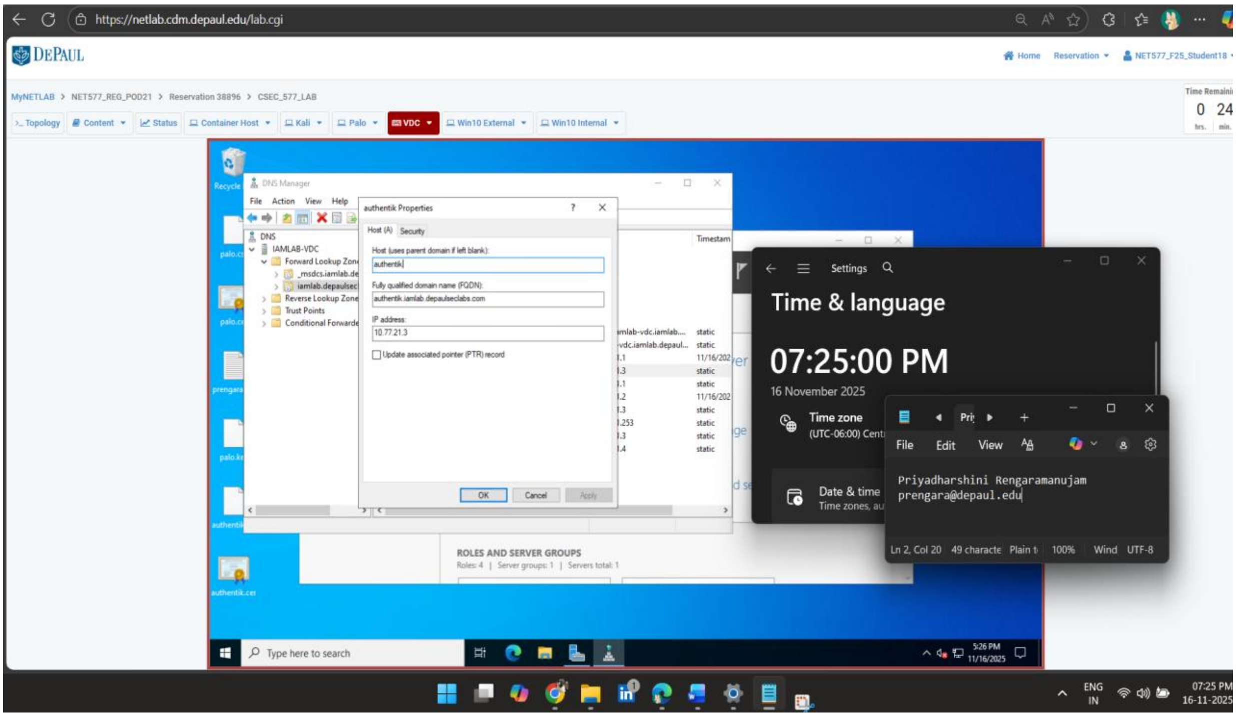
NET_577_Final Lab

Priyadharshini Rengaramanujam

All services that use Keycloak for authentication has been reconfigured to use Authentik.

1. DNS record created for Authentik



authentik Properties

Host (A) | Security

Host (uses parent domain if left blank): authentik

Fully qualified domain name (FQDN): authentik.iamlab.depaulseclabs.com

IP address: 10.77.21.3

☐ Update associated pointer (PTR) record

Time & language

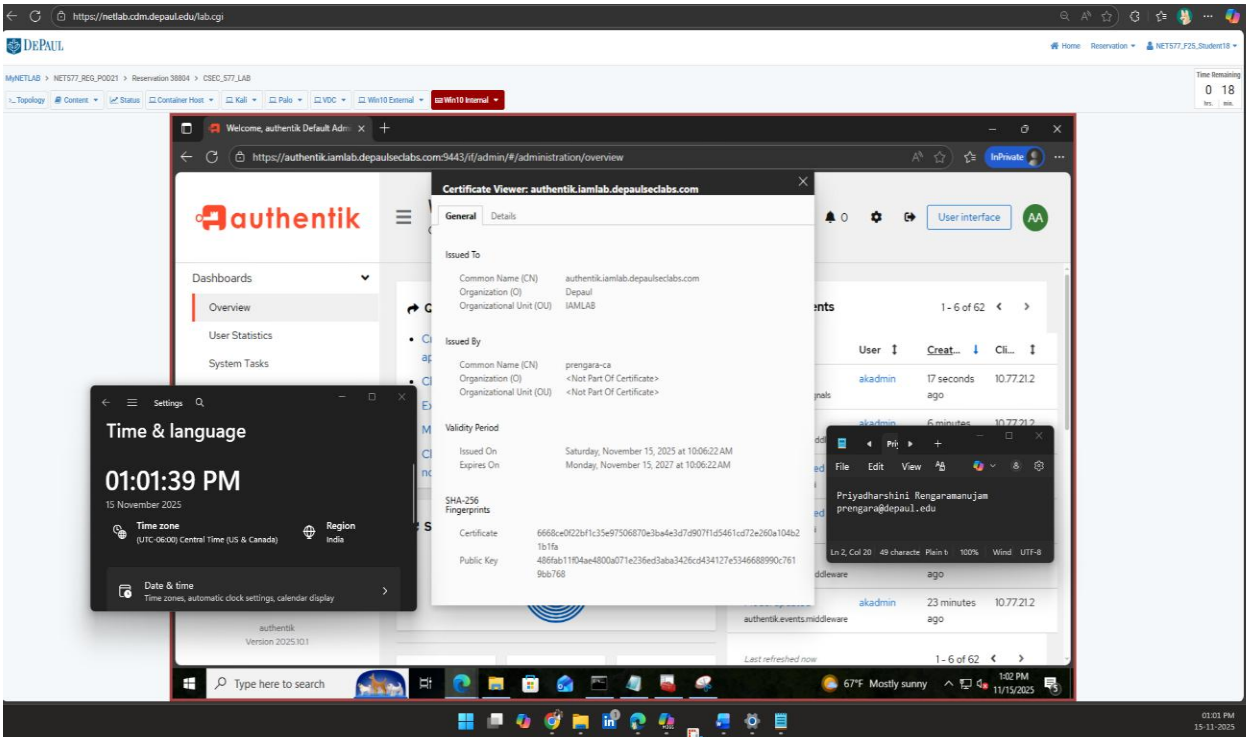
07:25:00 PM

16 November 2025

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

https://netlab.cdm.depaul.edu/lab.cgi
DEPAUL
MyNETLAB > NET577_REG_POD21 > Reservation 38896 > CSEC_577_LAB
Topology
Content
Status
Container Host
Kali
Palo
VDC
Win10 External
Win10 Internal
DNS Manager
File Action View Help
DNS
IAMLAB-VDC
Forward Lookup Zones
Reverse Lookup Zones
Trust Points
Conditional Forwarders
OK
Cancel
Apply
ROLES AND SERVER GROUPS
Time zone
Date & time
Type here to search
5:26 PM 11/16/2025
07:25 PM 16-11-2025

2. Browser connected to Authentik and the certificate chain presented by Authentik



https://authentik.iamlab.depaulseclabs.com:9443/if/admin/#/administration/overview

Certificate Viewer: authentik.iamlab.depaulseclabs.com

General | Details

Issued To

Common Name (CN) authentik.iamlab.depaulseclabs.com
Organization (O) Depaul
Organizational Unit (OU) IAMLAB

Issued By

Common Name (CN) prengara-ca
Organization (O) <Not Part Of Certificate>
Organizational Unit (OU) <Not Part Of Certificate>

Validity Period

Issued On Saturday, November 15, 2025 at 10:06:22 AM
Expires On Monday, November 15, 2027 at 10:06:22 AM

SHA-256 Fingerprints

Certificate 6668ce0f22bf1c35e97506870e3ba4e3d7d907f1d5461cd72e260a104b21b1fa
Public Key 486fab11f04ae4800a071e236ed3aba3426cd434127e5346688990c7619bb768

Time & language

01:01:39 PM

15 November 2025

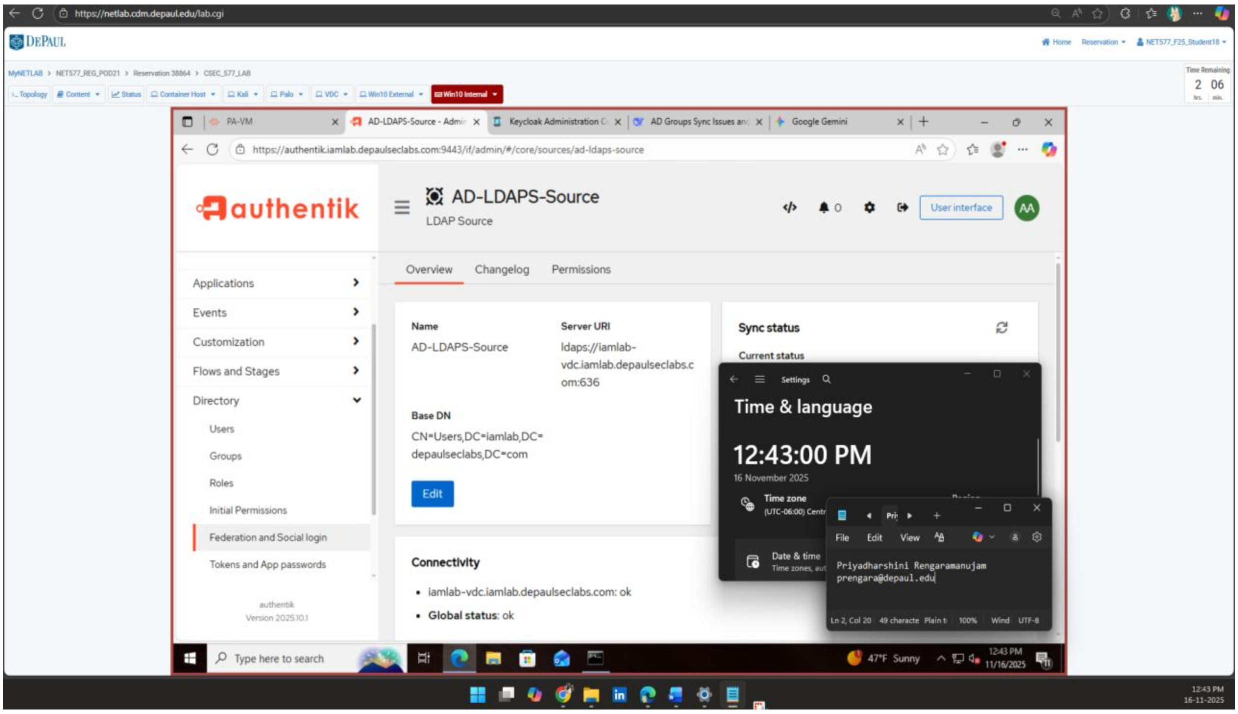
Time zone (UTC-06:00) Central Time (US & Canada)

Region India

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

https://netlab.cdm.depaul.edu/lab.cgi
DEPAUL
MyNETLAB > NET577_REG_POD21 > Reservation 38804 > CSEC_577_LAB
Welcome, authentik Default Adm
authentik
Dashboards
Overview
User Statistics
System Tasks
User interface
AA
1 - 6 of 62
User
Created
Client
akadmin
17 seconds ago
10.77.21.2
23 minutes ago
authentik.events.middleware
Last refreshed now
authentik Version 2025.10.1
Date & time
Time zones, automatic clock settings, calendar display
Type here to search
67°F Mostly sunny
1:02 PM 11/15/2025
01:01 PM 15-11-2025

3. LDAPS configuration in Authentik


https://netlab.cdm.depaul.edu/lab.cgi
DEPAUL
MyNETLAB > NET577_REG_POD21 > Reservation 38864 > CSEC_577_LAB
Time Remaining 2 hrs. 06 min.
https://authentik.iamlab.depaulseclabs.com:9443/if/admin/#/core/sources/ad-ldaps-source
authentik
Overview
Changelog
Permissions
Applications
Events
Customization
Flows and Stages
Directory
Users
Groups
Roles
Initial Permissions
Federation and Social login
Tokens and App passwords
authentik Version 2025.10.1
Edit
User interface
Time & language
Time zone
Date & time
Type here to search
47°F Sunny
12:43 PM 11/16/2025

AD-LDAPS-Source
LDAP Source

Name
AD-LDAPS-Source

Server URI
ldaps://iamlab-vdc.iamlab.depaulseclabs.com:636

Base DN
CN=Users,DC=iamlab,DC=depaulseclabs,DC=com

Sync status
Current status

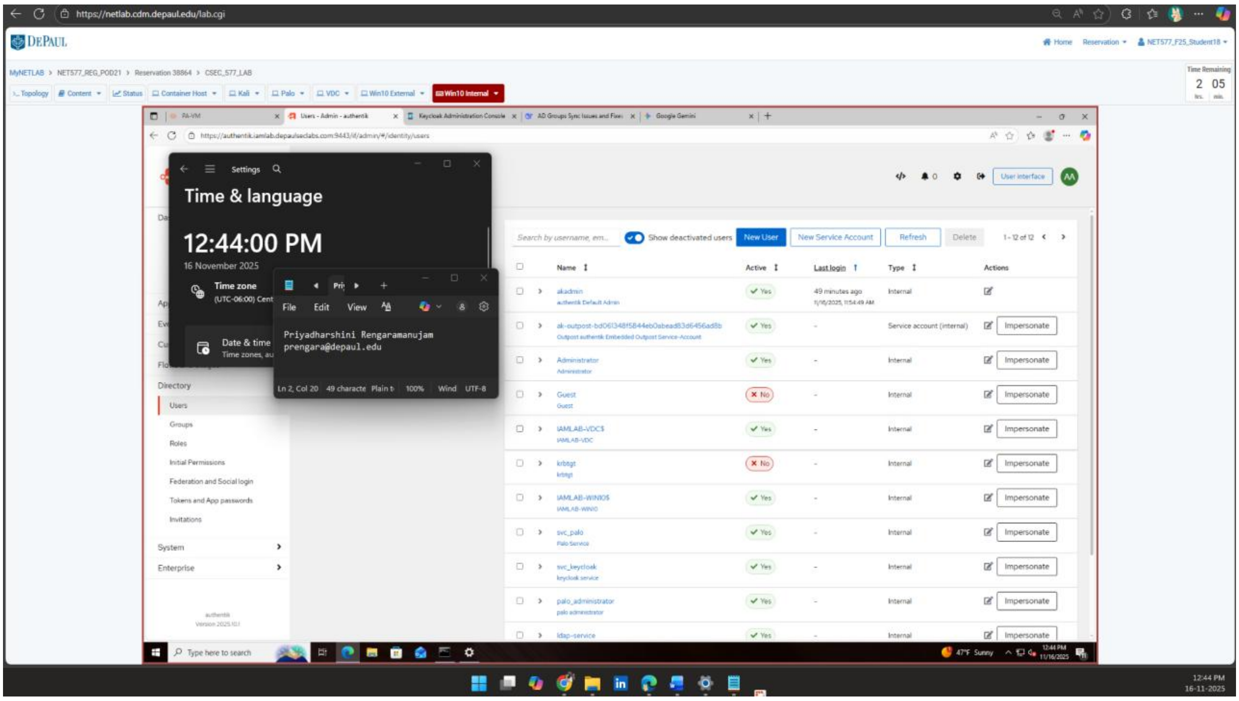
Connectivity

- iamlab-vdc.iamlab.depaulseclabs.com: ok
- **Global status:** ok

12:43:00 PM
16 November 2025
(UTC-06:00) Central

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

4. Users synced to Authentik from LDAP

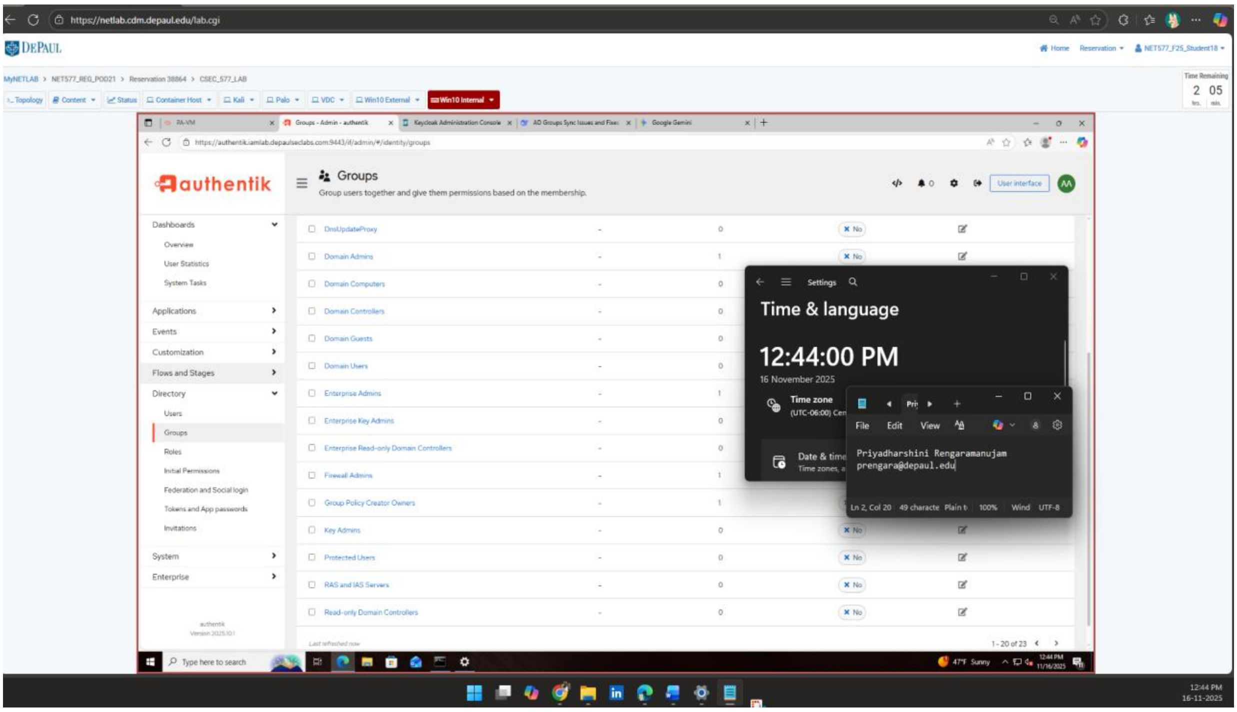

https://netlab.cdm.depaul.edu/lab.cgi
DEPAUL
MyNETLAB > NET577_REG_POD21 > Reservation 38864 > CSEC_577_LAB
Time Remaining 2 hrs. 05 min.
https://authentik.iamlab.depaulseclabs.com:9443/if/admin/#/identity/users
Directory
Users
Groups
Roles
Initial Permissions
Federation and Social login
Tokens and App passwords
Invitations
System
Enterprise
User interface
Search by username, em...
Show deactivated users
New User
New Service Account
Refresh
Delete
1 - 12 of 12
Time & language
Time zone
Date & time
Type here to search
47°F Sunny
12:44 PM 11/16/2025

12:44:00 PM
16 November 2025
(UTC-06:00) Central

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

Name	Active	Last login	Type	Actions
akadmin authentik Default Admin	✓ Yes	49 minutes ago 11/16/2025, 11:54:49 AM	Internal	
ak-outpost-bd061348f5844eb0abead83d6456ad8b Outpost authentik Embedded Outpost Service-Account	✓ Yes	-	Service account (internal)	Impersonate
Administrator Administrator	✓ Yes	-	Internal	Impersonate
Guest Guest	✗ No	-	Internal	Impersonate
IAMLAB-VDC$ IAMLAB-VDC	✓ Yes	-	Internal	Impersonate
krbtgt krbtgt	✗ No	-	Internal	Impersonate
IAMLAB-WIN10$ IAMLAB-WIN10	✓ Yes	-	Internal	Impersonate
svc_palo Palo Service	✓ Yes	-	Internal	Impersonate
svc_keycloak keycloak service	✓ Yes	-	Internal	Impersonate
palo_administrator palo administrator	✓ Yes	-	Internal	Impersonate
ldap-service	✓ Yes	-	Internal	Impersonate

5. Groups synced to Authentik from LDAP



https://authentik.iamlab.depaulseclabs.com:9443/if/admin/#/identity/groups

Groups

Group users together and give them permissions based on the membership.

DnsUpdateProxy	-	0	✗ No
Domain Admins	-	1	✗ No
Domain Computers	-	0	
Domain Controllers	-	0	
Domain Guests	-	0	
Domain Users	-	0	
Enterprise Admins	-	1	
Enterprise Key Admins	-	0	
Enterprise Read-only Domain Controllers	-	0	
Firewall Admins	-	1	
Group Policy Creator Owners	-	1	
Key Admins	-	0	✗ No
Protected Users	-	0	✗ No
RAS and IAS Servers	-	0	✗ No
Read-only Domain Controllers	-	0	✗ No

1 - 20 of 23

Time & language

12:44:00 PM

16 November 2025

```
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prengara@depaul.edu
```
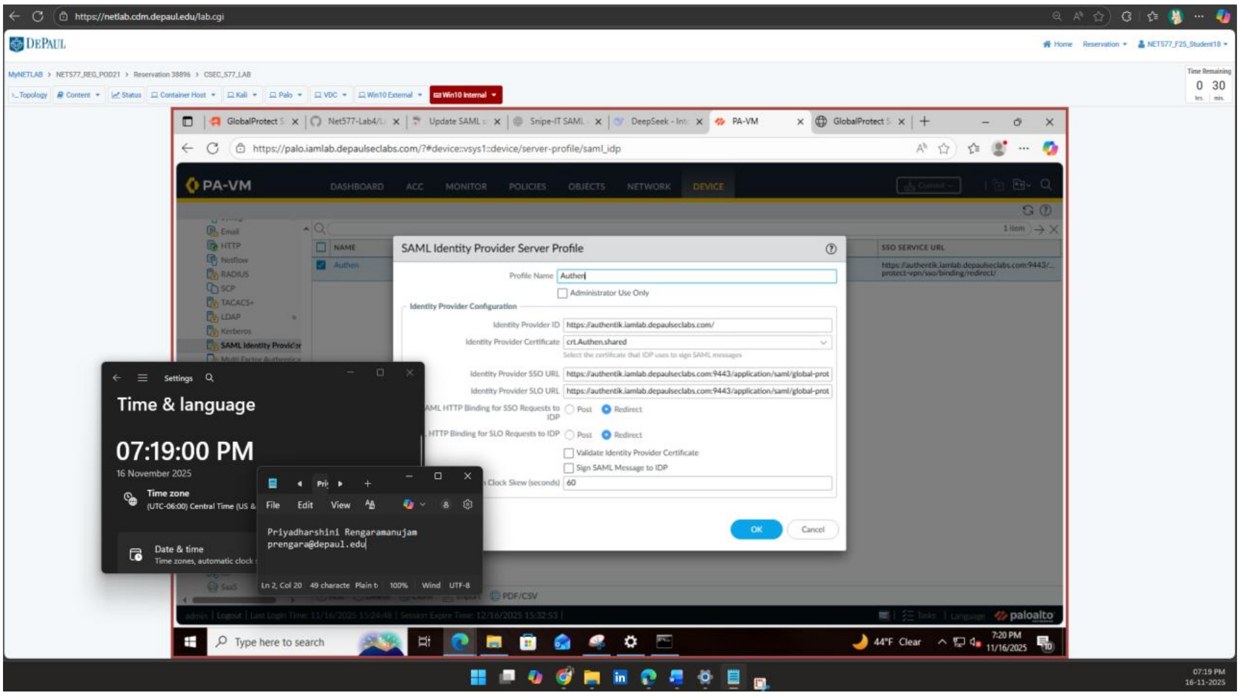

https://netlab.cdm.depaul.edu/lab.cgi
DEPAUL
MyNETLAB > NETS77_REG_POD21 > Reservation 38864 > CSEC_577_LAB
Topology
Content
Status
Container Host
Kali
Palo
VDC
Win10 External
Win10 Internal
Time Remaining
2 05
Groups - Admin - authentik
Keycloak Administration Console
AD Groups Sync Issues and Fixes
Google Gemini
authentik
User interface
Dashboards
Overview
User Statistics
System Tasks
Applications
Events
Customization
Flows and Stages
Directory
Users
Groups
Roles
Initial Permissions
Federation and Social login
Tokens and App passwords
Invitations
System
Enterprise
Settings
Time zone
(UTC-06:00) Cen
Date & time
File
Edit
View
Ln 2, Col 20
49 characte
Plain t
100%
Wind
UTF-8
47°F Sunny
12:44 PM
11/16/2025
12:44 PM
16-11-2025

6. SAML Identity provider configuration on the palo alto using Authentik as the IDP



https://palo.iamlab.depaulseclabs.com/?#device::vsys1::device/server-profile/saml_idp

SAML Identity Provider Server Profile

Profile Name: Authen

☐ Administrator Use Only

Identity Provider Configuration

Identity Provider ID: https://authentik.iamlab.depaulseclabs.com/

Identity Provider Certificate: crt.Authen.shared

Select the certificate that IDP uses to sign SAML messages

Identity Provider SSO URL: https://authentik.iamlab.depaulseclabs.com:9443/application/saml/global-prot

Identity Provider SLO URL: https://authentik.iamlab.depaulseclabs.com:9443/application/saml/global-prot

SAML HTTP Binding for SSO Requests to IDP: ○ Post ● Redirect

SAML HTTP Binding for SLO Requests to IDP: ○ Post ● Redirect

☐ Validate Identity Provider Certificate

☐ Sign SAML Message to IDP

Clock Skew (seconds): 60

Time & language

07:19:00 PM

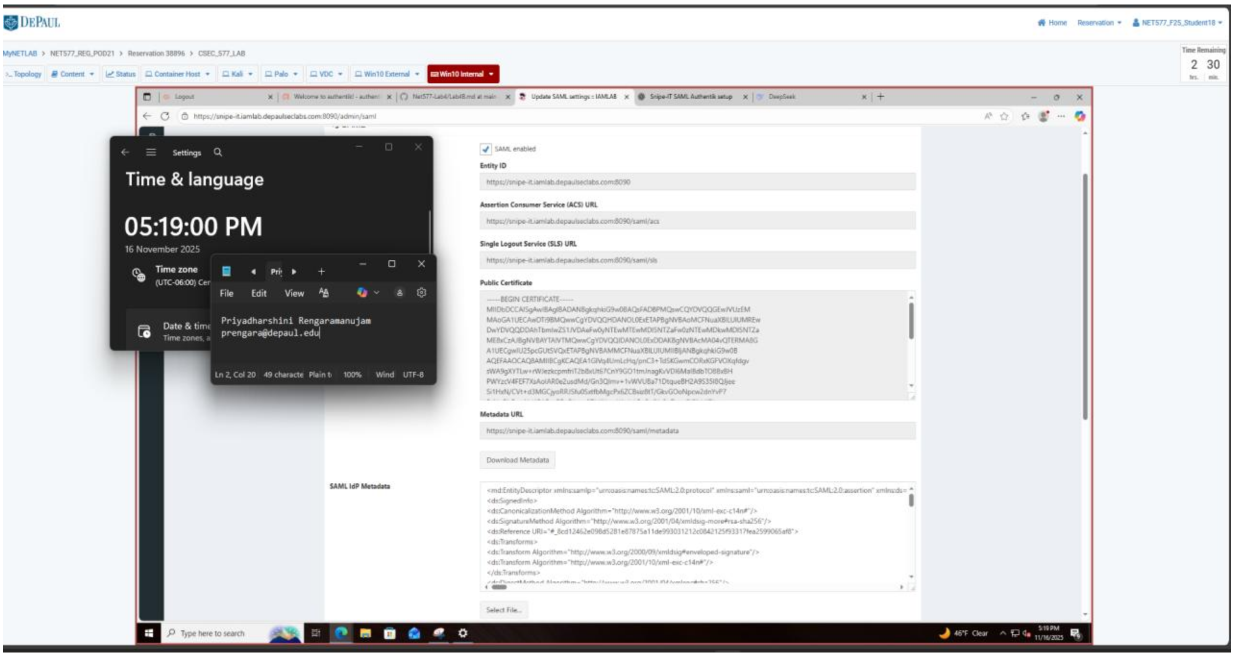
16 November 2025

Time zone (UTC-06:00) Central Time (US &

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

https://netlab.cdm.depaul.edu/lab.cgi
DEPAUL
MyNETLAB > NETS77_REG_POD21 > Reservation 38896 > CSEC_577_LAB
Time Remaining
0 30
GlobalProtect
Net577-Lab4
Update SAML
Snipe-IT SAML
DeepSeek
PA-VM
GlobalProtect
PA-VM
DASHBOARD
ACC
MONITOR
POLICIES
OBJECTS
NETWORK
DEVICE
Email
HTTP
Netflow
RADIUS
SCP
TACACS+
LDAP
Kerberos
SAML Identity Provider
NAME
Authen
SSO SERVICE URL
https://authentik.iamlab.depaulseclabs.com:9443/...protect-vpn/sso/binding/redirect/
1 item
OK
Cancel
PDF/CSV
Session Expire Time: 12/16/2025 15:32:53
paloalto
Settings
Date & time
Time zones, automatic clock
File
Edit
View
Ln 2, Col 20
49 characte
Plain t
100%
Wind
UTF-8
44°F Clear
7:20 PM
11/16/2025
07:19 PM
16-11-2025

7. SAML configuration used by SNIPE-IT showing Authentik as the IDP



☑ SAML enabled

Entity ID
https://snipe-it.iamlab.depaulseclabs.com:8090

Assertion Consumer Service (ACS) URL
https://snipe-it.iamlab.depaulseclabs.com:8090/saml/acs

Single Logout Service (SLS) URL
https://snipe-it.iamlab.depaulseclabs.com:8090/saml/sls

Public Certificate
-----BEGIN CERTIFICATE-----

Metadata URL
https://snipe-it.iamlab.depaulseclabs.com:8090/saml/metadata

SAML IdP Metadata

```
<md:EntityDescriptor xmlns:samlp="urn:oasis:names:tc:SAML:2.0:protocol" xmlns:saml="urn:oasis:names:tc:SAML:2.0:assertion" xmlns:ds=
<ds:SignedInfo>
<ds:CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
<ds:SignatureMethod Algorithm="http://www.w3.org/2001/04/xmldsig-more#rsa-sha256"/>
<ds:Transforms>
<ds:Transform Algorithm="http://www.w3.org/2000/09/xmldsig#enveloped-signature"/>
<ds:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
</ds:Transforms>
```

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

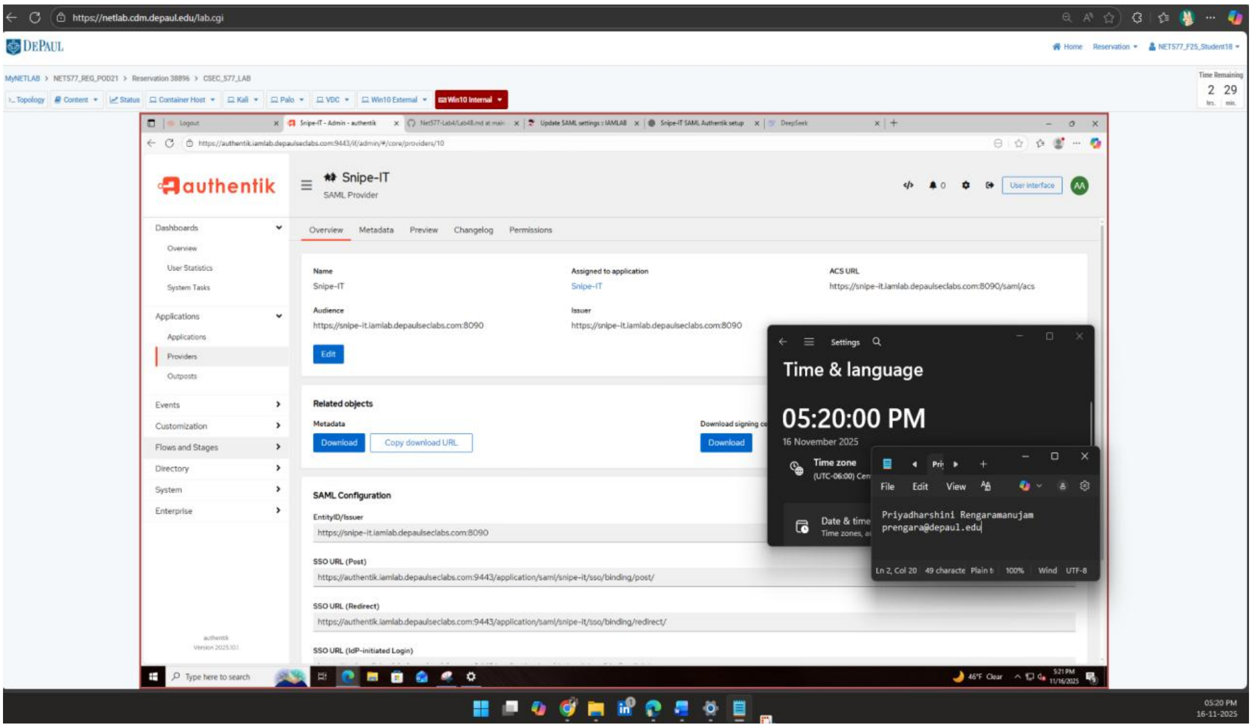
Time & language

05:19:00 PM

16 November 2025

DEPAUL
MyNETLAB > NET577_REG_POD21 > Reservation 38896 > CSEC_577_LAB
Home
Reservation
NET577_F25_Student18
Time Remaining 2 30
Topology
Content
Status
Container Host
Kali
Palo
VDC
Win10 External
Win10 Internal
Update SAML settings :: IAMLAB
Snipe-IT SAML Authentik setup
DeepSeek
https://snipe-it.iamlab.depaulseclabs.com:8090/admin/saml
Settings
Time zone
Date & time
File
Edit
View
Ln 2, Col 20
49 characte
Plain t
100%
Wind
UTF-8
Download Metadata
Select File...
Type here to search
46°F Clear
5:19 PM
11/16/2025

8. Snipe IT provider using Authentik as IDP



Snipe-IT
SAML Provider

Name	Assigned to application	ACS URL
Snipe-IT	Snipe-IT	https://snipe-it.iamlab.depaulseclabs.com:8090/saml/acs

Audience	Issuer
https://snipe-it.iamlab.depaulseclabs.com:8090	https://snipe-it.iamlab.depaulseclabs.com:8090

SAML Configuration

EntityID/Issuer
https://snipe-it.iamlab.depaulseclabs.com:8090

SSO URL (Post)
https://authentik.iamlab.depaulseclabs.com:9443/application/saml/snipe-it/sso/binding/post/

SSO URL (Redirect)
https://authentik.iamlab.depaulseclabs.com:9443/application/saml/snipe-it/sso/binding/redirect/

SSO URL (IdP-initiated Login)

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

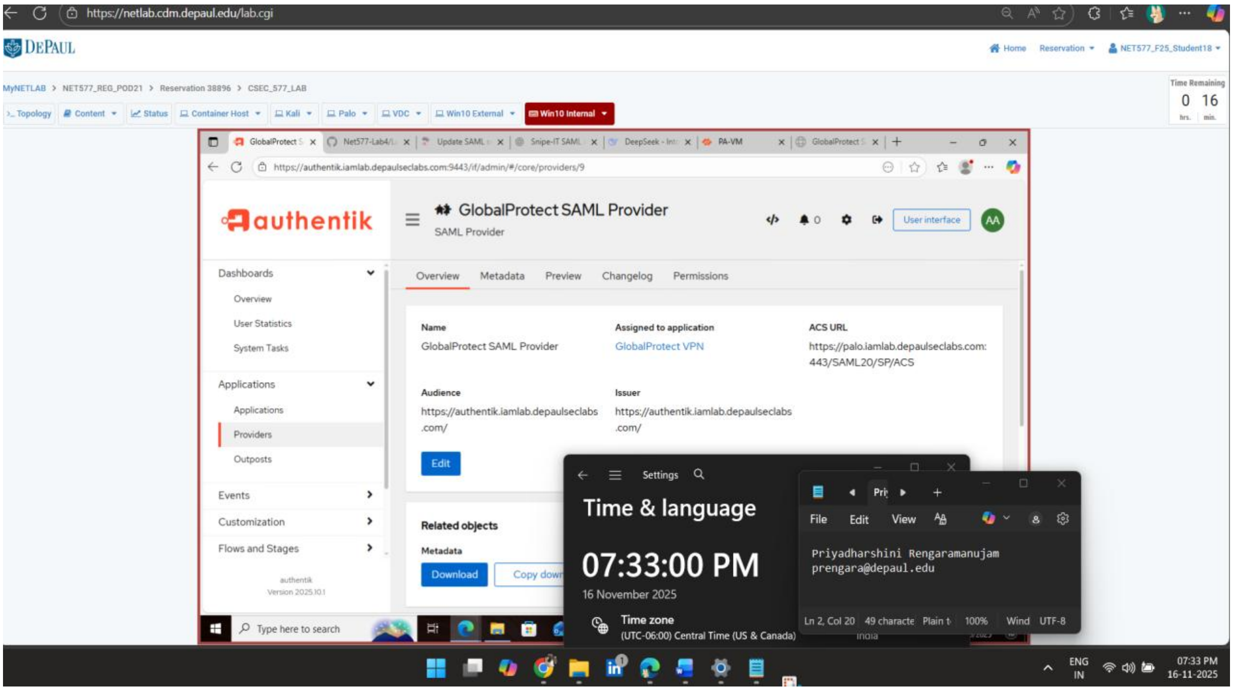
Time & language

05:20:00 PM

16 November 2025

https://netlab.cdm.depaul.edu/lab.cgi
DEPAUL
MyNETLAB > NET577_REG_POD21 > Reservation 38896 > CSEC_577_LAB
Home
Reservation
NET577_F25_Student18
Time Remaining 2 29
Topology
Content
Status
Container Host
Kali
Palo
VDC
Win10 External
Win10 Internal
Snipe-IT - Admin - authentik
Update SAML settings :: IAMLAB
Snipe-IT SAML Authentik setup
DeepSeek
https://authentik.iamlab.depaulseclabs.com:9443/if/admin/#/core/providers/10
authentik
User interface
Dashboards
Overview
User Statistics
System Tasks
Applications
Applications
Providers
Outposts
Events
Customization
Flows and Stages
Directory
System
Enterprise
Overview
Metadata
Preview
Changelog
Permissions
Edit
Related objects
Metadata
Download
Copy download URL
Download signing ce
Download
Settings
Time zone
(UTC-06:00) Cen
Date & time
File
Edit
View
Ln 2, Col 20
49 characte
Plain t
100%
Wind
UTF-8
Type here to search
46°F Clear
5:21 PM
11/16/2025
05:20 PM
16-11-2025

9. snipe IT provider for Global Protect using Authentik as IDP


https://netlab.cdm.depaul.edu/lab.cgi
DEPAUL
MyNETLAB > NET577_REG_POD21 > Reservation 38896 > CSEC_577_LAB
Topology
Content
Status
Container Host
Kali
Palo
VDC
Win10 External
Win10 Internal
Time Remaining
0 16
https://authentik.iamlab.depaulseclabs.com:9443/if/admin/#/core/providers/9
authentik
Dashboards
Overview
User Statistics
System Tasks
Applications
Applications
Providers
Outposts
Events
Customization
Flows and Stages
User interface
Overview
Metadata
Preview
Changelog
Permissions
Edit
Related objects
Download
Copy down
Settings
Time & language
File
Edit
View
Type here to search

GlobalProtect SAML Provider
SAML Provider

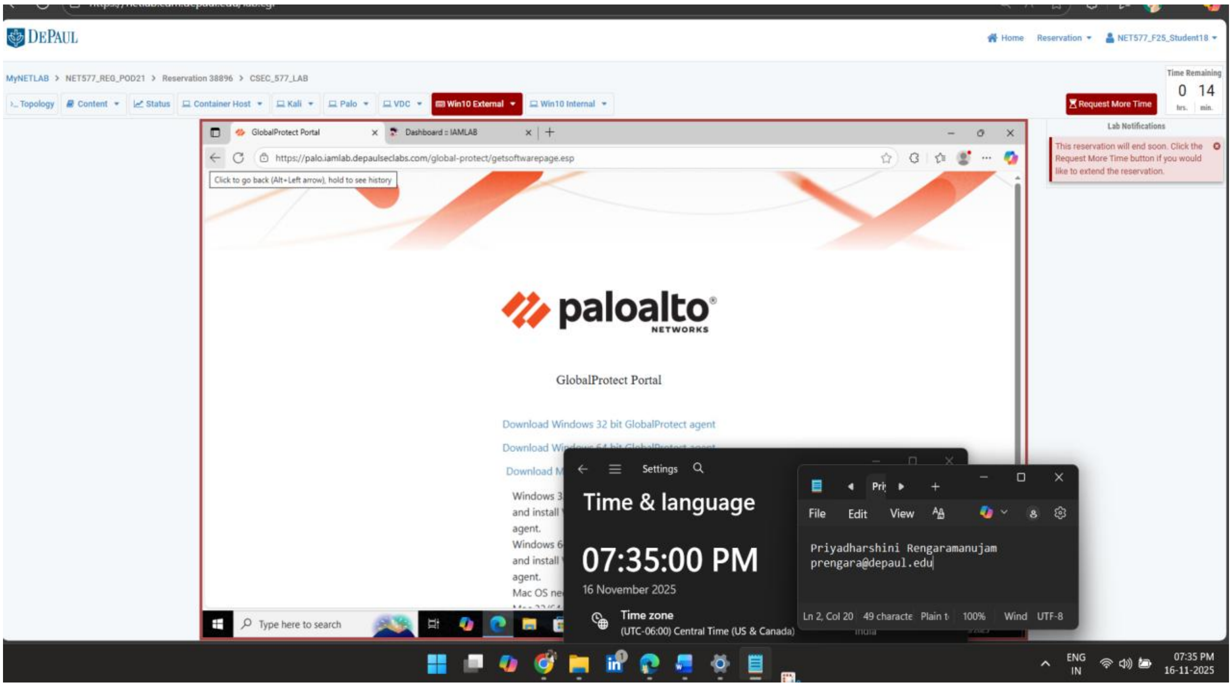
Name: GlobalProtect SAML Provider
Assigned to application: GlobalProtect VPN
ACS URL: https://palo.iamlab.depaulseclabs.com:443/SAML20/SP/ACS
Audience: https://authentik.iamlab.depaulseclabs.com/
Issuer: https://authentik.iamlab.depaulseclabs.com/
Metadata

07:33:00 PM
16 November 2025
Time zone
(UTC-06:00) Central Time (US & Canada)

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

07:33 PM
16-11-2025

10. Authentik accessible from win10- external


DEPAUL
MyNETLAB > NET577_REG_POD21 > Reservation 38896 > CSEC_577_LAB
Topology
Content
Status
Container Host
Kali
Palo
VDC
Win10 External
Win10 Internal
Request More Time
Time Remaining
0 14
Lab Notifications
GlobalProtect Portal
Dashboard :: IAMLAB
Click to go back (Alt+Left arrow), hold to see history
paloalto NETWORKS
Settings
Time & language
File
Edit
View
Type here to search

https://palo.iamlab.depaulseclabs.com/global-protect/getsoftwarepage.esp

This reservation will end soon. Click the Request More Time button if you would like to extend the reservation.

GlobalProtect Portal

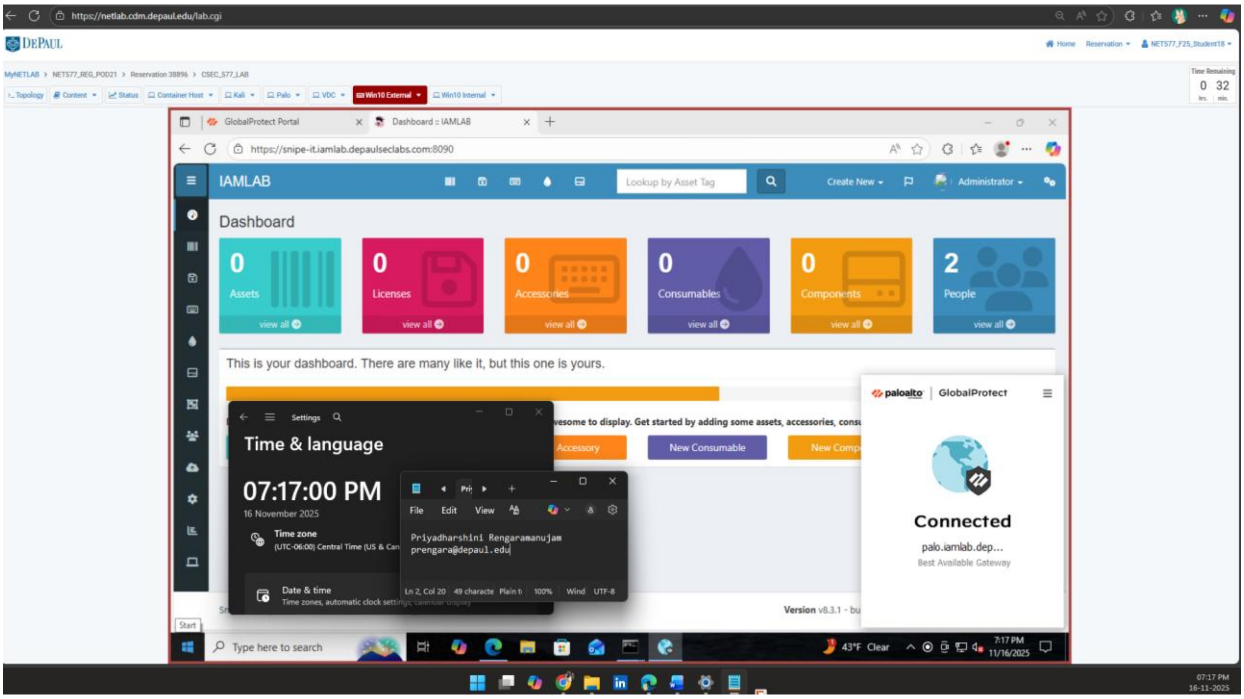
Download Windows 32 bit GlobalProtect agent

07:35:00 PM
16 November 2025
Time zone
(UTC-06:00) Central Time (US & Canada)

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

07:35 PM
16-11-2025

11. Authentication to GP portal successful with Authentik



Dashboard

This is your dashboard. There are many like it, but this one is yours.

Time & language

07:17:00 PM

16 November 2025

Time zone (UTC-06:00) Central Time (US & Canada)

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

GlobalProtect

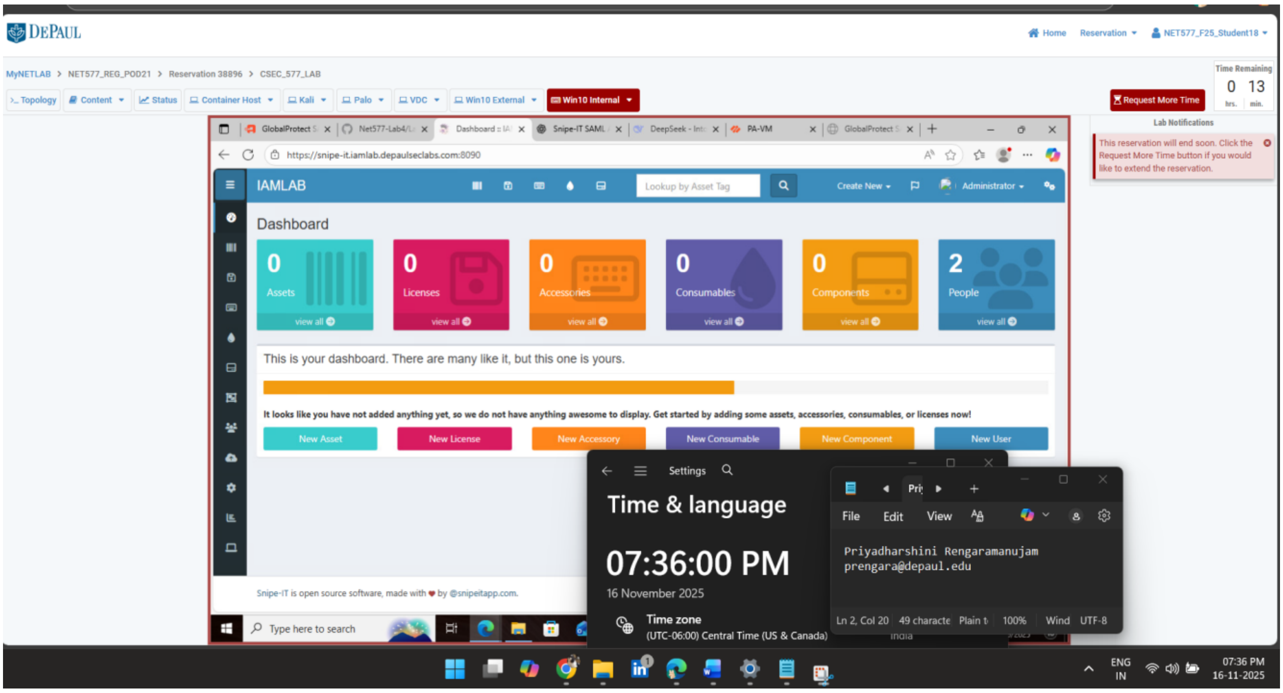
Connected

palo.iamlab.dep...

Best Available Gateway

https://netlab.cdm.depaul.edu/lab.cgi
https://snipe-it.iamlab.depaulseclabs.com:8090
IAMLAB
0 Assets
0 Licenses
0 Accessories
0 Consumables
0 Components
2 People
Time Remaining 0 hrs. 32 min.

12. Authentication to snipeit successful with Authentik



Dashboard

This is your dashboard. There are many like it, but this one is yours.

It looks like you have not added anything yet, so we do not have anything awesome to display. Get started by adding some assets, accessories, consumables, or licenses now!

Time & language

07:36:00 PM

16 November 2025

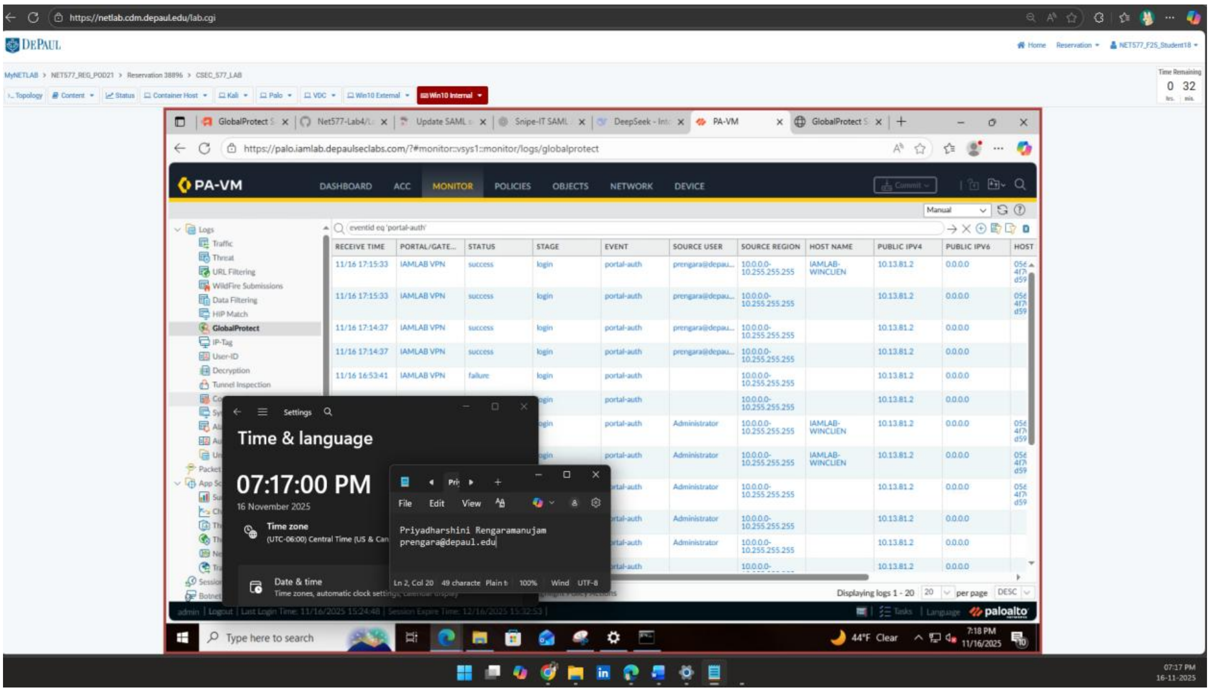
Time zone (UTC-06:00) Central Time (US & Canada)

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

Lab Notifications

This reservation will end soon. Click the Request More Time button if you would like to extend the reservation.

https://snipe-it.iamlab.depaulseclabs.com:8090
IAMLAB
0 Assets
0 Licenses
0 Accessories
0 Consumables
0 Components
2 People
New Asset
New License
New Accessory
New Consumable
New Component
New User
Request More Time
Time Remaining 0 hrs. 13 min.


https://netlab.cdm.depaul.edu/lab.cgi
DEPAUL
Home
Reservation
NET577_F25_Student18
MyNETLAB > NET577_REG_POD21 > Reservation 38896 > CSEC_577_LAB
Topology
Content
Status
Container Host
Kali
Palo
VDC
Win10 External
Win10 Internal
Time Remaining
0 32
hrs. min.
GlobalProtect
Net577-Lab4/
Update SAML
Snipe-IT SAML
DeepSeek - Int
PA-VM
GlobalProtect
PA-VM
DASHBOARD
ACC
MONITOR
POLICIES
OBJECTS
NETWORK
DEVICE
Commit
Manual
Logs
Traffic
Threat
URL Filtering
WildFire Submissions
Data Filtering
HIP Match
GlobalProtect
IP-Tag
User-ID
Decryption
Tunnel Inspection
Settings
File
Edit
View
Type here to search
44°F Clear
7:18 PM
11/16/2025
07:17 PM
16-11-2025

https://palo.iamlab.depaulseclabs.com/?#monitor::vsys1::monitor/logs/globalprotect

eventid eq 'portal-auth'

RECEIVE TIME	PORTAL/GATE...	STATUS	STAGE	EVENT	SOURCE USER	SOURCE REGION	HOST NAME	PUBLIC IPV4	PUBLIC IPV6	HOST
11/16 17:15:33	IAMLAB VPN	success	login	portal-auth	prengara@depau...	10.0.0.0-10.255.255.255	IAMLAB-WINCLIEN	10.13.81.2	0.0.0.0	056 4f7 d59
11/16 17:15:33	IAMLAB VPN	success	login	portal-auth	prengara@depau...	10.0.0.0-10.255.255.255		10.13.81.2	0.0.0.0	056 4f7 d59
11/16 17:14:37	IAMLAB VPN	success	login	portal-auth	prengara@depau...	10.0.0.0-10.255.255.255		10.13.81.2	0.0.0.0	
11/16 17:14:37	IAMLAB VPN	success	login	portal-auth	prengara@depau...	10.0.0.0-10.255.255.255		10.13.81.2	0.0.0.0	
11/16 16:53:41	IAMLAB VPN	failure	login	portal-auth		10.0.0.0-10.255.255.255		10.13.81.2	0.0.0.0	
			ogin	portal-auth		10.0.0.0-10.255.255.255		10.13.81.2	0.0.0.0	
			ogin	portal-auth	Administrator	10.0.0.0-10.255.255.255	IAMLAB-WINCLIEN	10.13.81.2	0.0.0.0	056 4f7 d59
			ogin	portal-auth	Administrator	10.0.0.0-10.255.255.255	IAMLAB-WINCLIEN	10.13.81.2	0.0.0.0	056 4f7 d59
				rtal-auth	Administrator	10.0.0.0-10.255.255.255		10.13.81.2	0.0.0.0	056 4f7 d59
				rtal-auth	Administrator	10.0.0.0-10.255.255.255		10.13.81.2	0.0.0.0	
				rtal-auth	Administrator	10.0.0.0-10.255.255.255		10.13.81.2	0.0.0.0	
				rtal-auth		10.0.0.0-		10.13.81.2	0.0.0.0	

Displaying logs 1 - 20 20 per page DESC

admin | Logout | Last Login Time: 11/16/2025 15:24:48 | Session Expire Time: 12/16/2025 15:32:53 |

Time & language

07:17:00 PM

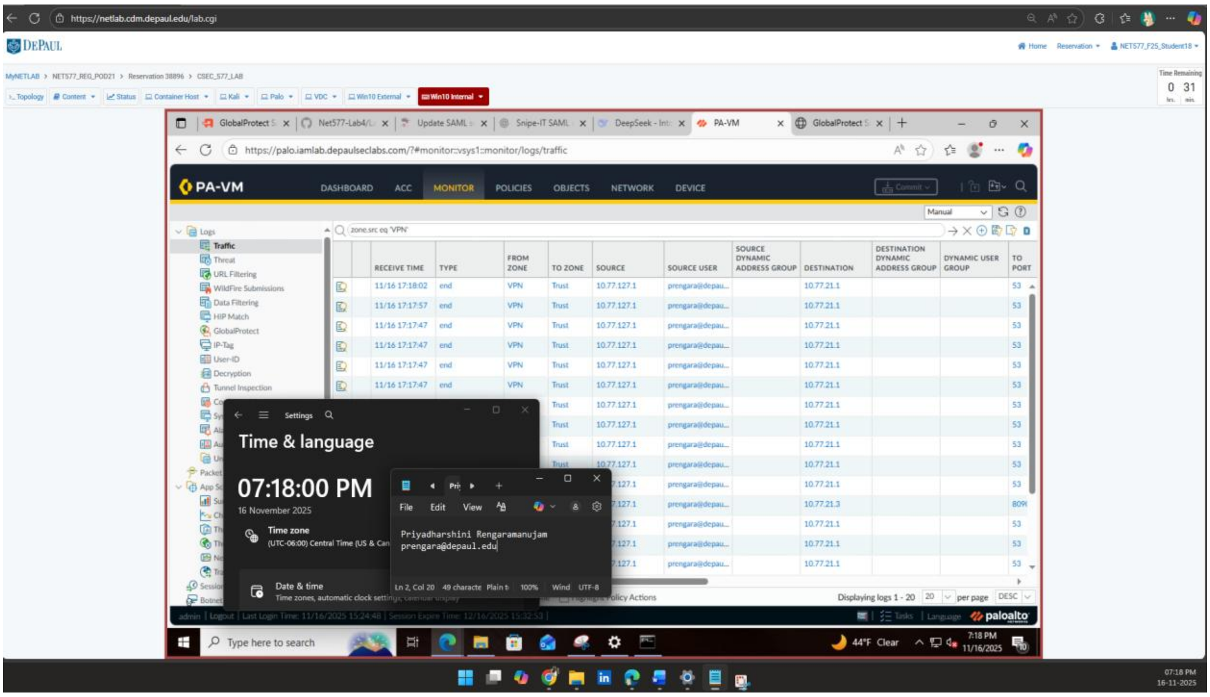
16 November 2025

Time zone
(UTC-06:00) Central Time (US & Can

Date & time
Time zones, automatic clock settings

```
Priyadharshini Rengaramanujam
prengara@depaul.edu
```

Ln 2, Col 20 49 characte Plain t 100% Wind UTF-8


https://netlab.cdm.depaul.edu/lab.cgi
DEPAUL
Home
Reservation
NET577_F25_Student18
MyNETLAB > NET577_REG_POD21 > Reservation 38896 > CSEC_577_LAB
Topology
Content
Status
Container Host
Kali
Palo
VDC
Win10 External
Win10 Internal
Time Remaining
0 31
hrs. min.
GlobalProtect
Net577-Lab4/
Update SAML
Snipe-IT SAML
DeepSeek - Int
PA-VM
GlobalProtect
PA-VM
DASHBOARD
ACC
MONITOR
POLICIES
OBJECTS
NETWORK
DEVICE
Commit
Manual
Logs
Traffic
Threat
URL Filtering
WildFire Submissions
Data Filtering
HIP Match
GlobalProtect
IP-Tag
User-ID
Decryption
Tunnel Inspection
Settings
File
Edit
View
Highlight Policy Actions
Type here to search
44°F Clear
7:18 PM
11/16/2025
07:18 PM
16-11-2025

https://palo.iamlab.depaulseclabs.com/?#monitor::vsys1::monitor/logs/traffic

zone.src eq 'VPN'

RECEIVE TIME	TYPE	FROM ZONE	TO ZONE	SOURCE	SOURCE USER	SOURCE DYNAMIC ADDRESS GROUP	DESTINATION	DESTINATION DYNAMIC ADDRESS GROUP	DYNAMIC USER GROUP	TO PORT
11/16 17:18:02	end	VPN	Trust	10.77.127.1	prengara@depau...		10.77.21.1			53
11/16 17:17:57	end	VPN	Trust	10.77.127.1	prengara@depau...		10.77.21.1			53
11/16 17:17:47	end	VPN	Trust	10.77.127.1	prengara@depau...		10.77.21.1			53
11/16 17:17:47	end	VPN	Trust	10.77.127.1	prengara@depau...		10.77.21.1			53
11/16 17:17:47	end	VPN	Trust	10.77.127.1	prengara@depau...		10.77.21.1			53
11/16 17:17:47	end	VPN	Trust	10.77.127.1	prengara@depau...		10.77.21.1			53
			Trust	10.77.127.1	prengara@depau...		10.77.21.1			53
			Trust	10.77.127.1	prengara@depau...		10.77.21.1			53
			Trust	10.77.127.1	prengara@depau...		10.77.21.1			53
			Trust	10.77.127.1	prengara@depau...		10.77.21.1			53
				.127.1	prengara@depau...		10.77.21.1			53
				.127.1	prengara@depau...		10.77.21.3			809
				.127.1	prengara@depau...		10.77.21.1			53
				.127.1	prengara@depau...		10.77.21.1			53
				.127.1	prengara@depau...		10.77.21.1			53

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