SurePassID LDAP Gateway Guide

SurePassID Authentication Server 2025

You can find the most up-to-date technical documentation at:

http://www.surepassid.com/resources

The SurePassID web site also provides the latest product updates.

If you have comments about this documentation, submit your feedback to:

support@SurePassID.com

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Introduction

This guide explains how to install and configure the SurePassID LDAP Gateway for Windows. The purpose of this guide is to provide a reference for system administrators.

This guide provides information on the following topics:

- **What is SurePassID LDAP Gateway?**
  - A brief introduction to the SurePassID LDAP Gateway.
- **Installing and Configuring SurePassID LDAP Gateway**
  - Detailed explanations for installing the SurePassID LDAP Gateway in a Windows environment.

Other SurePassID Guides

The Server Install Guide for Windows Servers has the following companion guides that provide additional detail on specific topics for SurePassID:

- Server API Guide
- Fido U2F Mobile API Guide
- System Administration Guide
- Local Agent Guide
  - High performance Radius Server
  - Windows Event Log Integration
  - Active Directory Synchronization
- SurePassID Desktop Authenticator Guide
- Google Authenticator Guide
- SurePassID Authenticator Guide

What is the SurePassID LDAP Gateway?

The SurePassID LDAP Gateway functions as a proxy between an LDAP based application and an LDAP based directory enhancing it to support Multi-Factor Authentication (MFA) to any LDAP based system/application.

The SurePassID LDAP Gateway uses the native LDAP directory for first factor authentication and requires any SurePassID MFA server (cloud, on-premises) for all multi-factor authentication. One SurePassID LDAP Gateway can support many different LDAP applications. Alternatively, you can have a different LDAP gateway for each LDAP application.

The SurePassID LDAP Gateway can be added to any load balancer backend application pool such as F5, NGINX, Azure Load Balancer, AWS (Amazon Web Services) Load Balancer for scale and server fail-over, disaster recovery.

The system supports the majority of SurePassID MFA capable authentication methods as described below:

Legacy send OTP Options (not recommended by NIST or SurePassID):

- **Send SMS OTP**– Sends SMS text message containing the OTP is sent to the user's phone.
- **Send OTP by Voice Call -** Call is made to the user's phone speaking the OTP. This is an invaluable option for users that do not have SMS capabilities on their phone or users sitting at their desk or for the visually impaired.
- **Email Code** – An email containing the OTP is sent to the user's email account.

Push Authentication Options:

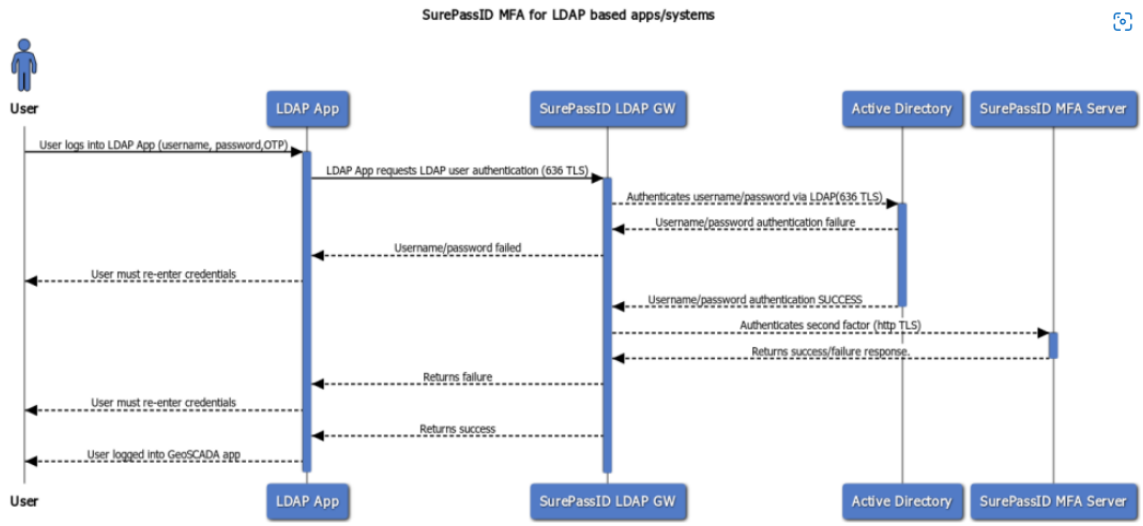
- **Push SMS Question** – A question is sent to the user's mobile device asking the user to confirm a request to allow access to the system. If the user responds positively, the user is allowed to login with just username and password. Requires SMS support turned on in the SurePassID MFA server.
- **Push Question -** A question is sent to the user's mobile device (via cellular notification) asking the user to confirm a request to allow access to the system. If the user responds positively, the user is allowed to login with just username and password.
- **Push Voice Question -** A voice call is made to the user's phone asking the user to confirm access to the system. If the user responds positively, the user is allowed to login with just username and password.

HINT: All messages sent to the user can be tailored to your company's needs in the SurePassID portal using the Customize SMS Messages and Customize Email Messages menus.

SurePassID LDAP Gateway supports the following directories:

- **SurePassID Directory** – For use with other cloud systems or external users that are not part of the existing enterprise Active Directory.
- **Active Directory (LDAP)** – For companies that use Windows Active Directory.
- **LDAP Native Directory** – For companies that use a native LDAP directory such as OpenLDAP.

The product architecture is shown in the diagram below is for securing all LDAP applications:



Product Architecture

Prerequisites

SurePassID LDAP Gateway can be installed on the following 64-bit Windows versions:

- Windows 2012 – All versions (Microsoft End-of-Life 10/23/2023)
- Windows 2016 – All versions
- Windows 2019 – All versions
- Windows 2022 – All versions
- Windows 2025 – All versions

Post Configuration Steps

Here are a few recommended items to consider after installing the SurePassID LDAP Gateway.

- Configure LDAP Gateway Server Configuration

These suggestions will be discussed in the following sections.

Installing the LDAP Gateway

The LDAP Gateway can be downloaded from the following URL:

https://downloads.surepassid.com/LG/SPLG.zip

The SurePassID LDAP Gateway installer will install all of the LDAP Gateway components and prerequisites.

The SurePassID LDAP Gateway is installed as a Windows service.

To start the installation, you must first download the installation file SPLG.zip **file,** unzip the file, and run the installation on one of your Windows servers and you will see the following installation form:

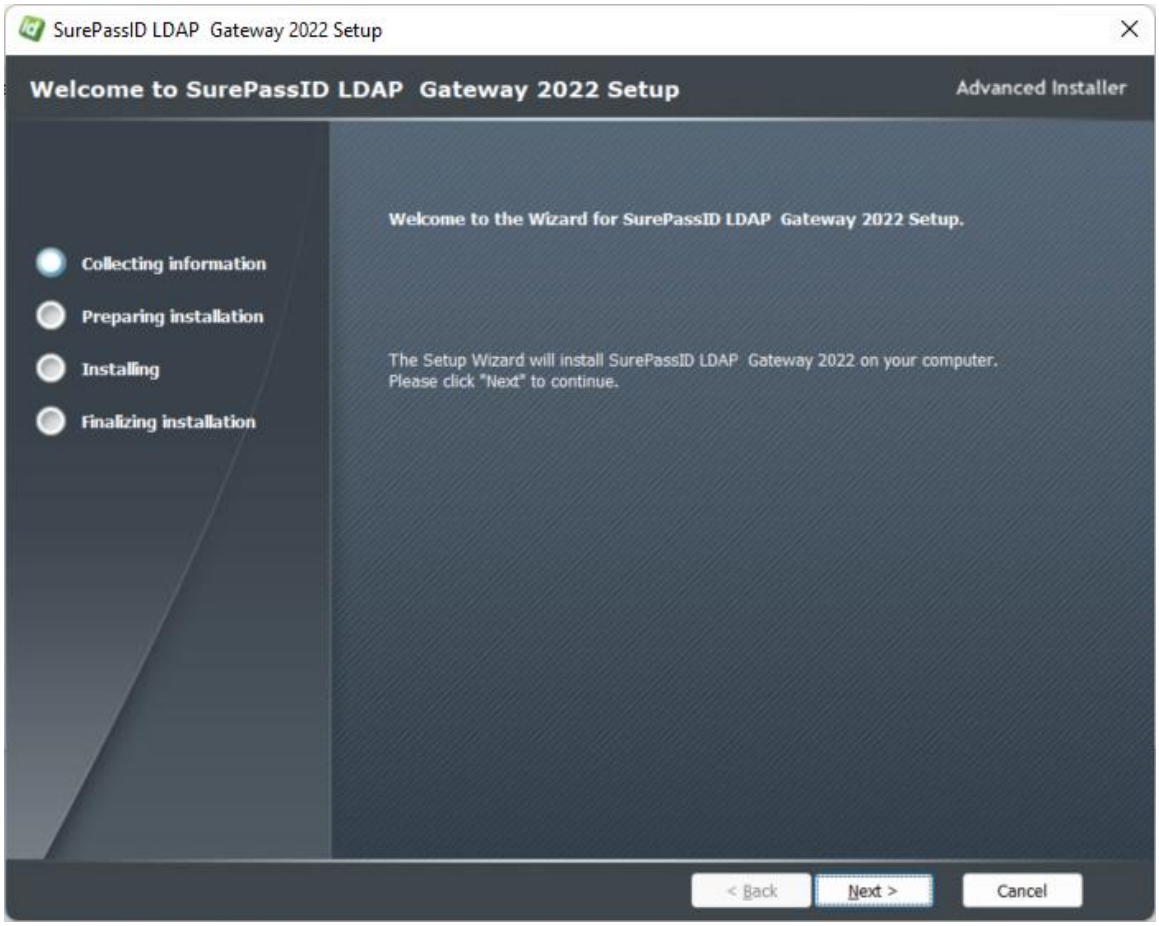


Figure 1: Installation Welcome

Click **Next** and the SurePassID LDAP Gateway License Agreement will be displayed.

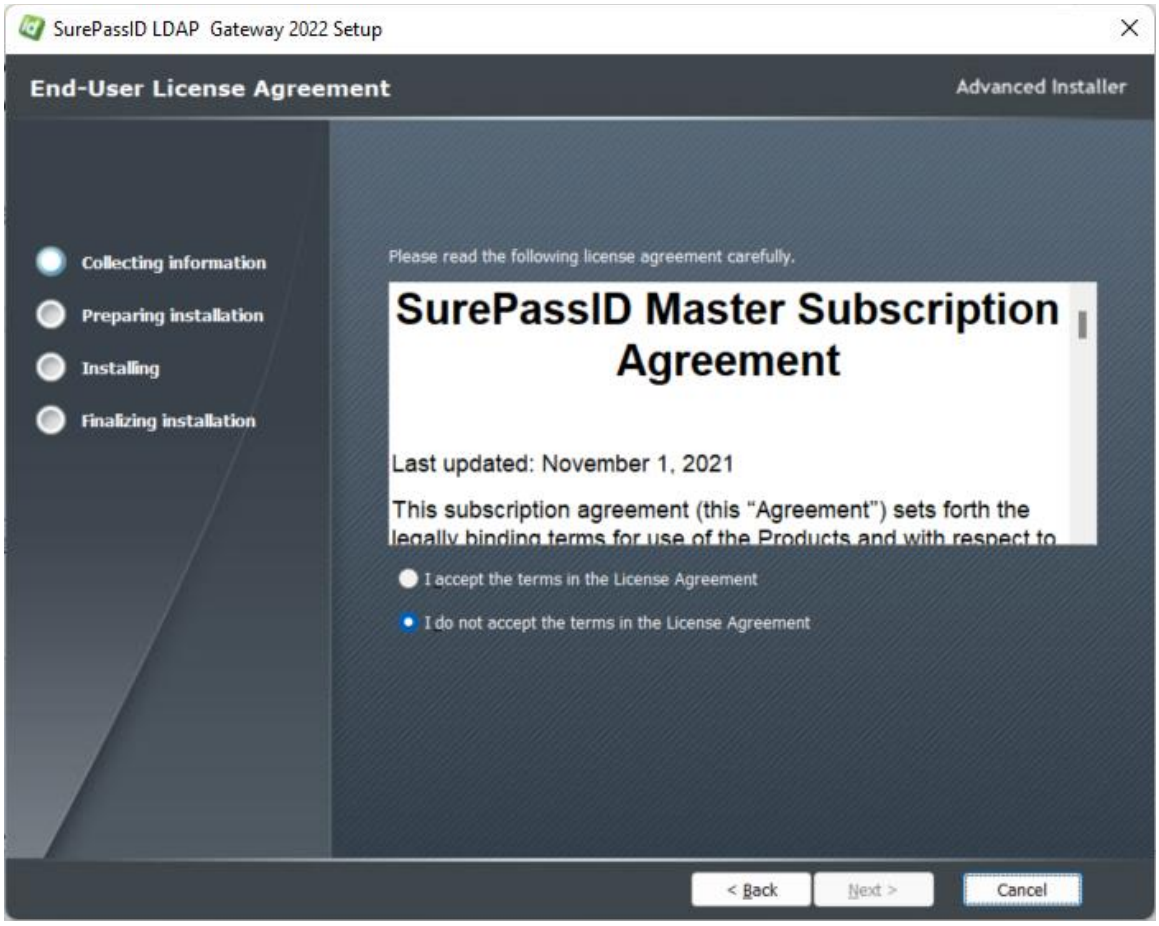


Figure 2: License Agreement

Read the Master Subscription License Agreement and if you accept the terms then click the **Next** button and you will see the installation folder form.

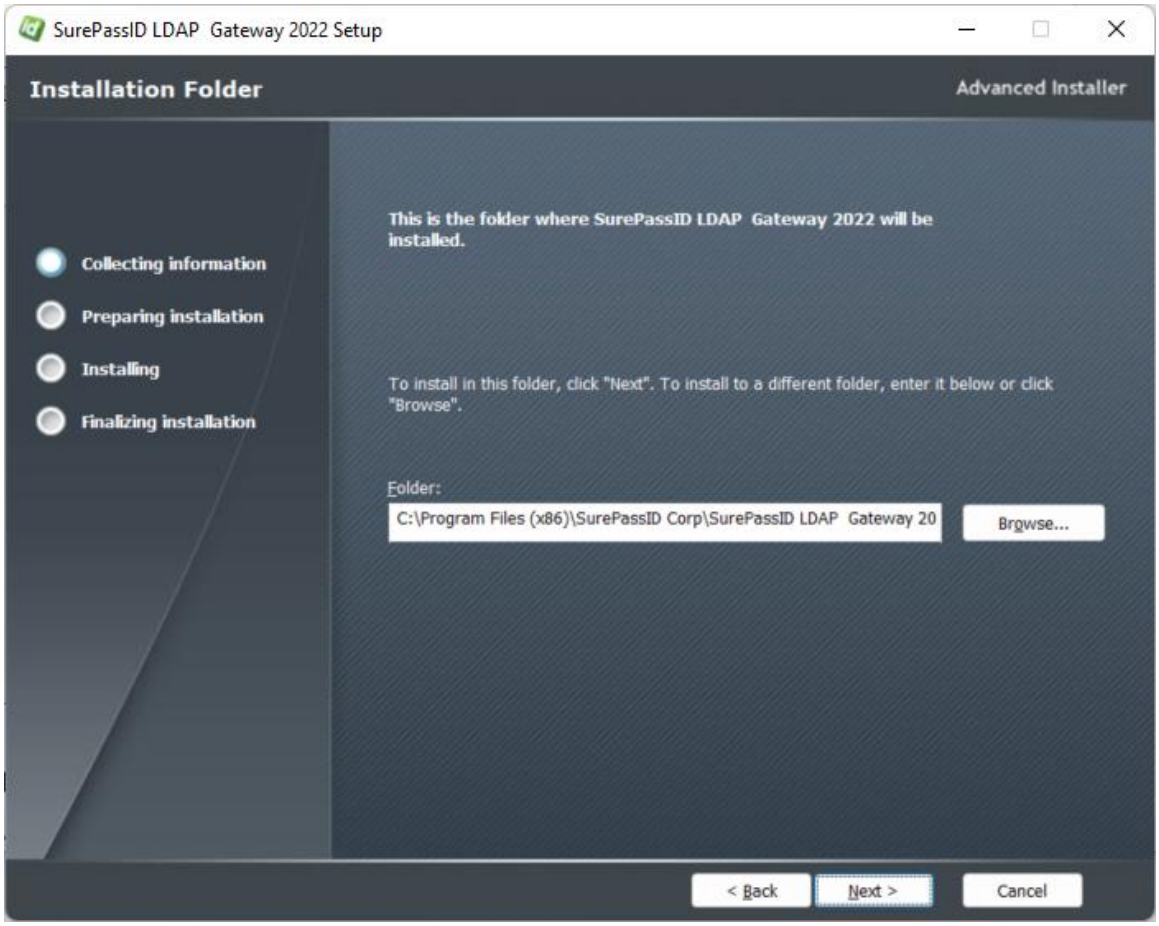


Figure 3: Installation Location: Specify Installation Folder

Browse the product installation folder or leave the default installation folder. When you are done, press the **Next** button and you will see the **Ready to Install** form.

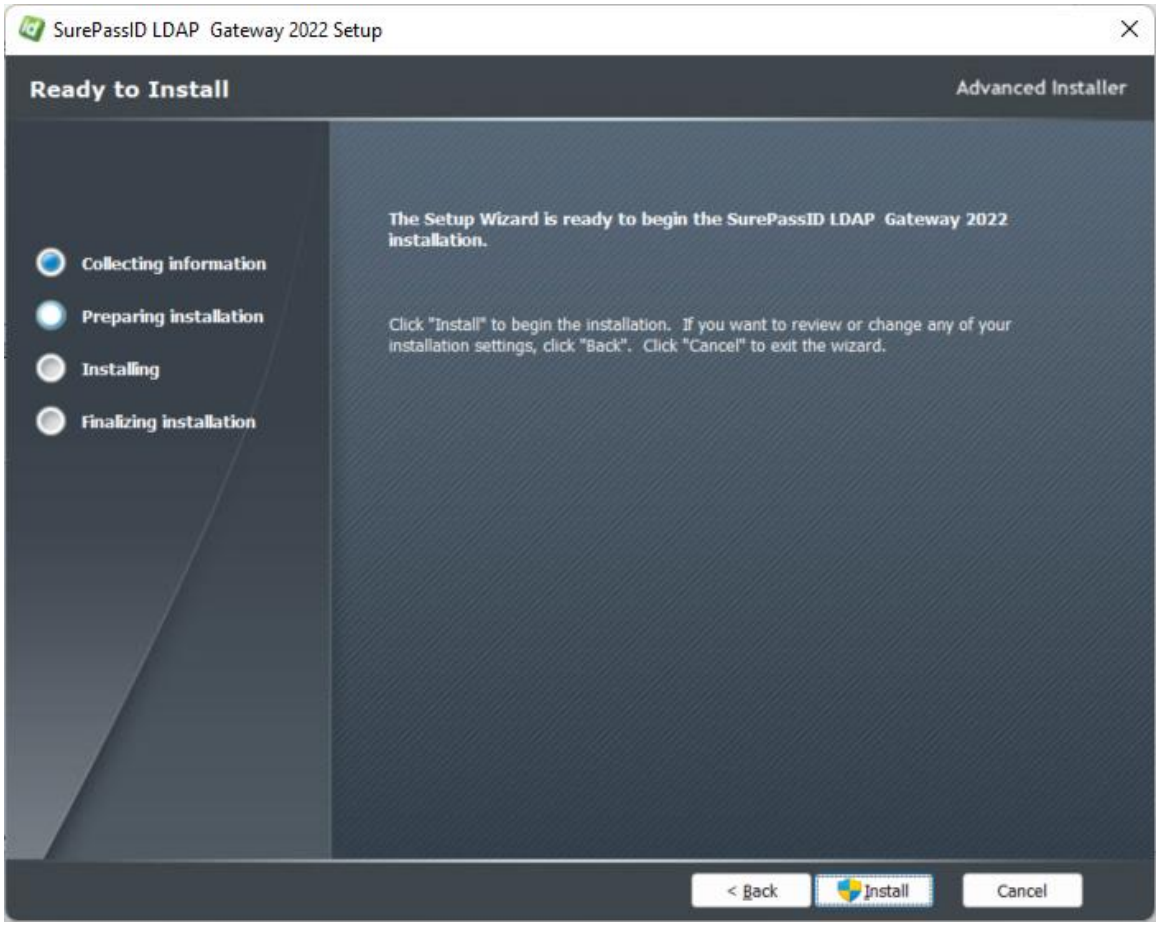


Figure 4: Ready to Install:

Click the **Install** button to start the installation process. You will first be presented with a signed SurePassID verified publisher statement.

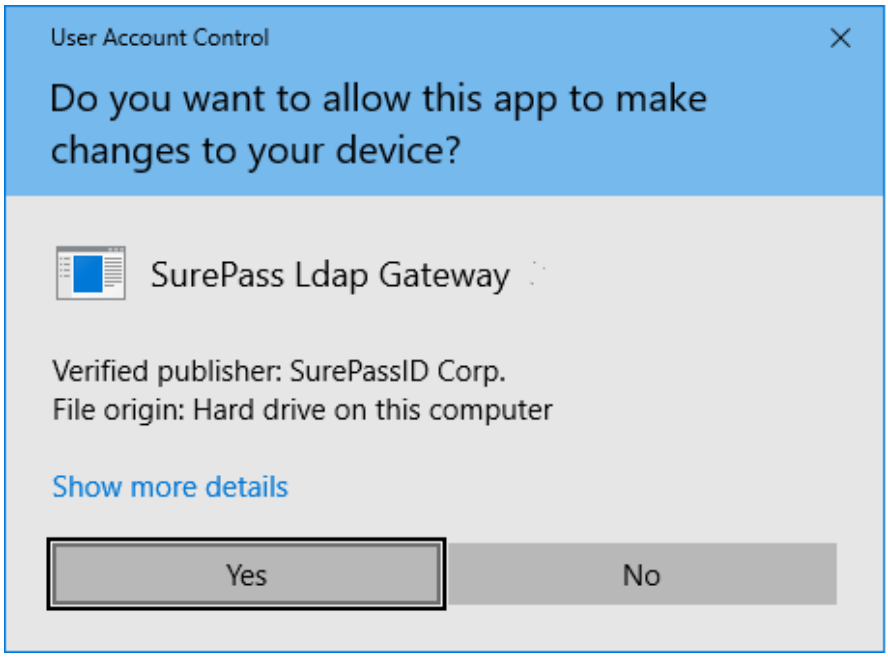


Figure 5: Installation App: Verify Publisher

If you do not see the **Verified Publisher: SurePassID Corp.,** click **No** to cancel installation. If you do see it, click **Yes** to install the product.

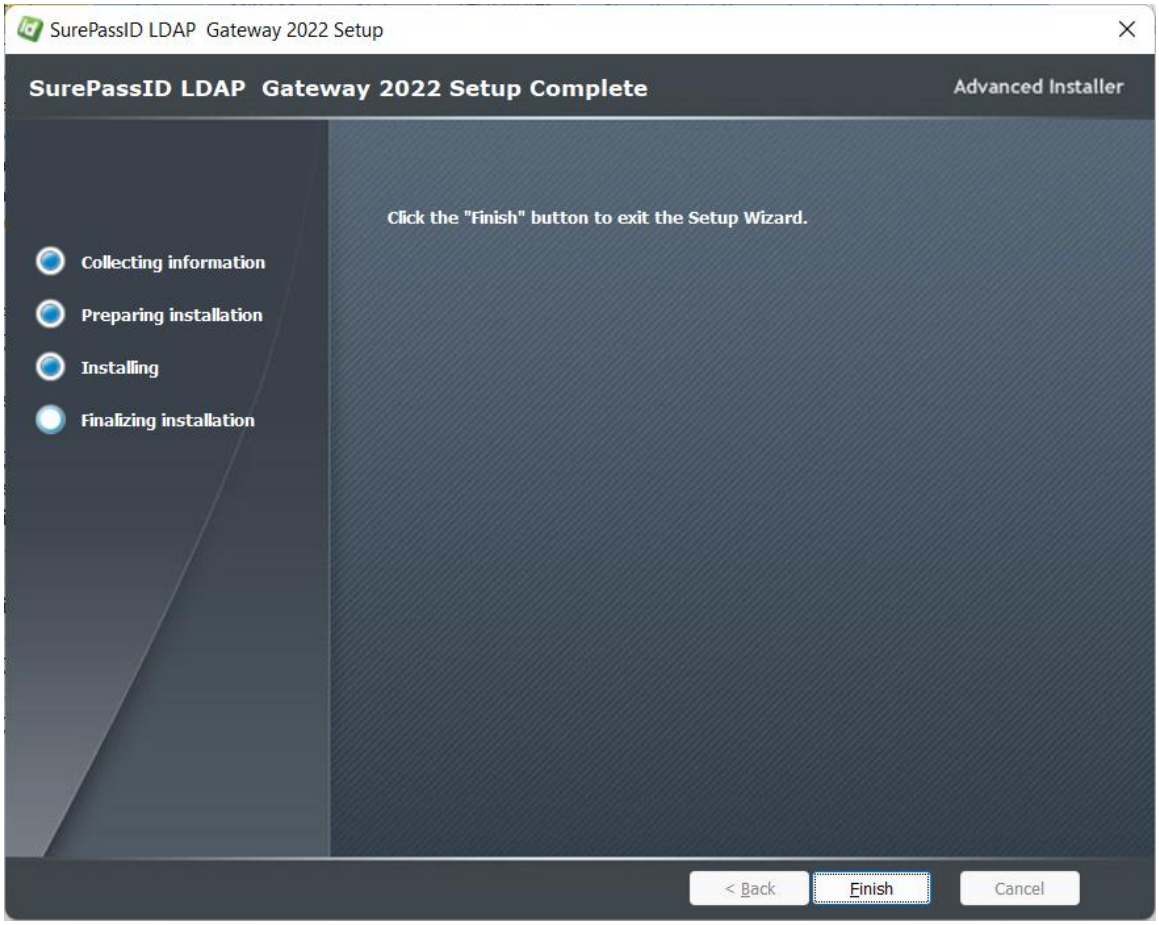


Figure 6: Complete Installation

The installation is complete. You are now ready to configure the system.

Configuration Settings

All the configuration settings for the system are located in ldap.conf file located in the folder where the product is installed. The default product installation folder is: C:\Program Files (x86)\SurePassID Corp\SurePassID LDAP Gateway.

Step1: Configure SurePassID LDAP Gateway Settings

The ldap.conf configuration file is comprised of the following parameters:

```
//SurePassID MFA Server Settings
'AuthServerURL=https://sandbox.surepassid.com/AuthServer/REST/OATH/OATHServer.aspx
AuthServerURL=https://cloud2.surepassid.com/AuthServer/REST/OATH/OATHServer.aspx
AuthServerKeyIdentifier=<you must fill this in with the appropriate application id>
AuthServerKey=<you must fill this in with the appropriate application key>
AllowSMS=0
AllowEmail=0
AllowCall=0
AllowPushApp=0
AllowPushSMS=0
AllowPushVoice=0
PushAppName=Ldap App Access
PushAuthnReason=Login
//Ldap Server Settings
LdapBaseDn=
LdapEndPoint=<fill this in with your real LDAP server endpoint>
LdapUseTls=true
LdapEndPointPort=636
LdapTargetDirectory=ActiveDirectory
'LdapReceiveTimeoutSeconds=
'LdapSendTimeoutSeconds=
// SurePassID Gateway Settings
LdapGatewayPort=636
LdapGatewayServiceAccount=CN=readonly_service_acct,OU=OU,DC=your_domain,DC=us
LdapGatewayServiceAccountPw=<fill this in with the password for ServiceAccount>
'LdapGatewaySslCertificatePfxPath=SP_LDAP_TEST_CERT.pfx
LdapGatewaySslCertificatePfxPw=test_cert_do_not_use
LdapGatewaySslCertificateThumbprint=D98FFD8B00871987A6046EF20B19A30793182D7C
TraceLevel=0
```

Figure 7: Sample LDAP Gateway Configuration File

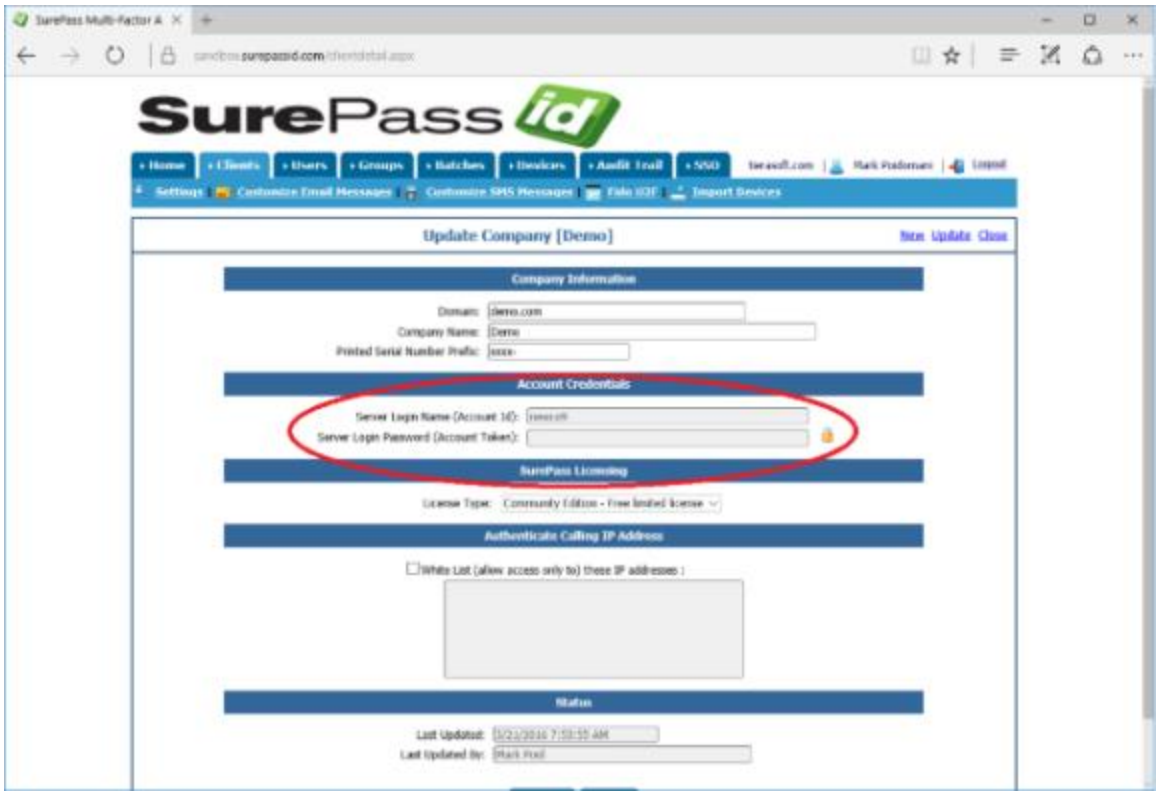
The configuration file format requires each setting to be specified on a separate line, with each option name and its corresponding value separated by an equals sign (=). Lines beginning with an apostrophe are treated as comments.

Descriptions of each option are described in the following sections.

SurePassID MFA Server Settings

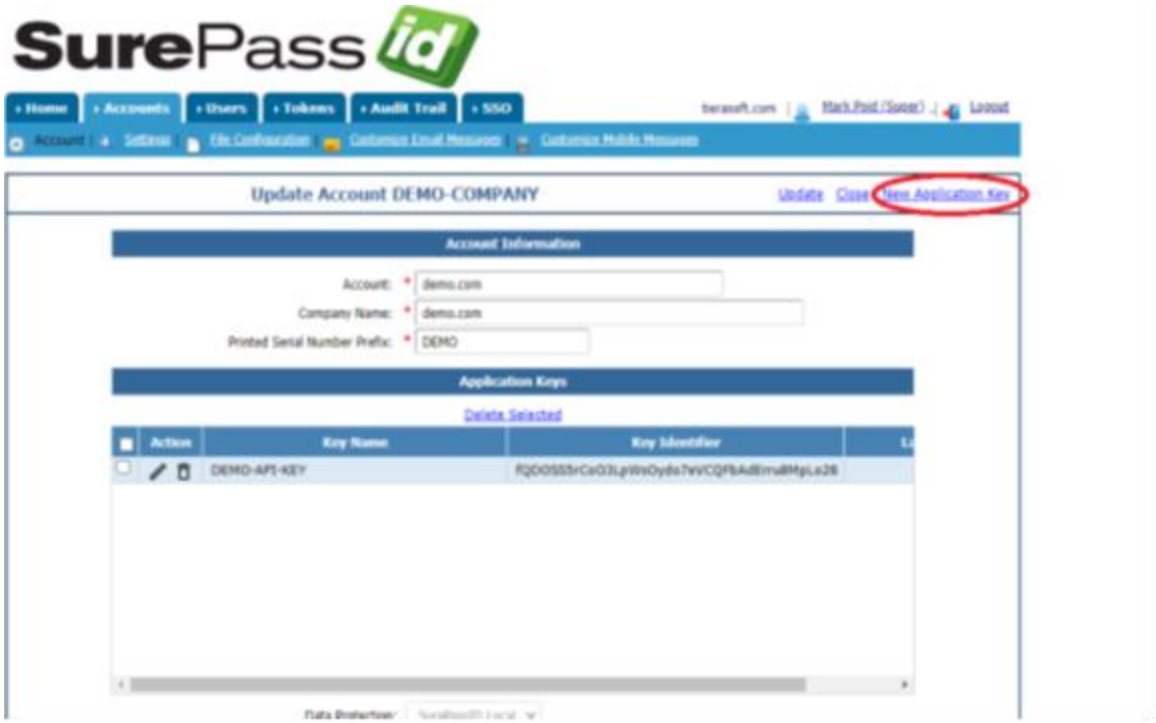
- **AuthServerKeyIdentifier** - Refers to the **API Key Identifier**, which forms one part of a custom API Key used to specify ADFS access rights to an MFA server. For earlier versions of SurePassID, use **Server Login Name** for your SurePassID account.
- **AuthServerKey** - Refers to the **API Key**, which forms a second part of a custom API Key used to specify ADFS access rights to an MFA server. For earlier versions of SurePassID, use **Server Login Password** for your SurePassID account.

  If you are using an older version of SurePassID MFA server, you will see the following info for your account as shown below.



SurePassID Legacy Account Settings

If you are using the latest version of SurePassID you will see the following info for your account:



SurePassID API Key Settings

All application requests to the MFA Server require an **Application Key**. To create a new **Application Key** just for **RADIUS Server** (recommended) click the **New Application Key** link and see the form below:

The **Key Name** is the friendly name to identify this key. It is not used for any security purposes. For instance, you could name it **ADFS Key**.

Select the **ADFS Adapter** (this is correct) from the **Permissions Templates** drop-down list.

The **Key Identifier** parameter is the **AuthServerToken** and the **Key** parameter is the **AuthServerKey**

Copy **Key Identifier** and **Key** for later use when configuring **LDAP Gateway**. One you click the **Add** button the **Key** will no longer be viewable. If you forget the **Key**, you can delete this **Application Key** and add a new one.

Press the **Add** button to save the Api Key.

Caution: Deleting an **Application Key** prevents applications using it from accessing the MFA Server. It cannot be restored; a new key must be generated and updated in the application.

- **AllowSMS** - Allow the user to request an OTP be sent by SMS to their mobile device. 0=no 1=yes
- **AllowEmail** - Allow the user to request an OTP be sent to their email. 0=no 1=yes
- **AllowCall** - Allow the user to request an OTP be sent by voice call. 0=no 1=yes
- **AllowPushApp** - Allow the user to request that a push authentication be sent (pushed) to their mobile device to confirm their identity. Requires the user to have SurePassID Mobile Authenticator installed on their mobile device. 0=no 1=yes
- **AllowPushSMS** - Allow the user to request that an SMS push question can be sent to their mobile device to confirm their identity. 0=no 1=yes
- **AllowPushVoice** - Allow users to request a voice call that will allow them to confirm their identity. 0=no 1=yes
- **PushAppName** - For push authentications, the name of the application requesting access. The PushAppName is displayed to the user when they receive a push notification. The default is Remote Access.
- **PushAuthnReason** – For push authentications, the reason why the application is requesting access. The default is Login.

LDAP Server Settings

- **LdapTargetDirectory** – The target directory used for first factor (username & passwod) authentication. Values are:
  - **ActiveDirectory** – Native Active Directory connection using the LSA. Must specify the **ActiveDirectoryDomain** paramter.
  - **Ldap –** Any Ldap directory. Must specify the **LdapEndPoint**, **LdapEndpointPort** and **LdapUseTls** parameters.
  - **SurePassID –** SurePassID directory
- **ActiveDirectoryDomain** – The Active Directory domain that will be used to authenticate the users first factor.
- **LdapBaseDN** – The baseDN that will be appended to the DN from the LDAP application. In most cases you can leave this blank.

- **LdapEndPoint** – The FQDN (or IP) of the target AD/LDAP server.
- **LdapEndpointPort** – The port the target LDAP server listens on. Default is 389. Port 389 is the standard port for non-secure LDAP. This is not acceptable for production. You should use port 636 and configure SSL parameters below.
- **LdapUseTls** – Set the gateway to use TLS when communicating with the Ldap server. 0=no 1=yes
- **LdapReceiveTimeoutSeconds** – Setting the maximum number of seconds the gateway will wait to receive data from the LDAP/AD server. Default is 10 seconds.
- **LdapSendTimeoutSeconds** - Setting the maximum number of seconds

```
CN=readonly_service_acct,OU=OU,DC=your_domain,DC=us
```

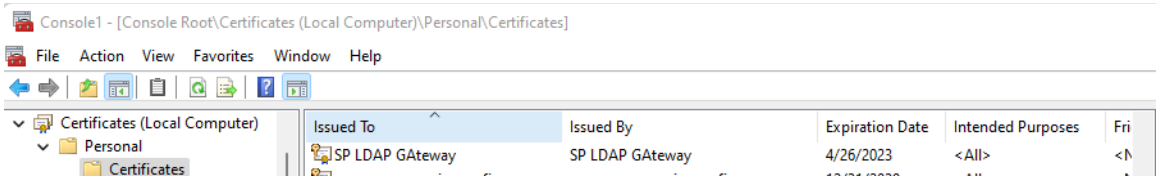
  the gateway will wait sending data to the LDAP/AD server. Default is 10 seconds.

LDAP Gateway Server Settings

- **LdapGatewayPort** – The port the SurePassID LDAP Gateway server listens on. Default is 389. 636 is usually used for secure (SSL/TLS) connections.
- **LdapGatewayServiceAccount** – The default user service account in the target LDAP/Active Directory directory. This user will be used by the server for requests that require non-authenticated searches. This user account should have read-only privileges and is specified in distinguished name format. For example:
- **LdapGatewayServiceAccountPW** – The password for the service account (**LdapGatewayServiceAccount**)

- **LdapGatewaySslCertificateThumbprint** – The thumbprint of the SSL certificate securing LDAP-gateway communications. If using port 636 (standard TLS), this parameter is required for the LDAP application to connect.

- **LdapGatewaySslCertificatePfxPath** – The path to the SSL certificate. If this field is commented out (and it is by default) then the system will look for the certificate in the **Local Computer/Personal/Certificate** store (recommended) as shown below:



- **LdapGatewaySslCertificatePfxPw** – Password for the certificate identified by the **LdapGatewaySslCertificateThumbprint.**
- **TraceLevel** – Sets the level of system tracing. The trace file is stored in the Trace folder located in the installation folder. It is strongly recommended you only turn on trace to debug issues with the system. When you are done debugging, turn off tracing and delete any trace files that are present. Options are:
    - 0 - No tracing.
    - 1 - Application tracing.
    - 2 – In and outbound tracing packet tracing. **Only for extreme debugging situations and should never be left on. It could expose sensitive information.**

Step2: Configure LDAP Application

When using the SurePassID LDAP Gateway the LDAP application is configured the same way as you would for any LDAP server. LDAP applications can vary and if you need help setting up your LDAP application contact SurePassID support and we can assist you to get it up and running.

Step3: Using the LDAP application

After setting up your LDAP application to use SurePassID LDAP Gateway you can test logging into the system. To login You will need two factors. This would be your first factor (username and password which you already know) and second factor (One Time Passcode). The One Time Password (OTP) can come from a hard token (FOB, Display card) or a soft token such as the SurePassID Mobile Authenticator app.

To login securely to you LDAP application that has been configured to use the LDAP Gateway follow these steps:

1. In the User field enter your username.

```
Ggg7bb5688&Pw,?
```

2. In the Password field enter your current password followed by a comma and your OTP as shown below:

3. Press the usual button you use to login. If **your_current_password** and OTP are correct, then you will be logged in to the system.

```
your_current_password,push_request
```

You can also use push notifications login to your LDAP application as an alternative/additional two factor method to an OTP. You can do this by changing the format of the password field to the following form:

```
your_current_password,123456
```

Where **push_requst** can be one of the following values:

? – Send phishing resistant pus message
?? -Send MSMS push
– send push voice. Call

When using push authentication, the login flow is:

1. In the User field enter your username.
2. In the Password field enter your current password followed by a comma and your **push_request**. For example, to login using a push notification (assuming your password is Ggg7bb5688&Pw) you would enter:

3. When you receive the push notification and approve it you will be logged into your LDAP application. Never approve a notification if it is not requested by you and also look at the notification to verify it is for the LDAP app you are logging into.

SSL/TLS Certificate Set-up

For the SurePassID LDAP Gateway to accepts TLS requests you will need to:

1. Create a certificate with private key using PowerShell
2. Update the ldap.config file to specify the new certificate by its thumbprint.

Step1: Create certificate with private key using PowerShell

To create the certificate and store it in Local Computer/Personal/Certificate use the PowerShell script below. You must run this script as an Administrator. This script (ldap_create_cert.ps1) is also provided in the scripts sub-folder of the installation folder.

NOTE: You can tailor the script to meet your company standards by changing the certificate Expiration Date ($ed) and Subject Name ($sn) variables.

Step2: Edit ldap.config to set the certificate thumbprint.

When the script in Step 1. runs, it will give you instructions on how to update the ldap.conf file. Update line:
LdapGatewaySslCertificateThumbprint=CERTIFICATE_THUMBPRINT

```
$ed = Get-Date -Date "12/31/2025 23:59:59"
$sn = "CN=SurePassID LDAP Gateway TLS"
Write-OutPut "Starting the LDAP Gateway certificate generation process....."

Write-OutPut "Creating self-signed cert and placing it in Local
Computer/Personal/Certificate store…"
$cert=New-SelfSignedCertificate -certstorelocation cert:\localmachine\my -
Subject $sn -NotAfter $ed -KeyExportPolicy Exportable -KeySpec Signature -
KeyLength 2048 -KeyAlgorithm RSA -HashAlgorithm SHA256
Write-OutPut "Certificate created. Please take note of the change to
ldap.conf below:"

$tn=Get-ChildItem Cert:\LocalMachine\my -Recurse | Where { $_.Subject -eq
$sn} | Select Thumbprint

Write-OutPut ""
Write-OutPut "-----------------update ldap.config----------------"
Write-OutPut " Update line:
LdapGatewaySslCertificateThumbprint="$tn.Thumbprint" "
```