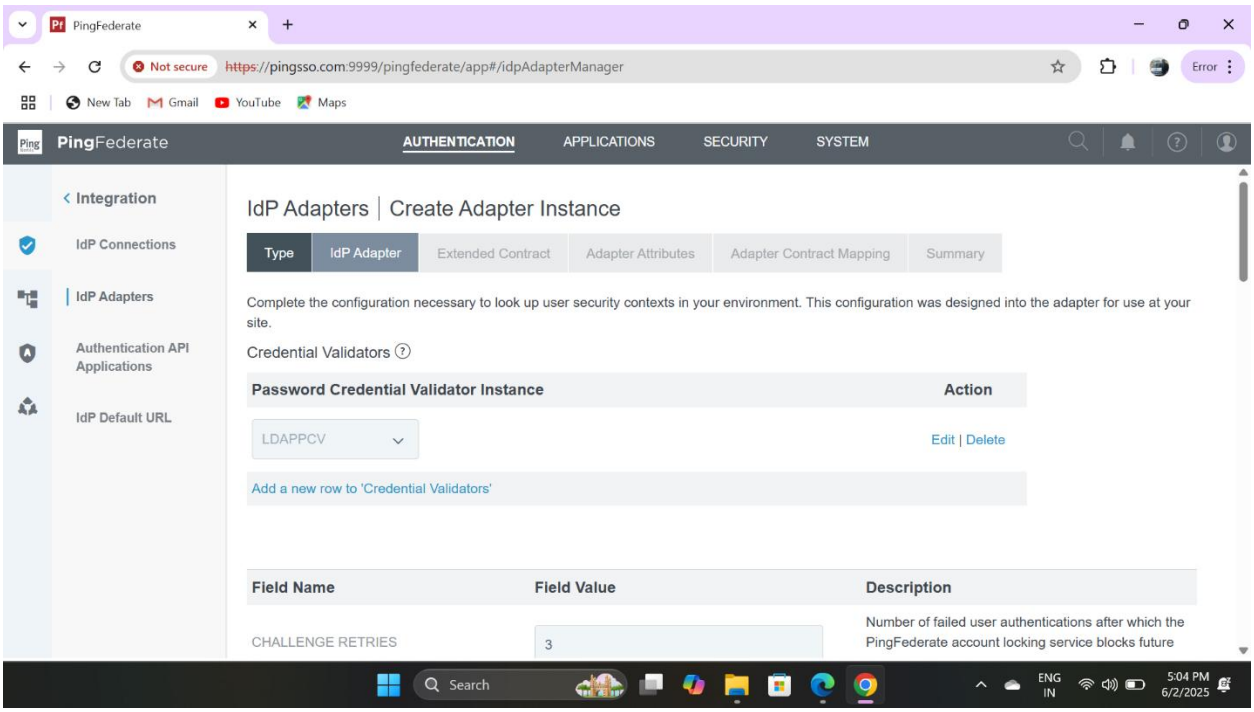
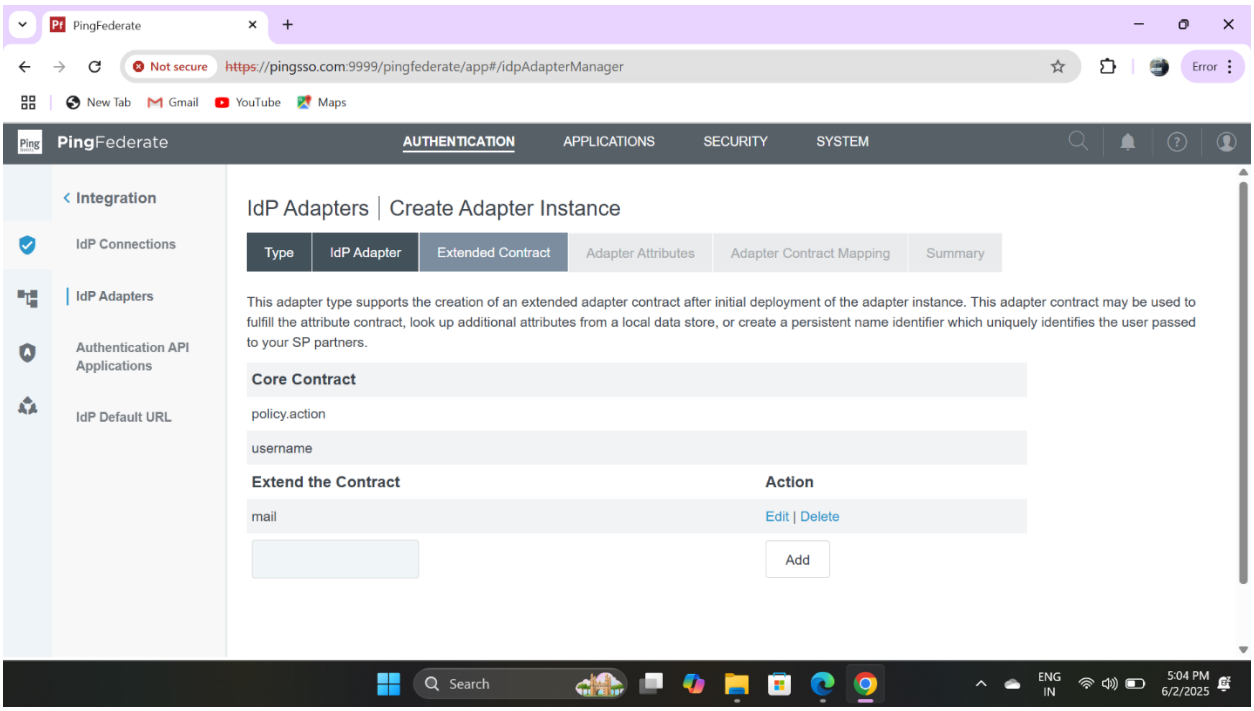
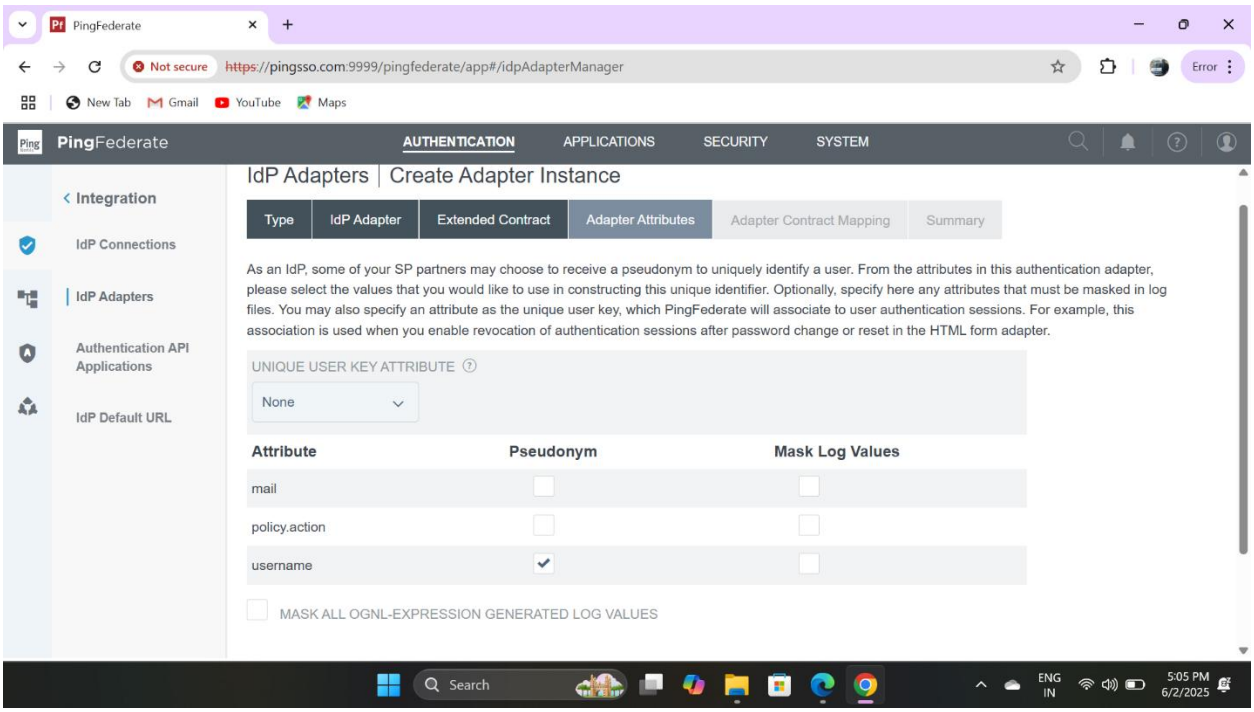
5:02 PM
6/2/2025

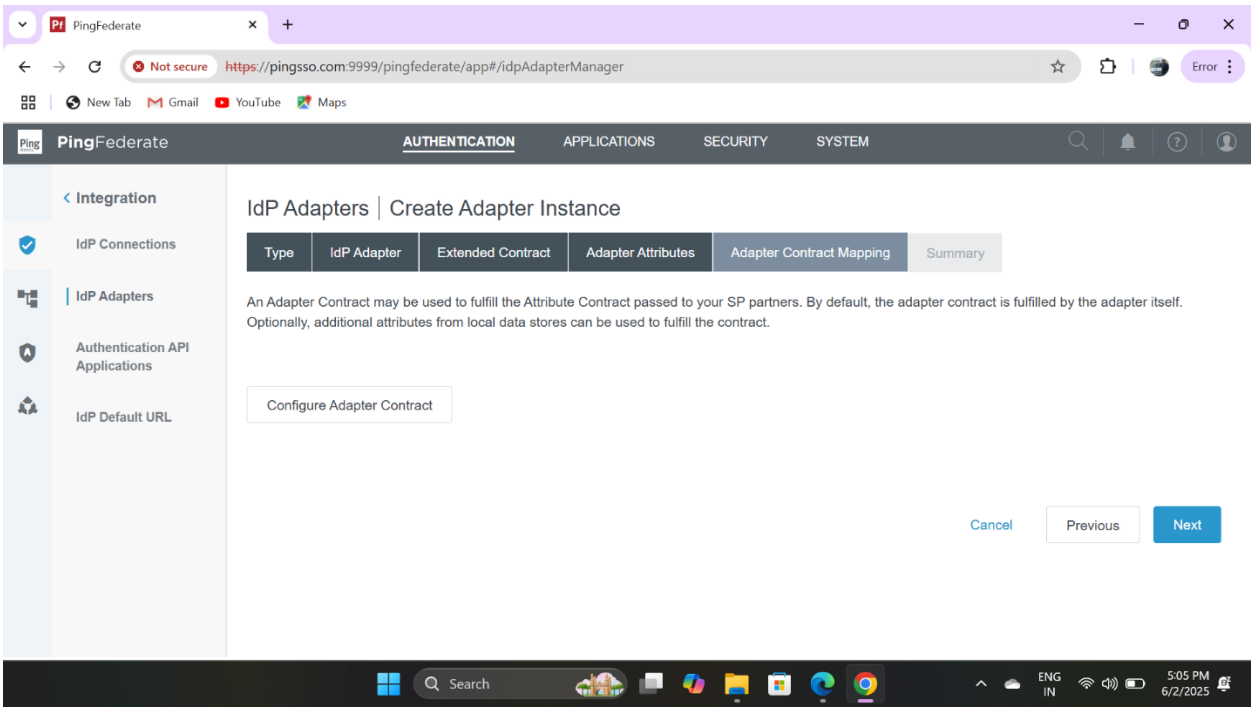

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/idpAdapterManager
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
IdP Connections
IdP Adapters
Authentication API Applications
IdP Default URL
IdP Adapters | Create Adapter Instance
Type
IdP Adapter
Extended Contract
Adapter Attributes
Adapter Contract Mapping
Summary
Enter an Adapter Instance Name and ID, select the Adapter Type, and a parent if applicable. The Adapter Type is limited to the adapters currently installed on your server.
INSTANCE NAME
HTMLLogin
INSTANCE ID
HTMLLogin
TYPE
HTML Form IdP Adapter
PARENT INSTANCE
None
Search
ENG
IN
5:04 PM
6/2/2025

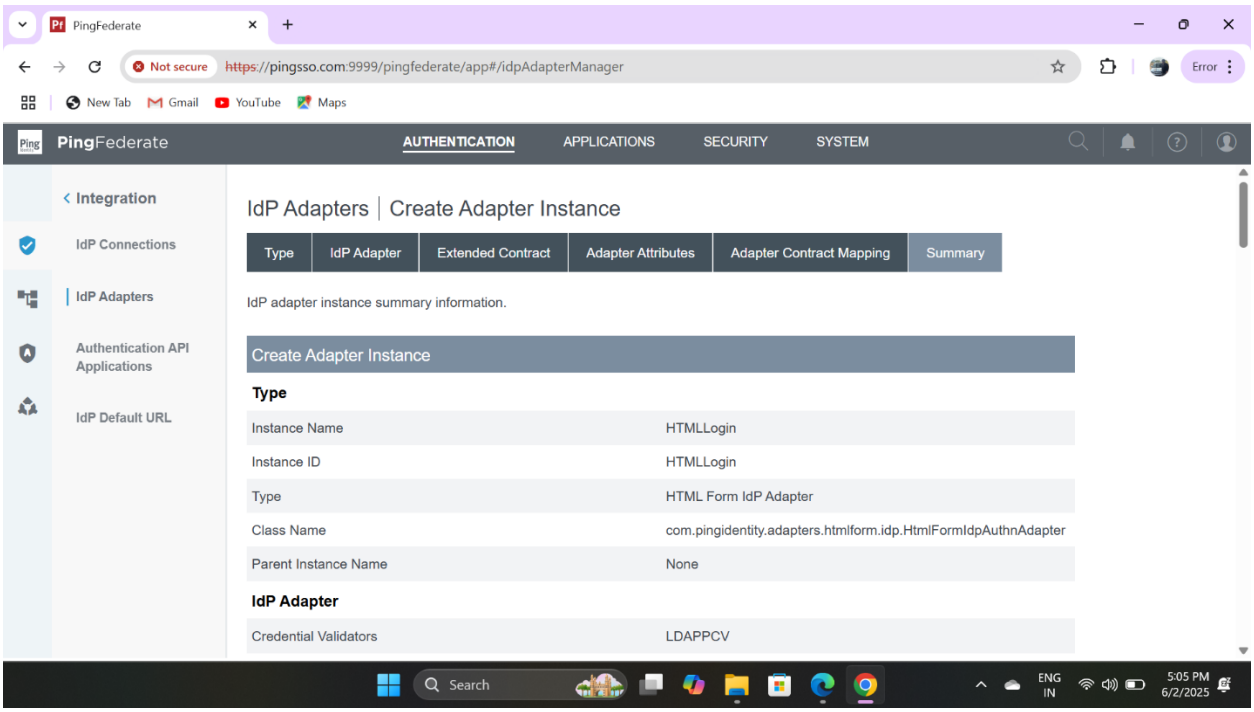

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/idpAdapterManager
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
IdP Connections
IdP Adapters
Authentication API Applications
IdP Default URL
IdP Adapters | Create Adapter Instance
Type
IdP Adapter
Extended Contract
Adapter Attributes
Adapter Contract Mapping
Summary
Complete the configuration necessary to look up user security contexts in your environment. This configuration was designed into the adapter for use at your site.
Credential Validators
Password Credential Validator Instance
Action
Add a new row to 'Credential Validators'
Field Name
Field Value
Description
CHALLENGE RETRIES
3
Number of failed user authentications after which the PingFederate account locking service blocks future attempts.
Globally
Determines how state is maintained within one adapter or between different adapter instances. To
javascript:onclick_addRowLink();
Search
ENG
IN
5:04 PM
6/2/2025

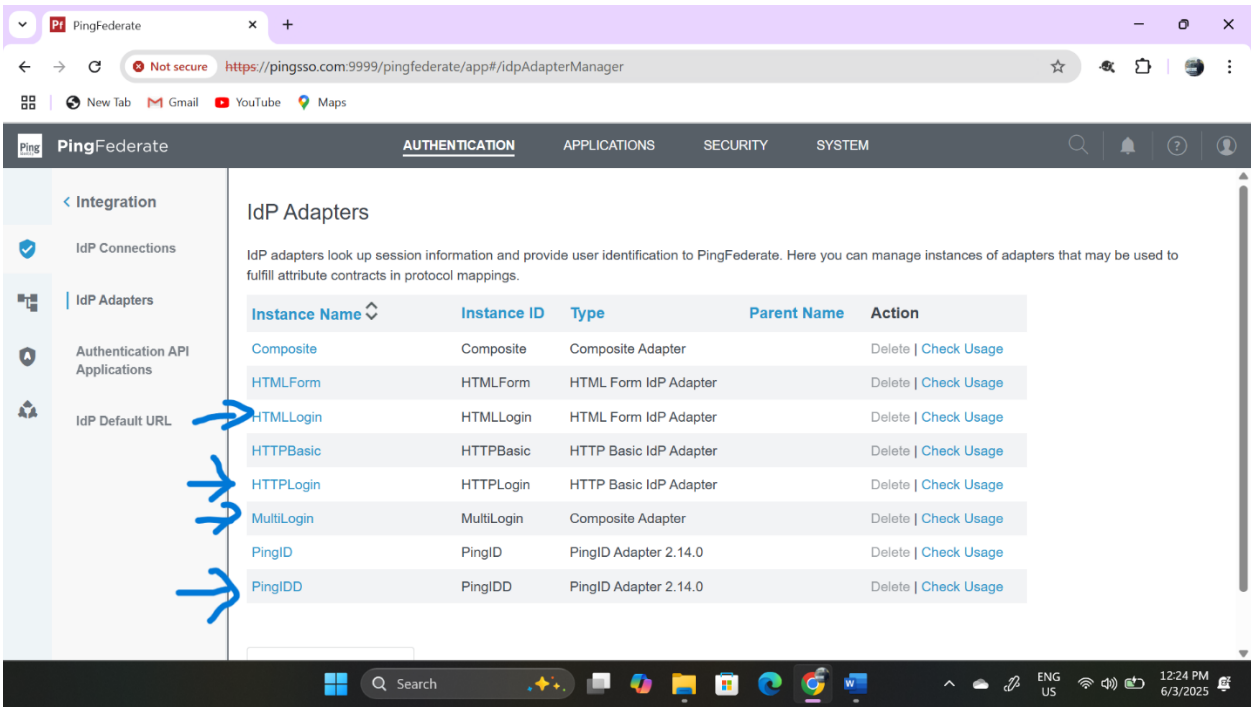

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/idpAdapterManager
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
IdP Connections
IdP Adapters
Authentication API Applications
IdP Default URL
IdP Adapters | Create Adapter Instance
Type
IdP Adapter
Extended Contract
Adapter Attributes
Adapter Contract Mapping
Summary
Complete the configuration necessary to look up user security contexts in your environment. This configuration was designed into the adapter for use at your site.
Credential Validators
Password Credential Validator Instance
Action
LDAPPCV
Edit | Delete
Add a new row to 'Credential Validators'
Field Name
Field Value
Description
CHALLENGE RETRIES
3
Number of failed user authentications after which the PingFederate account locking service blocks future
Search
ENG
IN
5:04 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/idpAdapterManager
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
IdP Connections
IdP Adapters
Authentication API Applications
IdP Default URL
IdP Adapters | Create Adapter Instance
Type
IdP Adapter
Extended Contract
Adapter Attributes
Adapter Contract Mapping
Summary
This adapter type supports the creation of an extended adapter contract after initial deployment of the adapter instance. This adapter contract may be used to fulfill the attribute contract, look up additional attributes from a local data store, or create a persistent name identifier which uniquely identifies the user passed to your SP partners.
Core Contract
policy.action
username
Extend the Contract
Action
mail
Edit | Delete
Add
Search
ENG
IN
5:04 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/idpAdapterManager
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
IdP Connections
IdP Adapters
Authentication API Applications
IdP Default URL
IdP Adapters | Create Adapter Instance
Type
IdP Adapter
Extended Contract
Adapter Attributes
Adapter Contract Mapping
Summary
As an IdP, some of your SP partners may choose to receive a pseudonym to uniquely identify a user. From the attributes in this authentication adapter, please select the values that you would like to use in constructing this unique identifier. Optionally, specify here any attributes that must be masked in log files. You may also specify an attribute as the unique user key, which PingFederate will associate to user authentication sessions. For example, this association is used when you enable revocation of authentication sessions after password change or reset in the HTML form adapter.
UNIQUE USER KEY ATTRIBUTE
None
Attribute
Pseudonym
Mask Log Values
mail
policy.action
username
MASK ALL OGNL-EXPRESSION GENERATED LOG VALUES
Search
ENG
IN
5:05 PM
6/2/2025

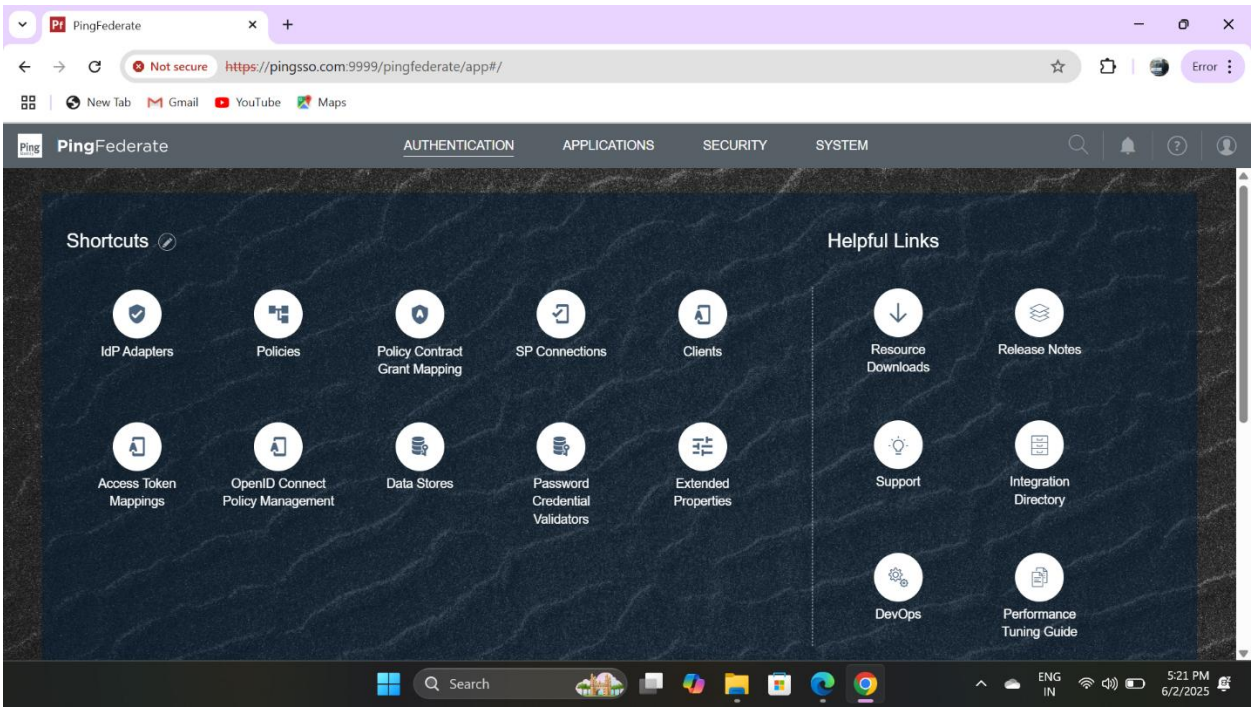

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/idpAdapterManager
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
IdP Connections
IdP Adapters
Authentication API Applications
IdP Default URL
IdP Adapters | Create Adapter Instance
Type
IdP Adapter
Extended Contract
Adapter Attributes
Adapter Contract Mapping
Summary
An Adapter Contract may be used to fulfill the Attribute Contract passed to your SP partners. By default, the adapter contract is fulfilled by the adapter itself. Optionally, additional attributes from local data stores can be used to fulfill the contract.
Configure Adapter Contract
Cancel
Previous
Next
Search
ENG
IN
5:05 PM
6/2/2025

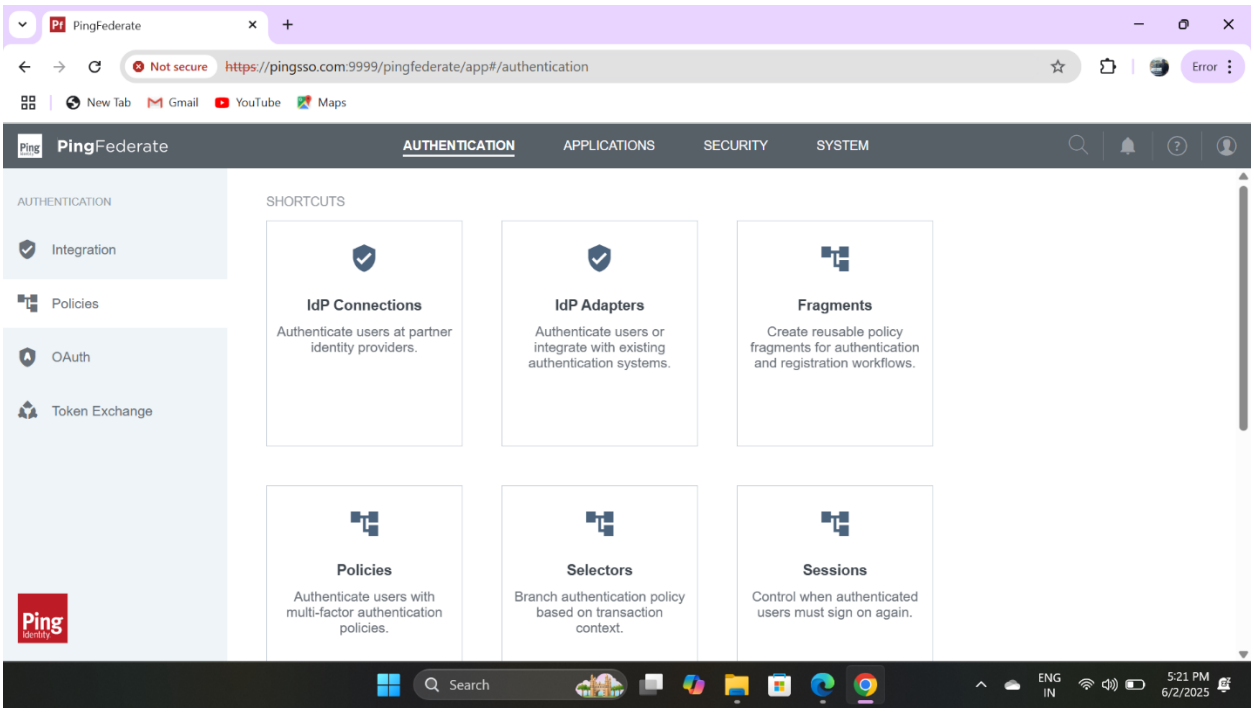

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/idpAdapterManager
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
IdP Connections
IdP Adapters
Authentication API Applications
IdP Default URL
IdP Adapters | Create Adapter Instance
Type
IdP Adapter
Extended Contract
Adapter Attributes
Adapter Contract Mapping
Summary
IdP adapter instance summary information.
Create Adapter Instance
Type
Instance Name
HTMLLogin
Instance ID
HTMLLogin
Type
HTML Form IdP Adapter
Class Name
com.pingidentity.adapters.htmlform.idp.HtmlFormIdpAuthnAdapter
Parent Instance Name
None
IdP Adapter
Credential Validators
LDAPPCV
Search
ENG
IN
5:05 PM
6/2/2025

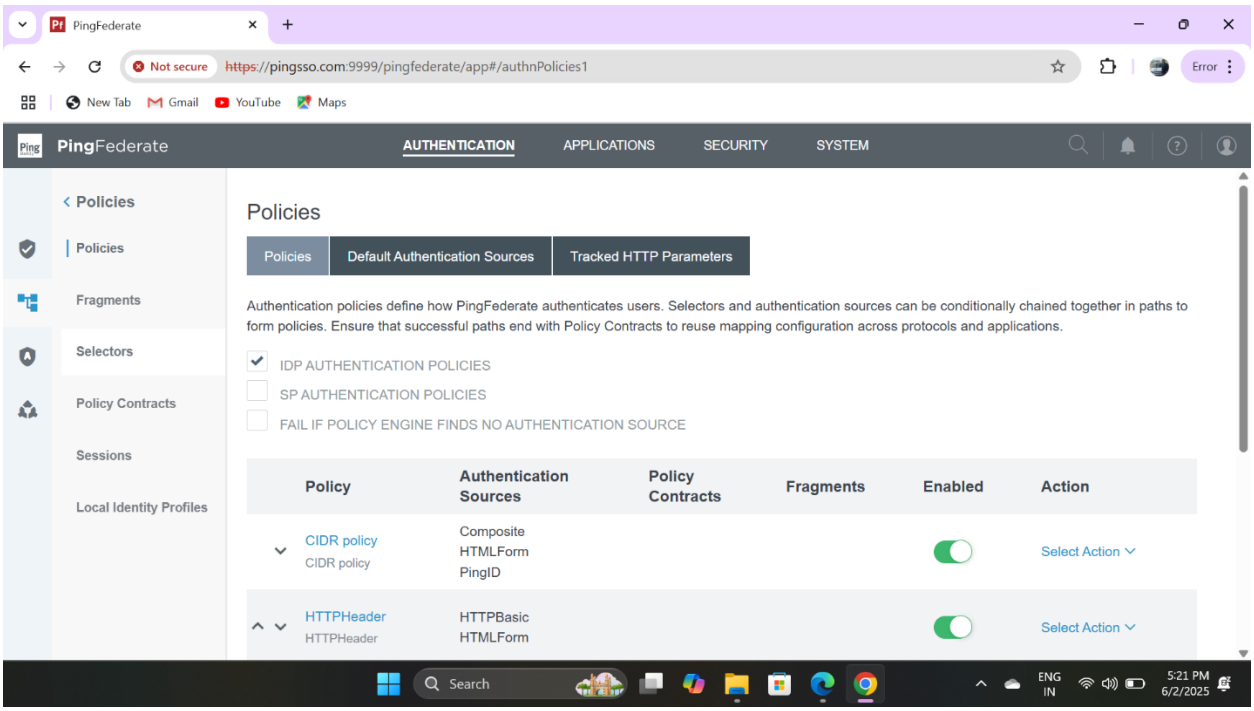


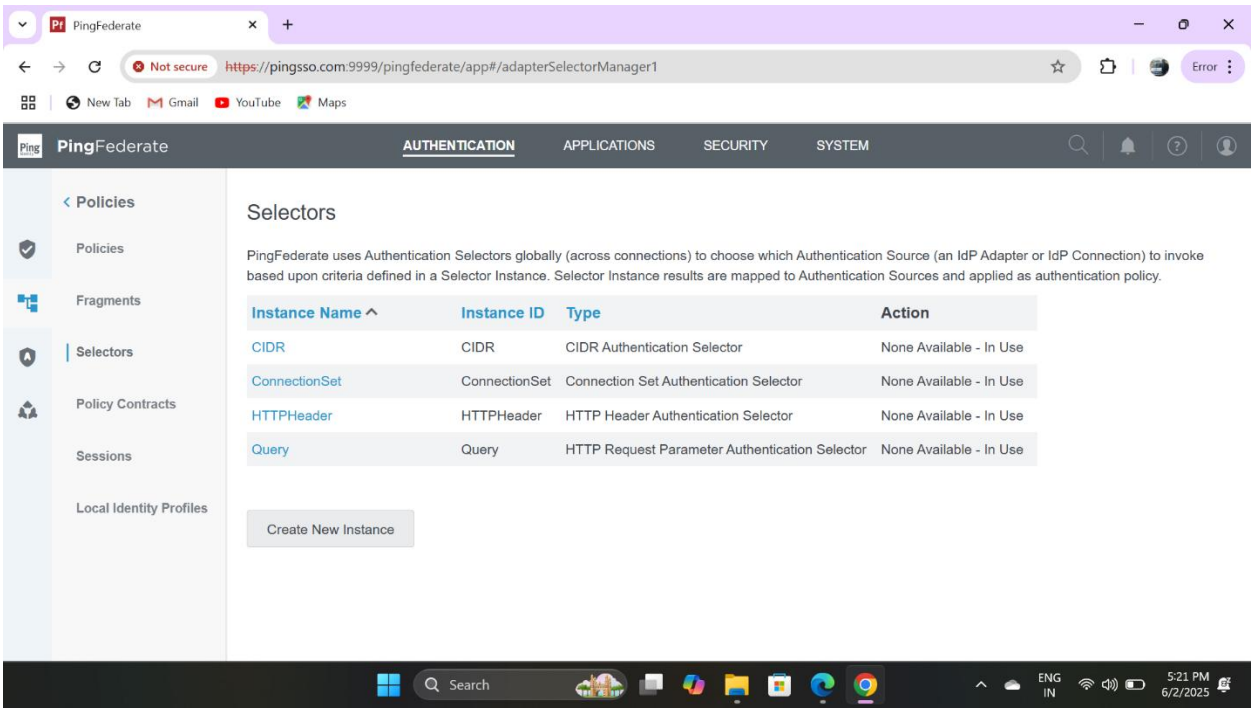

**<u>Step 4</u>:- Create CIDR Authentication Selector**

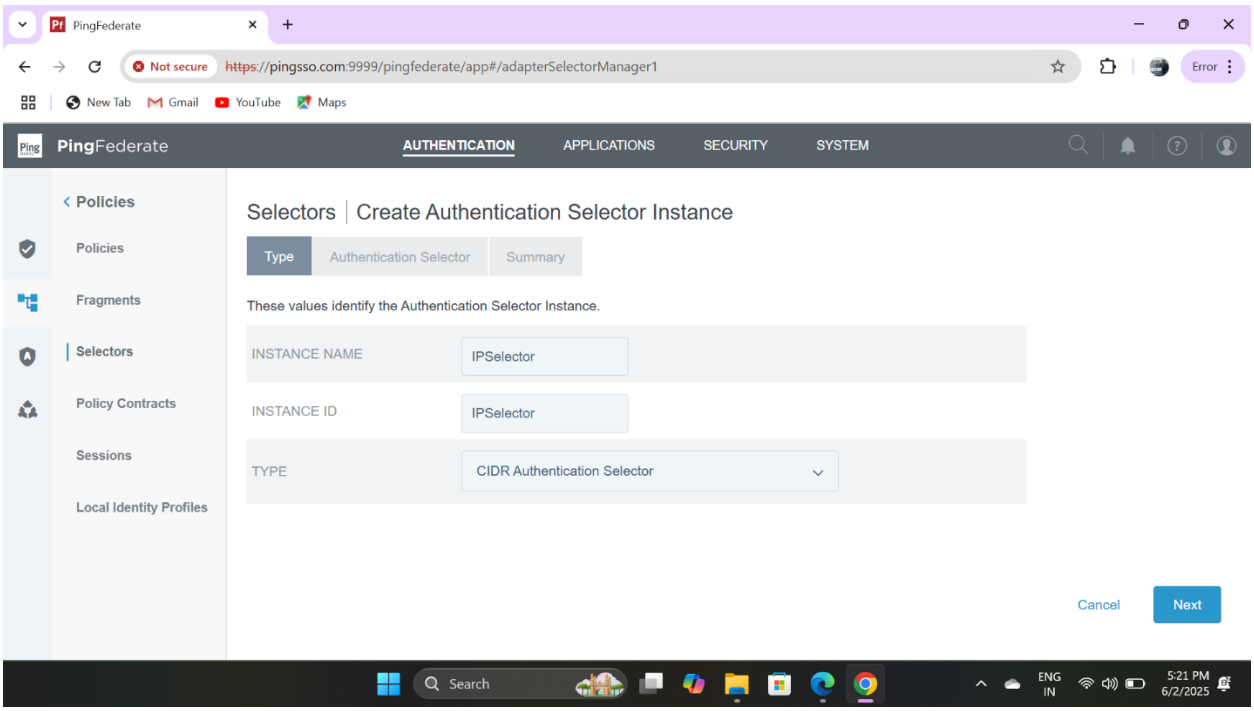
1. Go to Authentication → Selectors.
2. Click Create New Selector.
3. Choose CIDR Authentication Selector.
4. Define CIDR ranges representing internal IPs (e.g., 192.168.1.9/24).
5. Save the selector.

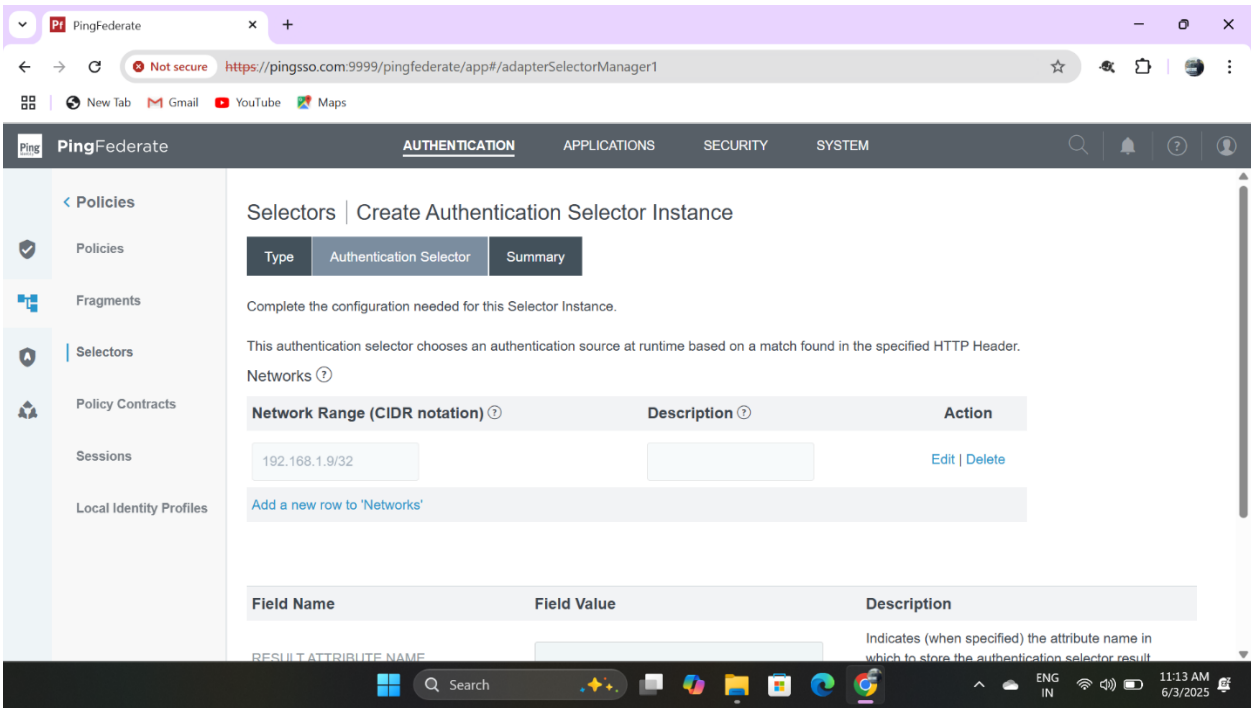

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Shortcuts
IdP Adapters
Policies
Policy Contract Grant Mapping
SP Connections
Clients
Access Token Mappings
OpenID Connect Policy Management
Data Stores
Password Credential Validators
Extended Properties
Helpful Links
Resource Downloads
Release Notes
Support
Integration Directory
DevOps
Performance Tuning Guide
Search
ENG IN
5:21 PM 6/2/2025

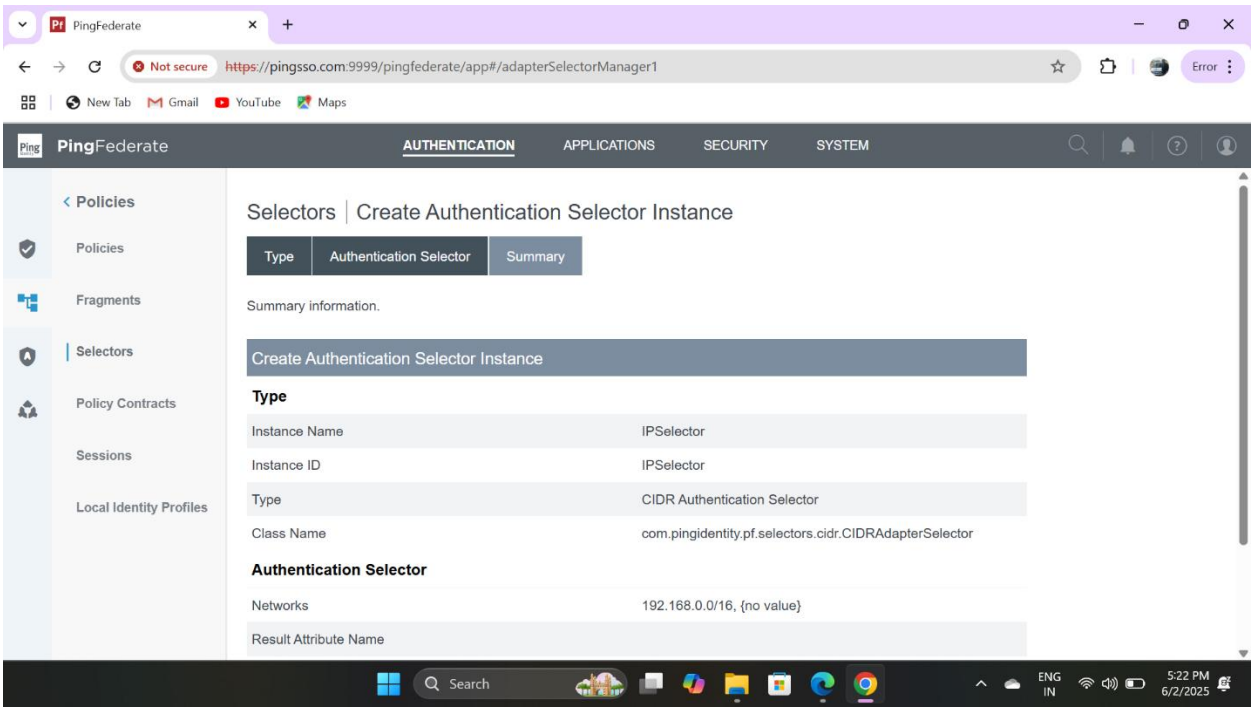

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/authentication
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
AUTHENTICATION
Integration
Policies
OAuth
Token Exchange
SHORTCUTS
IdP Connections
Authenticate users at partner identity providers.
IdP Adapters
Authenticate users or integrate with existing authentication systems.
Fragments
Create reusable policy fragments for authentication and registration workflows.
Policies
Authenticate users with multi-factor authentication policies.
Selectors
Branch authentication policy based on transaction context.
Sessions
Control when authenticated users must sign on again.
Ping Identity
Search
ENG IN
5:21 PM 6/2/2025

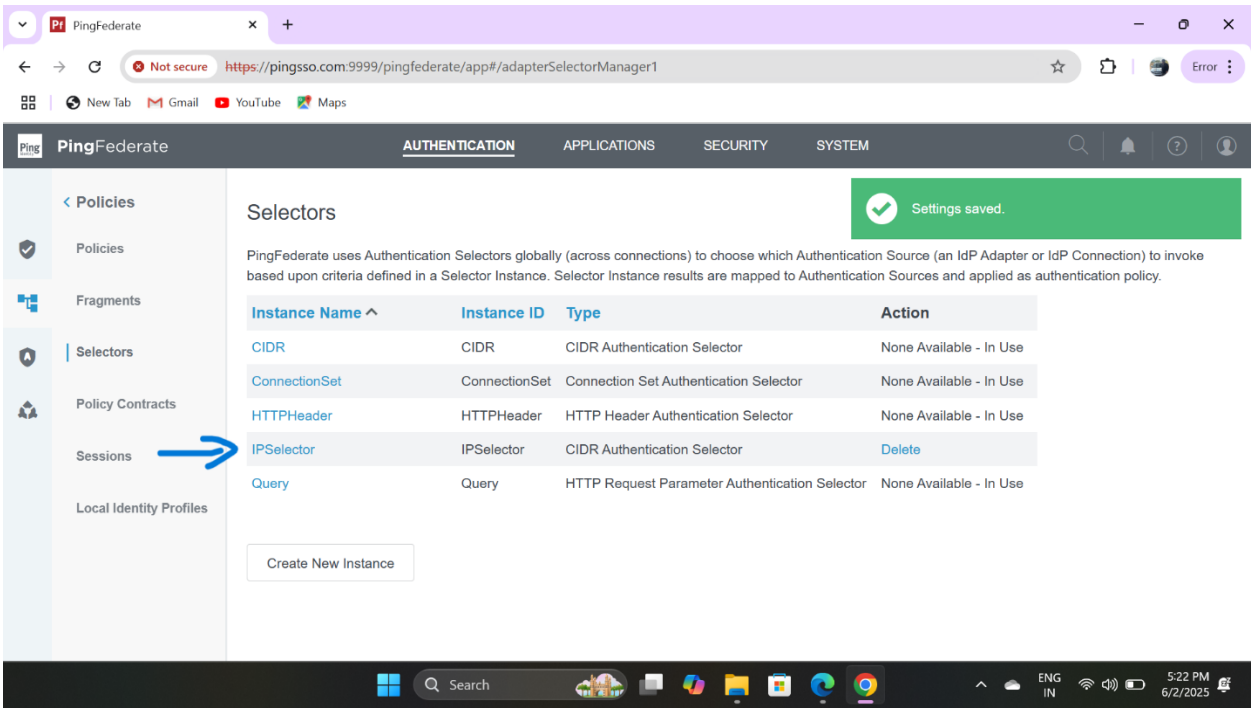

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/authnPolicies1
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
Policies
Policies
Default Authentication Sources
Tracked HTTP Parameters
Authentication policies define how PingFederate authenticates users. Selectors and authentication sources can be conditionally chained together in paths to form policies. Ensure that successful paths end with Policy Contracts to reuse mapping configuration across protocols and applications.
IDP AUTHENTICATION POLICIES
SP AUTHENTICATION POLICIES
FAIL IF POLICY ENGINE FINDS NO AUTHENTICATION SOURCE
Policy
Authentication Sources
Policy Contracts
Fragments
Enabled
Action
CIDR policy
CIDR policy
Composite
HTMLForm
PingID
Select Action
HTTPHeader
HTTPHeader
HTTPBasic
HTMLForm
Select Action
Search
ENG
IN
5:21 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/adapterSelectorManager1
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
Selectors
PingFederate uses Authentication Selectors globally (across connections) to choose which Authentication Source (an IdP Adapter or IdP Connection) to invoke based upon criteria defined in a Selector Instance. Selector Instance results are mapped to Authentication Sources and applied as authentication policy.
Instance Name
Instance ID
Type
Action
CIDR
CIDR
CIDR Authentication Selector
None Available - In Use
ConnectionSet
ConnectionSet
Connection Set Authentication Selector
None Available - In Use
HTTPHeader
HTTPHeader
HTTP Header Authentication Selector
None Available - In Use
Query
Query
HTTP Request Parameter Authentication Selector
None Available - In Use
Create New Instance
Search
ENG
IN
5:21 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/adapterSelectorManager1
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
Selectors | Create Authentication Selector Instance
Type
Authentication Selector
Summary
These values identify the Authentication Selector Instance.
INSTANCE NAME
IPSelector
INSTANCE ID
IPSelector
TYPE
CIDR Authentication Selector
Cancel
Next
Search
ENG
IN
5:21 PM
6/2/2025

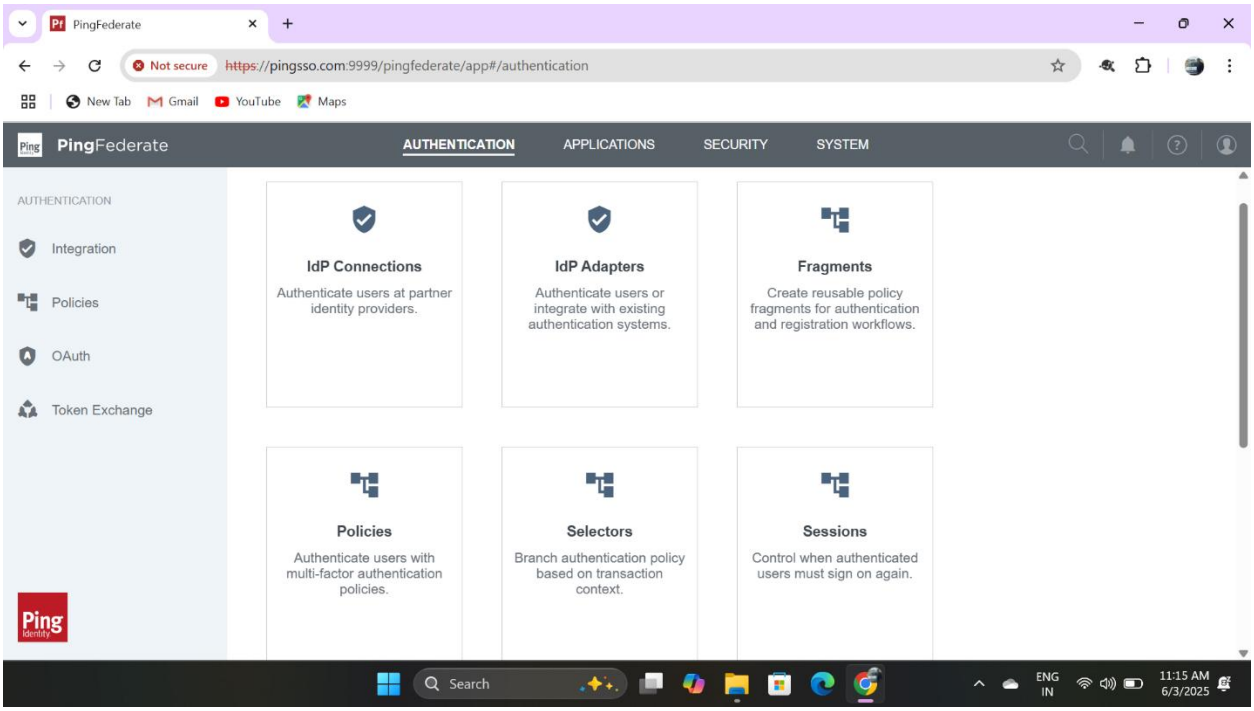

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/adapterSelectorManager1
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
Selectors | Create Authentication Selector Instance
Type
Authentication Selector
Summary
Complete the configuration needed for this Selector Instance.
This authentication selector chooses an authentication source at runtime based on a match found in the specified HTTP Header.
Networks
Network Range (CIDR notation)
Description
Action
192.168.1.9/32
Edit | Delete
Add a new row to 'Networks'
Field Name
Field Value
Description
Indicates (when specified) the attribute name in
Search
ENG
IN
11:13 AM
6/3/2025

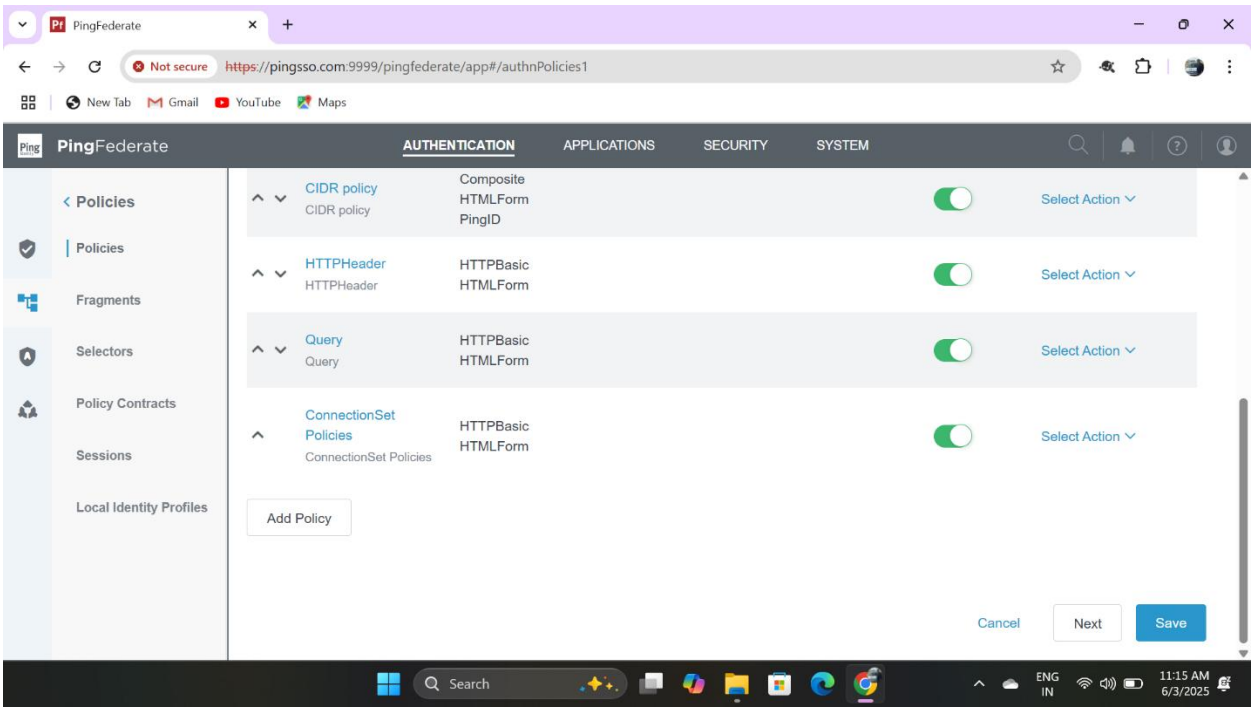

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/adapterSelectorManager1
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
Selectors | Create Authentication Selector Instance
Type
Authentication Selector
Summary
Summary information.
Create Authentication Selector Instance
Type
Instance Name
IPSelector
Instance ID
IPSelector
Type
CIDR Authentication Selector
Class Name
com.pingidentity.pf.selectors.cidr.CIDRAdapterSelector
Authentication Selector
Networks
192.168.0.0/16, {no value}
Result Attribute Name
Search
ENG
IN
5:22 PM
6/2/2025

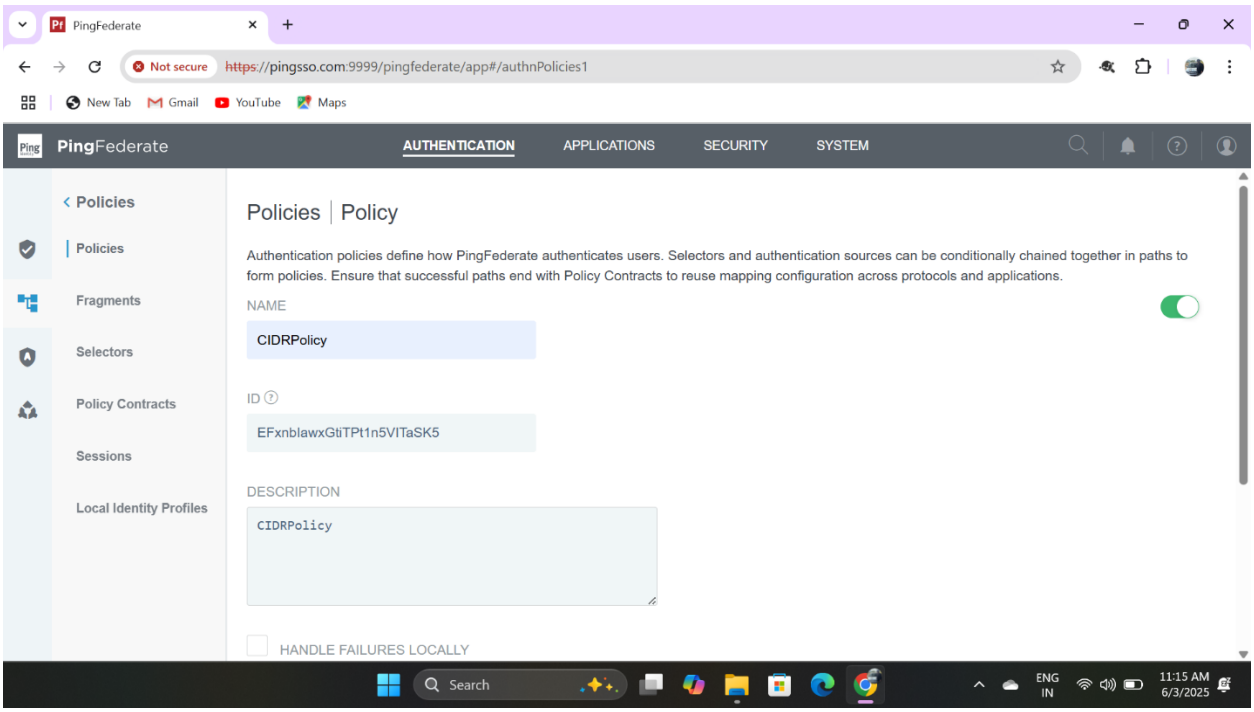

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/adapterSelectorManager1
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
Selectors
Settings saved.
PingFederate uses Authentication Selectors globally (across connections) to choose which Authentication Source (an IdP Adapter or IdP Connection) to invoke based upon criteria defined in a Selector Instance. Selector Instance results are mapped to Authentication Sources and applied as authentication policy.
Instance Name
Instance ID
Type
Action
CIDR
CIDR
CIDR Authentication Selector
None Available - In Use
ConnectionSet
ConnectionSet
Connection Set Authentication Selector
None Available - In Use
HTTPHeader
HTTPHeader
HTTP Header Authentication Selector
None Available - In Use
IPSelector
IPSelector
CIDR Authentication Selector
Delete
Query
Query
HTTP Request Parameter Authentication Selector
None Available - In Use
Create New Instance
Search
ENG
IN
5:22 PM
6/2/2025

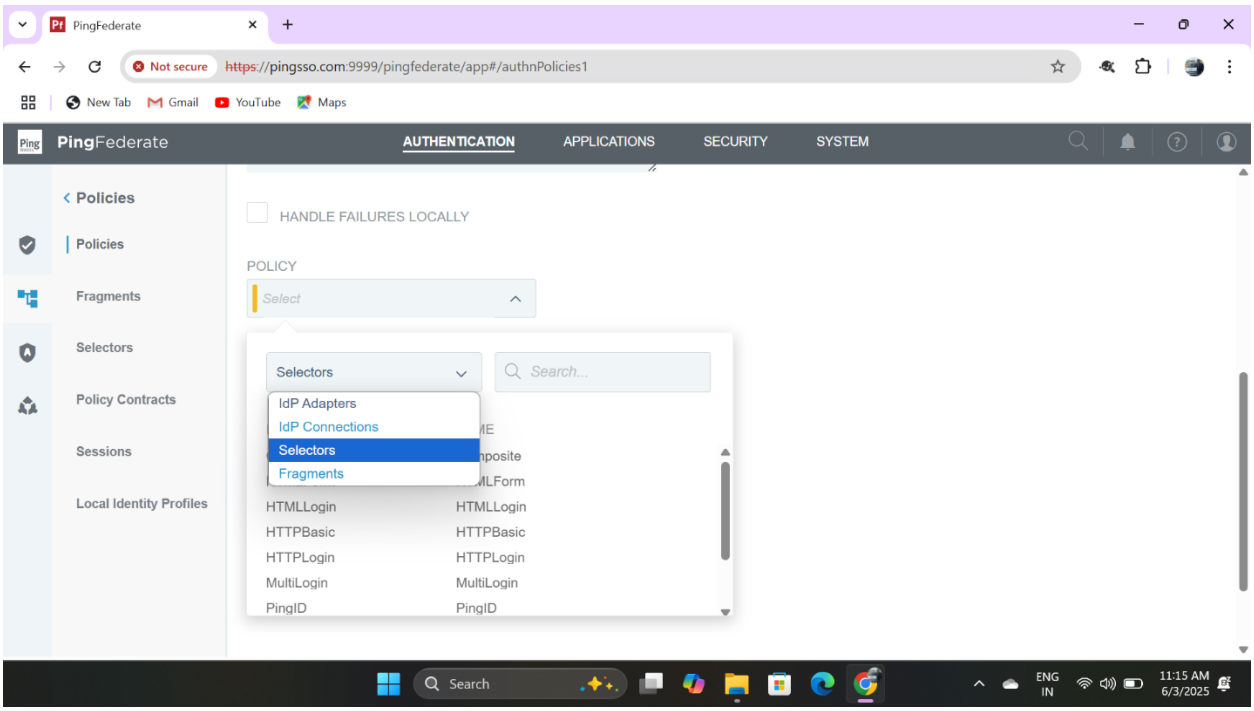
**<u>Step 5</u>:- Create CIDR-based Authentication Policy**

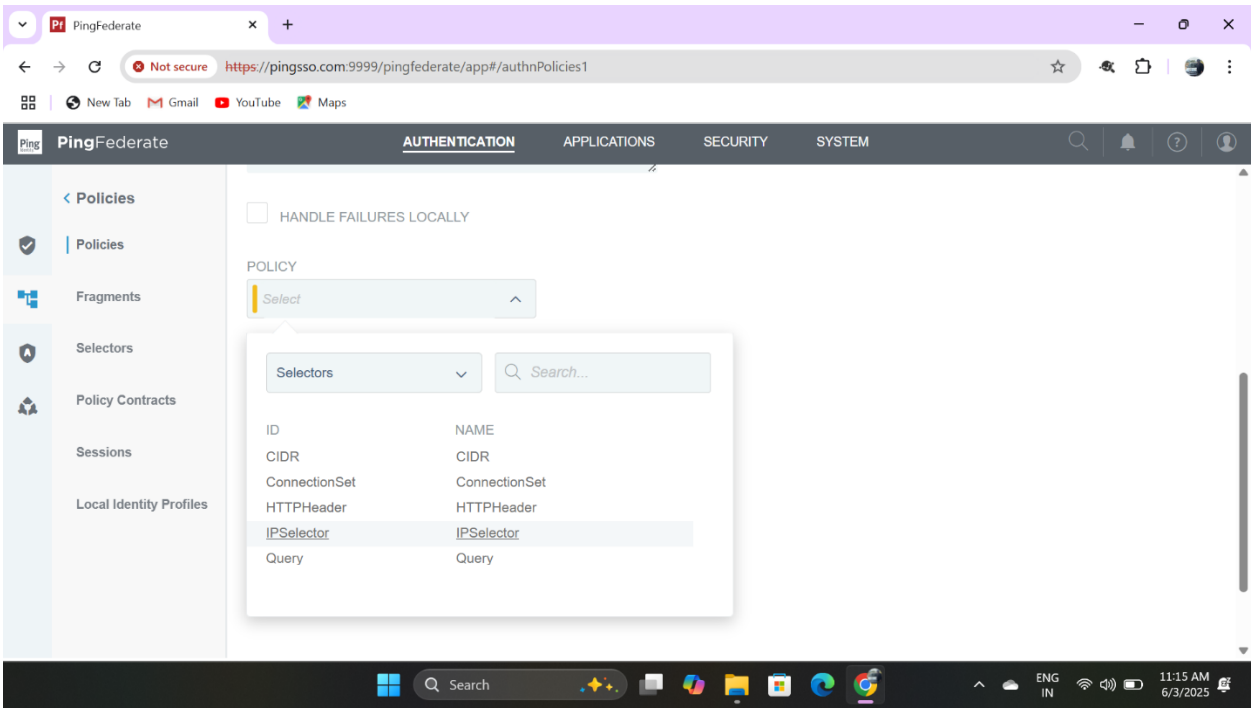
1. Navigate to Authentication → Policies.
2. Click Create New Policy.
3. Define rules to route users based on CIDR selector:
    - Internal IPs → Use adapters without MFA
    - External IPs → Use adapters with PingID MFA
4. Save the policy.

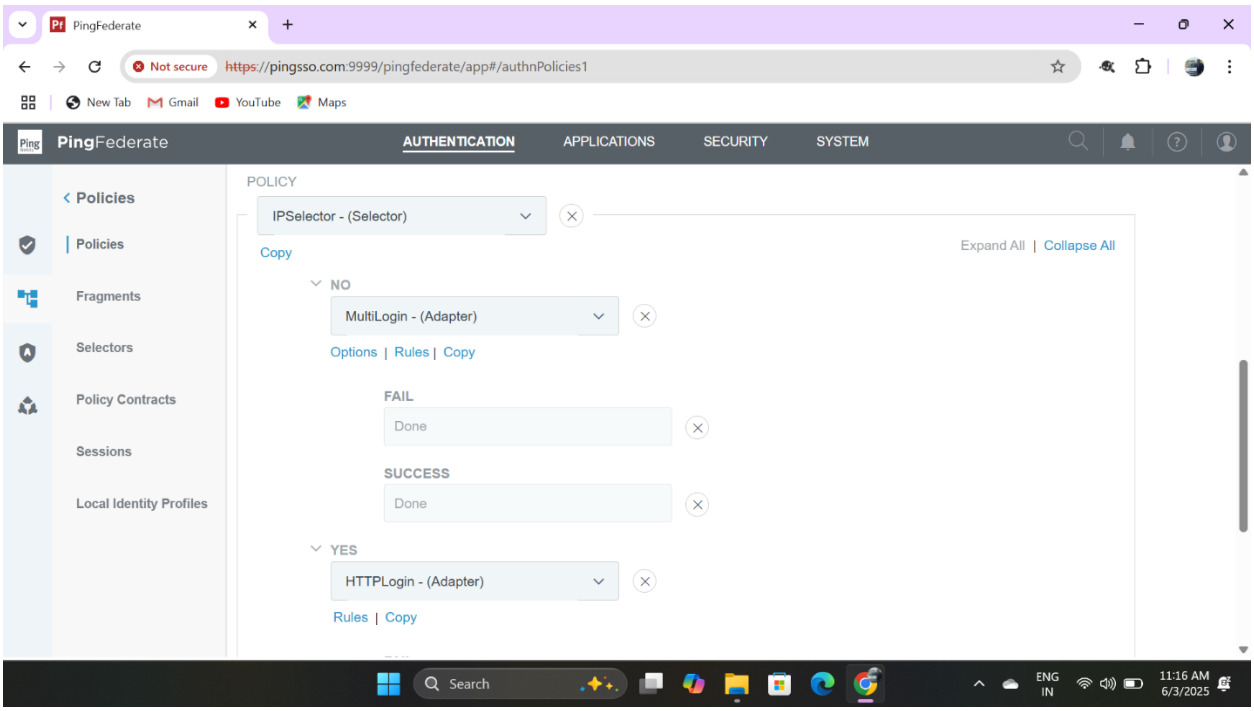



PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/authnPolicies1
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
CIDR policy
CIDR policy
Composite
HTMLForm
PingID
Select Action
HTTPHeader
HTTPHeader
HTTPBasic
HTMLForm
Select Action
Query
Query
HTTPBasic
HTMLForm
Select Action
ConnectionSet Policies
ConnectionSet Policies
HTTPBasic
HTMLForm
Select Action
Add Policy
Cancel
Next
Save
Search
ENG
IN
11:15 AM
6/3/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/authnPolicies1
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
Policies | Policy
Authentication policies define how PingFederate authenticates users. Selectors and authentication sources can be conditionally chained together in paths to form policies. Ensure that successful paths end with Policy Contracts to reuse mapping configuration across protocols and applications.
NAME
CIDRPolicy
ID
EFxnblawxGtiTPt1n5VITaSK5
DESCRIPTION
CIDRPolicy
HANDLE FAILURES LOCALLY
Search
ENG
IN
11:15 AM
6/3/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/authnPolicies1
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
HANDLE FAILURES LOCALLY
POLICY
Select
Selectors
Search...
IdP Adapters
IdP Connections
Selectors
Fragments
HTMLLogin
HTTPBasic
HTTPLogin
MultiLogin
PingID
Search
ENG
IN
11:15 AM
6/3/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/authnPolicies1
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
HANDLE FAILURES LOCALLY
POLICY
Select
Selectors
Search...
ID
NAME
CIDR
CIDR
ConnectionSet
ConnectionSet
HTTPHeader
HTTPHeader
IPSelector
IPSelector
Query
Query
Search
ENG
IN
11:15 AM
6/3/2025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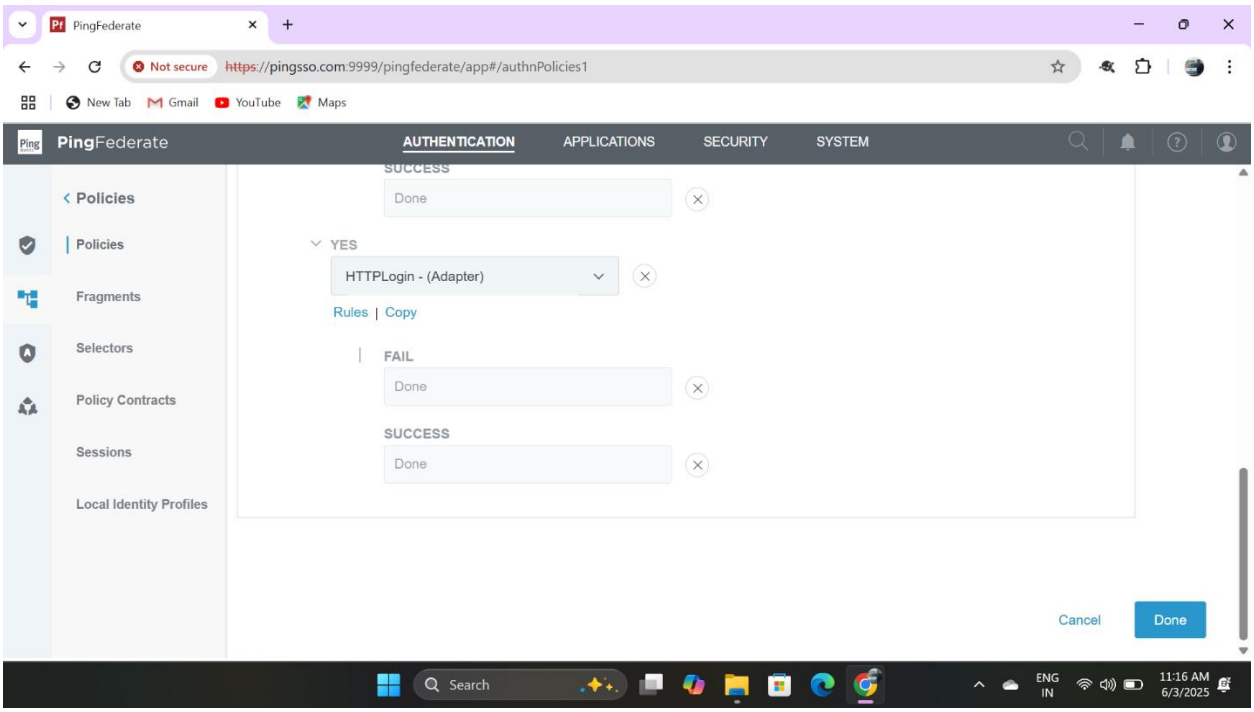
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
POLICY
IPSelector - (Selector)
Copy
Expand All | Collapse All
NO
MultiLogin - (Adapter)
Options | Rules | Copy
FAIL
Done
SUCCESS
Done
YES
HTTPLogin - (Adapter)
Rules | Copy
Search
ENG
IN
11:16 AM
6/3/2025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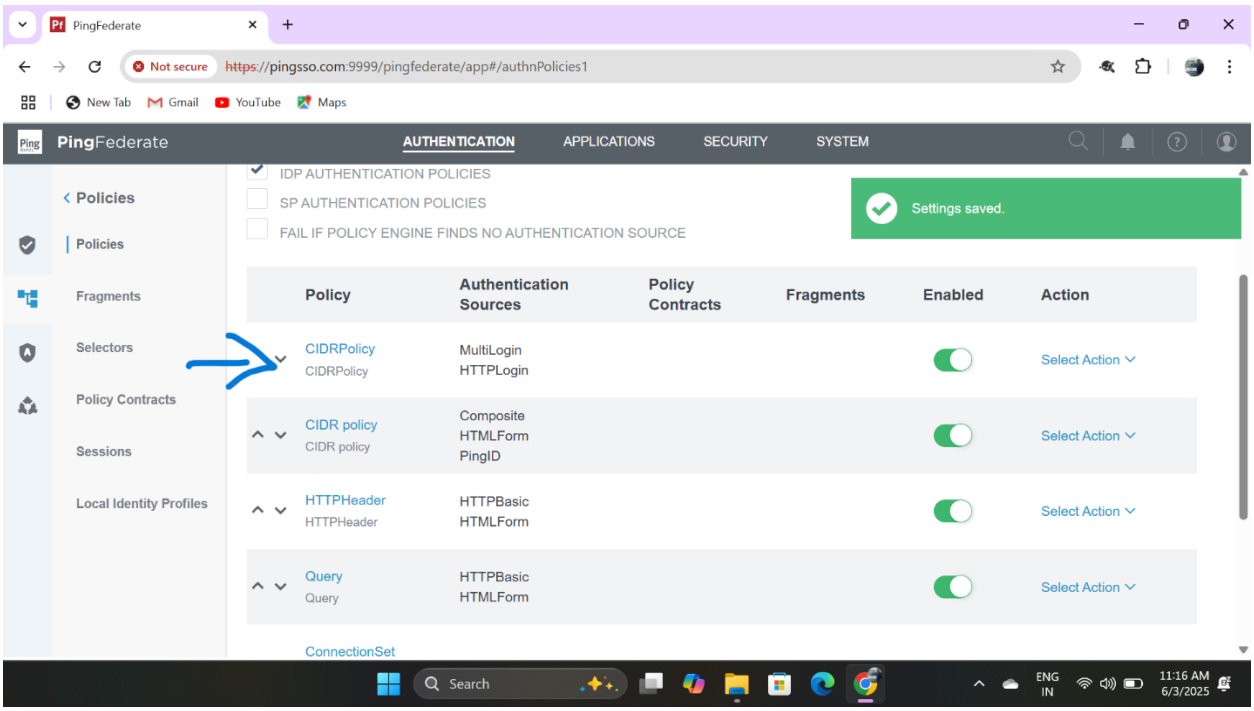
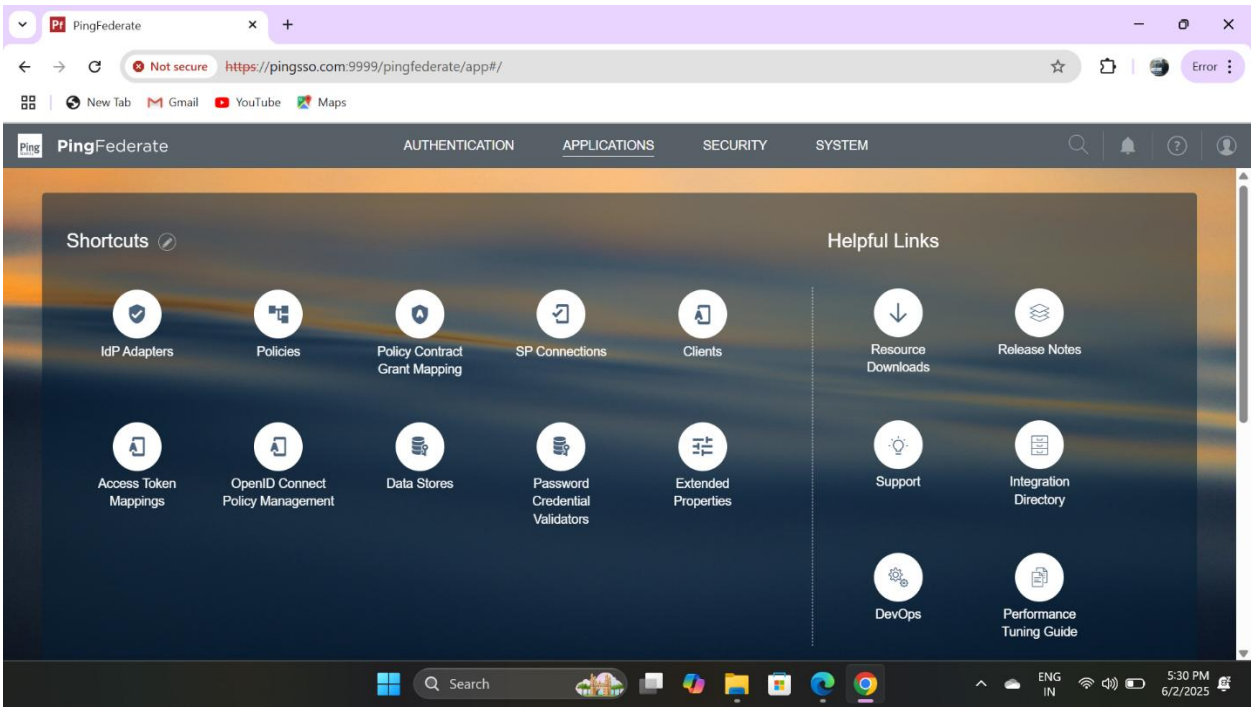
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
SUCCESS
Done
YES
HTTPLogin - (Adapter)
Rules | Copy
FAIL
Done
SUCCESS
Done
Cancel
Done
Search
ENG
IN
11:16 AM
6/3/2025




## Step 6:- Configure Service Provider (SP) Connection

1. Go to SP Connections.
2. Click Create New Connection.
3. Select SAML 2.0 as the connection type.
4. Enter connection details and upload SP metadata if needed.
5. Link the authentication policy created in Step 5.
6. Save the connection.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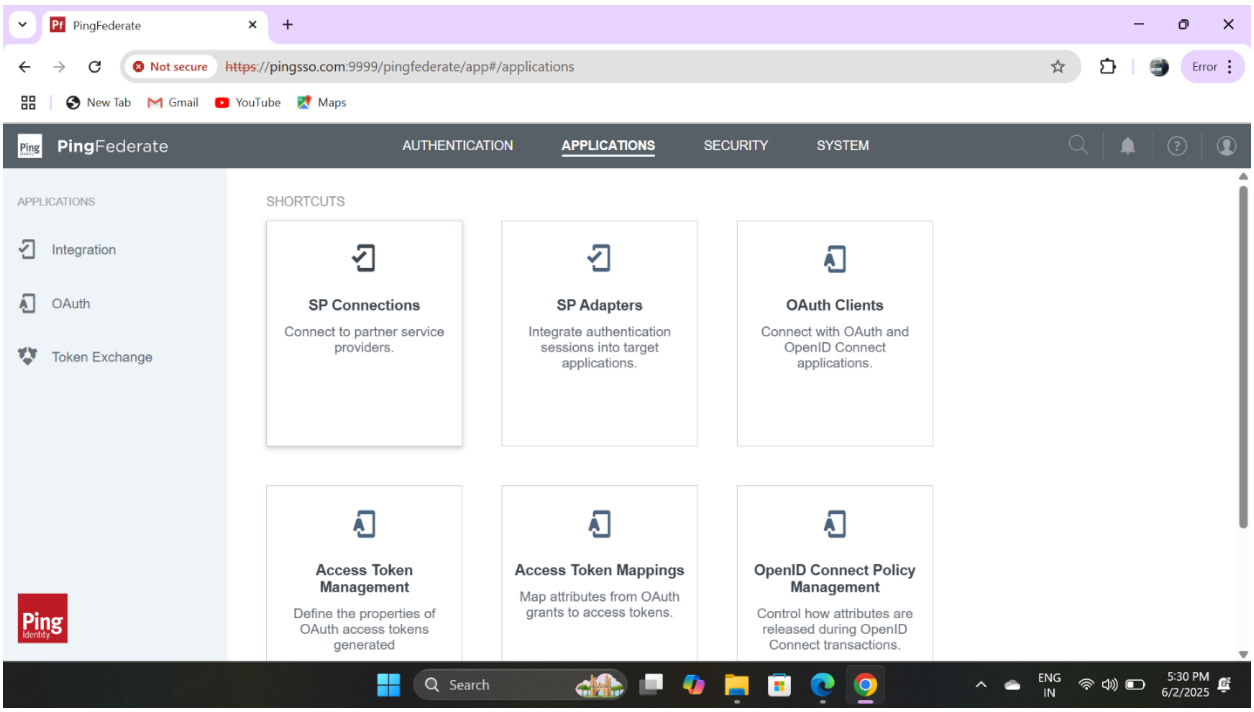
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Shortcuts
Helpful Links
IdP Adapters
Policies
Policy Contract Grant Mapping
SP Connections
Clients
Resource Downloads
Release Notes
Access Token Mappings
OpenID Connect Policy Management
Data Stores
Password Credential Validators
Extended Properties
Support
Integration Directory
DevOps
Performance Tuning Guide
Search
ENG IN
5:30 PM 6/2/2025


PingFederate
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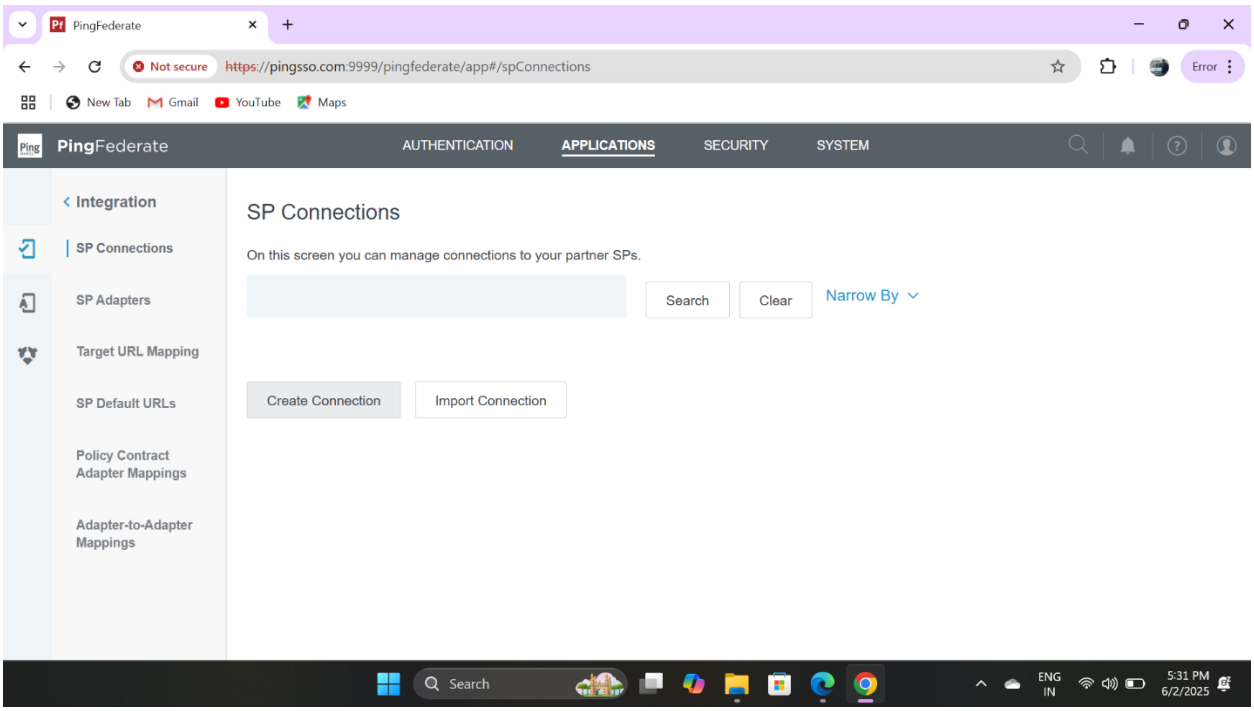
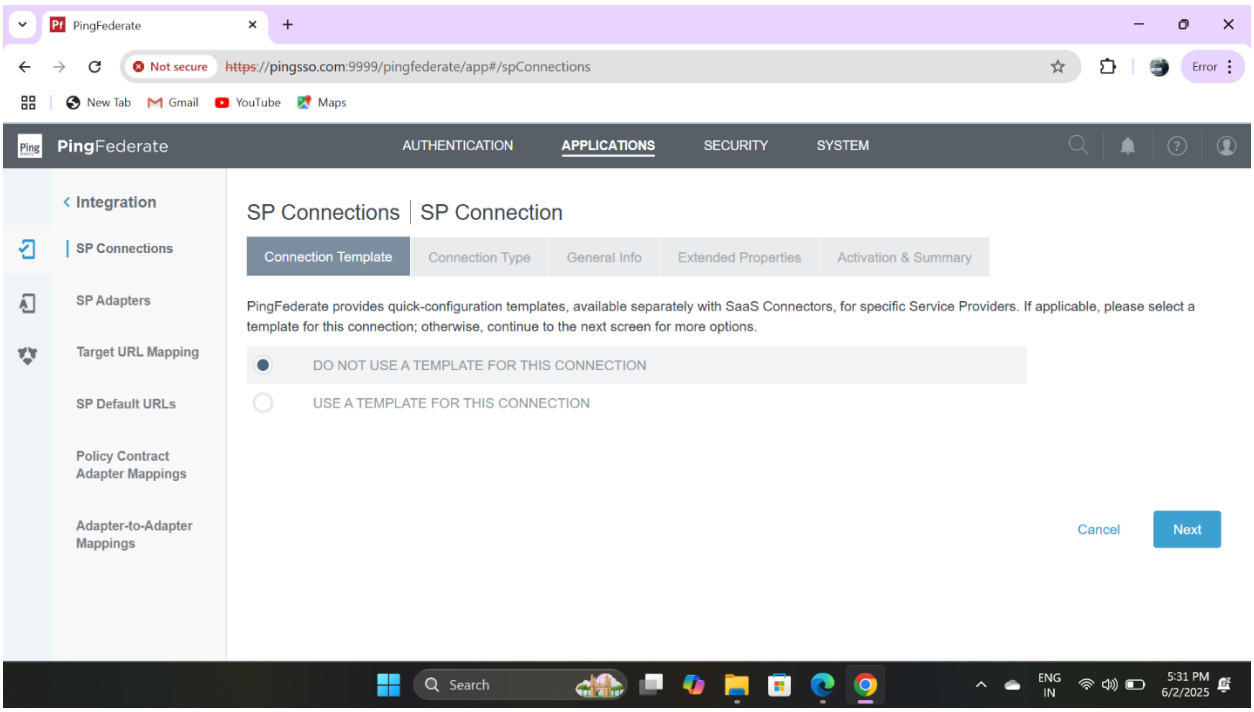
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
APPLICATIONS
Integration
OAuth
Token Exchange
SHORTCUTS
SP Connections
Connect to partner service providers.
SP Adapters
Integrate authentication sessions into target applications.
OAuth Clients
Connect with OAuth and OpenID Connect applications.
Access Token Management
Define the properties of OAuth access tokens generated
Access Token Mappings
Map attributes from OAuth grants to access tokens.
OpenID Connect Policy Management
Control how attributes are released during OpenID Connect transactions.
Ping Identity
Search
ENG IN
5:30 PM 6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections
On this screen you can manage connections to your partner SPs.
Search
Clear
Narrow By
Create Connection
Import Connection
Search
ENG IN
5:31 PM 6/2/2025


PingFederate
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Error
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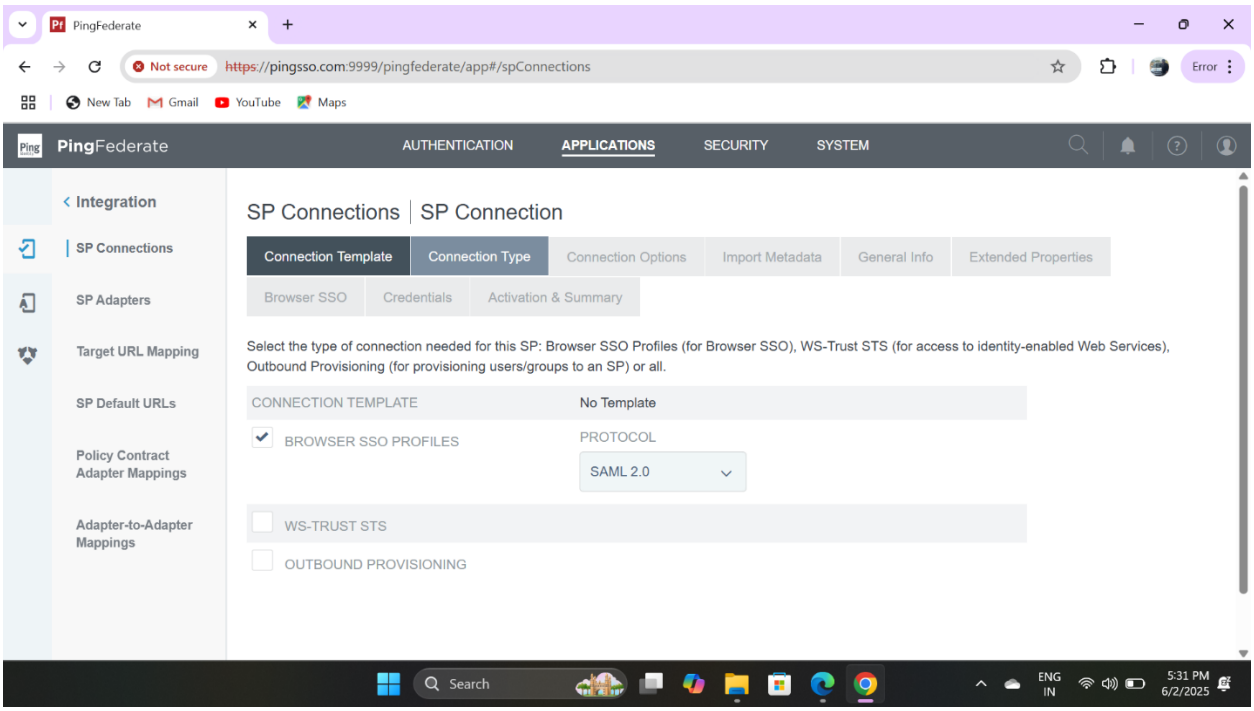
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection
Connection Template
Connection Type
General Info
Extended Properties
Activation & Summary
PingFederate provides quick-configuration templates, available separately with SaaS Connectors, for specific Service Providers. If applicable, please select a template for this connection; otherwise, continue to the next screen for more options.
DO NOT USE A TEMPLATE FOR THIS CONNECTION
USE A TEMPLATE FOR THIS CONNECTION
Cancel
Next
Search
ENG IN
5:31 PM 6/2/2025


PingFederate
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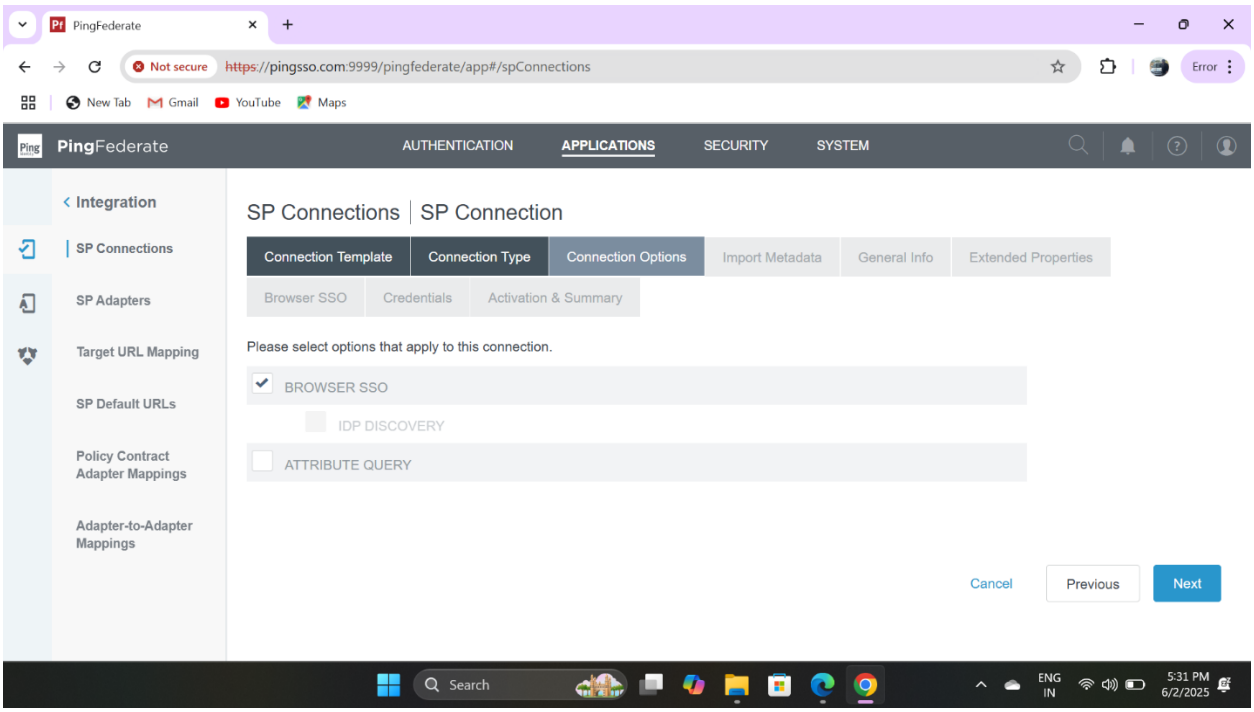
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection
Connection Template
Connection Type
Connection Options
Import Metadata
General Info
Extended Properties
Browser SSO
Credentials
Activation & Summary
Select the type of connection needed for this SP: Browser SSO Profiles (for Browser SSO), WS-Trust STS (for access to identity-enabled Web Services), Outbound Provisioning (for provisioning users/groups to an SP) or all.
CONNECTION TEMPLATE
No Template
BROWSER SSO PROFILES
PROTOCOL
SAML 2.0
WS-TRUST STS
OUTBOUND PROVISIONING
Search
ENG
IN
5:31 PM
6/2/2025


PingFederate
Not secure
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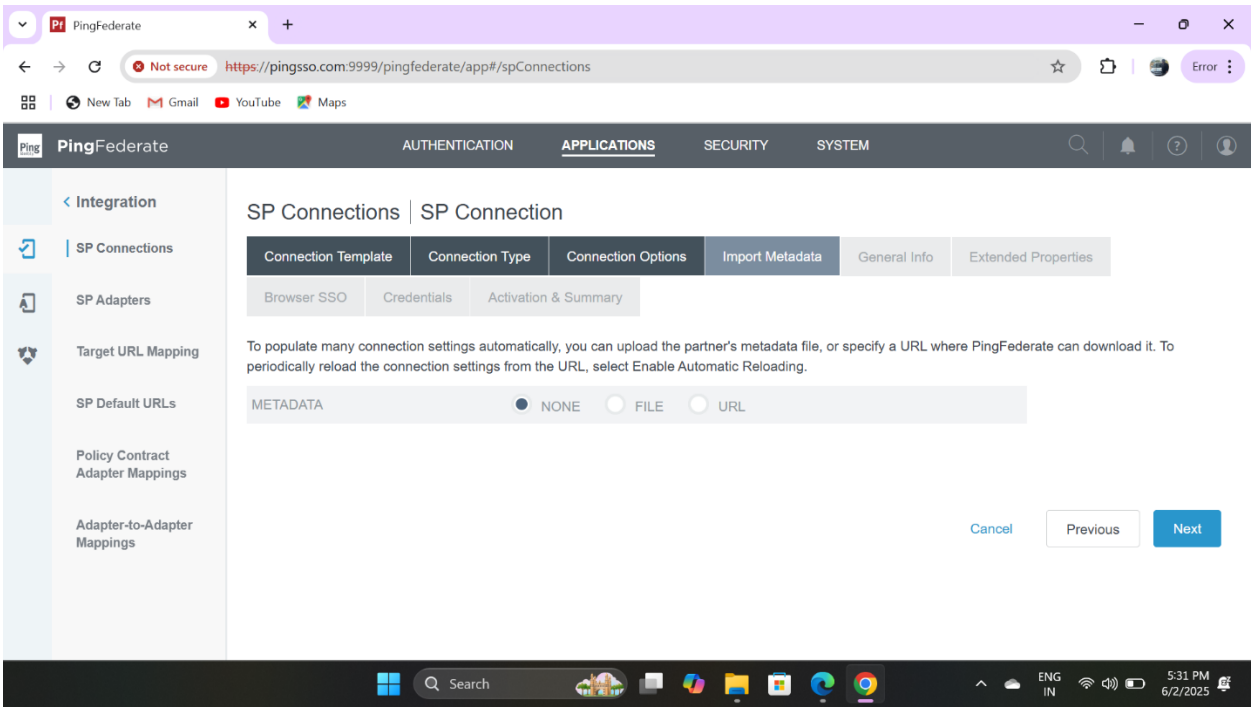
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection
Connection Template
Connection Type
Connection Options
Import Metadata
General Info
Extended Properties
Browser SSO
Credentials
Activation & Summary
Please select options that apply to this connection.
BROWSER SSO
IDP DISCOVERY
ATTRIBUTE QUERY
Cancel
Previous
Next
Search
ENG
IN
5:31 PM
6/2/2025


PingFederate
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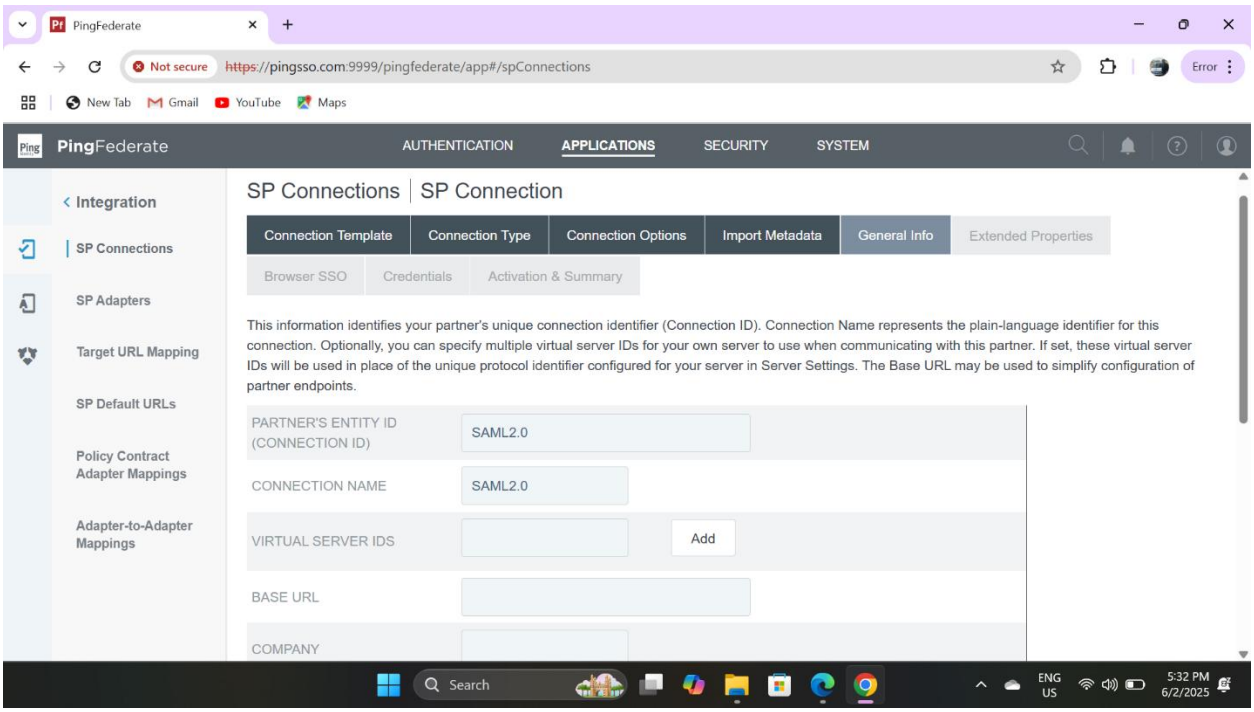
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection
Connection Template
Connection Type
Connection Options
Import Metadata
General Info
Extended Properties
Browser SSO
Credentials
Activation & Summary
To populate many connection settings automatically, you can upload the partner's metadata file, or specify a URL where PingFederate can download it. To periodically reload the connection settings from the URL, select Enable Automatic Reloading.
METADATA
NONE
FILE
URL
Cancel
Previous
Next
Search
ENG
IN
5:31 PM
6/2/2025


PingFederate
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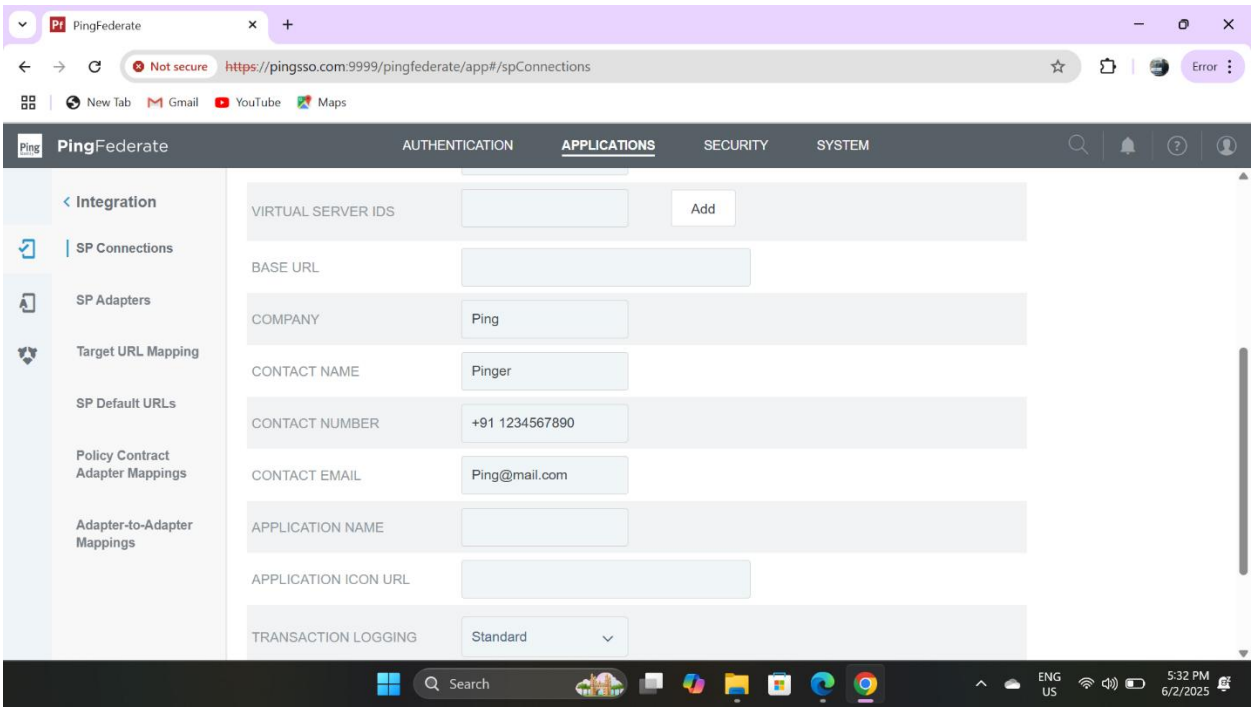
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection
Connection Template
Connection Type
Connection Options
Import Metadata
General Info
Extended Properties
Browser SSO
Credentials
Activation & Summary
This information identifies your partner's unique connection identifier (Connection ID). Connection Name represents the plain-language identifier for this connection. Optionally, you can specify multiple virtual server IDs for your own server to use when communicating with this partner. If set, these virtual server IDs will be used in place of the unique protocol identifier configured for your server in Server Settings. The Base URL may be used to simplify configuration of partner endpoints.
PARTNER'S ENTITY ID (CONNECTION ID)
SAML2.0
CONNECTION NAME
SAML2.0
VIRTUAL SERVER IDS
Add
BASE URL
COMPANY
Search
ENG
US
5:32 PM
6/2/2025


PingFederate
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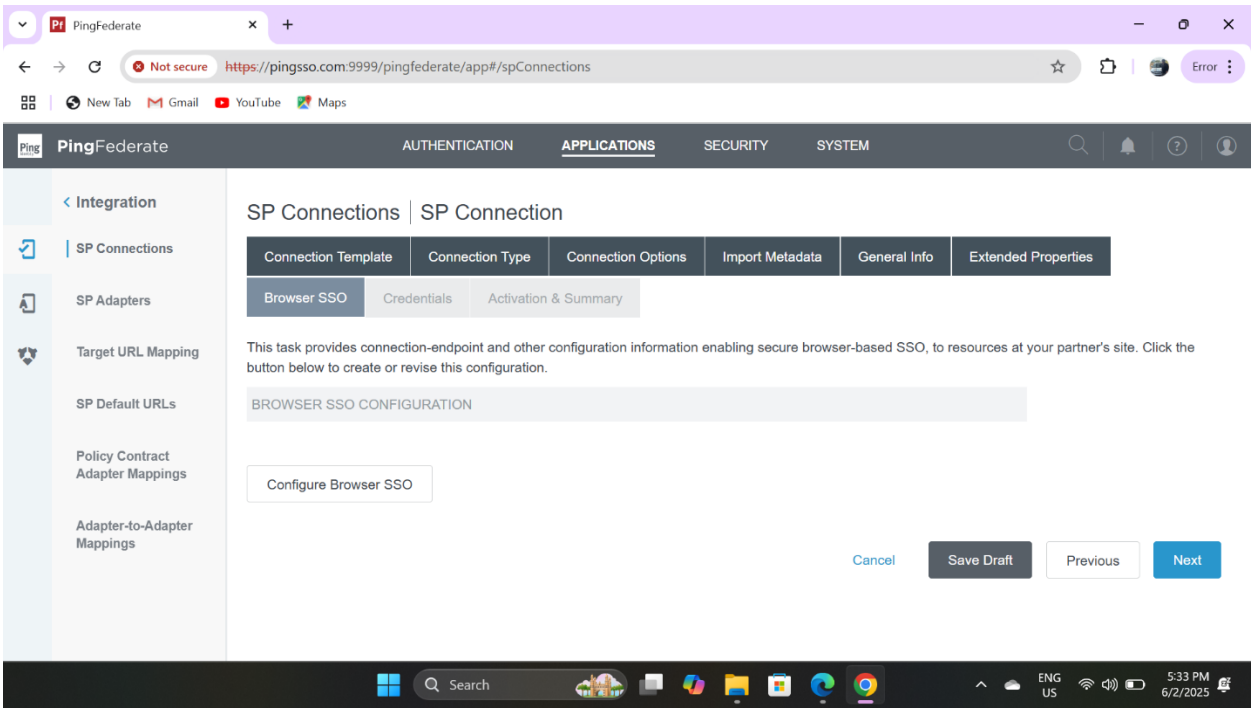
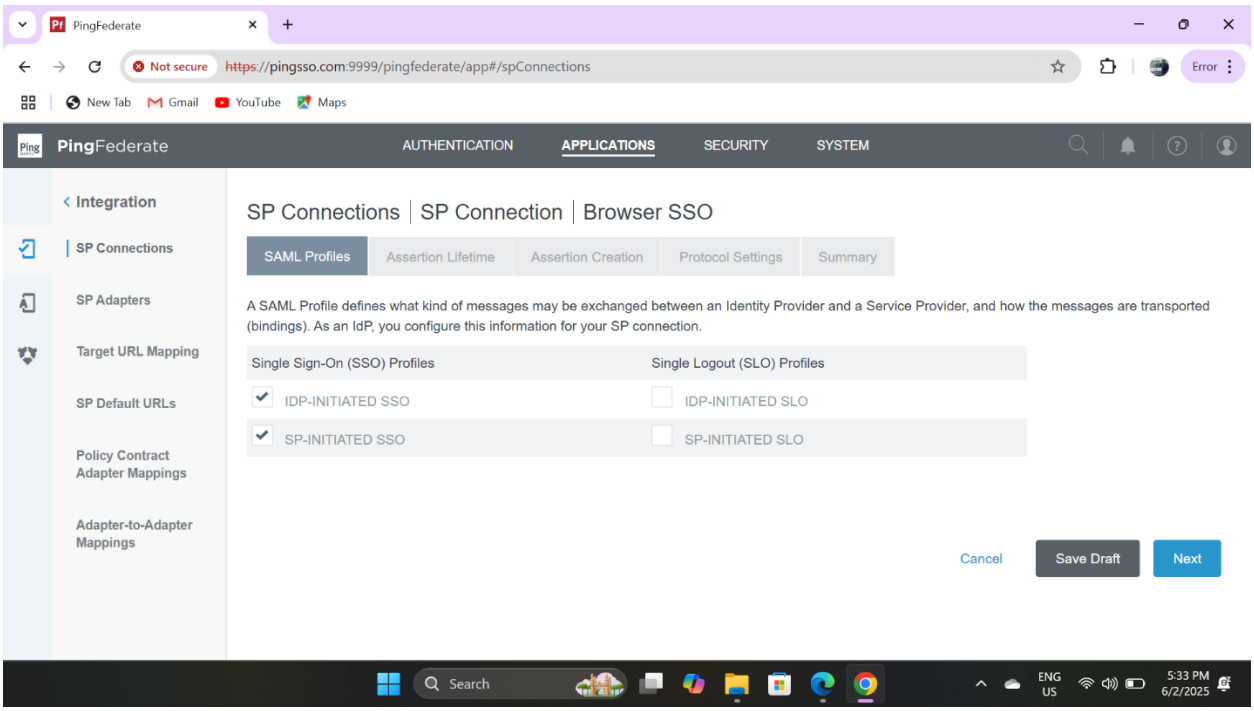
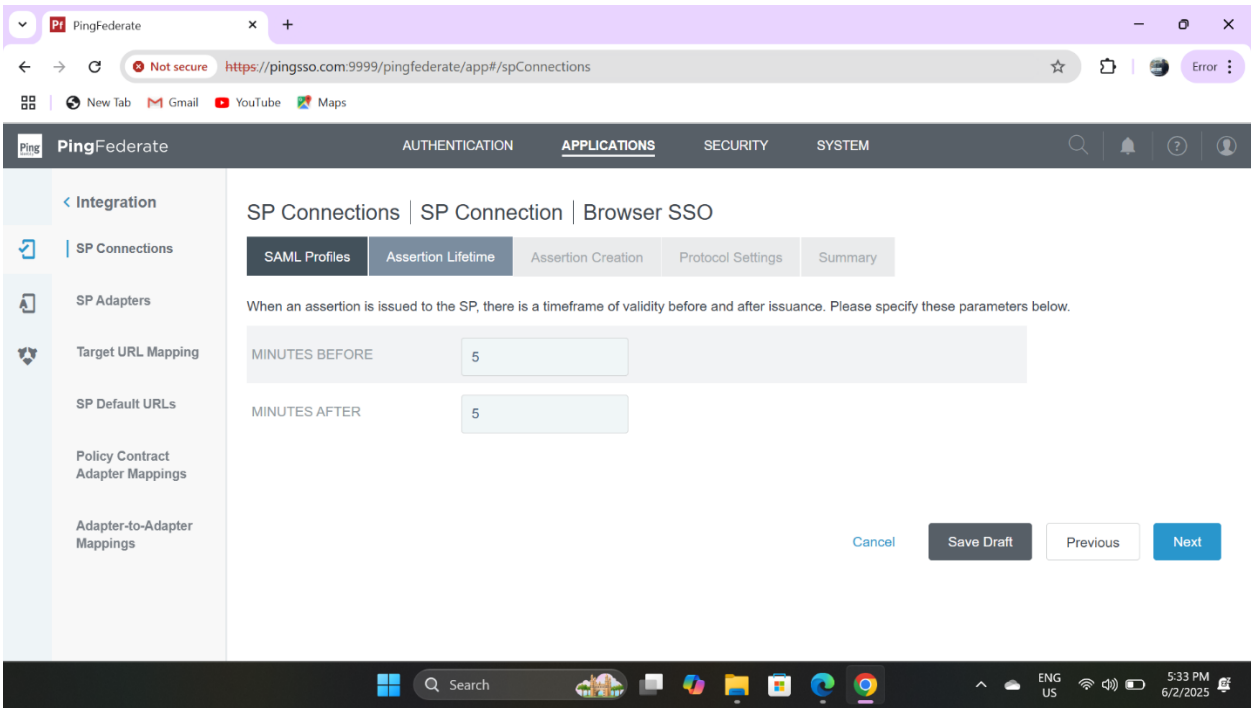
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
VIRTUAL SERVER IDS
Add
BASE URL
COMPANY
Ping
CONTACT NAME
Pinger
CONTACT NUMBER
+91 1234567890
CONTACT EMAIL
Ping@mail.com
APPLICATION NAME
APPLICATION ICON URL
TRANSACTION LOGGING
Standard
Search
ENG
US
5:32 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection
Connection Template
Connection Type
Connection Options
Import Metadata
General Info
Extended Properties
Browser SSO
Credentials
Activation & Summary
This task provides connection-endpoint and other configuration information enabling secure browser-based SSO, to resources at your partner's site. Click the button below to create or revise this configuration.
BROWSER SSO CONFIGURATION
Configure Browser SSO
Cancel
Save Draft
Previous
Next
Search
ENG
US
5:33 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO
SAML Profiles
Assertion Lifetime
Assertion Creation
Protocol Settings
Summary
A SAML Profile defines what kind of messages may be exchanged between an Identity Provider and a Service Provider, and how the messages are transported (bindings). As an IdP, you configure this information for your SP connection.
Single Sign-On (SSO) Profiles
Single Logout (SLO) Profiles
IDP-INITIATED SSO
IDP-INITIATED SLO
SP-INITIATED SSO
SP-INITIATED SLO
Cancel
Save Draft
Next
Search
ENG US
5:33 PM 6/2/2025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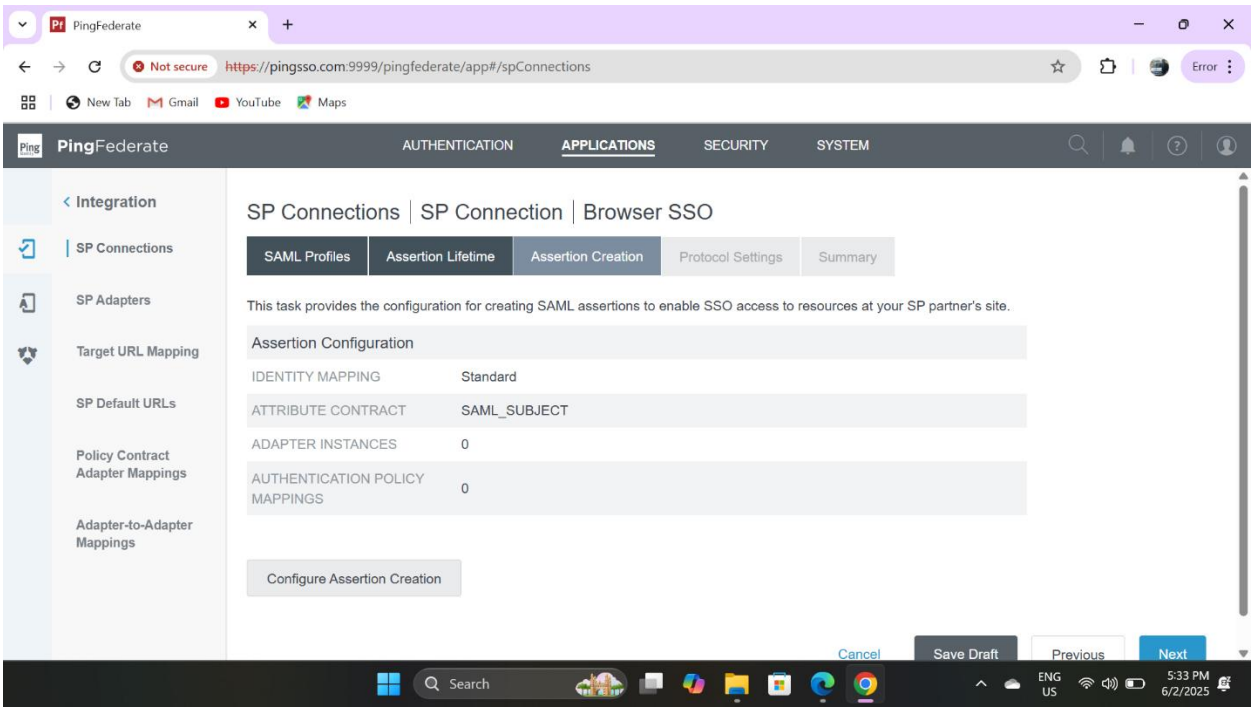
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO
SAML Profiles
Assertion Lifetime
Assertion Creation
Protocol Settings
Summary
When an assertion is issued to the SP, there is a timeframe of validity before and after issuance. Please specify these parameters below.
MINUTES BEFORE
5
MINUTES AFTER
5
Cancel
Save Draft
Previous
Next
Search
ENG US
5:33 PM 6/2/2025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Error
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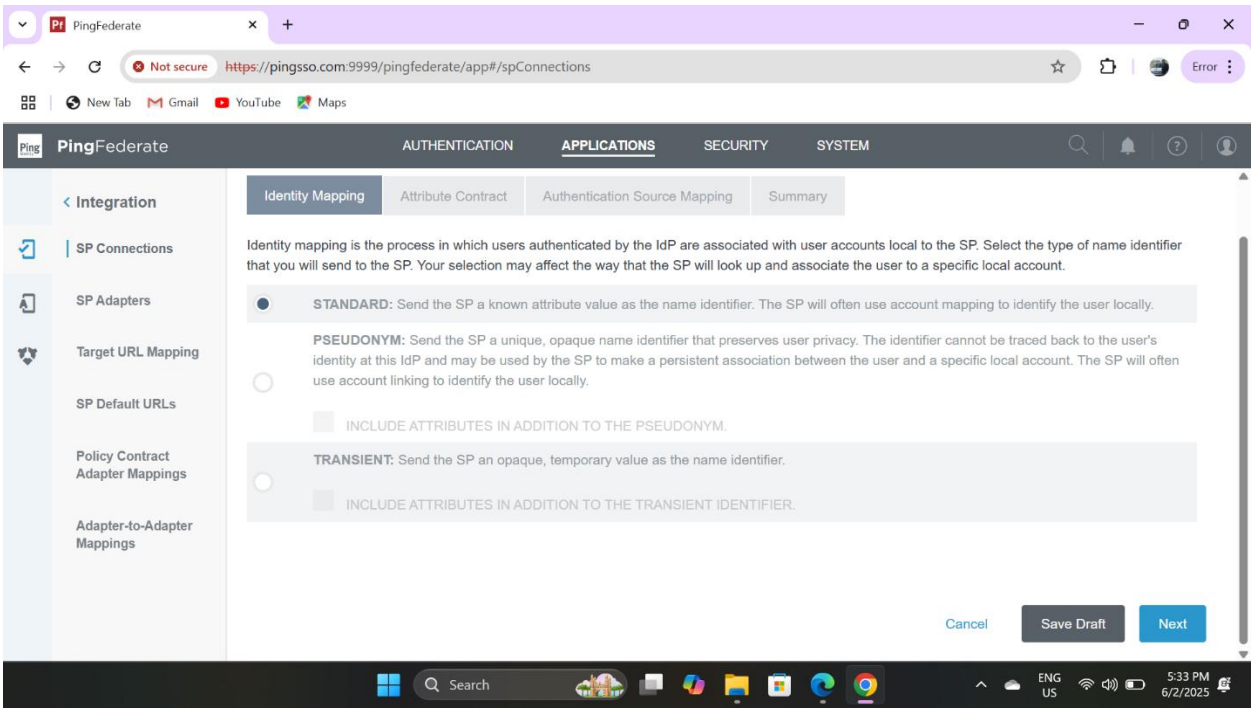
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO
SAML Profiles
Assertion Lifetime
Assertion Creation
Protocol Settings
Summary
This task provides the configuration for creating SAML assertions to enable SSO access to resources at your SP partner's site.
Assertion Configuration
IDENTITY MAPPING
Standard
ATTRIBUTE CONTRACT
SAML_SUBJECT
ADAPTER INSTANCES
0
AUTHENTICATION POLICY MAPPINGS
0
Configure Assertion Creation
Cancel
Save Draft
Previous
Next
Search
ENG
US
5:33 PM
6/2/2025


PingFederate
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Error
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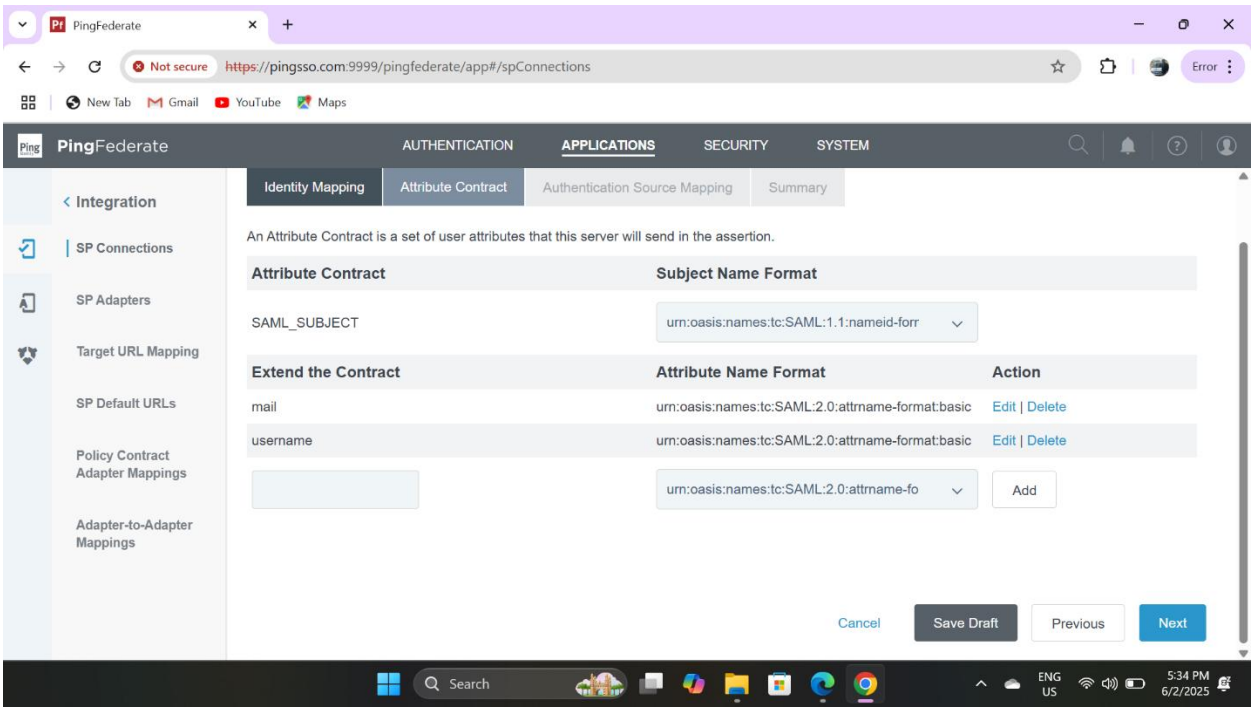
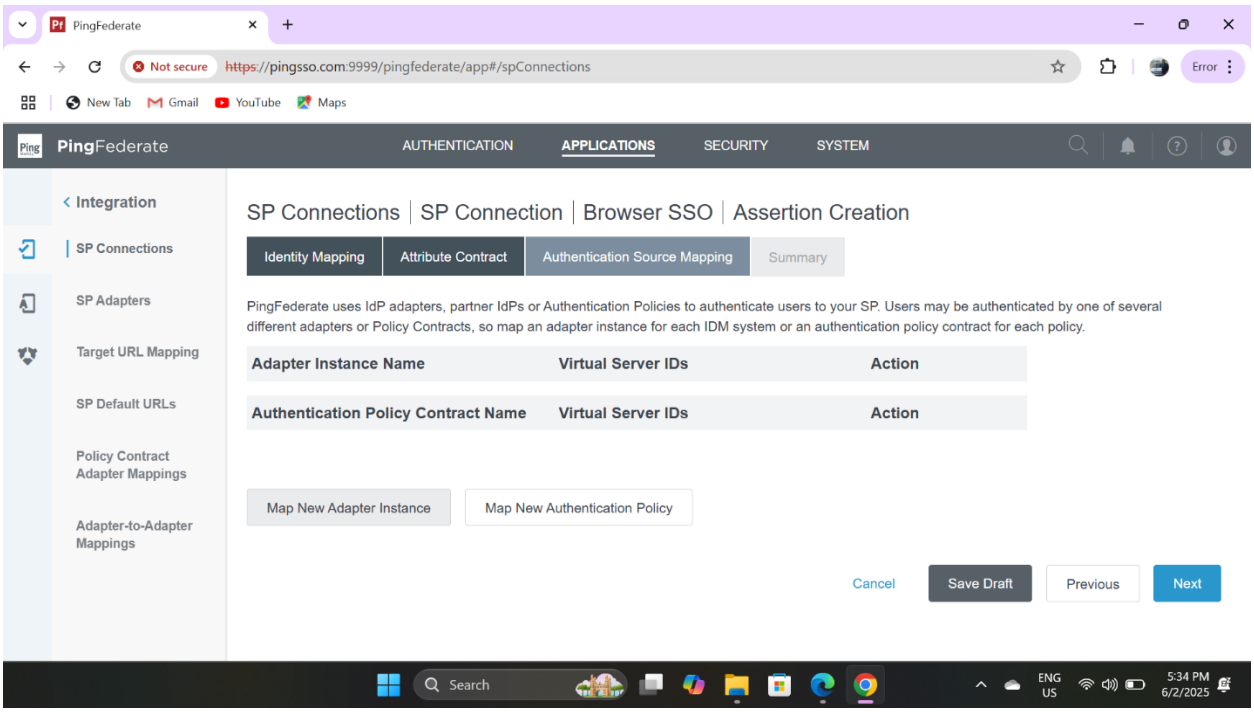
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
Identity Mapping
Attribute Contract
Authentication Source Mapping
Summary
Identity mapping is the process in which users authenticated by the IdP are associated with user accounts local to the SP. Select the type of name identifier that you will send to the SP. Your selection may affect the way that the SP will look up and associate the user to a specific local account.
STANDARD: Send the SP a known attribute value as the name identifier. The SP will often use account mapping to identify the user locally.
PSEUDONYM: Send the SP a unique, opaque name identifier that preserves user privacy. The identifier cannot be traced back to the user's identity at this IdP and may be used by the SP to make a persistent association between the user and a specific local account. The SP will often use account linking to identify the user locally.
INCLUDE ATTRIBUTES IN ADDITION TO THE PSEUDONYM.
TRANSIENT: Send the SP an opaque, temporary value as the name identifier.
INCLUDE ATTRIBUTES IN ADDITION TO THE TRANSIENT IDENTIFIER.
Cancel
Save Draft
Next
Search
ENG
US
5:33 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
Identity Mapping
Attribute Contract
Authentication Source Mapping
Summary
An Attribute Contract is a set of user attributes that this server will send in the assertion.
Attribute Contract
Subject Name Format
SAML_SUBJECT
urn:oasis:names:tc:SAML:1.1:nameid-forr
Extend the Contract
Attribute Name Format
Action
mail
urn:oasis:names:tc:SAML:2.0:attrname-format:basic
Edit | Delete
username
urn:oasis:names:tc:SAML:2.0:attrname-format:basic
Edit | Delete
urn:oasis:names:tc:SAML:2.0:attrname-fo
Add
Cancel
Save Draft
Previous
Next
Search
ENG
US
5:34 PM
6/2/2025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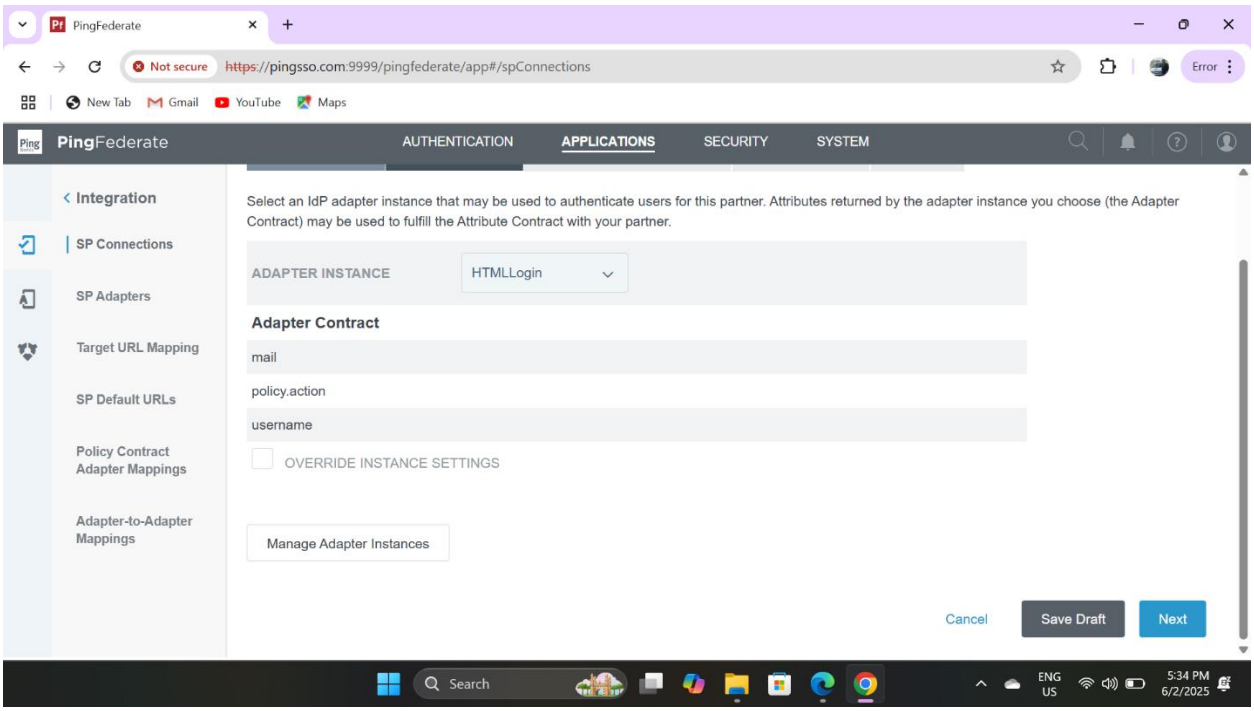
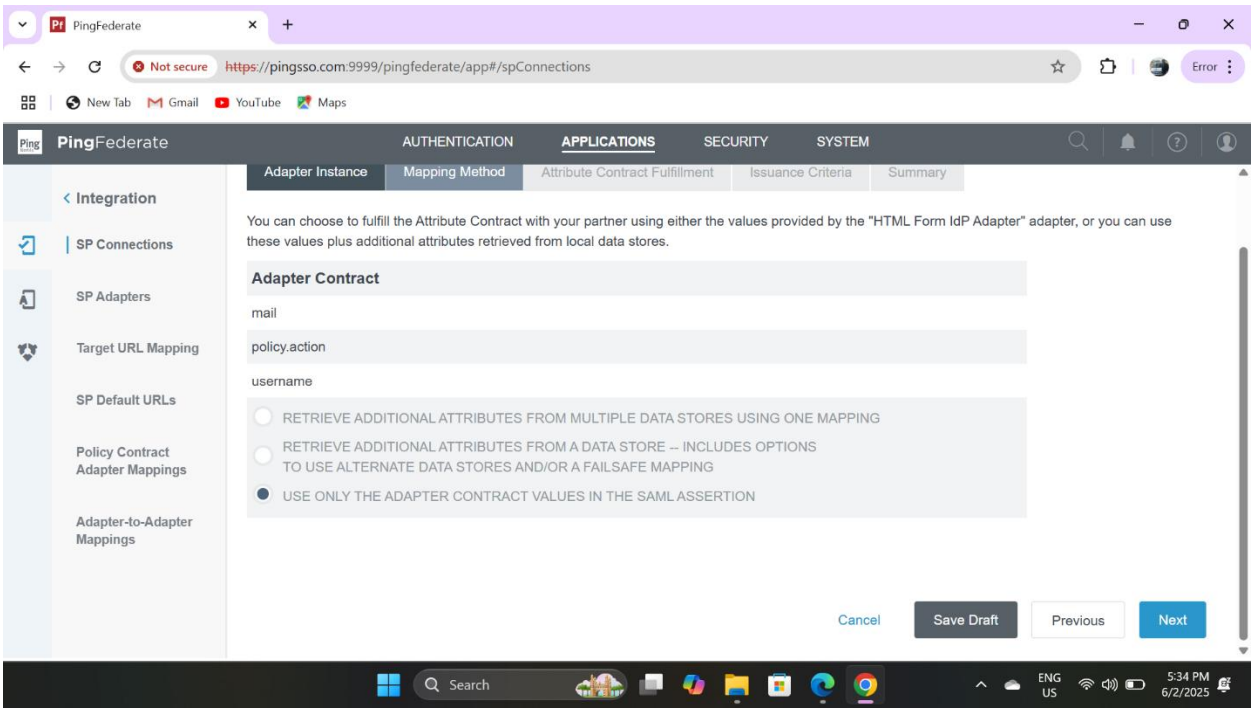
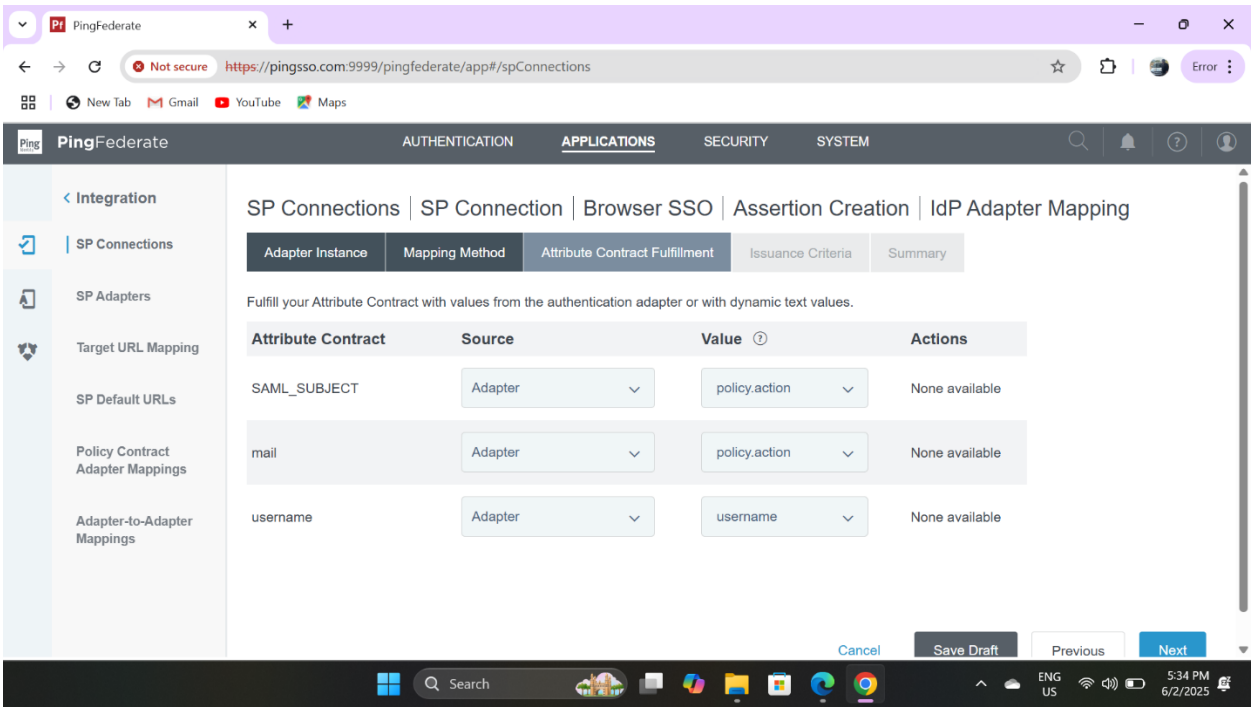
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO | Assertion Creation
Identity Mapping
Attribute Contract
Authentication Source Mapping
Summary
PingFederate uses IdP adapters, partner IdPs or Authentication Policies to authenticate users to your SP. Users may be authenticated by one of several different adapters or Policy Contracts, so map an adapter instance for each IDM system or an authentication policy contract for each policy.
Adapter Instance Name
Virtual Server IDs
Action
Authentication Policy Contract Name
Virtual Server IDs
Action
Map New Adapter Instance
Map New Authentication Policy
Cancel
Save Draft
Previous
Next
Search
ENG
US
5:34 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
Select an IdP adapter instance that may be used to authenticate users for this partner. Attributes returned by the adapter instance you choose (the Adapter Contract) may be used to fulfill the Attribute Contract with your partner.
ADAPTER INSTANCE
HTMLLogin
Adapter Contract
mail
policy.action
username
OVERRIDE INSTANCE SETTINGS
Manage Adapter Instances
Cancel
Save Draft
Next
Search
ENG
US
5:34 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Adapter Instance
Mapping Method
Attribute Contract Fulfillment
Issuance Criteria
Summary
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
You can choose to fulfill the Attribute Contract with your partner using either the values provided by the "HTML Form IdP Adapter" adapter, or you can use these values plus additional attributes retrieved from local data stores.
Adapter Contract
mail
policy.action
username
RETRIEVE ADDITIONAL ATTRIBUTES FROM MULTIPLE DATA STORES USING ONE MAPPING
RETRIEVE ADDITIONAL ATTRIBUTES FROM A DATA STORE -- INCLUDES OPTIONS TO USE ALTERNATE DATA STORES AND/OR A FAILSAFE MAPPING
USE ONLY THE ADAPTER CONTRACT VALUES IN THE SAML ASSERTION
Cancel
Save Draft
Previous
Next
Search
ENG
US
5:34 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO | Assertion Creation | IdP Adapter Mapping
Adapter Instance
Mapping Method
Attribute Contract Fulfillment
Issuance Criteria
Summary
Fulfill your Attribute Contract with values from the authentication adapter or with dynamic text values.
Attribute Contract
Source
Value
Actions
SAML_SUBJECT
Adapter
policy.action
None available
mail
Adapter
policy.action
None available
username
Adapter
username
None available
Cancel
Save Draft
Previous
Next
Search
ENG
US
5:34 PM
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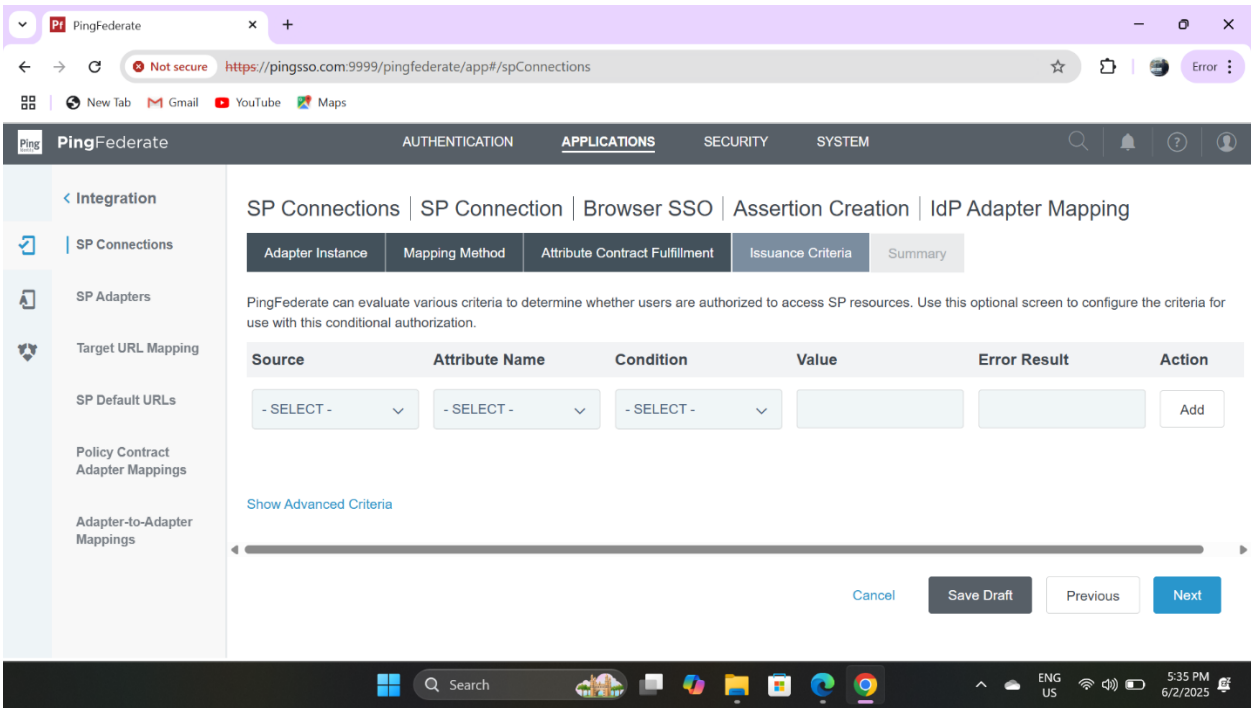
PingFederate
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New Tab
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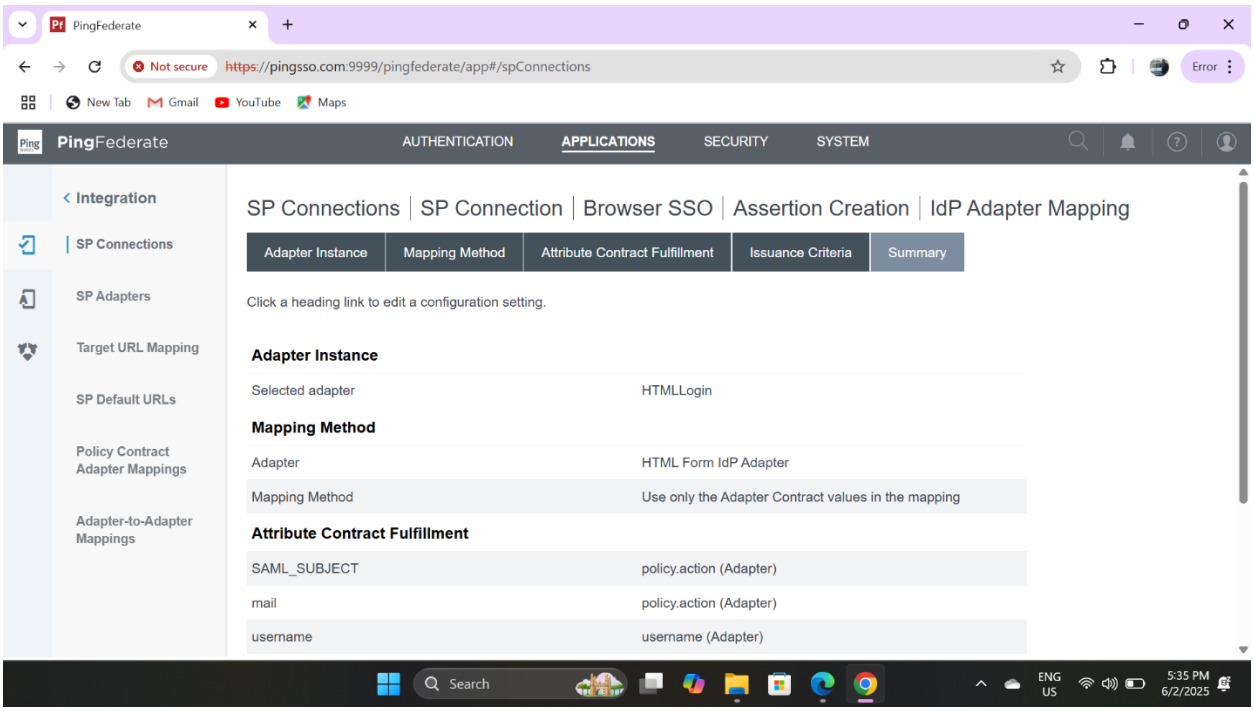
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO | Assertion Creation | IdP Adapter Mapping
Adapter Instance
Mapping Method
Attribute Contract Fulfillment
Issuance Criteria
Summary
PingFederate can evaluate various criteria to determine whether users are authorized to access SP resources. Use this optional screen to configure the criteria for use with this conditional authorization.
Source
Attribute Name
Condition
Value
Error Result
Action
- SELECT -
- SELECT -
- SELECT -
Add
Show Advanced Criteria
Cancel
Save Draft
Previous
Next
Search
ENG
US
5:35 PM
6/2/2025


PingFederate
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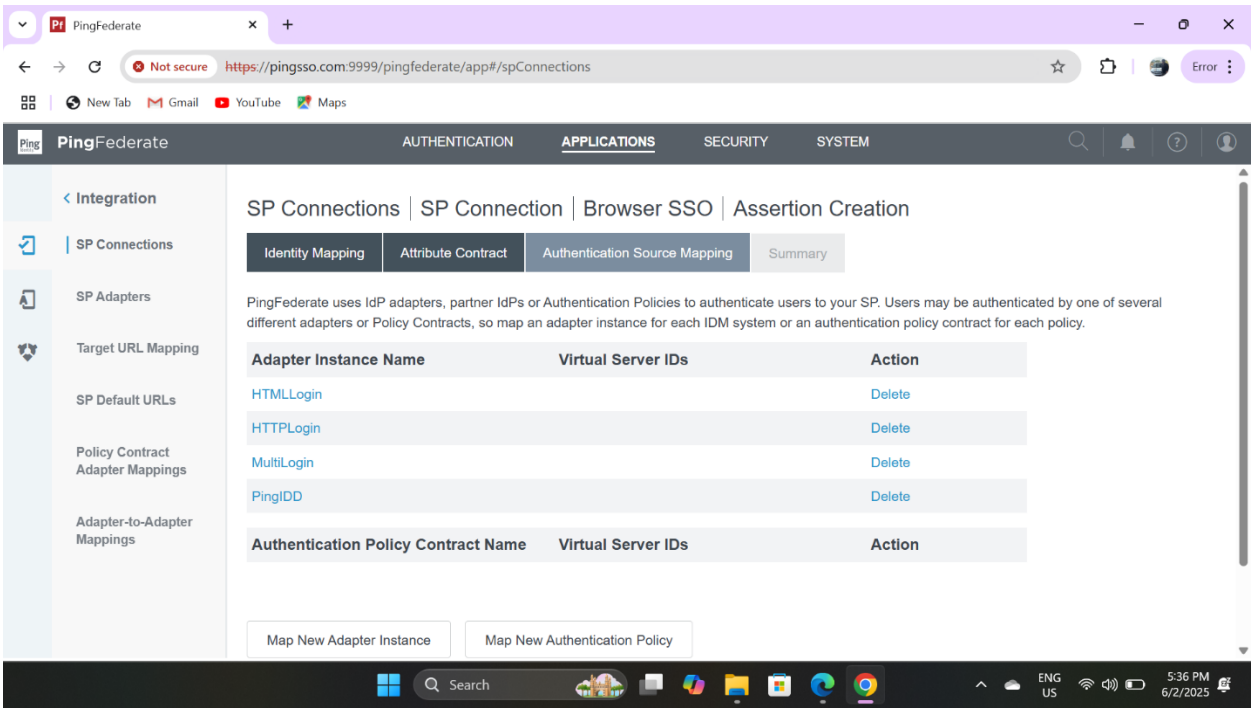
https://pingsso.com:9999/pingfederate/app#/spConnections
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO | Assertion Creation | IdP Adapter Mapping
Adapter Instance
Mapping Method
Attribute Contract Fulfillment
Issuance Criteria
Summary
Click a heading link to edit a configuration setting.
Adapter Instance
Selected adapter
HTMLLogin
Mapping Method
Adapter
HTML Form IdP Adapter
Mapping Method
Use only the Adapter Contract values in the mapping
Attribute Contract Fulfillment
SAML_SUBJECT
policy.action (Adapter)
mail
policy.action (Adapter)
username
username (Adapter)
Search
ENG
US
5:35 PM
6/2/2025


PingFederate
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New Tab
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Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO | Assertion Creation
Identity Mapping
Attribute Contract
Authentication Source Mapping
Summary
PingFederate uses IdP adapters, partner IdPs or Authentication Policies to authenticate users to your SP. Users may be authenticated by one of several different adapters or Policy Contracts, so map an adapter instance for each IDM system or an authentication policy contract for each policy.
Adapter Instance Name
Virtual Server IDs
Action
HTMLLogin
Delete
HTTPLogin
Delete
MultiLogin
Delete
PingIDD
Delete
Authentication Policy Contract Name
Virtual Server IDs
Action
Map New Adapter Instance
Map New Authentication Policy
Search
ENG
US
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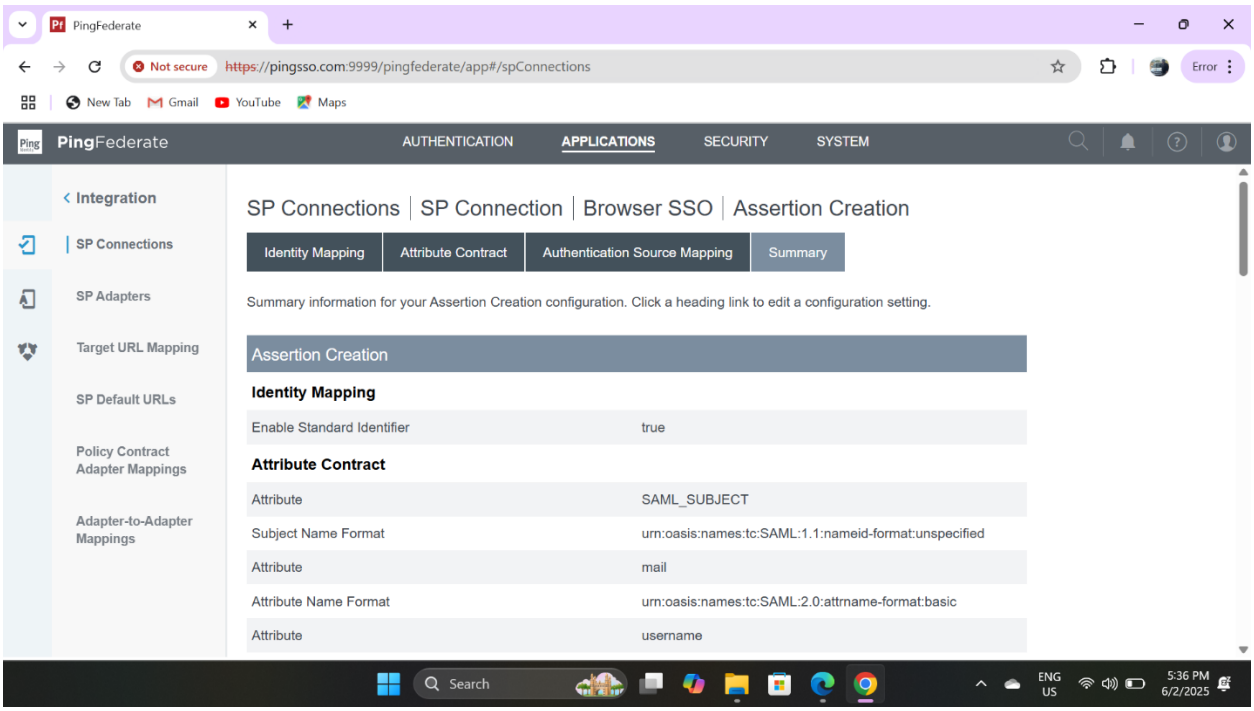
PingFederate
Not secure
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Error
New Tab
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PingFederate
AUTHENTICATION
APPLICATIONS
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SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO | Assertion Creation
Identity Mapping
Attribute Contract
Authentication Source Mapping
Summary
Summary information for your Assertion Creation configuration. Click a heading link to edit a configuration setting.
Assertion Creation
Identity Mapping
Enable Standard Identifier
true
Attribute Contract
Attribute
SAML_SUBJECT
Subject Name Format
urn:oasis:names:tc:SAML:1.1:nameid-format:unspecified
Attribute
mail
Attribute Name Format
urn:oasis:names:tc:SAML:2.0:attrname-format:basic
Attribute
username
Search
ENG
US
5:36 PM
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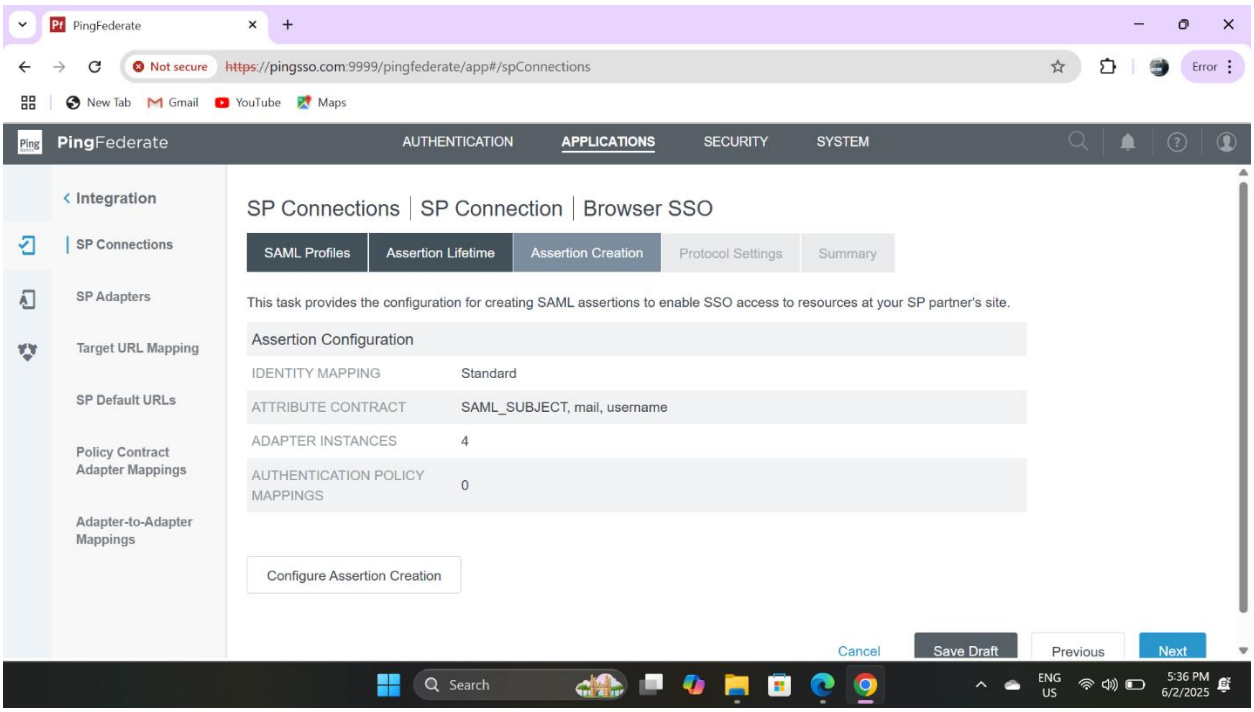
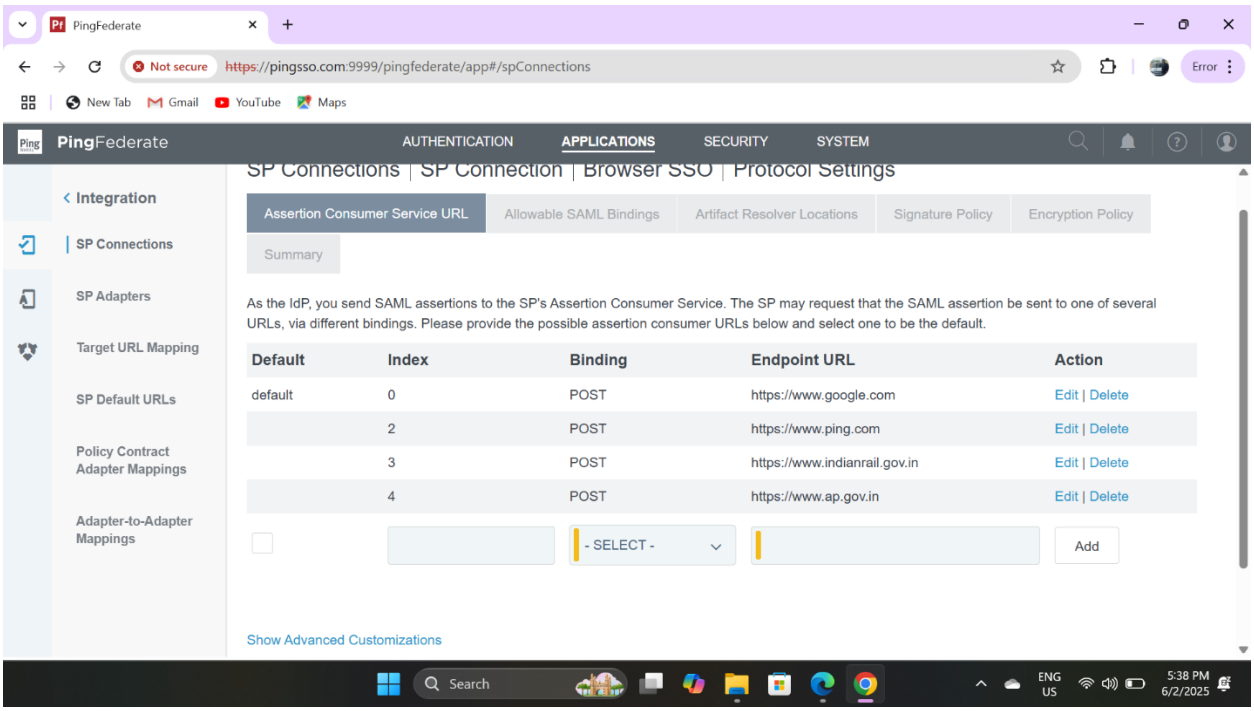
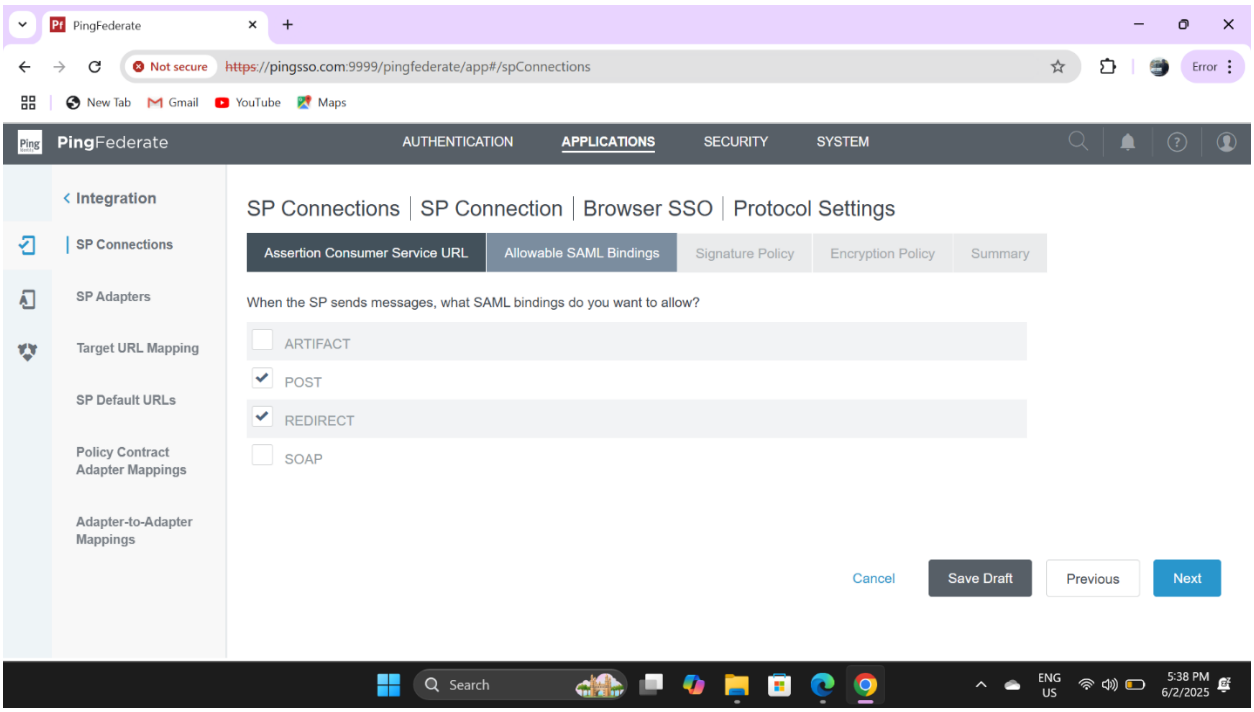
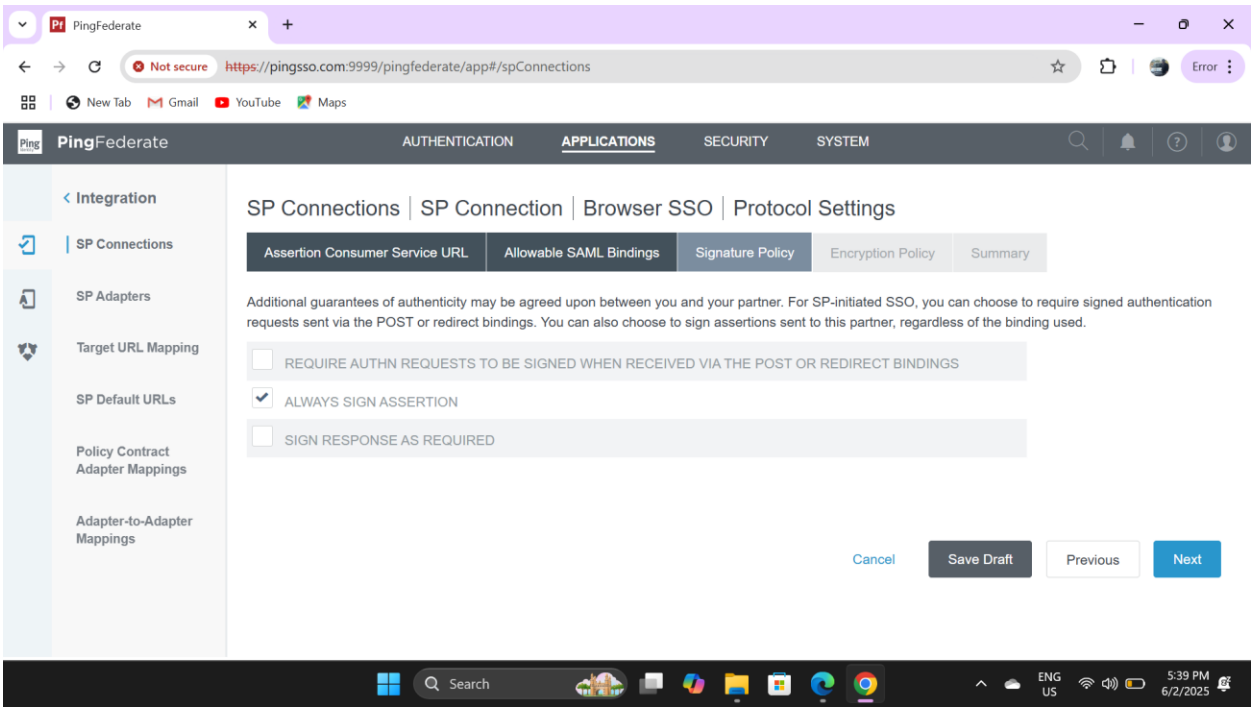
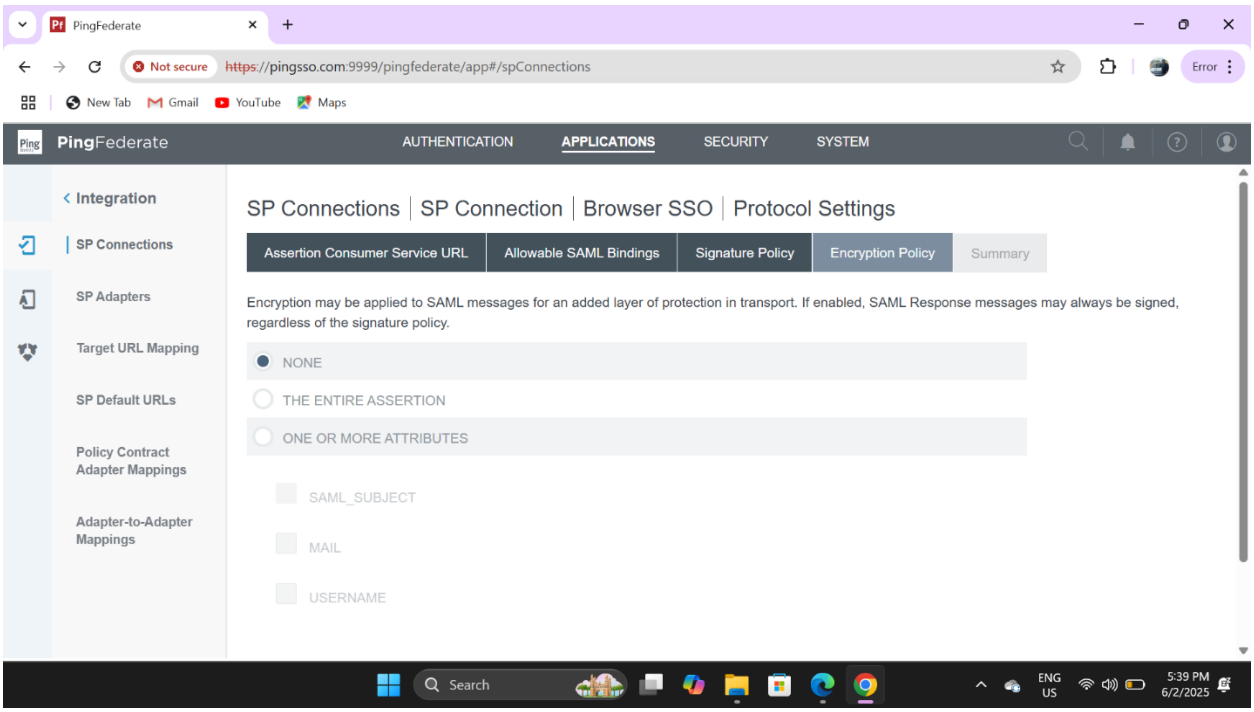
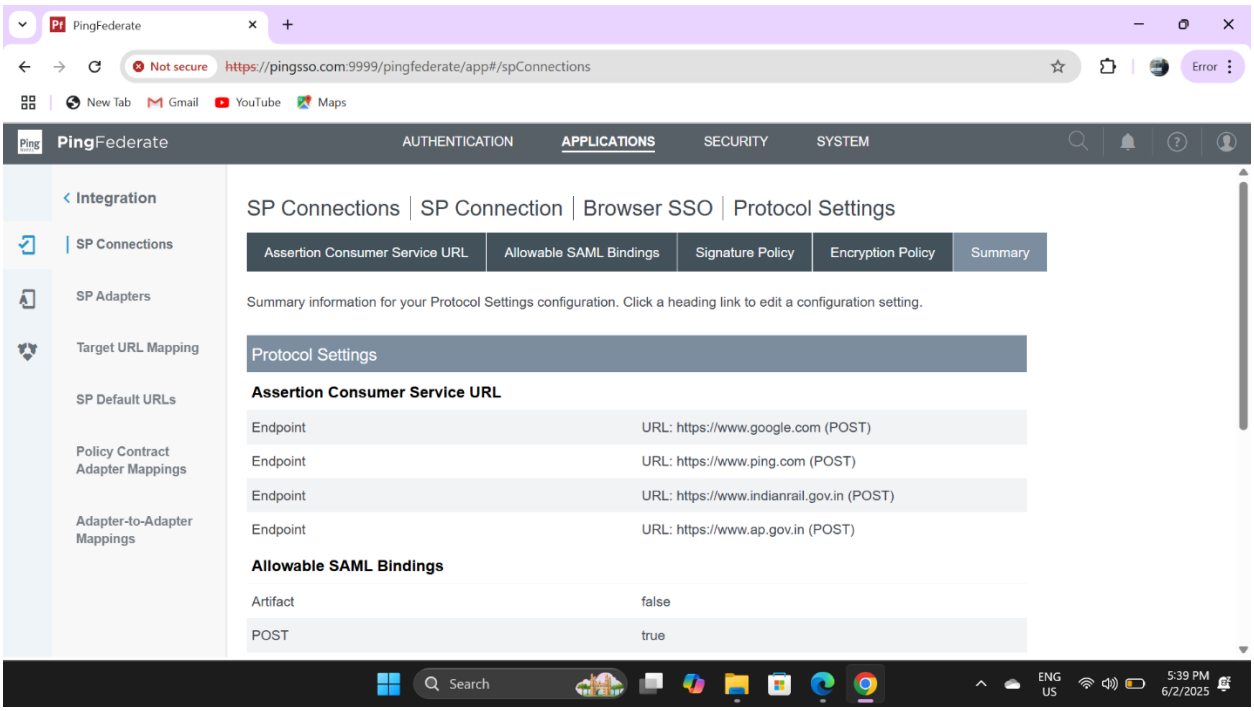

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO
SAML Profiles
Assertion Lifetime
Assertion Creation
Protocol Settings
Summary
This task provides the configuration for creating SAML assertions to enable SSO access to resources at your SP partner's site.
Assertion Configuration
IDENTITY MAPPING
Standard
ATTRIBUTE CONTRACT
SAML_SUBJECT, mail, username
ADAPTER INSTANCES
4
AUTHENTICATION POLICY MAPPINGS
0
Configure Assertion Creation
Cancel
Save Draft
Previous
Next
Search
ENG
US
5:36 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO | Protocol Settings
Assertion Consumer Service URL
Allowable SAML Bindings
Artifact Resolver Locations
Signature Policy
Encryption Policy
Summary
As the IdP, you send SAML assertions to the SP's Assertion Consumer Service. The SP may request that the SAML assertion be sent to one of several URLs, via different bindings. Please provide the possible assertion consumer URLs below and select one to be the default.
Default
Index
Binding
Endpoint URL
Action
default
0
POST
https://www.google.com
Edit | Delete
2
POST
https://www.ping.com
Edit | Delete
3
POST
https://www.indianrail.gov.in
Edit | Delete
4
POST
https://www.ap.gov.in
Edit | Delete
- SELECT -
Add
Show Advanced Customizations
Search
ENG
US
5:38 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO | Protocol Settings
Assertion Consumer Service URL
Allowable SAML Bindings
Signature Policy
Encryption Policy
Summary
When the SP sends messages, what SAML bindings do you want to allow?
ARTIFACT
POST
REDIRECT
SOAP
Cancel
Save Draft
Previous
Next
Search
ENG
US
5:38 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO | Protocol Settings
Assertion Consumer Service URL
Allowable SAML Bindings
Signature Policy
Encryption Policy
Summary
Additional guarantees of authenticity may be agreed upon between you and your partner. For SP-initiated SSO, you can choose to require signed authentication requests sent via the POST or redirect bindings. You can also choose to sign assertions sent to this partner, regardless of the binding used.
REQUIRE AUTHN REQUESTS TO BE SIGNED WHEN RECEIVED VIA THE POST OR REDIRECT BINDINGS
ALWAYS SIGN ASSERTION
SIGN RESPONSE AS REQUIRED
Cancel
Save Draft
Previous
Next
Search
ENG
US
5:39 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO | Protocol Settings
Assertion Consumer Service URL
Allowable SAML Bindings
Signature Policy
Encryption Policy
Summary
Encryption may be applied to SAML messages for an added layer of protection in transport. If enabled, SAML Response messages may always be signed, regardless of the signature policy.
NONE
THE ENTIRE ASSERTION
ONE OR MORE ATTRIBUTES
SAML_SUBJECT
MAIL
USERNAME
Search
ENG
US
5:39 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
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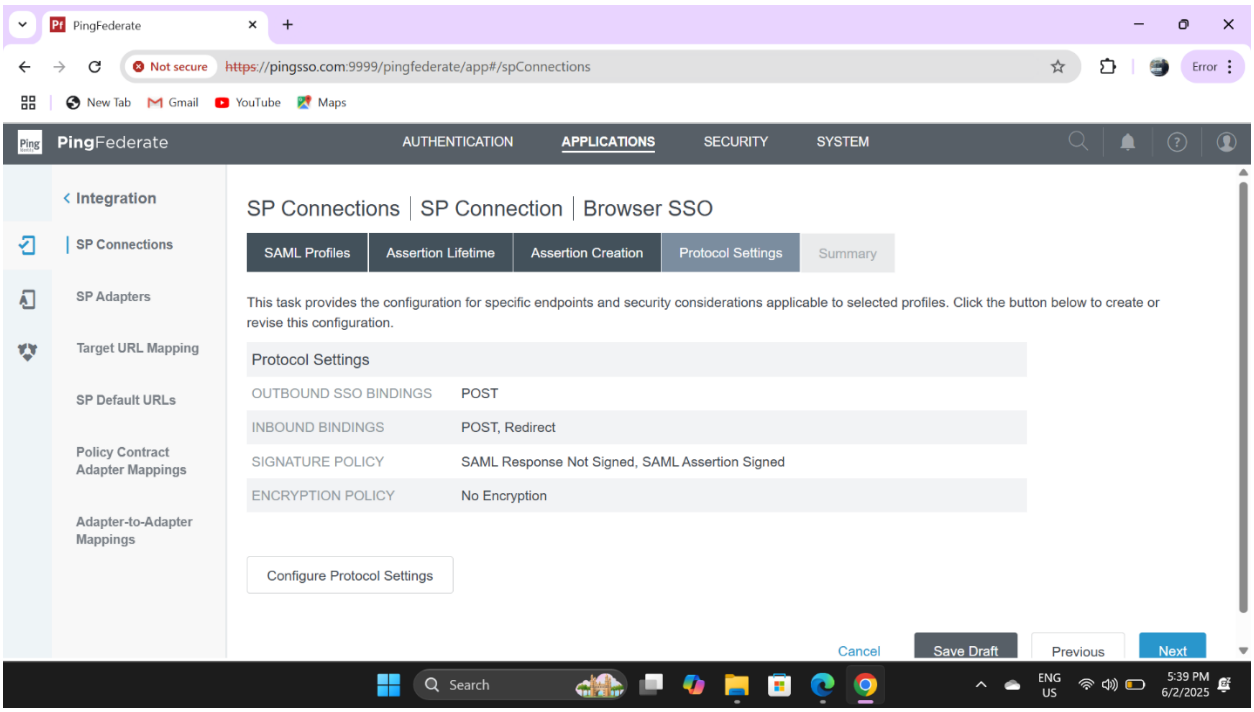
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO | Protocol Settings
Assertion Consumer Service URL
Allowable SAML Bindings
Signature Policy
Encryption Policy
Summary
Summary information for your Protocol Settings configuration. Click a heading link to edit a configuration setting.
Protocol Settings
Assertion Consumer Service URL
Endpoint
URL: https://www.google.com (POST)
Endpoint
URL: https://www.ping.com (POST)
Endpoint
URL: https://www.indianrail.gov.in (POST)
Endpoint
URL: https://www.ap.gov.in (POST)
Allowable SAML Bindings
Artifact
false
POST
true
Search
ENG
US
5:39 PM
6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO
SAML Profiles
Assertion Lifetime
Assertion Creation
Protocol Settings
Summary
This task provides the configuration for specific endpoints and security considerations applicable to selected profiles. Click the button below to create or revise this configuration.
Protocol Settings
OUTBOUND SSO BINDINGS
POST
INBOUND BINDINGS
POST, Redirect
SIGNATURE POLICY
SAML Response Not Signed, SAML Assertion Signed
ENCRYPTION POLICY
No Encryption
Configure Protocol Settings
Cancel
Save Draft
Previous
Next
Search
ENG
US
5:39 PM
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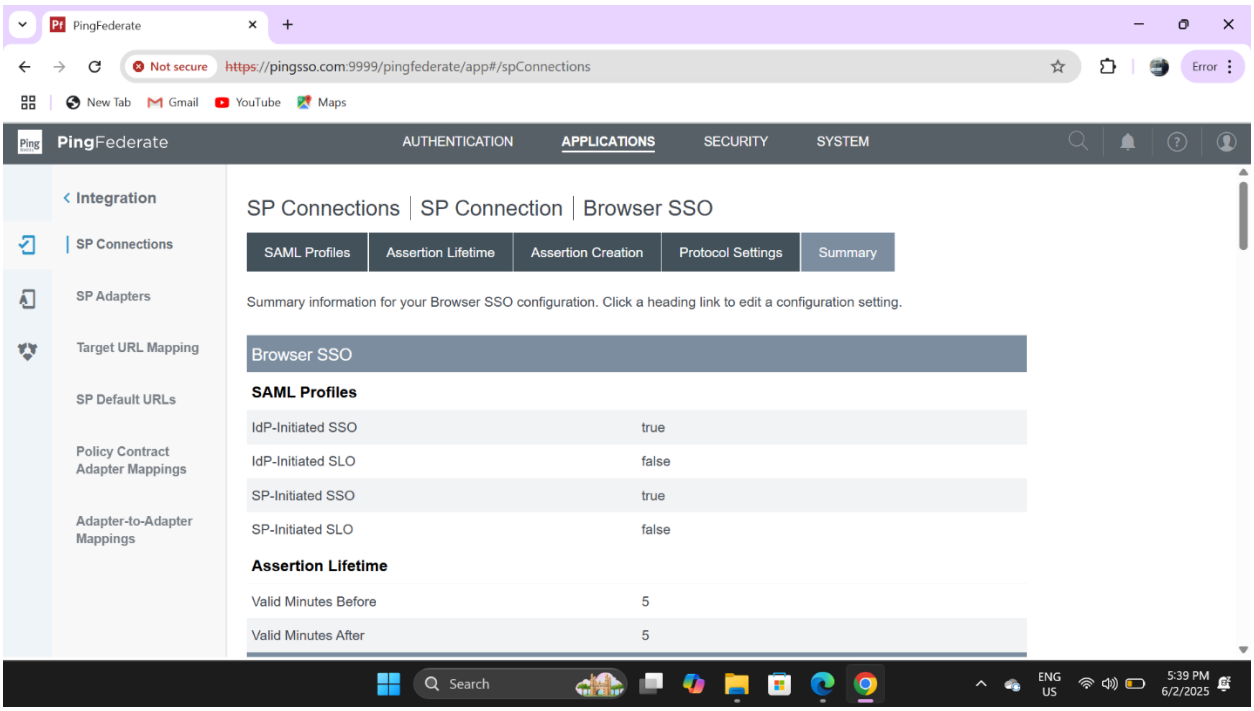
PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
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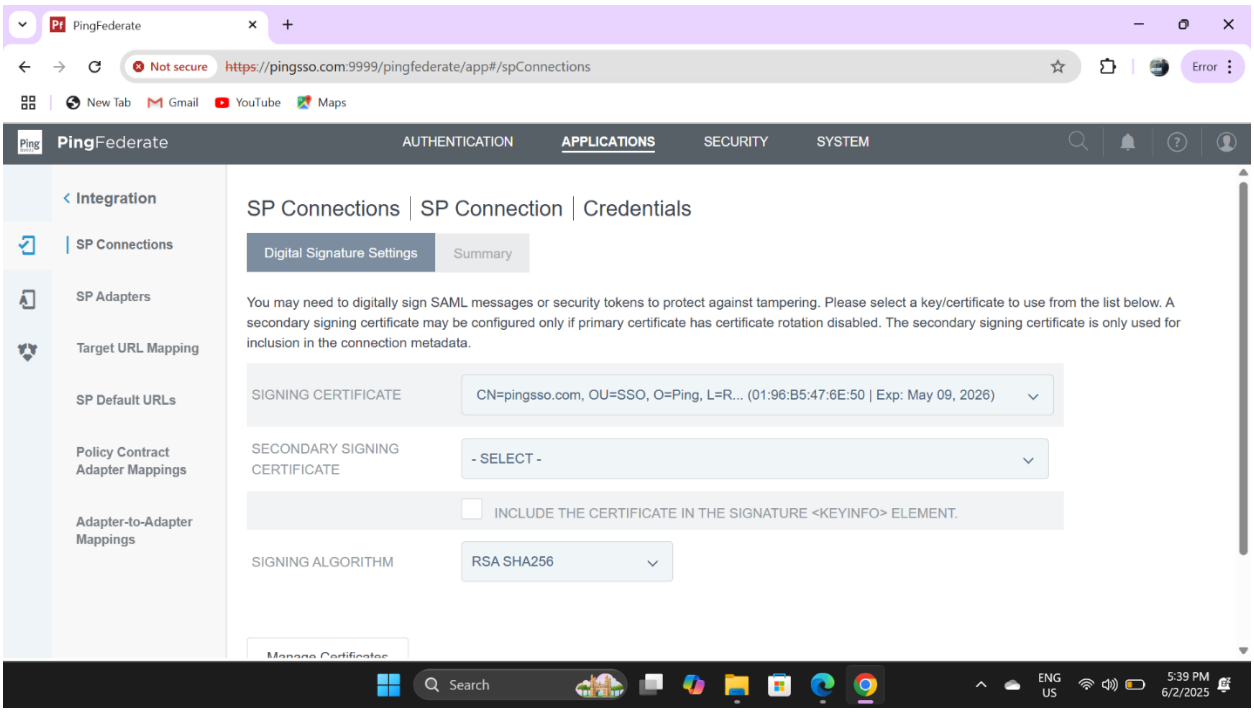
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Browser SSO
SAML Profiles
Assertion Lifetime
Assertion Creation
Protocol Settings
Summary
Summary information for your Browser SSO configuration. Click a heading link to edit a configuration setting.
Browser SSO
SAML Profiles
IdP-Initiated SSO true
IdP-Initiated SLO false
SP-Initiated SSO true
SP-Initiated SLO false
Assertion Lifetime
Valid Minutes Before 5
Valid Minutes After 5
Search
ENG US
5:39 PM 6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
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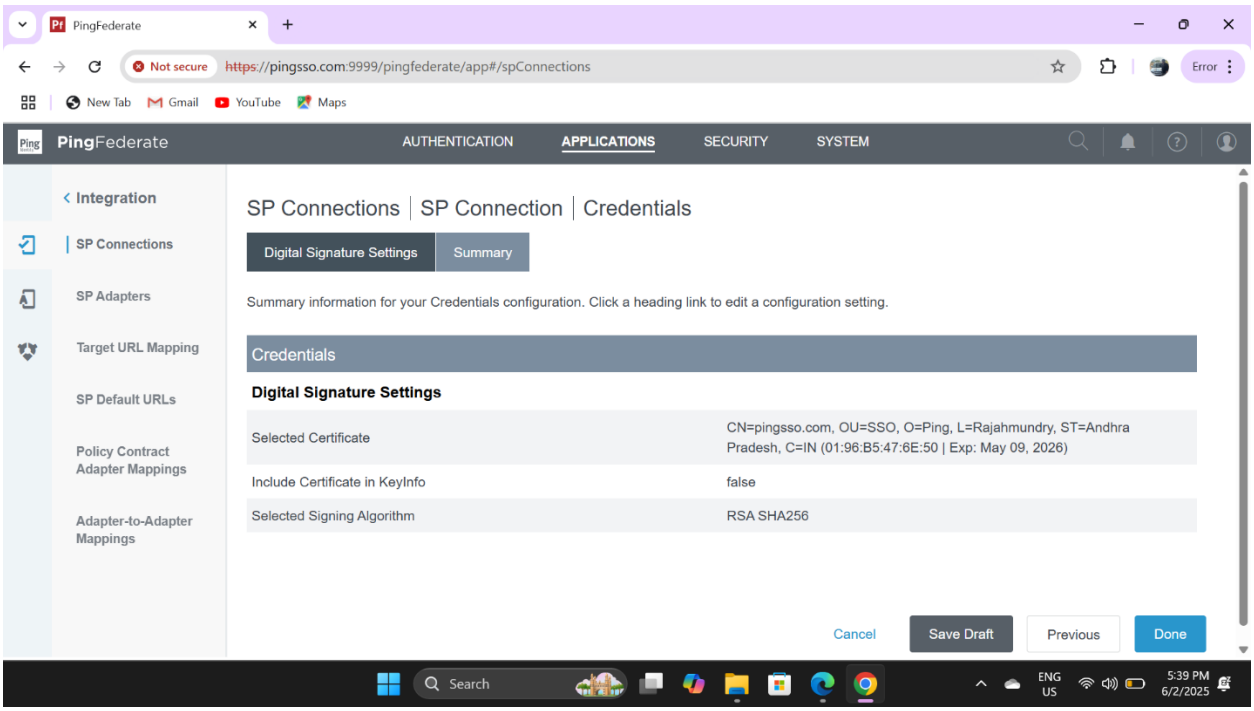
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Credentials
Digital Signature Settings
Summary
You may need to digitally sign SAML messages or security tokens to protect against tampering. Please select a key/certificate to use from the list below. A secondary signing certificate may be configured only if primary certificate has certificate rotation disabled. The secondary signing certificate is only used for inclusion in the connection metadata.
SIGNING CERTIFICATE
CN=pingsso.com, OU=SSO, O=Ping, L=R... (01:96:B5:47:6E:50 | Exp: May 09, 2026)
SECONDARY SIGNING CERTIFICATE
- SELECT -
INCLUDE THE CERTIFICATE IN THE SIGNATURE <KEYINFO> ELEMENT.
SIGNING ALGORITHM
RSA SHA256
Manage Certificates
Search
ENG US
5:39 PM 6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
Error
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
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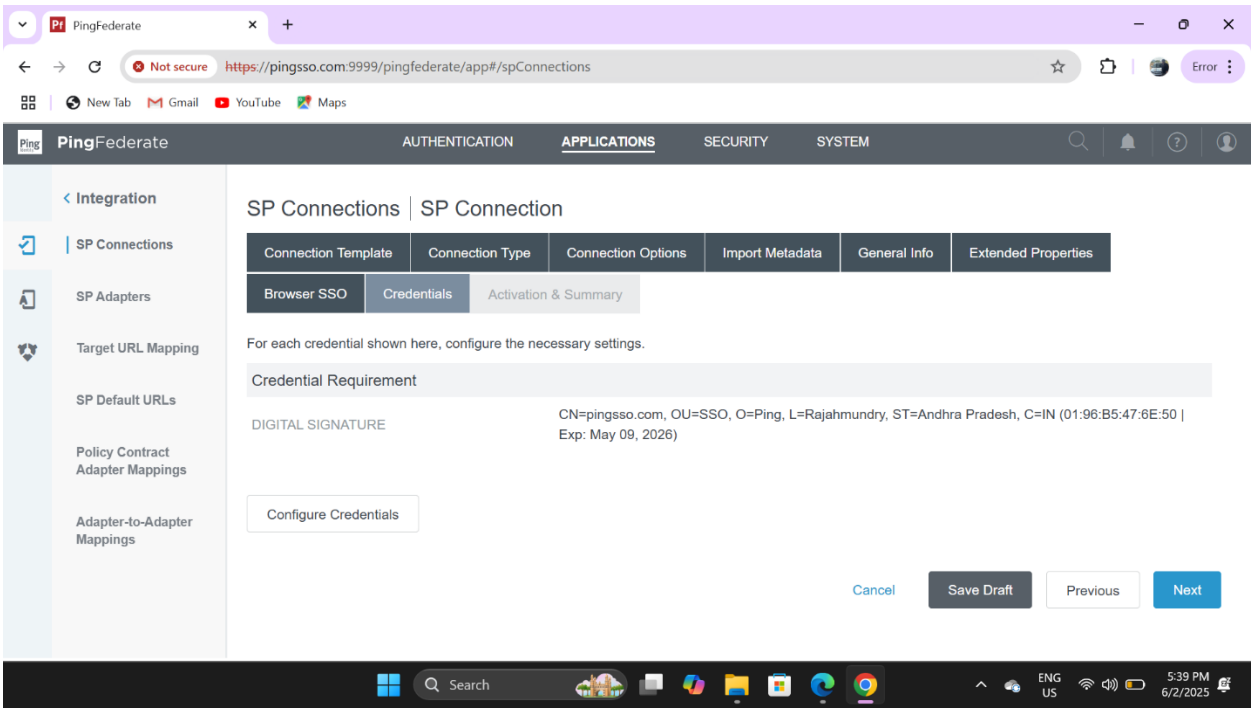
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection | Credentials
Digital Signature Settings
Summary
Summary information for your Credentials configuration. Click a heading link to edit a configuration setting.
Credentials
Digital Signature Settings
Selected Certificate
CN=pingsso.com, OU=SSO, O=Ping, L=Rajahmundry, ST=Andhra Pradesh, C=IN (01:96:B5:47:6E:50 | Exp: May 09, 2026)
Include Certificate in KeyInfo
false
Selected Signing Algorithm
RSA SHA256
Cancel
Save Draft
Previous
Done
Search
ENG US
5:39 PM 6/2/2025


PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
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New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
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Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection
Connection Template
Connection Type
Connection Options
Import Metadata
General Info
Extended Properties
Browser SSO
Credentials
Activation & Summary
For each credential shown here, configure the necessary settings.
Credential Requirement
DIGITAL SIGNATURE
CN=pingsso.com, OU=SSO, O=Ping, L=Rajahmundry, ST=Andhra Pradesh, C=IN (01:96:B5:47:6E:50 | Exp: May 09, 2026)
Configure Credentials
Cancel
Save Draft
Previous
Next
Search
ENG US
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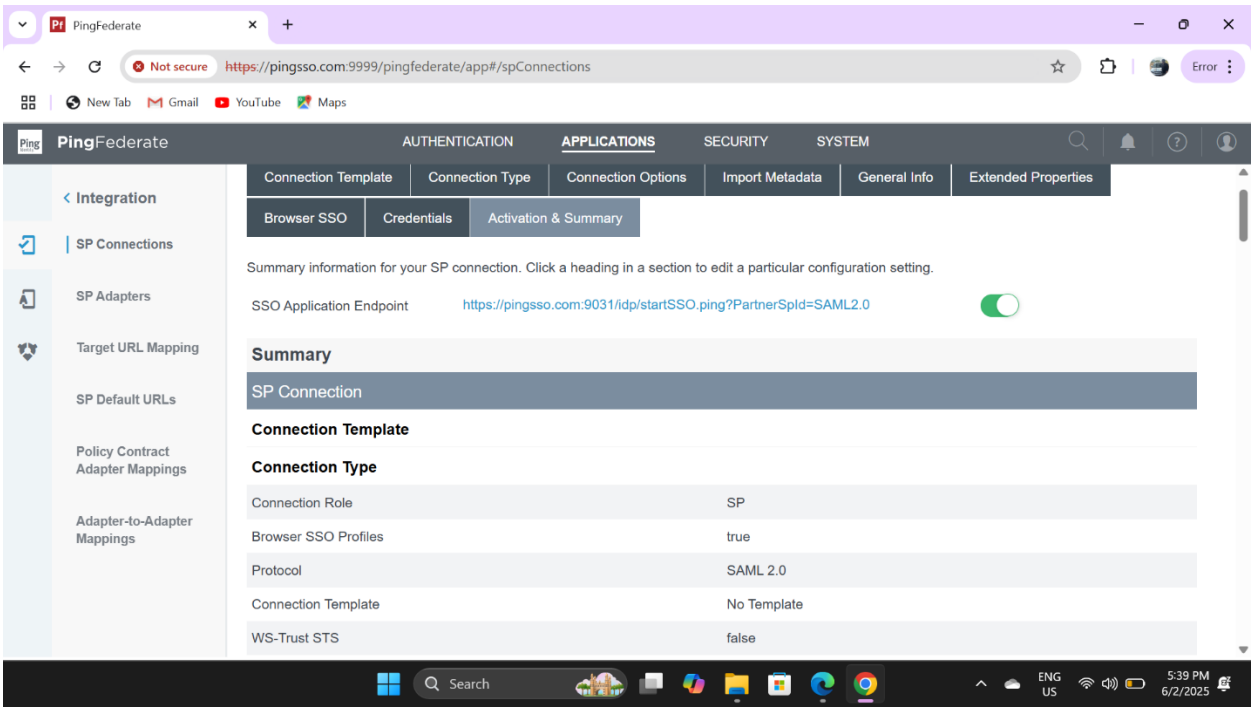
PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
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SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
Connection Template
Connection Type
Connection Options
Import Metadata
General Info
Extended Properties
Browser SSO
Credentials
Activation & Summary
Summary information for your SP connection. Click a heading in a section to edit a particular configuration setting.
SSO Application Endpoint
https://pingsso.com:9031/idp/startSSO.ping?PartnerSpId=SAML2.0
Summary
SP Connection
Connection Template
Connection Type
Connection Role
SP
Browser SSO Profiles
true
Protocol
SAML 2.0
Connection Template
No Template
WS-Trust STS
false
Search
ENG
US
5:39 PM
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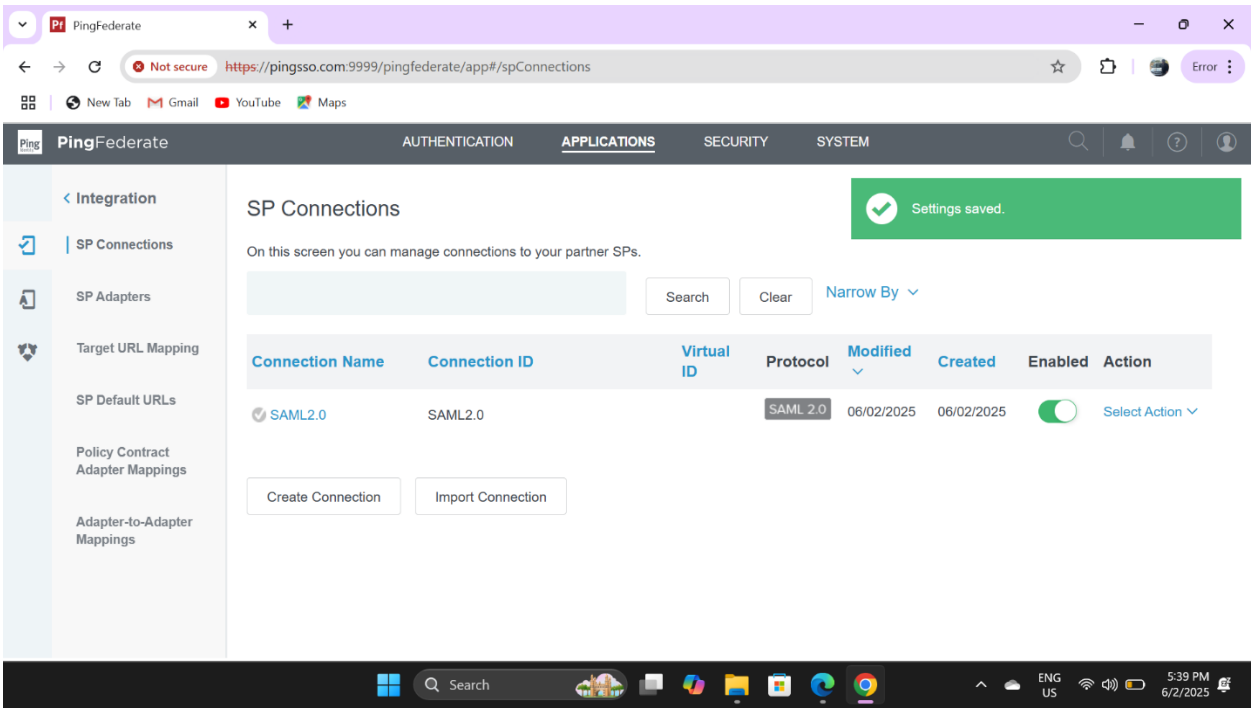
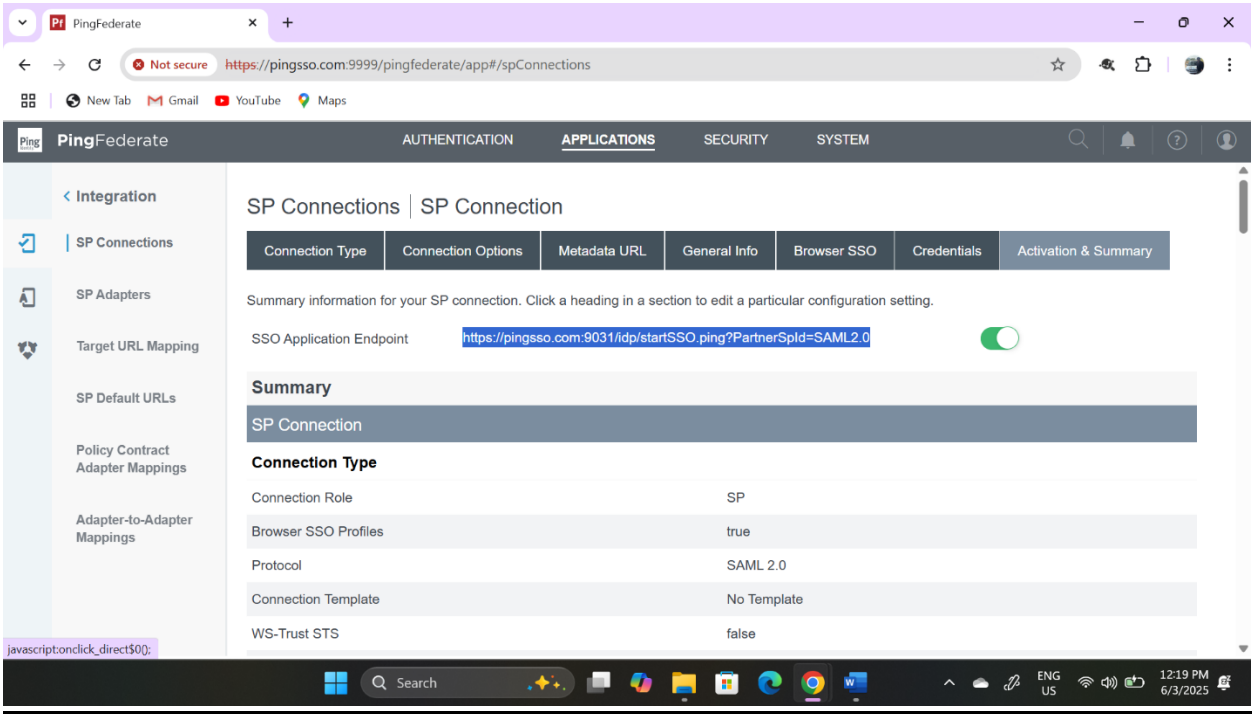
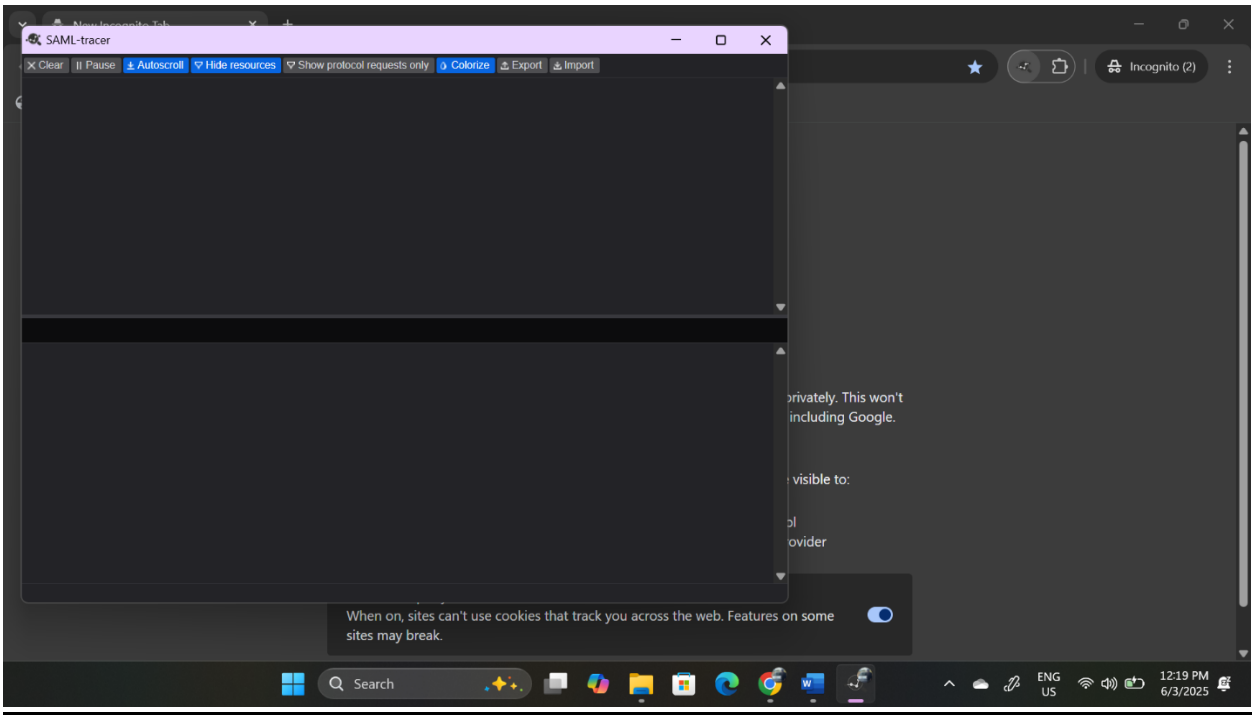

PingFederate
Not secure
https://pingsso.com:9999/pingfederate/app#/spConnections
New Tab
Gmail
YouTube
Maps
PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections
Settings saved.
On this screen you can manage connections to your partner SPs.
Search
Clear
Narrow By
Connection Name
Connection ID
Virtual ID
Protocol
Modified
Created
Enabled
Action
SAML2.0
SAML2.0
SAML 2.0
06/02/2025
06/02/2025
Select Action
Create Connection
Import Connection
Search
ENG
US
5:39 PM
6/2/2025

## Step 7:- Test the SAML Login Flow

1. Access the Service Provider URL.
2. Login from an internal IP address and verify authentication succeeds without MFA.
3. Login from an external IP address and verify that PingID MFA is required.
4. Check PingFederate logs to confirm successful authentication and assertions.

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Autoscroll
Hide resources
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Colorize
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Search
ENG
US
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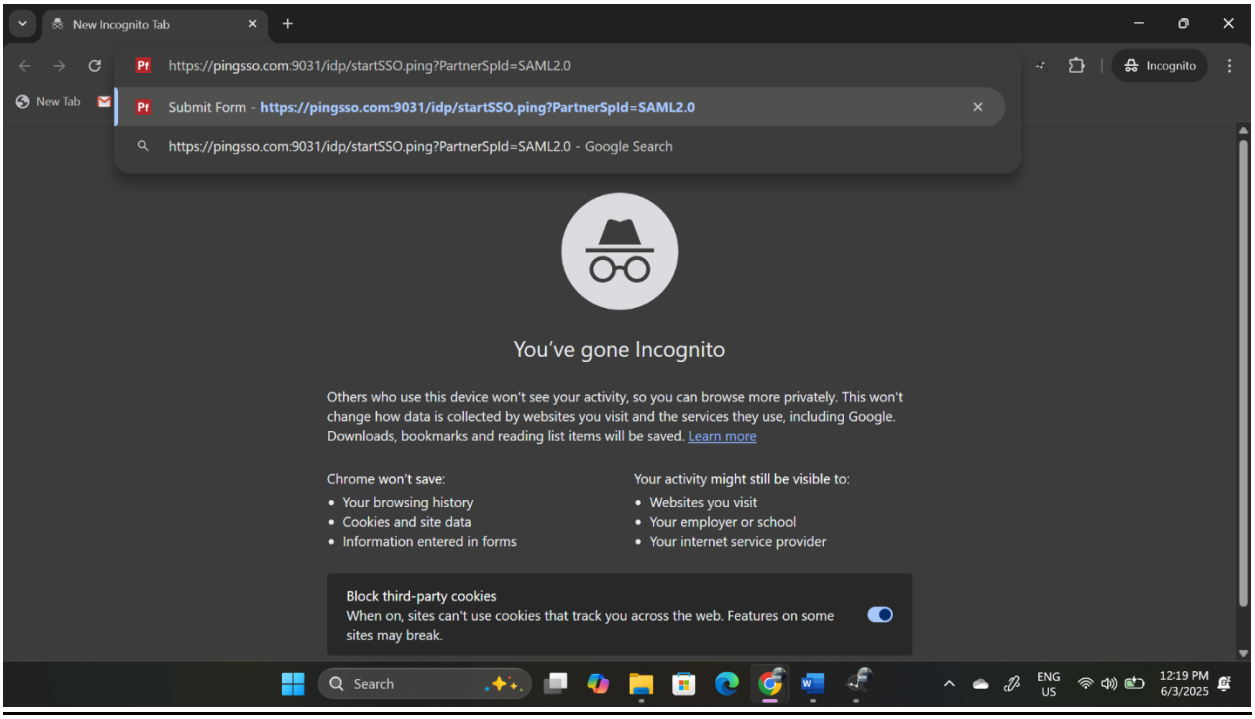
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Submit Form - https://pingsso.com:9031/idp/startSSO.ping?PartnerSpId=SAML2.0
https://pingsso.com:9031/idp/startSSO.ping?PartnerSpId=SAML2.0 - Google Search
Incognito
New Tab
You've gone Incognito
Others who use this device won't see your activity, so you can browse more privately. This won't change how data is collected by websites you visit and the services they use, including Google. Downloads, bookmarks and reading list items will be saved. Learn more
Chrome won't save:
Your browsing history
Cookies and site data
Information entered in forms
Your activity might still be visible to:
Websites you visit
Your employer or school
Your internet service provider
Block third-party cookies
When on, sites can't use cookies that track you across the web. Features on some sites may break.
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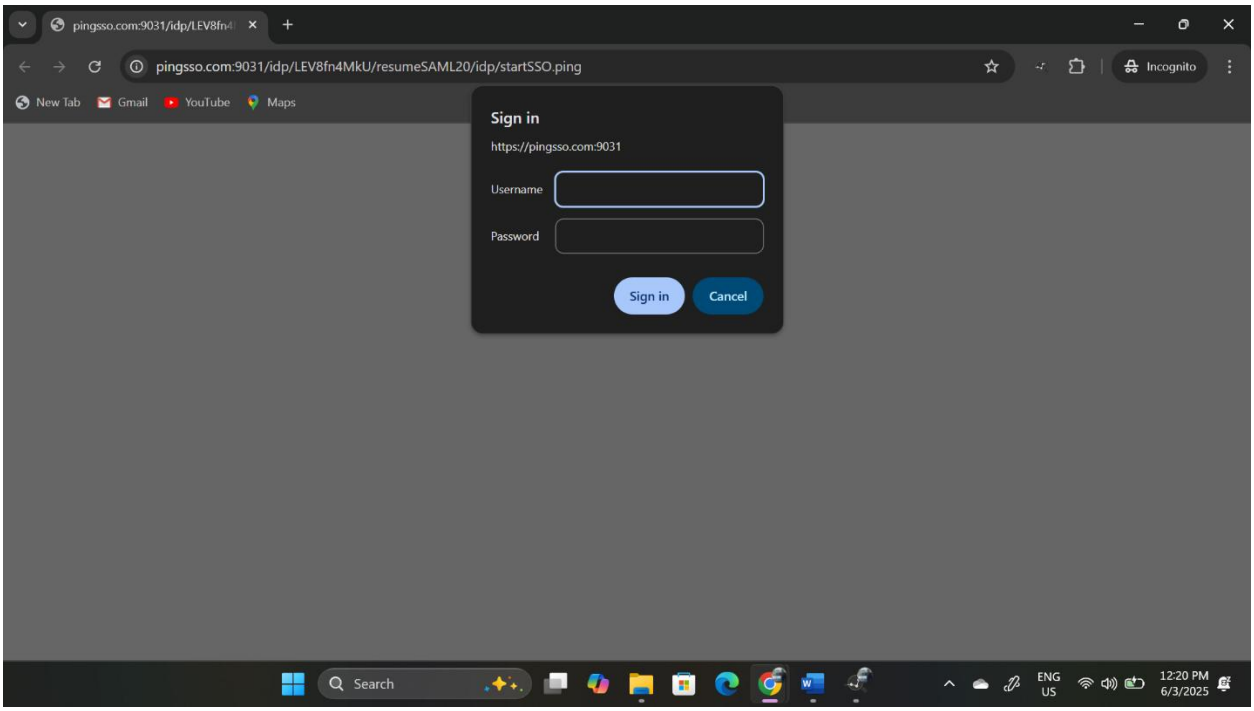
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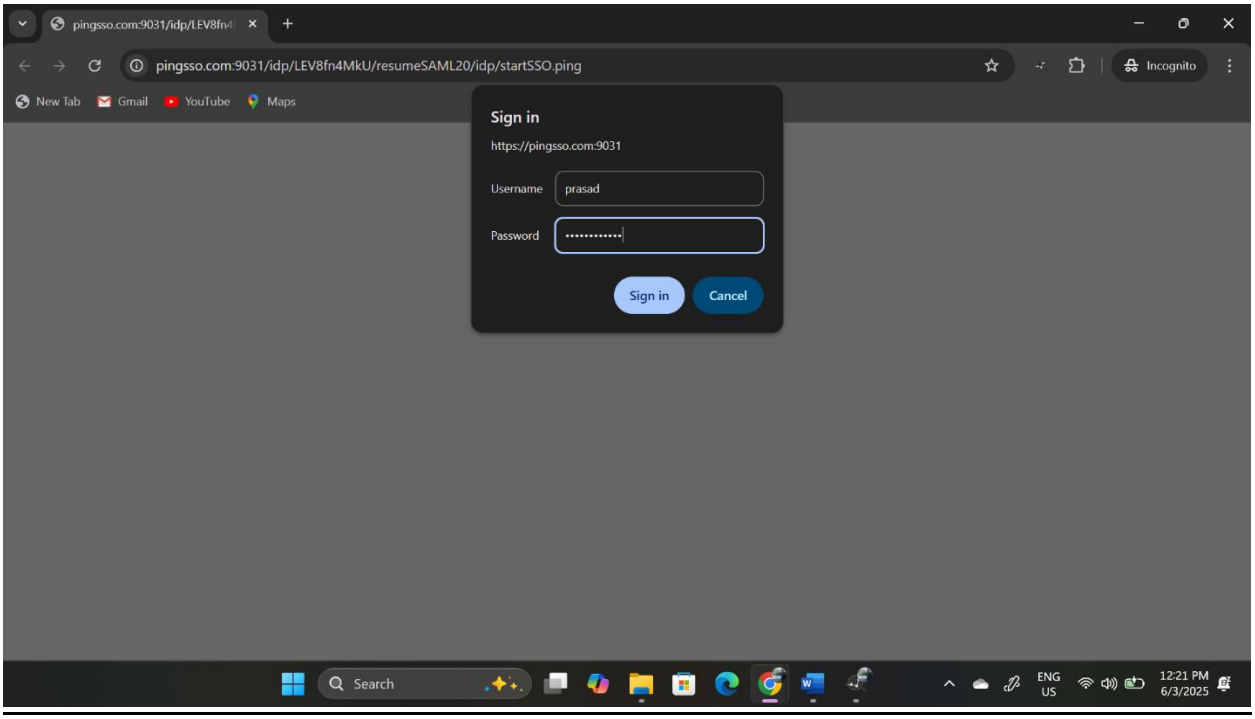
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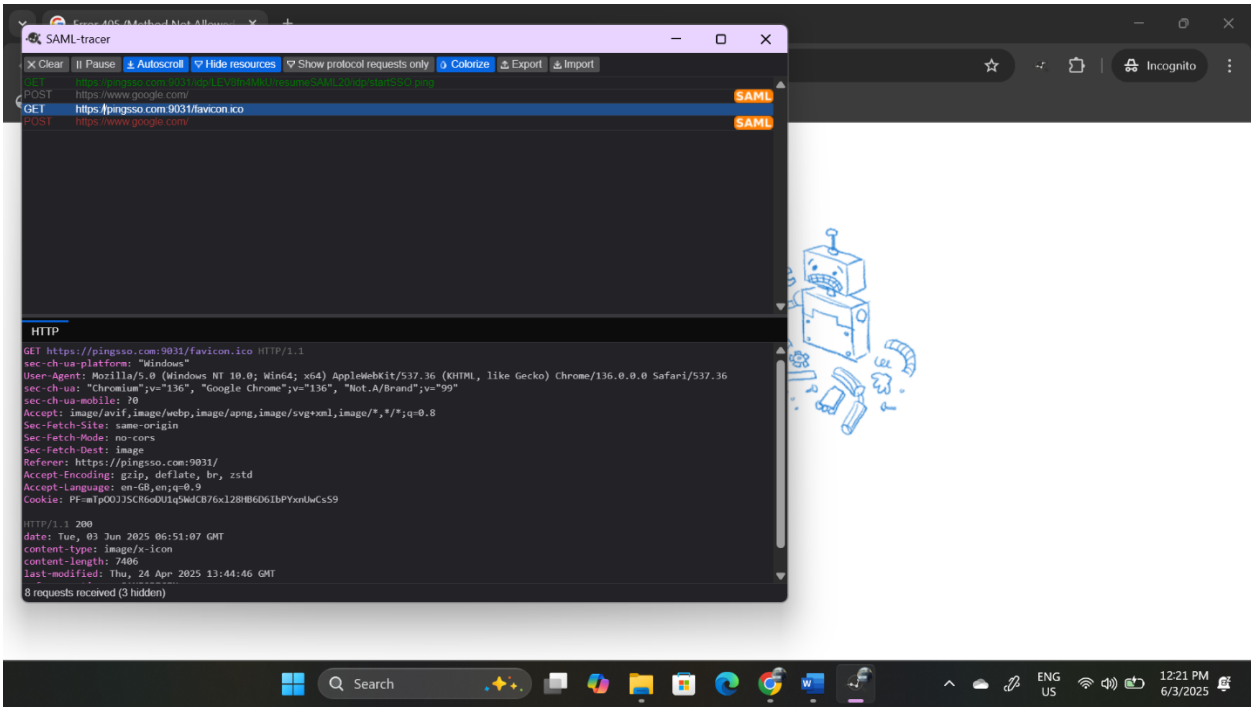
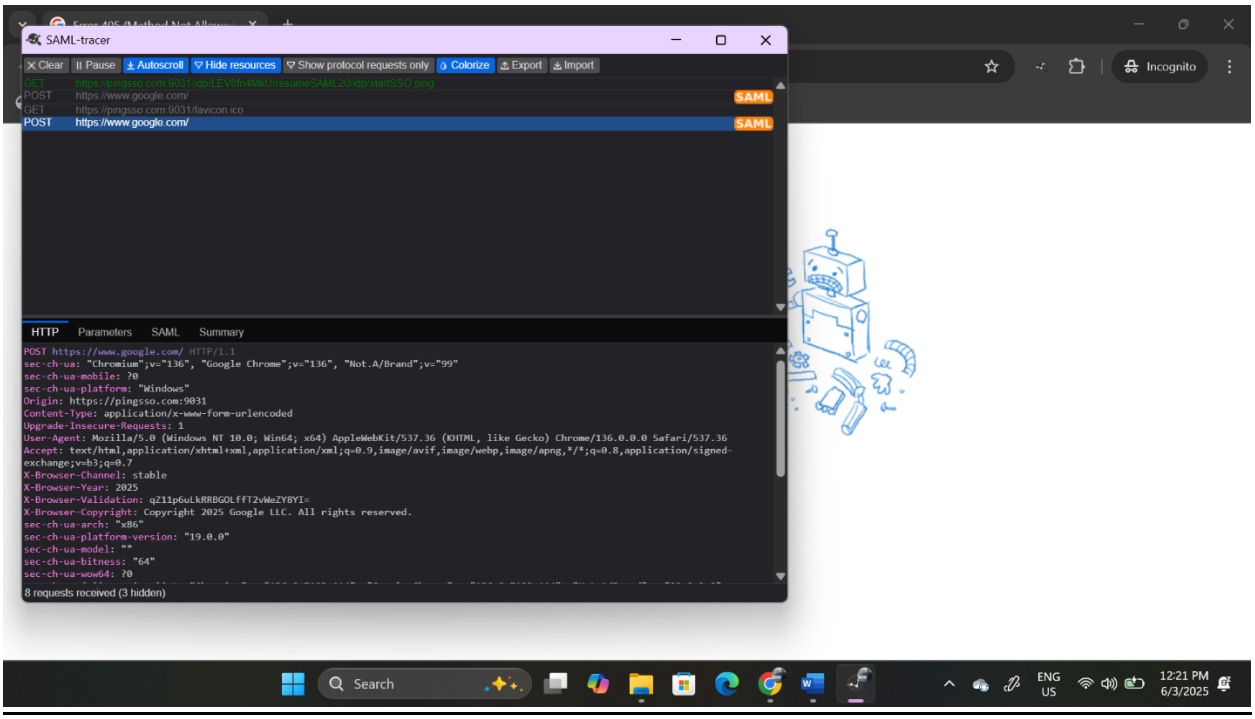
Google

**405.** That's an error.

The request method POST is inappropriate for the URL /.
That's all we know.

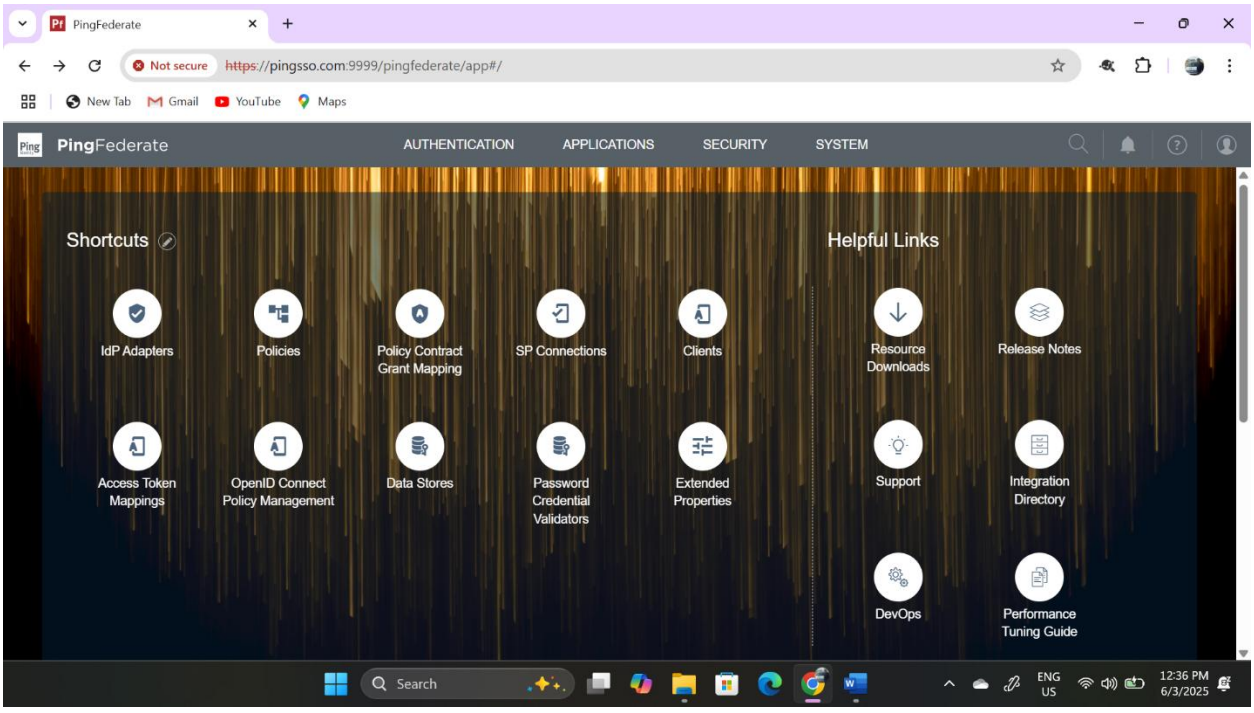


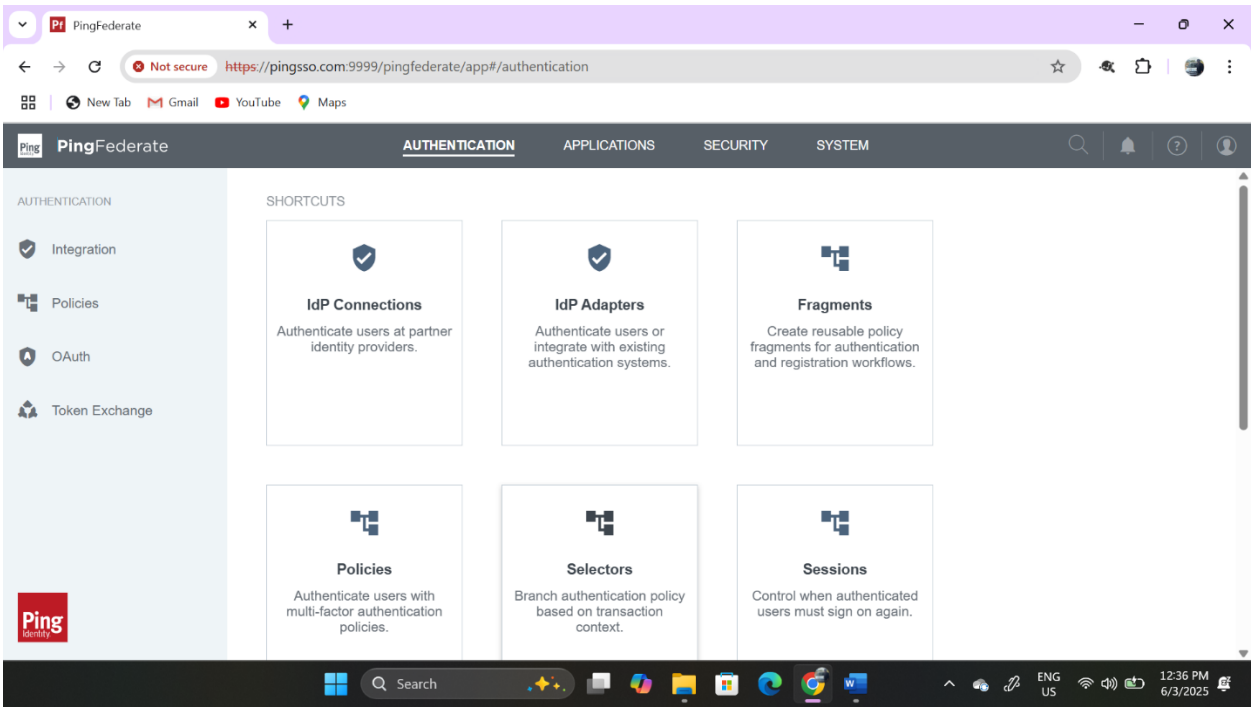

**<u>Step 7</u>:- Testing the SAML Login Flow — External User**

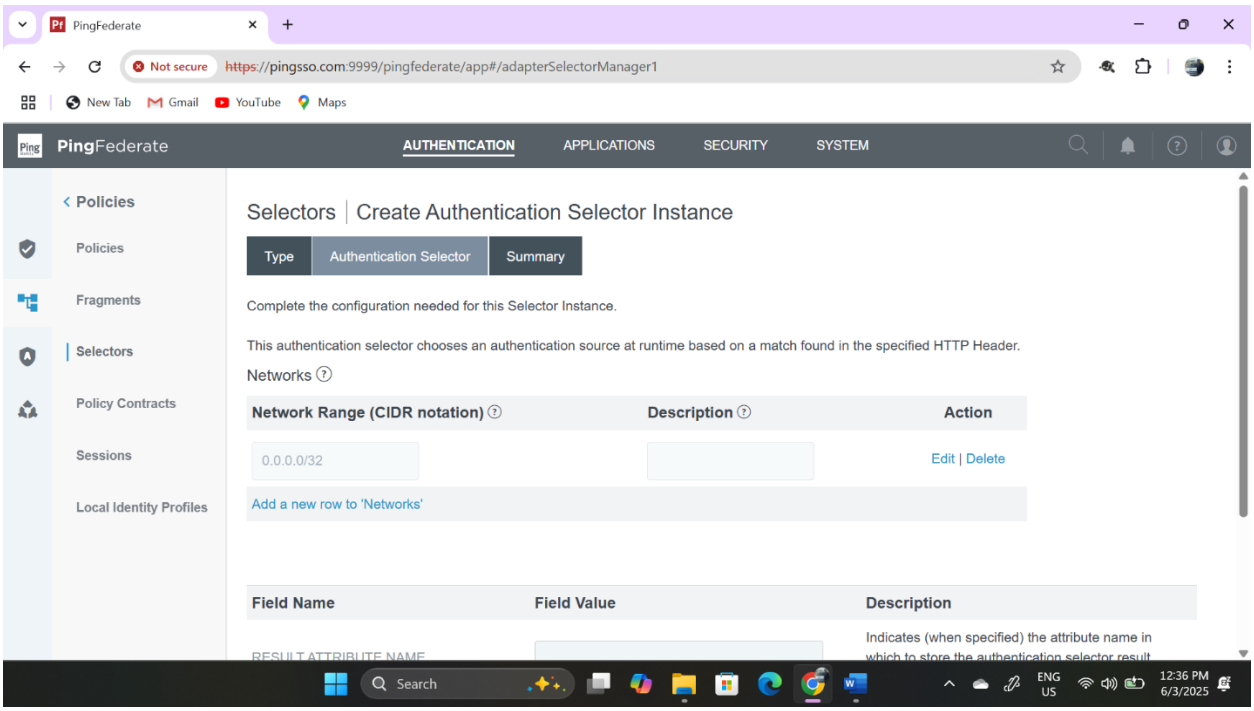
To ensure that the authentication flow correctly enforces multi-factor authentication (MFA) for users connecting from outside the internal network, follow these steps:

- When an external user (with an IP address outside the defined CIDR ranges) accesses the Service Provider application, they are first presented with the standard login screen to enter their username and password.
- After successful primary authentication, the system recognizes the user's external IP and triggers the PingID Multi-Factor Authentication (MFA) adapter as per the CIDR-based policy.
- The user is required to complete the PingID MFA challenge, such as approving a push notification on their mobile device or entering a one-time password (OTP).
- Only after successful completion of the MFA step, the user is granted access and the SAML assertion is sent to the Service Provider, completing the federated login.
- This process ensures that external users undergo an additional security layer, protecting sensitive resources from unauthorized access.
- Administrators can verify the flow by checking PingFederate logs, which will show the primary authentication followed by MFA challenge events for external IP addresses.

This setup balances security and usability by allowing internal users to authenticate quickly without MFA, while enforcing strong authentication for external users.

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Not secure
https://pingsso.com:9999/pingfederate/app#/adapterSelectorManager1
New Tab
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AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Policies
Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
Selectors | Create Authentication Selector Instance
Type
Authentication Selector
Summary
Complete the configuration needed for this Selector Instance.
This authentication selector chooses an authentication source at runtime based on a match found in the specified HTTP Header.
Networks
Network Range (CIDR notation)
Description
Action
0.0.0.0/32
Edit | Delete
Add a new row to 'Networks'
Field Name
Field Value
Description
Indicates (when specified) the attribute name in
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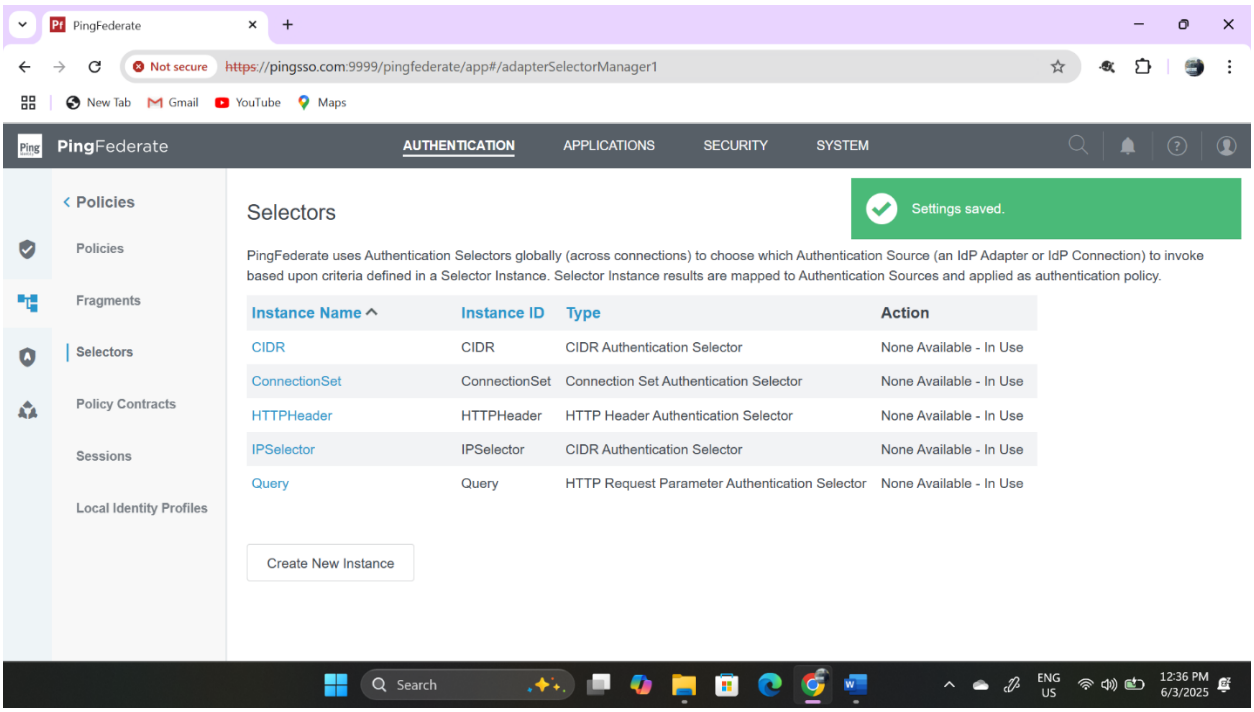
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PingFederate
AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
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Policies
Fragments
Selectors
Policy Contracts
Sessions
Local Identity Profiles
Selectors
Settings saved.
PingFederate uses Authentication Selectors globally (across connections) to choose which Authentication Source (an IdP Adapter or IdP Connection) to invoke based upon criteria defined in a Selector Instance. Selector Instance results are mapped to Authentication Sources and applied as authentication policy.
Instance Name
Instance ID
Type
Action
CIDR
CIDR
CIDR Authentication Selector
None Available - In Use
ConnectionSet
ConnectionSet
Connection Set Authentication Selector
None Available - In Use
HTTPHeader
HTTPHeader
HTTP Header Authentication Selector
None Available - In Use
IPSelector
IPSelector
CIDR Authentication Selector
None Available - In Use
Query
Query
HTTP Request Parameter Authentication Selector
None Available - In Use
Create New Instance
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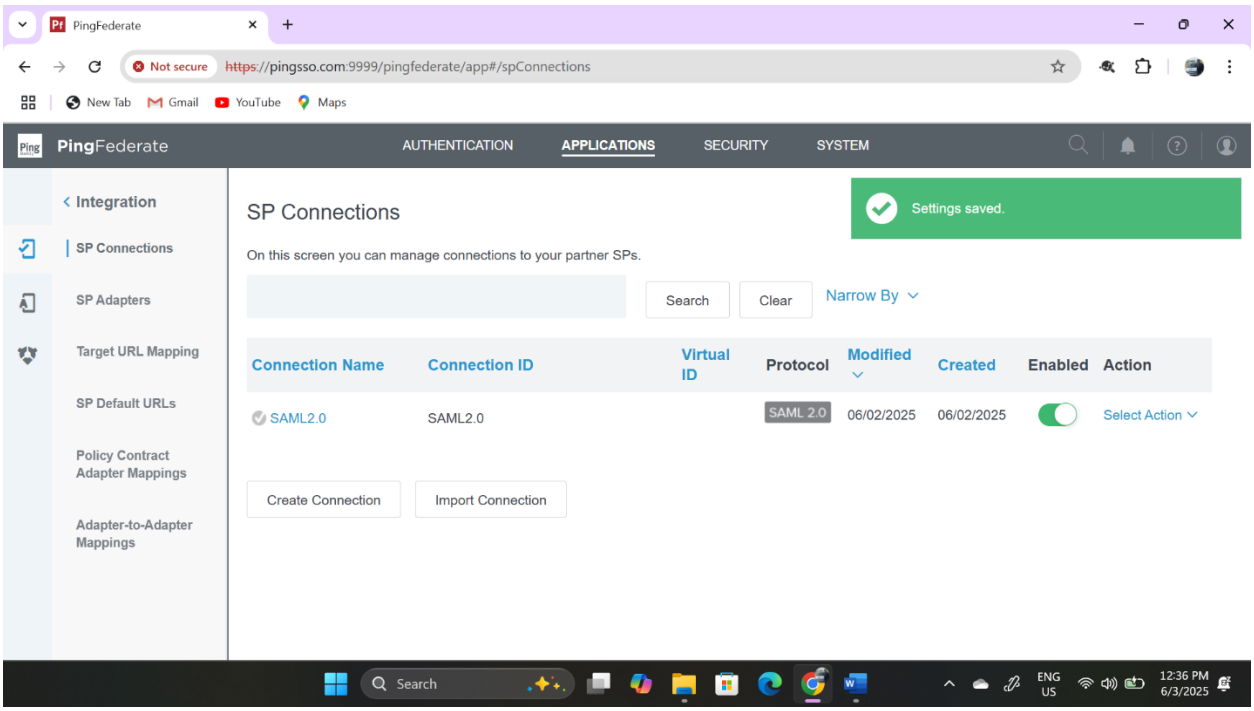
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AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections
Settings saved.
On this screen you can manage connections to your partner SPs.
Search
Clear
Narrow By
Connection Name
Connection ID
Virtual ID
Protocol
Modified
Created
Enabled
Action
SAML2.0
SAML2.0
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Select Action
Create Connection
Import Connection
Search
ENG US
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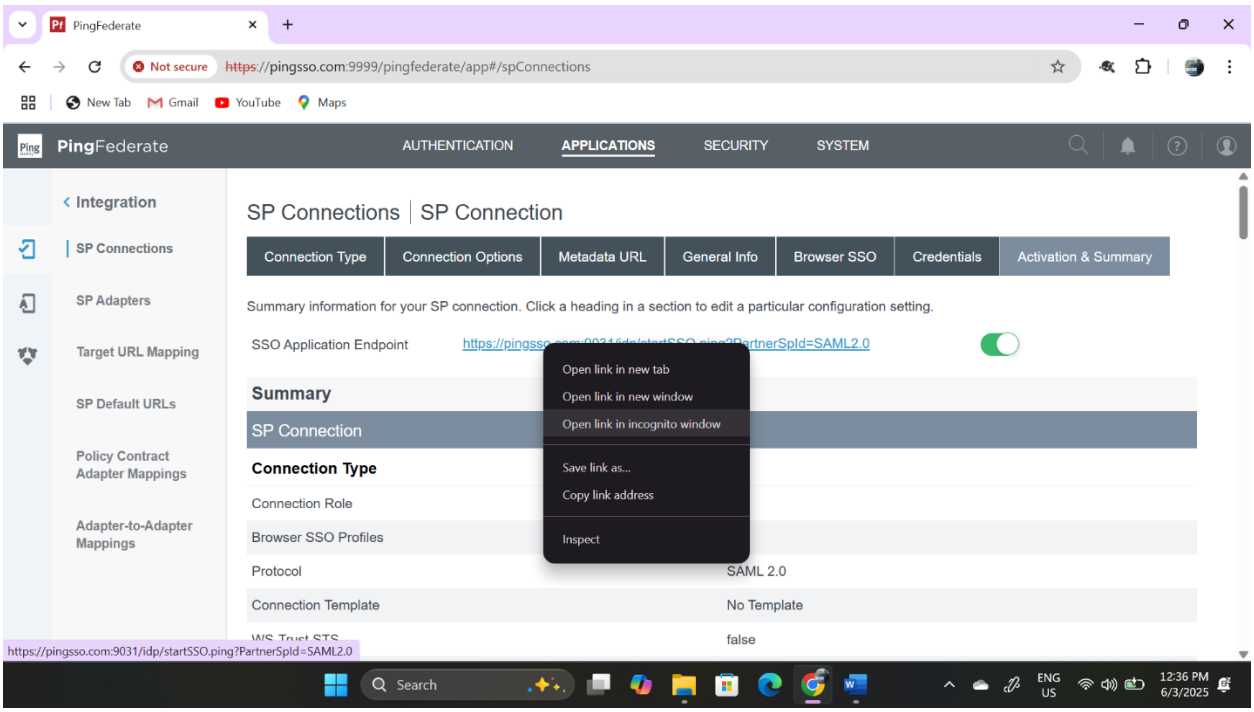
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AUTHENTICATION
APPLICATIONS
SECURITY
SYSTEM
Integration
SP Connections
SP Adapters
Target URL Mapping
SP Default URLs
Policy Contract Adapter Mappings
Adapter-to-Adapter Mappings
SP Connections | SP Connection
Connection Type
Connection Options
Metadata URL
General Info
Browser SSO
Credentials
Activation & Summary
Summary information for your SP connection. Click a heading in a section to edit a particular configuration setting.
SSO Application Endpoint
Open link in new tab
Open link in new window
Open link in incognito window
Save link as...
Copy link address
Inspect
Summary
SP Connection
Connection Type
Connection Role
Browser SSO Profiles
Protocol
SAML 2.0
Connection Template
No Template
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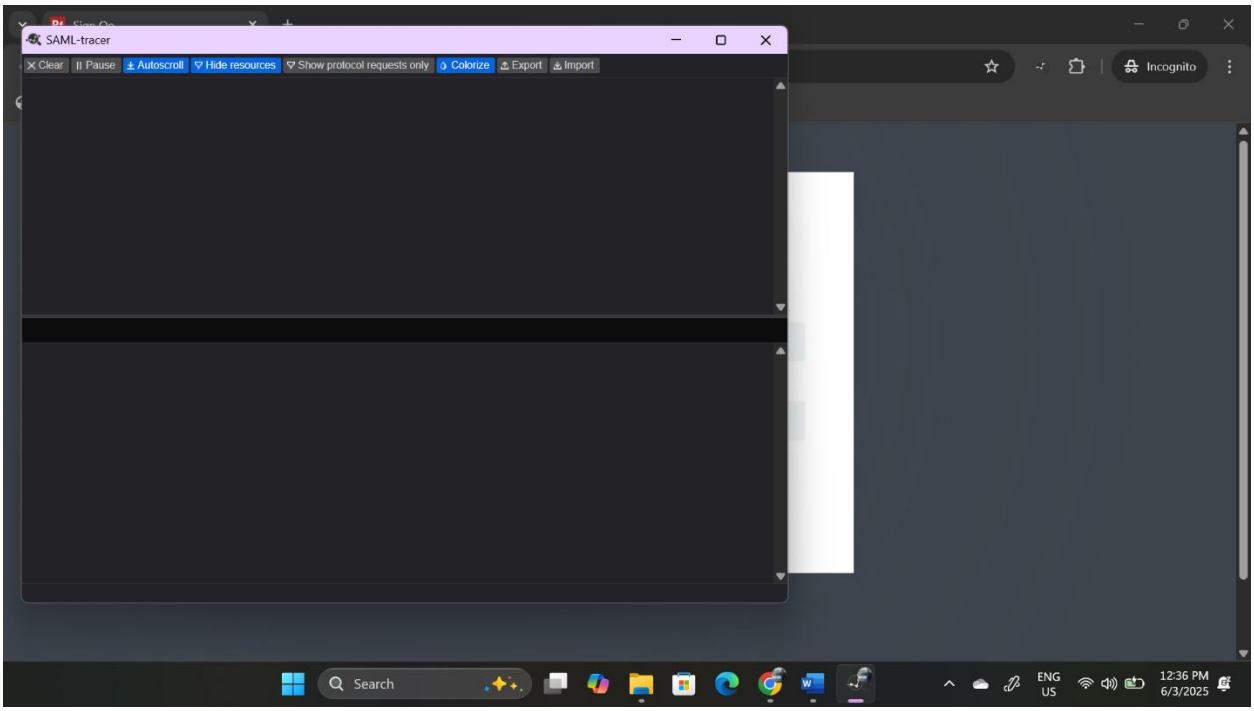
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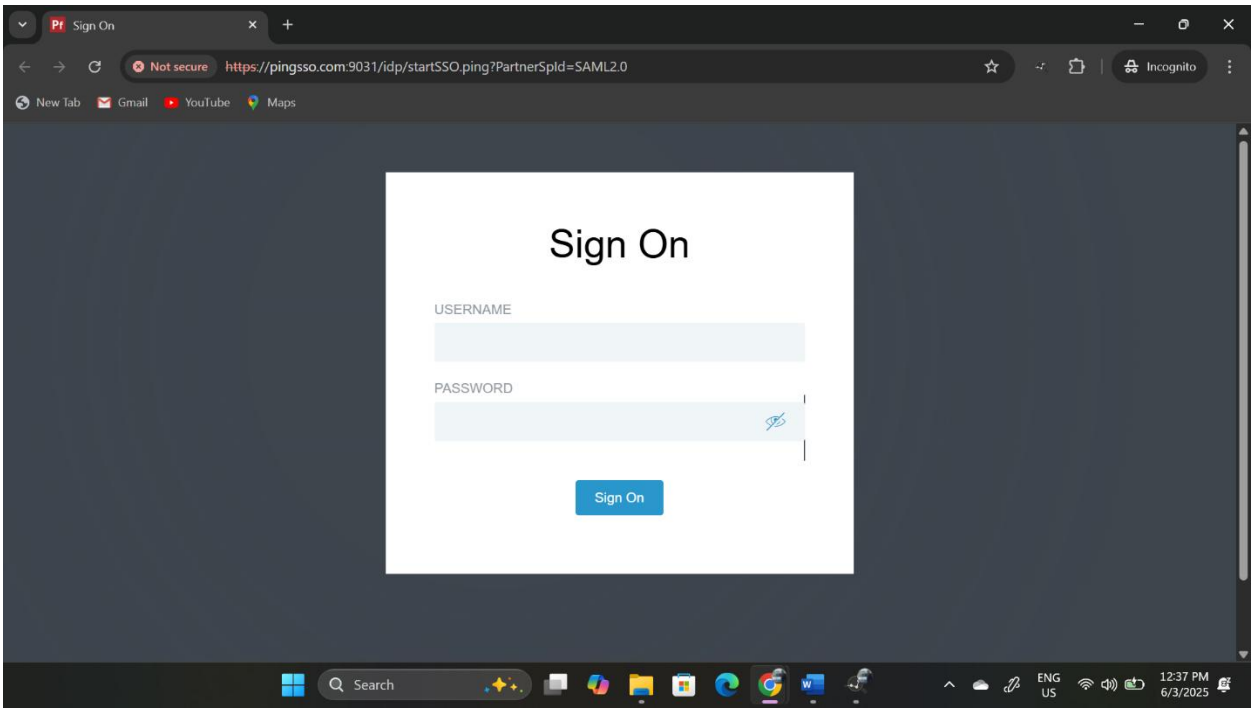
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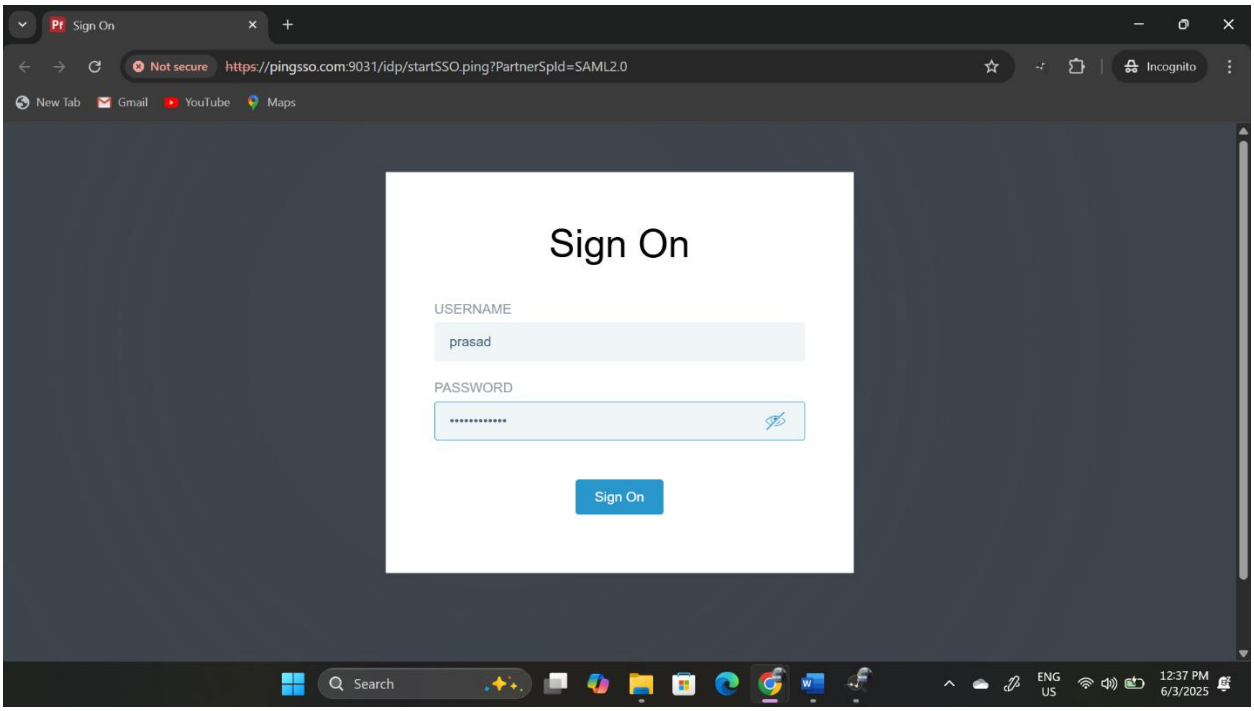
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PASSWORD
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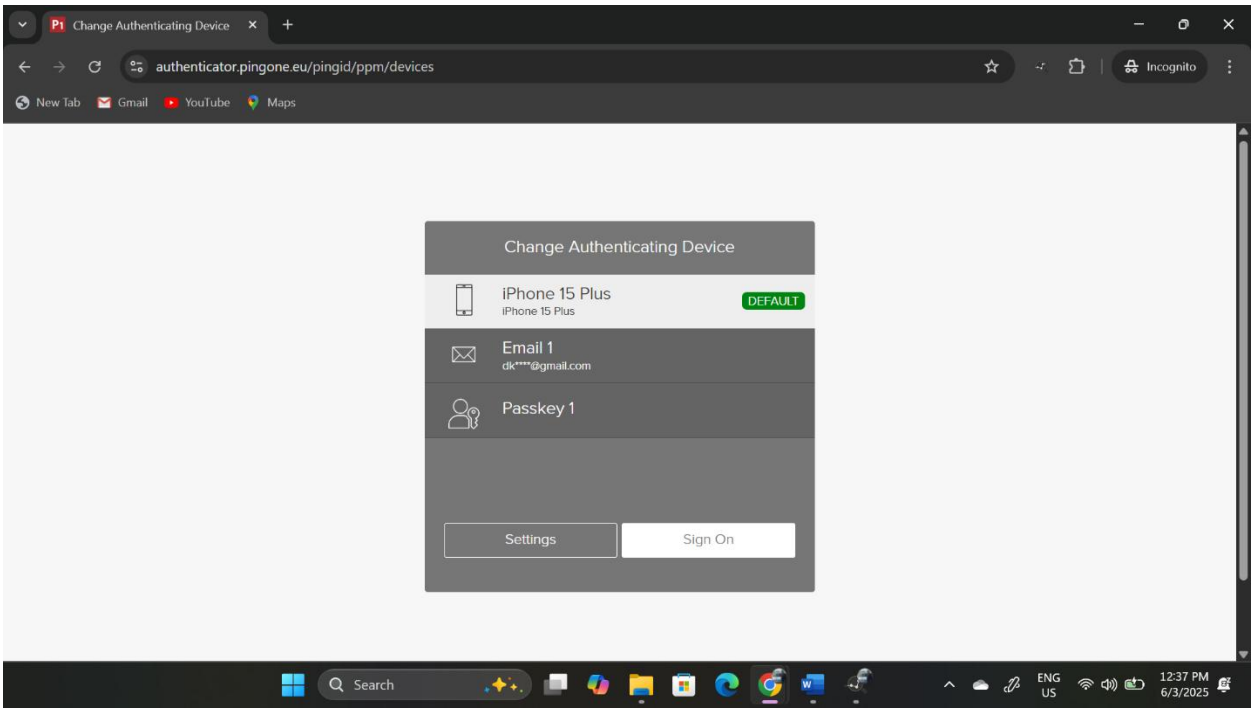
Change Authenticating Device
authenticator.pingone.eu/pingid/ppm/devices
Incognito
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DEFAULT
Email 1
dk****@gmail.com
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Settings
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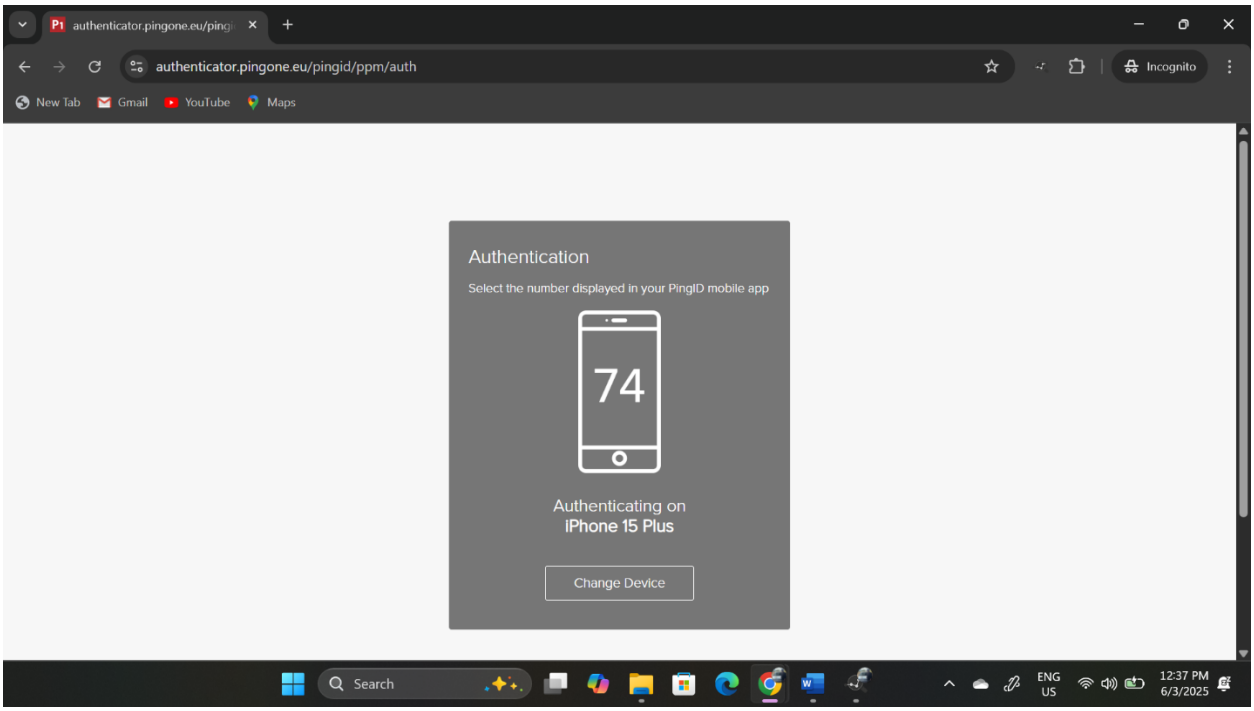
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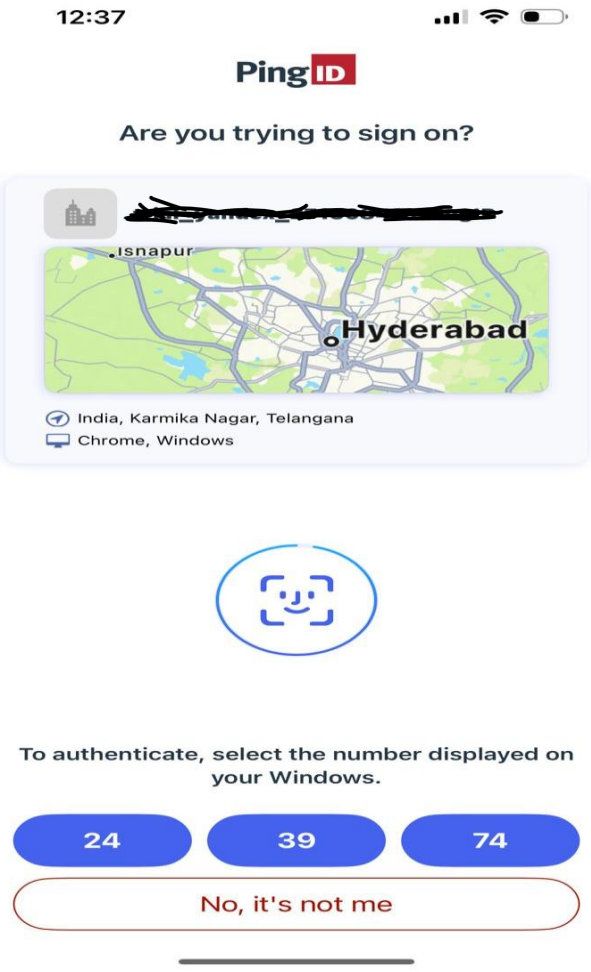
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PingID
Are you trying to sign on?
[redacted]
Hyderabad
India, Karmika Nagar, Telangana
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To authenticate, select the number displayed on your Windows.
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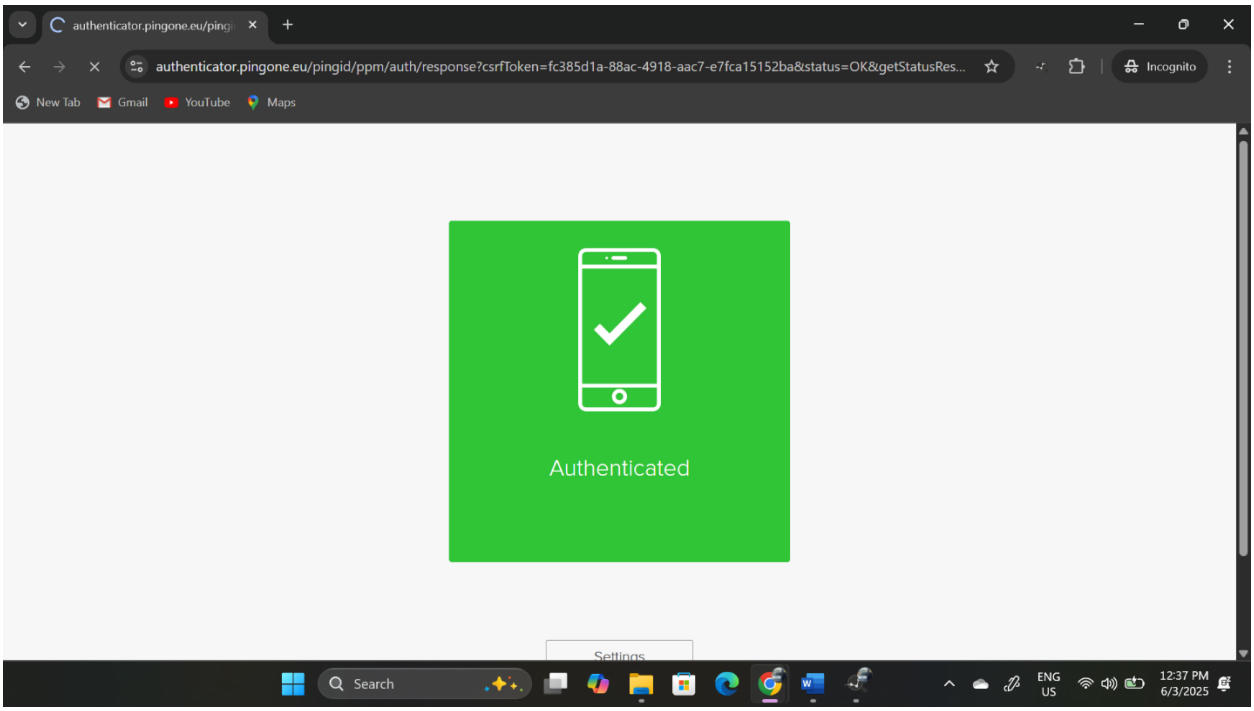
39
74
No, it's not me

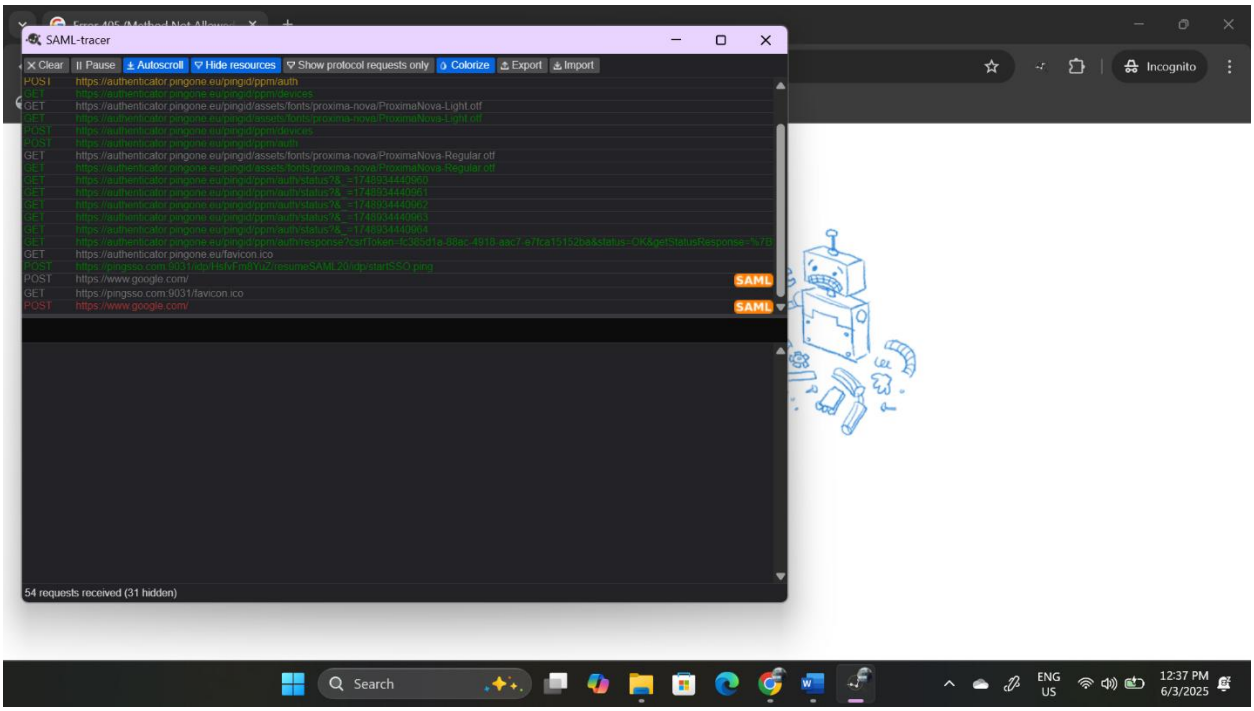




Google

**405.** That's an error.

The request method POST is inappropriate for the URL /.
That's all we know.




**Results and Observations**:-

- The secure authentication flow was successfully implemented using PingFederate, with conditional MFA based on user IP addresses.
- **Internal users**, identified via CIDR matching, were authenticated using only username and password (via HTML Form or HTTP Basic Adapter) and **did not require PingID MFA**, improving usability within the trusted network.
- **External users** were correctly routed to the PingID MFA flow after primary authentication, enhancing security for users accessing from untrusted locations.
- The CIDR selector worked as expected, accurately determining whether an IP was internal or external.
- The **Composite Adapter** effectively combined multiple login methods into a single seamless experience, enhancing flexibility and maintainability.
- The SAML 2.0 SP connection completed successfully, and assertions were correctly generated and passed to the Service Provider application.
- Logs confirmed successful authentication chains, including conditional branching and MFA enforcement.

## **Conclusion**:-

This mini project demonstrated a practical implementation of a dynamic and secure authentication system using PingFederate. By leveraging features such as **SAML 2.0**, **Composite Adapters**, **CIDR Selectors**, and **PingID MFA**, we achieved:

- Context-aware access control
- Improved user experience for internal users
- Enhanced security for external access
- A flexible, policy-driven authentication architecture

This hands-on implementation provides a solid foundation for modern enterprise Identity and Access Management (IAM) practices. It shows how organizations can enforce security dynamically without compromising usability.

## **References**:-


- PingFederate Documentation – Official Guide
- PingID Integration Guide
- SAML 2.0 Technical Overview – OASIS Standard
- Internal PingFederate Admin Console
- Lab/Test Environment Setup


## **Acknowledgement**:-


I would like to thank everyone who supported and guided me throughout this mini project. Special thanks to the creators of PingFederate and PingID for providing powerful IAM tools that enabled this hands-on implementation.


Thank you for taking the time to read this documentation. I hope it provides value and insight into secure authentication flows using PingFederate.