# 

Documentation @ 1.1.3

### Table of Contents

Thycotic Identity Bridge	9
Installation and Upgrades	10
Prerequisites	10
System Requirements	10
*	10
Windows & Active Directory Requirements	10
Windows 7	11
Software Downloads	12
Server Software	12
Agent Software (Endpoints)	12
Installing Thycotic Agent	14
Installations Covered	14
Installing on CentOS/RedHat/Oracle Linux	15
Thycotic File Locations	15
Disable Security-Enhanced Linux (SELinux)	15
RPM	15
YUM	15
Post Installation	16
Installing on Ubuntu	17
Prerequisites	17
Thycotic File Locations	17
DPKG	17
APT	17
Post Installation	18
ID Bridge Install on Windows	19
Installing the Thycotic Identity Bridge for Windows .exe file	20
Linux/Unix Agents	25
Joining	26
Prerequisites	26
Overview	26
Existing Computer objects	27
Command Line Options	27
Expected output of Successful Join	28
CLI Examples	28
Fully Interactive Example	29
Identity Bridge Commands	30

Prerequisites	30
bridge Command Line Options	30
syscfg	30
stats	31
testuser	31
acl	31
leave	31
delete	31
purge	32
cache	32
bridge Examples	32
Syscfg	32
Stats	32
Testuser	33
ACL	33
ACL - Verbose	33
Leave	33
Delete	33
Cache - Default	34
Cache - Full	34
Purge	35
Global Commands	36
Prerequisites	36
Agent Global Commands	36
Identity Bridge Configuration Utility	38
Markdig.Syntax.Inlines.LinkInline	39
Markdig.Syntax.Inlines.LinkInline	39
Help Menu	39
The General Panel	40

Default User Settings	40
Starting UID	40
Default Home Directory	41
Default Login Shell	41
POSIX Data for Users	41
Default Group Settings	41
Starting GID	41
POSIX Data for Groups	41
Default Computer Settings	41
Default Computer Container	41
Access Control List	42
Global Access Control Settings	42
Allow logon when no ACL defined	42
Access Control List	43
Add Access Control Entry	43
Filter	43
Panel	44
Test Access of User/Computer	44
Agent Settings	45
Authentication Settings	45
Allow Cached Logon	45
Time Sync	46
Global User/Group Defaults	46
Expanded Group Membership	46
Force Home Directory Ownership	46
Recurse Files/Folders	46
UID Generation Mode	46
Attribute Mapping	47
UID Number	47
GID Number	48
Home Directory	48
Unix Username	48
GECOS	48
Unix Login Shell	48
Group Alternative Name	48
Group GID Number	48
Group Description	48
Cache Setting	49
Agent Cache Expiry Time (days)	49
Agent Cache Update Time	50

Custom Text	51
Password Prompts	52
Active Directory	52
Local System	52
Other	53
Old Active Directory Password	53
New Active Directory Password	53
Confirm New Active Directory Password	53
Password Policy Violation	53
Friendly Messages	54
Welcome Message	54
Authentication Messages	54
Show Friendly Messages	55
Account Disabled	55
Account Locked	55
Access Control Deny	55
Account Expired	55
Invalid Password	55
User Not Found	55
Warning Messages	56
Home Directory Ownership	56
No Required POSIX Data	57
Change Shell Disallowed	57
Access Control Messages	58
No Users	58
All Users	59
Bridge Users	59
Select Users	59
Select Bridge Users	60
Custom Variables	61
Add Variable	61
Defaults	61
Exclusions	62
User and/or Group Exclusions	62
Add	62
Filter	62
Exclusions Panel	63
User(s)	63
UID(s) Number	63
GID(s) Number	63

Domain	63
Group(s)	63
Licensing	64
Default Trial License	64
Add new license	64
Logging	66
Logging	66
Turn on SysLog	66
Log Successful/Failed Authentications	67
Log Send Friendly Messages	67
Log Send Warning Messages	67
Protocol	67
Facility	67
Туре	67
Remote SysLog Server	67
Remote SysLog Port	67
OU Override	68
Configured OUs	68
Filter	68
Restore ALL Settings	68
Service Accounts	69
Configured Credentials	69
Add New Credentials	69
Filter	70
Panel	70
User/Group Naming Tab	71
Separator Characters	71
Space Replacement Character	71
Domain/User Separator	71
Domain/Group Separator	72
User Name Formatting	72
User Uniqueness Processing	72
User Uniqueness Format	72
Group Name Formatting	72
Group Uniqueness Processing	72
Group Uniqueness Format	72
omain Controller Selector	73
File Menu - Import/Export Backup	75
Export Backup	75
Import Backup	76

Backup Files	76
ADUC Extension	77
Users - Thycotic User Data Panel	77
Users - Thycotic User Mapping Panel	77
Groups - Thycotic Group Data Panel	77
OU's - Thycotic Overrides Panel	77
Computers - Thycotic Identity Bridge Panel	77
Thycotic User Data	78
Auto Generated	78
UID Number	78
Generate	78
Primary GID	79
Home Directory	79
Login Shell	79
Comment (GECOS)	79
Thycotic User Mapping	80
Add	80
Thycotic ID Bride - Computers	81
Thycotic Group Data	82
GID Number	82
Generate	82
Algorithmic/Incremental drop-down	82
Alternative Group Name	82
Thycotic Overrides	84
Default Home Directory	84
Default Login Shell	84
Primary GID	84
Clear	84
Inherited	85
Release Notes	87
1.1.3 Release Notes	88
Bug Fixes	88
Known Issues	88
1.1.2 Release Notes	89
Enhancements	89
Bug Fixes	89
1.1.1 Release Notes	90
Enhancements	90
Bug Fixes	90
1.1.0 Release Notes	91

Enhancements	91
Bug Fixes	91
1.0.1 Release Notes	92
Bug Fixes	92
Known Issues	92
1.0.0 Initial Release	93
Initial Feature Set	93
Limitations	93
Known Issues	94
Documentation Changelog	95
February 2021	95
January 2021	95
December 2020	95
November 2020	95
October 2020	95

Thycotic's **Identity Bridge** (ID Bridge) is a utility that allows the setting of values to be used in the Thycotic panels under Active Directory User and Computers, User and Group Properties. These values are used to enable the ID Bridge to manage the user authentication from Linux\Unix hosts to Active directory.

The ID Bridge Configuration Utility allows to globally set all values and selected values at an organizational unit (OU) level.

### Installation and Upgrades

The agent should have a resolvable hostname set before installing the Thycotic Identity Bridge. If the agent has a default hostname of localhost.localdomain, the pmagent service will not function as expected.

Note: Updating the agent hostname post installation will require a reinitialization of the agent configuration.

CentOS 7.x, 8.x	100Mb - 2mb in each of /lib64 /etc/pam.d /usr/lib64/security and /etc	2Gb	For the Identity Bridge component to function correctly <b>SELinux</b> currently needs to be <u>disabled on the host</u> .
RedHat Linux 7.x, 8.x	100Mb - 2mb in each of /lib64 /etc/pam.d /usr/lib64/security and /etc	2Gb	For the Identity Bridge component to function correctly <b>SELinux</b> currently needs to be <u>disabled on the host</u> .
Oracle Linux, 7.x, 8.x	100Mb - 2mb in each of /lib64 /etc/pam.d /usr/lib64/security and /etc	2Gb	For the Identity Bridge component to function correctly <b>SELinux</b> currently needs to be <u>disabled on the host</u> .
Ubuntu 18.04, 20.04	100Mb - 2mb in each of /lib/x86_64-linux- gnu/security, /lib/x86_64-linux-gnu/ /etc/pam.d and /etc	2 Gb	

#### Windows & Active Directory Requirements

- Active Directory Forest Functional Level: Greater than or equal to 2012 R2 or newer
- Windows OS: Greater than or equal to Windows 2012 R2/Windows 7 (x64 only across all versions of Windows)
- Client Prerequisites:
  - Visual Studio C++ Redistributable 2019 x64 (<u>https://aka.ms/vs/16/release/vc\_redist.x64.exe</u>)

  - (https://download.visualstudio.microsoft.com/download/pr/7c30d3a1-f519-4167-b850b9c49bf2aa0e/dbfa957a76a41a1e1795f59d400d4ccd/dotnet-hosting-3.1.5-win.exe)
  - .NET 4.5.2 (https://download.microsoft.com/download/E/2/1/E21644B5-2DF2-47C2-91BD-63C560427900/NDP452-KB2901907x86-x64-AllOS-ENU.exe)

#### Note:

- If installing from the bundled installer/bootstrapper (ThycoticIdentityBridge\_x64\_.exe), the client prerequisites will automatically be installed.
- If installing the raw msi (ADBridge.Installer\_x64\_.msi), the user will have to manually download and install the client prerequisites.



#### Windows 7

If you install the Identity Bridge on a Windows 7 system, please refer to the following Microsoft KB: <u>https://support.microsoft.com/en-us/help/2533623/microsoft-security-advisory-insecure-library-loading-could-allow-remot</u>

### Software Downloads

This page provides links to Thycotic Identity Bridge product software downloads.

#### Note:

- Only general availability releases are fully supported for usage with Thycotic's Identity Bridge.
- The Identity Bridge Configuration Utility software and Agent software versions need to match to work correctly.

Windows Management Tools	refer to <u>System Requirements</u>	Thycotic Identity Bridge for Windows Package V1.1.2
		Thycotic Identity Bridge Installer Only (No Dependencies) V1.1.2

Linux	Redhat	6.x	coming soon
		7.x	Thycotic Identity Bridge Linux Agent V1.1.3
		8.x	Thycotic Identity Bridge Linux Agent V1.1.3
	CentOS	6.x	coming soon
		7.x	Thycotic Identity Bridge Linux Agent V1.1.3
		8.x	Thycotic Identity Bridge Linux Agent V1.1.3
	Ubuntu LTS	14.x	coming soon
		22.x	coming soon
		18.04	Thycotic Identity Bridge Linux Agent V1.1.3
		20.04	Thycotic Identity Bridge Linux Agent V1.1.3
	SuSE Enterprise	12.x	coming soon
		15.x	coming soon
	Oracle	6.x	coming soon
		7.x	Thycotic Identity Bridge Linux Agent V1.1.3
		8.x	Thycotic Identity Bridge Linux Agent V1.1.3

Unix	AIX	6.x	coming soon
		7.x	coming soon
	HP-UX	11i v3	coming soon
	Solaris	10.x	coming soon
		11.3	coming soon
		11.4	coming soon

The following information will guide you through the process on how to install your Identity Bridge agent on CentOS.

Once you have downloaded the latest version of Thycotic's **pmagent** installer you will need to securely copy it onto you host. You will need to perform the installation as root or a user with root sudo permissions.

#### Installations Covered

- CentOS, RedHat, Oracle Linux
- <u>Ubuntu</u>

#### **Thycotic File Locations**

Core installation location: /opt/thycotic

Other Thycotic file locations: /lib64, /usr/lib64/security, /var/log, /etc

Other locations Thycotic agent will modify system files: /etc, /etc/pam.d, /etc/ssh, /etc/authselect/

#### Disable Security-Enhanced Linux (SELinux)

Currently for the Thycotic Identity Bridge agent to correctly authenticate against Active Directory Thycotic requires that the SELinux functionality of the host machine is disabled.

The agent installer will detect if SELinux is set to Enforcing or Permissive and provide the following message at the end of the installation.

```
Please disable SELinux to allow the Identity Bridge to function properly
```

To disable the SELinux functionality you will need to perform the following:

- 1. Edit the /etc/selinux/config file
- 2. Set the SELINUX line to: disabled
  - Example: SELINUX=disabled
- 3. Reboot your host

If SElinux is disabled the message will not be displayed.

For CentOS, RedHat, and Oracle there are 2 methods for installing packages, rpm and yum, both methods are outlined below.

#### RPM

For upgrades to version 1.1.3 only, as mentioned in the Release Notes under Known Issues, run this upgrade command:

rpm -U --force ./pmagent\_x86\_64\_vn.n.n.nn\_<platform>.rpm

For new installations only, performed as non root user with sudo permissions:

>> sudo rpm -i /root/Thycotic/pmagent\_x86\_64\_vn.n.n.nr.pm

Where, pmagent\_x86\_64\_vn.n.n.nr.pm is replaced with the actual software package and version that is being installed.

Below is the expected output of a successful installation

Created symlink from /etc/systemd/system/multi-user.target.wants/pmagent.service to /etc/systemd/system/pmagent.service.

Please start the pmagent service by running:

/bin/systemctl start pmagent.service

You need to join an Active Directory domain to start authenticating users using the command:

/opt/thycotic/sbin/pmagent --join

Please disable SELinux to allow the Identity Bridge to function properly

#### YUM

For upgrades to version 1.1.3 only, as mentioned in the <u>Release Notes</u> under Known Issues, run this downgrade command:

yum downgrade ./pmagent\_x86\_64\_vn.n.n.nn\_<platform>.rpm

For new installations only, performed as non root user with sudo permissions:

>> sudo yum install /root/Thycotic/pmagent\_x86\_64\_vn.n.n.nrpm

Where, pmagent\_x86\_64\_vn.n.n.n.rpm is replaced with the actual software package and version that is being installed.

Below is the expected output of a successful installation _oaded plugins: fastestmirror, langpacks Examining pmagent_x86_64_v1.1.3.81.rpm: pmagent_x86_64_1.1.3.81 Marking pmagent_x86_64_v1.1.3.81.rpm to be installed Resolving Dependencies -> Running transaction check > Package pmagent.x86_64 0:1.1.3.81 will be installed -> Finished Dependency Resolution			
pendencies Resolved			
ckage Arch Version Repository Size			
talling:			
agent x86_64 1.1.3.816 /pmagent_x86_64_v1.1.3.81 50 M			
nsaction Summary			
tall 1 Package al size: 50 M talled size: 50 M his ok [y/d/N]: y wnloading packages: nning transaction check nning transaction test insaction test succeeded nning transaction stalling : pmagent_x86_64_1.1.3.81 1/1 eated symlink from /etc/systemd/system/multi-user.target.wants/pmagent.service to /etc/systemd/system/pmagent.service. ase start the pmagent service by running:			
in/systemctl start pmagent.service			
pt/thycotic/sbin/pmagentjoin			

Verifying : pmagent\_x86\_64\_1.1.3.81 1/1

Installed: pmagent\_x86\_64\_1.1.3.81 Complete!

#### **Post Installation**

By default CentOS, RedHat, and Oracle do not start a newly installed package, therefore you will need to manually start the Thycotic Agent.

Performed as non root user with sudo permissions:

>> sudo systemctl start pmagent.service

The pmagent service will be started automatically following a reboot of the host system.

#### Prerequisites

If the Ubuntu operating system is installed from either

- ubuntu-18.04-live-server-amd64.iso or
- ubuntu-20.04.1-live-server-amd64.iso

you will be required to update the operating system base files with the following command before installing the Identity Bridge agent.

sudo apt-get update

It is recommended that your base operating system is always running the latest vendor recommended patches.

#### **Thycotic File Locations**

Core installation location: /opt/thycotic

Other Thycotic file locations: /lib/x86\_64-linux-gnu/security, /lib/x86\_64-linux-gnu/, /var/log, /etc

Other locations Thycotic agent will modify system files: /etc, /etc/pam.d, /etc/ssh

There are 2 methods for installing packages, DPKG and APT, both methods are outlined below.

#### DPKG

Performed as non root user with sudo permissions

>> sudo dpkg -i pmagent-1.1.3.81-Linux.deb

Below is the expected output of a successful installation

Selecting previously unselected package pmagent. (Reading database ... 184828 files and directories currently installed.) Preparing to unpack pmagent-1.1.3.81-Linux.deb ... Unpacking pmagent (1.1.3.81) ... Setting up pmagent (1.1.3.81) ... Created symlink /etc/system/system/multi-user.target.wants/pmagent.service /etc/systemd/system/pmagent.service.

Please start the pmagent service by running: /bin/systemctl start pmagent.service

You need to join an Active Directory domain to start authenticating users using the command: /opt/thycotic/sbin/pmagent --join

#### APT

Performed as non root user with sudo permissions

>> sudo apt install /root/Thycotic/pmagent-1.1.3.81-Linux.deb

Below is the expected output of a successful installation

Reading package lists... Done Building dependency tree Reading state information... Done Note, selecting 'pmagent' instead of '/home/installer/pmagent-1.1.3.81-Linux.deb' The following packages were automatically installed and are no longer required: linux-hwe-5.4-headers-5.4.0-42 tcpd Use 'sudo apt autoremove' to remove them. The following NEW packages will be installed

pmagent 0 to upgrade, 1 to newly install, 0 to remove and 92 not to upgrade. Need to get 0 B/8,669 kB of archives. After this operation, 28.5 MB of additional disk space will be used. Get:1 /home/installer/pmagent-1.1.3.81-Linux.deb pmagent amd64 1.1.3.81 [8,669 kB] Selecting previously unselected package pmagent. (Reading database ... 184828 files and directories currently installed.) Preparing to unpack .../pmagent-1.1.3.81-Linux.deb ... Unpacking pmagent (1.1.3.81) ... Setting up pmagent (1.1.3.81) ... Created symlink /etc/system/system/multi-user.target.wants/pmagent.service /etc/system/system/pmagent.service.

Please start the pmagent service by running: /bin/systemctl start pmagent.service

You need to join an Active Directory domain to start authenticating users using the command: /opt/thycotic/sbin/pmagent --join

#### **Post Installation**

By default Ubuntu does not start a newly installed package, therefore you will need to manually start the Thycotic Agent

Performed as non root user with sudo permissions

>> sudo systemctl start pmagent.service

The pmagent service will be started automatically following a reboot of the host system.

The Identity Bridge for Active Directory Configuration application can be installed on Windows servers based on the specifications outlined on in the <u>System Requirements</u> section.

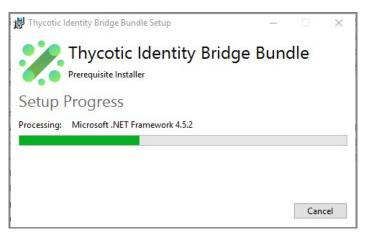
If you are co-hosting Thycotic products like Privilege Manager and installing the Identity Bridge Configuration application on an existing server already running Internet Information Services, the application pool identity might need to be reset to the correct account permissions, if the Active Directory Domain Server is added or created after the application pools for Privilege Manager have been established.

The executable for the Identity Bride installation on Windows systems, checks for prerequisites and installed those before entering the actual product installation.

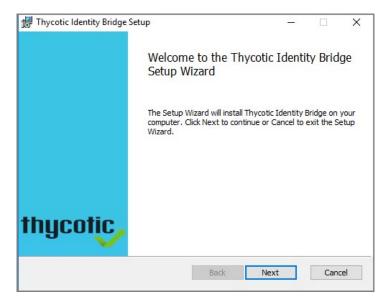
- 1. Double-click the downloaded Identity Bridge for Windows install executable.
- 2. The Thycotic Identity Bridge Bundle installer opens, click Install.



3. The installer shows the progress of the prerequisites verification and installation.



Once the prerequisites are applied the Installation wizard opens, click Next.



4. The install wizard shows the installed Prerequisites, click Next.

Prerequisites		
This shows what prerequisites are current	y installed	6
Here is the list of preequisites and their curre Active Directory Users and Computers Exten must be able to make a serverless bind to an	ded Property Sheets, this installer	
Active Directory Connectivity	Not Contacted	
Visual C++ 2019 Redistributable (x64)	Installed	
Visual C++ 2019 Redistributable (x86)	Installed	
ASP.Net Core Hosting Bundle 3.1.5	Installed	
	Back Next Can	

5. When Active Directory is detected, the Configure Active Directory dialog opens to the following:

😽 Active Directory Configurat	ion	-		×
Configure Active Directo	ory			2
Configure AD				0
Thycotic Identity Bridge allows data on User, Group, Compute Active Directory through the Ao This functionality requires a mo	r, Container, and Organization ctive Directory Users and Com dification to the Configuration	nal Unit objects in puters MMC snap-		
Install Thycotic Identity Br	idge Property Sheets			
Use Specific User				
Username				
Password				
Configure AD	1			
	Back	Next	Cano	el

- $\circ$  Check the Install Thycotic Identity Bridge Property Sheets checkbox.
- If you are logged in as the default user (Administrator), ignore the specific user detail setup.
- Click Configure AD.
- 6. A successful AD Configuration is confirmed:

Configure Active Director	У			-
Configure AD				6
Thycotic Identity Bridge allows y data on User, Group, Computer, Active Directory through the Act This functionality requires a modi	Container, and Organizationa ive Directory Users and Comp	l Unit objects in uters MMC snap-	in.	
Install Thycotic Identity Brid	lge Property Sheets			
Use Specific User				
Username				
Username Password				
Password	l surresfullut			

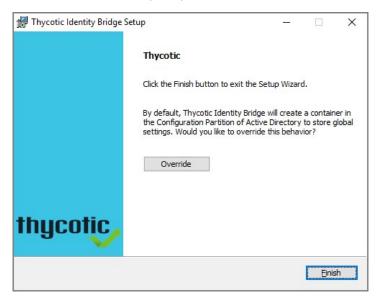
#### Click Next.

7. Confirm or change the default Destination Folder path:

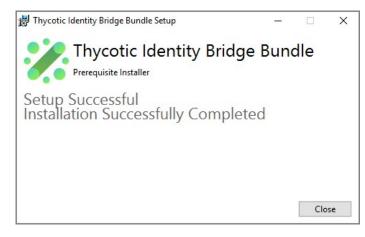
Thycotic Identity Bridge Setup		_	
Destination Folder			
Select a folder where the applicat	tion will be installed.		6
This wizard will install the files for T location.	hycotic Identity Bridge in the	following	
To install into a different location, o	lick the Browse button and s	elect another	
Destination Folder	ty Bridge \	Browse	
Destination Folder		Browse	
Destination Folder		Browse	·
Destination Folder		Browse	•

Click Next.

8. Click Finish once the setup completes.



9. On the Setup Successful dialog, click **Close**.



You are now ready to open the Identity Bridge application, it will open to the Thycotic Identity Bridge Connect dialog.

<b>%</b> T	hycotic Identity Bridge	•
Select a do	main to configure	
Domain:	demo.com	
Mode:	Current User	~
Username		
Password		

If you are the default user, you only need to click **Connect**. The Domain should have been automatically entered and the Mode drop-down is on the Current User option.

Refer to Identity Bridge Configuration Utility for details about the features of the configuration utility.

### Linux/Unix Agents

After a successful installation of the Thycotic agent on your \*nix host typing pmagent as a privileged user or sudo pmagent from a non privileged user will return all the usage options that can be used in conjunction with the pmagent command.

usage: pmagent [options] Global options (specify --global) options: display help display verbose data display version (re)initialize the agent install get the unique hostid set agent configuration value (-h|--help) (-V|--verbose) (-v|--version) (-N|--init) (-H|--hostid) (-s|--setcfg) <var=val> (-g|--getcfg) <var> (-e|--exportcfg) [path] (-i|--importcfg) [path] (-l|--listsvcs) get agent configuration value export agent configuration import agent configuration list agent services Join Identity Bridge to Active Directory (specify --join) options: (-d|--domain) <domain> domain to join admin user for join admin password for join the domain controller for join override computer name for join optional OU for computer account computer display name for join force join for existing computer do not configure system files (-a|--admin) <adminuser> (-p|--passwd) <adminpwd> (-D|--dc) <domaincontroller> (-n|--name) <computername> --ou <ou> --disp "<display name>" --force --nosyscfg Identity Bridge commands (specify --bridge) options: --syscfg <config|uninstall|unconfig|path> (un)configure or revert system files retrieve bridge statistics test user access to host --stats --testuser <username> view Active Directory ACL information leave an Active Directory domain leave and delete Computer in Active Directory admin user for delete admin password for delete do not unconfigure system files --acl [--verbose] --leave [<domain>] --leave [<domain>] leave [<domain>] leave [<domain>] leave [<domain>] leave [<domain>] adminuser>] advised leave [(-admin) <adminuser>] advised leave [(-admin) <adminuser>] advised leave [(-adminuser)] advised leave [(-adminuser)] leave [(-adminuser)] advised leave [(-adminuser)] l do not unconfigure system files purge cache data view cache data [--user|--user="<wildcard>"] [--group|--group="<wildcard>"] specify user cache data specify group cache data select agent cache data -agent

### Joining

Join Identity Bridge to Active Dire	ctory (specifyjoin)
options:	
(-d domain) <domain></domain>	domain to join
(-a admin) <adminuser></adminuser>	admin user for join
(-p passwd) <adminpwd></adminpwd>	admin password for join
(-D dc) <domaincontroller></domaincontroller>	the domain controller for join
(-n name) <computername≻< td=""><td>override computer name for join</td></computername≻<>	override computer name for join
ou <ou></ou>	optional OU for computer account
desc " <description>"</description>	computer description for join
force	force join for existing computer
nosyscfg	do not configure system files

This page describes the process and options for joining your \*nix agent to an Active Directory domain using Thycotic's Identity Bridge solution.

Before being able to join you \*nix host to a domain the following requirements will need to be met

- For the Linux\Unix agents to be able to communicate with Active Directory the Domain Controllers will require LDAPS to be enabled.
- DNS and routing must be correct
  - DNS record for agent
  - Agent must be able to resolve the domain and domain controller
- Thycotic Agent installed on the \*nix host
- Access to an Active Directory Account with permissions to add computer objects
- SELinux to be disabled on the \*nix host otherwise the authentication to Active directory will be impacted.
  - The Thycotic Agent installer will post a message if detected
  - The Join command will also abort and provide a message if SElinux is detected:

Please disable SELinux to allow the Identity Bridge to function properly

• Root access or a user with root sudo permissions

In order for your \*nix agent to Join an available Active directory domain you will need to run the pmagent --join command. This will contact an available dc within you domain and add your \*nix host as a computer object to that domain.

You can perform the join solely from using command line arguments or through an interactive method where you will be prompted to provide the required details.

As the Join process completes and the agent is registered, the join process will also configure the Thycotic agents system file configuration to allow authentication to pass through to Active Directory. This option can be skipped if required.

The command line also allows additional optional configuration options to be included in the Join, these will be details below.

As the join completes the system authentication files will also be configured to allow authentication of Active Directory users

If a computer object of the same name already exists within the AD the Join will overwrite the record with a new one for that host, as long as that computer object has no password (has never been actively used).

There is a force option to allow the overwrite of any computer object (however, this must be used with extreme caution)

Future: if an alternative host was registered with the now overwritten computer record it will cease to function and indicated within the logging. The host will then need to be joined back into the domain.

#### Command line options for joining your \*nix hosts to the Active directory domain

join	Base argument to Join an Active Directory domain must be present before any other argument listed below	The domain you wish to join can be added after Only argument required
-d Idomain	Specify the Domain you wish to join	Short and Long domain can be used, Demo or Demo.com
-a Iadmin	Specify an Active Directory admin user with privileges for join the domain	Accepted Input formats of
		Username:
		Administrator LDAP:
		"CN=Administrator,CN=Users,DC=Domain,DC=com" <b>User</b> <b>Principal Name (must be configured in AD)</b> :
		Administrator@Domain.com Down-Level Logon Name:
		Domain\\Administrator (Requires \\ as \ in *nix is an escape character)
-plpasswd	Specify password for admin user	
-DIdc	Specify a domain controller for join to be executed against	Optional - Provides a defined DC for performing the Join Effective when multiple DC available for a Domain
-n Iname	Specify the computer name for join	Optional - Uses the hostname of the *nix host by default
desc <"description">	Specify the computer description for join	Optional - Uses the FQDN of the *nix host by default
ou	Specify an alternative OU for the computer object to be placed in	Optional - Uses the Active Directories default of Computers to locate the computer object
		Example usage:

		ouOU=CentOS,OU=Non-Windows,DC=Demo,DC=com
nosyscfg	Will not configure the agents systems configuration files for AD authentication	Optional - By default the Join process will run thebridgesyscfg config at the end of the process to allow AD users to authenticate to the agent.
		This optional will stop thebridgesyscfg config from being run
force	Allows the join to overwrite an existing computer record within the AD regardless of the existing computer objects status	<b>Caution!!</b> Optional - Using the force option could stop other previously registered hosts from working or a computer of higher importance could be overwritten by mistake

**Note**: When using the command line method to join Active directory is the pmagent service is not running before the join, you will need to manually start it after. If the service was already running, it will be automatically restarted

Following the completion of either CLI or Interactive join to AD you should expect to see the following type of output:

Successfully Joined domain: DEMO.COM Domain Controller: DC01.Demo.com With User: Administrator Computer name: Agent01 In OU: CN=Computers,DC=Demo,DC=com Description: [Agent01.Demo.com](http://DC01.Demo.com)

(Re)starting Identity Bridge Service

#### pmagent --join \*Domain\*

• User will be prompted for Admin user and Password

pmagent --join \*Domain.com\* -a "\*CN=Administrator,CN=Users,DC=Domain,DC=com"\*

• User will be prompted for Administrator Password

pmagent --join \*Domain.com\* -p \*Password\*

• User will be prompted for Admin user

pmagent --join \*Domain.com\* -a \*Administrator\@Domain.com\* -p \*Password\* -D \*DC01\*

DC01 will be contacted to perform the join command

pmagent --join \*Domain.com\* -a \*Domain\\\\Administrator\* -p \*Password\* -n \*Linux\_Agent\*

• Will create a computer object with a name of LINUX\_AGENT1

pmagent --join -a \*Administrator\@Domain.com\* -p \*Password\* -desc "This is a Thycotic IB Agent"

- Will be prompted to provide a Domain to join
- Will create a computer object with a description of This is a Thycotic IB Agent

pmagent --join -d \*Domain.com\* -a \*Administrator\* -p \*Password\* -D \*DC01\* -n \*Linux\_Agent\* -desc "This is a Thycotic IB Agent" --ou OU=CentOS,OU=Non-Windows,DC=Demo,DC=com --nosyscfg

- Example with all options defined
- Computer object will be created in the Non-Windows CentOS folder

#### pmagent --join

- User will be prompted to provide Domain, Admin User and Password
  - Enter domain:
    - Enter Active Directory username:
    - Enter AD User@Domain.com's password:

Any required command line option not included, the user will be prompted to provide interactively

Identity Bridge commands (specifybrid	ge)
options:	
syscfg <config uninstall unconfig pa< th=""><th>th&gt;</th></config uninstall unconfig pa<>	th>
	(un)configure or revert system files
stats	retrieve bridge statistics
testuser <username></username>	test user access to host
acl [verbose]	view Active Directory ACL information
leave [ <domain>]</domain>	leave an Active Directory domain
delete [ <domain>]</domain>	leave and delete Computer in Active Directory
<pre> [(-a admin) <adminuser>]</adminuser></pre>	admin user for delete
<pre> [(-p passwd) <adminpwd>]</adminpwd></pre>	admin password for delete
<pre> [nosysuncfg]</pre>	do not unconfigure system files
purge [user][group]	purge cache data
cache [user][group][agen	t]
	view cache data
<pre> [user user="<wildcard>"]</wildcard></pre>	
<pre> [group group="<wildcard>"]</wildcard></pre>	specify group cache data
[agent]	select agent cache data

#### Prerequisites

Root access or a user with root sudo permissions.

#### --bridge Command Line Options

Once your Thycotic Identity bridge agent has been joined to Active Directory there are a number of other commands that you can utilise in conjunction with the **--bridge** option and these are identified below

#### --syscfg

Allows you to configure/unconfigure the hosts native authentication files for the Thycotic system configuration files to authenticate against your Active Directory Domain.

Thycotic uses json scripts to modify the hosts original authentication files. Before any **--syscfg** configuration any files to be modified are backed up. The Path option allows you to define an alternative json script to be used for the configuration of the hosts authentication files. This would be used when customers have specific alterations already defined on their hosts.

The default Thycotic scripts can be found in:

/opt/thycotic/scripts

Files currently modified by --syscfg:

- /etc/pam.d/password-auth
- /etc/pam.d/passwd
- /etc/nsswitch.conf
- /etc/ssh/ssh\_config
- /etc/ssh/sshd\_config

If password-auth, passwd or nsswitch.conf are found to be missing during a --syscfg config the process will be aborted and the user informed that a required system file is missing. ssh\_config and sshd\_config are not required files. If missing during a --syscfg unconfig\uninstall the process will continue and modify\replace any files still available.

The uninstall option will instead of modifying the existing system file simply use the .thyorig backups created when create was run and reset

the system files to how they were originally.

The unconfig will modify the existing files creating a .thybak backup first.

In the event the .thyorig files are missing the agent will fallback to performing a modifying the existing files.

#### --stats

Provides on screen feedback of the status of the agent, including Process Id and currently active AD instance.

Useful commands to check under which OU the agent is defined and running.

#### --testuser

Performs and Active Directory check of the user status against the agent.

The following statuses can be returned:

- Access Allowed
- Account Disabled
- Account Expired
- Account Locked
- Thycotic ACL denied access and User doesn't exist

#### --acl

Displays the Access Control List for the Agent. Displays a list of Active Directory user that are able to access the Agent in accordance with the Thycotic ACL policy defined in the Configuration Utility.

Optional: --verbose will display the users assigned to a Group in the ACL list.

#### --leave

Leaves the Active Directory domain, although leaving the computer object in Active Directory. As the leave process completes the --syscfg uncfg will be run, reverting the host back to its original authentication configuration and removing the Thycotic system configuration files.

Leave will clear all Active Directory setting on the host, it will clear all cached information. Defining the Domain is not required, if not defined the agent will use it's stored details for the Domain.

Optional: -- nosysuncfg stops the removal of the Thycotic system configuration files.

Do not unconfigure system files.

#### --delete

Leaves the Active Directory domain, also deleting the computer object in Active Directory. Although to complete the Delete command you will be required to provide the Domain, Admin username and Password. As the Delete process completes the --syscfg uncfg will be run, reverting the host back to it's original authentication configuration and removing the Thycotic system configuration files.

- [(-al--admin) <adminuser>] admin user for delete
- [(-pl--passwd) <adminpwd>] admin password for delete
- [--nosysuncfg] do not unconfigure system files

Delete can be completed solely through command line input or interactively. Interactively will default to showing the Domain the agent is currently joined to.

Optional: -- nosysuncfg stops the removal of the Thycotic system configuration files.

#### --purge

- --purge [--user...][--group...] view cahce data
- .. [--userl--user="<wildcard>"] specify user cache data
- .. [--groupl--group="<wildcard>"] specify group cache data

Purge allows the deletion of the locally cached data stored on the agent. The purge can remove all user and group cached information or be filtered to down to individual user and group level.

The purge will only remove the locally cached information regarding users and groups on that Agent. The cached information is used to reduce user/group look up times in Active Directory and provide authentication in the event the Domain is unavailable.

The default of --purge will delete all information. You may use \* wildcard matching and/or [Aa] for case matching.

#### --cache

- --cache [--user...][--group...][--agent] View cache data
- ... [--userl--user="<wildcard>"] specify user cache data
- ... [--groupl--group="<wildcard>"] specify group cache data
- ... [--agent] select agent cache data

Displays the cached information for the agent, users and groups. The cache can be displayed for all 3 categories or filtered to down to individual user and group level.

The cached information is used to reduce user/group look up times in Active Directory and provide authentication in the event the Domain is unavailable.

The default of --cache will display all information. You may use \* wildcard matching and/or [Aa] for case matching.

Note: The format of the cache output is subject to change and is of no particular format.

#### --bridge Examples

#### Syscfg

pmagent --bridge --syscfg /root/thycotic/corp-config.json

Rather than using the default /opt/thycotic/scripts/ to configure or unconfigure the authentication system files, the agent will call /root/thycotic/corp-config.json

#### Stats

pmagent --bridge --stats

#### Example output:

Process ID: 3770 Threads: 15 Started: Wed Jun 17 10:49:22 2020 Last Accessed: Wed Jun 17 11:16:21 2020 Status: running,connected,joined Current Client Processes: 0 NSS Requests: 130 PAM Requests: 4 Current Joined Domain: DEMO Computer name: AGENT1 OU: CN=Computers,DC=Demo,DC=com

#### Testuser

pmagent --bridge --testuser user1

Example output if account expired:

User user1 denied access to AGENT1 Reason: User account user1 has expired in Active Directory

#### ACL

pmagent --bridge --acl

The following Active Directory users / groups are allowed to login to this host

#### USERS

=====

[Username]	[Unix Us	ername] [User Principal Name]	[Display Name]
user10	user10	user10@Demo.com	user^10
user11	aduser11	user11@Demo.com	user^11

#### GROUPS

=====

[Group Name]	[Alt Group Name]	[Description]
Linux <sup>A</sup> dmins	Linux <sup>Admins</sup>	

#### ACL - Verbose

pmagent --bridge --acl --verbose

The following Active Directory users / groups are allowed to login to this host

USERS

[Username]	[Unix Use	ername] [User Principal Name]	[Display Name]
user10	user10	user10@Demo.com	user^10
user11	aduser11	user11@Demo.com	user^11

#### GROUPS

======

[Group Name] [Use Linux <sup>^</sup> Admins	rname] [Uni	x Username] [User Princi	pal Name] [Display Name]
user11	aduser11	user11@Demo.com	user^11
user12	linux12	user12@Demo.com	user^12
user14	aduser14	user14@Demo.com	user^14
USer15	USer15	USer15@Demo.com	USer^15

#### Leave

pmagent --bridge --leave --nosysuncfg

This will leave the current Active Directory domain.

The --nosysuncfg mean that the Thycotic authentication system files will remain in place.

• The --bridge --syscfg unconfig will not be run at the end of the leave.

#### Delete

pmagent --bridge --delete

You will be prompted interactively to complete the deletion process.

```
1. Enter domain (default: DEMO):
```

- 2. Enter Active Directory username: Administrator
- 3. Enter *Administrator*@Demo's password:
- 4. Successful.

#### Cache - Default

pmagent --bridge --cache --user [Uu]ser\\*

- Using both Character casing and wildcard matching
- Following the successful authentication of an AD user to your \*nix host you can recall the cached information for that user.

Example output:

```
{
"Users:
```

Names: user1, user1, DEMO/user1, user1@DEMO.COM SID: S-1-5-21-4211583412-2907095826-1833522802-3465 uid: 446501, gid: 513 groups: Domain^Users

#### Cache - Full

Using both Character casing and wildcard matching.

Following the successful authentication of an AD user to your \*nix host you can recall the cached information for that user.

```
{
"users": [
     "usid": "S-1-5-21-4211583412-2907095826-1833522802-3465",
     "name": "user1",
     "adname": "user1",
     "sam": "DEMO/user1",
     "principal": "user1@DEMO.COM",
     "linked": 0,
     "uid": 446501,
     "gid": 513,
    giu 513,
"gecos": "user 1",
"home": "/home/DEMO/user1",
"shell": "/bin/bash",
"lastUp": 1594725372,
     "expires": -1,
     "data": {
       "userName": "user1",
      "userPrincipalName": "user1@Demo.com",
      "KerberosName": "user1@Demo.com",
"unixLoginName": "user1",
"unixLoginShell": "/bin/bash",
      "unixHomeDirectory": "/home/DEMO/user1",
      "uidNumber": 446501,
       "gidNumber": 513,
      "sid": "S-1-5-21-4211583412-2907095826-1833522802-3465",
       "gecos": "user 1"
       "description": null,
      "displayName": "user 1",
"groupDN": "CN=Domain Users,CN=Users,DC=Demo,DC=com",
      "groupDescription": "All domain users",
"groupDisplayName": "Domain Users",
      "nETBIOSDomainName": "DEMO",
       "passThrough": false,
      "linkedUser": false,
      "accountExpires": 4294967295,
      "passwordExpired": false,
       accountLocked": false,
      "accountDisabled": false,
       "accessDenied": false,
      "message": "Welcome user1 to the Thycotic Universal Bridge on AGENT1",
       "groups": [
```



#### Purge

pmagent --bridge --cache --user=[Uu]ser\* pmagent --bridge --cache --user

- This will purge all cached user and group information from the agent
- Follow a purge this is the output you would see from checking the user cache

{ "users": [] }

Global options (specifyglobal)	
options:	
(-h help)	display help
(-V verbose)	display verbose data
(-v version)	display version
(-N init)	(re)initialize the agent install
(-H hostid)	get the unique hostid
(-s setcfg) <var=val></var=val>	set agent configuration value
(-g getcfg) <var></var>	get agent configuration value
(-e exportcfg) [path]	export agent configuration
(-i importcfg) [path]	import agent configuration
(-1 listsvcs)	list agent services

#### Prerequisites

Users need to have root access or root sudo permissions.

#### Agent Global Commands

Once your Thycotic Agent has been installed you have a number of Global options available which can be run directly after typing **pmagent** and are identified below.

-h Ihelp	Displays the pmagent options output	
-VI verbose	Displays verbose data	Normally used in conjunction with options such as -v
-v I version	Displays the installed version of the Thycotic agent	Example output: 1.0.0
-N Iinit	Re-initializes the agent installation	The agents configuration settings are all stored in letclpma.conf in the event this file is removed or you wish revert to a default configuration as per the installation then this option will regenerate the pma.conf
-HI hostid	Displays the unique host ID	Displays the unique value created by the operating system that identifies the machine.
-sl setcfg <var=val></var=val>	Updates an individual agent configuration setting	The variable component is in the format of section.field=new value
		Example of use: pmagent -s main.loglevel=debug

-g l getcfg	Displays an individual agent configuration setting	The variable component is in the format of section.field=new value
		Example of use: pmagent -g main.loglevel
		The output will displayed as: main.loglevel=warning
-el exportcfg [path]	Exports the current agent configuration in ini format	Without the path defined will display all the current configuration settings of the agent to screen.
		Using the path option, all the current configuration settings of the agent will be exported to the file you define in a readable ini format
-i l importcfg [path]	Imports an updated set of agent configuration settings from a specified file in ini format	Import files are required to be in the same format as the export If no file is defined in the command line the user is entered into an editor mode, where it you can define configuration settings.
		Once entered into the editor you define the settings by entering the settings as per the expected format. To complete the edit and exit the user will press the letter d along with holding down the CTRL key. A success message should be displayed to inform that the update was successful.
		<pre>[root@Bumblebee ~]# pmagent -i [main] loglevel=debug ^d Successful.</pre>
-1   listsvcs	lists the agent services currently active on the agent	Detailed information regarding the different services the Thycotic agent is currently providing and monitoring.

Example of \_\_\_\_I -- listsvcs\_\_\_global command following the install of pmagent:

task: pmagent\_registration key: register when: 2020-06-22 08:00:56 reoccurs: 60s maxretries: forever backoff: yes attempts: 0 expires: 2262-04-12 00:47:16 last tried: never

## Identity Bridge Configuration Utility

The ID Bridge Configuration Utility allows the setting of values used in the Thycotic panels under Active Directory User and Computers and User and Group Properties.

These values are used to enable the ID Bridge to manage the user authentication from Linux/Unix hosts to Active directory.

The ID Bridge Configuration Utility will allow Global setting of all values and selected values at an OU level. Below are all panels that appear under the ID Bridge Configuration Utility, each page outlines the functionality of the Panel

Default settings of values for User, Group, and OU attributes, including starting Id's, default home and shell parameters.

Assign Active directory groups at a global level to allow or deny login access to your Linux/Unix hosts.

Defaults for setting agent specific values, including Cached Logins, time sync, home directory permissions, and character separators.

Allow Active directory values to be mapped to Thycotic ID Bridge fields. For example based on AD terms, Display Name is mapped to Unix Username.

Sets the amount of time the local Linux/Unix agent will store a copy of the users password within the agent's encrypted database. This is required in the event the Agent is unable to contact AD to verify the users credentials.

Allows the ID Bridge user to configure the custom attribute variables for use within the Default User & Group Settings.

Provide a list of local user accounts that will automatically bypass the Identity Bridge portion of the authentication stack.

Licensing panel to view, add, and remove Thycotic ID Bridge licenses.

Allows the Linux/Unix host to utilize SysLog functionality, either logging the agent information locally or to a defined remote SysLog server.

Allows custom messages to be defined. The messages are displayed to user when accessing the Linux/Unix hosts.



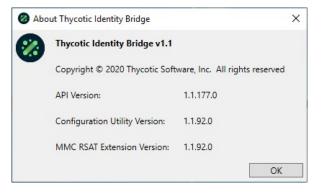
Shows an overview of where all Thycotic Identity Bridge configuration objects are stored in Active Directory.

Used to configure how Users and Groups are displayed.

The File Menu of the configuration utility offers options like:

- Location: Opens the location selector.
- Refresh: Refreshes configuration utility data.
- Restore all Defaults: Restores the utilities data to default values.
- Export Changes to File: Audit feature, only exports the changed values in the application.
- Go to Global Configuration: If user is not already in the global configuration selecting this option navigates to it.
- Export Backup
- Import Backup

To view information about component versions of the Thycotic Identity Bridge, navigate to Help and select About.



Default settings of values for User and Group attributes, including starting ID's, default home and shell parameters.

Thycotic Identity	Bridge for A	ctive Directo	ory Cor	figuration		-		×
ile Help								
Logging C	ustom Text	Licens	se	Exclusion	ns	Custo	m Vari	ables
Access Control Lis	t OU O	verride	Servi	ce Accounts	s	User/Gro	oup Na	aming
General	Attribute	Mapping		Agent S	ettings		Ca	che
Use this tab to con and Groups in the configuration set o Computers	selected cont	ainer and a	ll child	container u	inless t	here is a	defau	lt
Default User Settin	ngs							
Starting UID:		1000000	)					
Default Unix Hon	ne Directory:	[systemh	nome]/	[domain]/[u	isernar	ne]	+	0
Default Login Sh	ell:	/bin/bas	h				+	0
POSIX Data for U	sers:	Automa	tic	Ŷ				
POSIX Data for G	roups: Au	itomatic		*				
Default Computer		Chi C					_	
Default Compute	er Container:	CN=Com	puters				Se	elect
Currently Configu	ring: Gla	bal Configu	iration					
Domain Controlle	r: <u>DC</u>	101.demo.co	om		Show	Configu	ration	Objec
				OK	Δ.	oply		ancel

## **Default User Settings**

### Starting UID

The starting UID that will be taken as starting point for all uid assignments.

- Default: value should be 1000000
- Only positive numeric characters can be set
- A maximum of 9 numeric characters can be used

#### **Default Home Directory**

The Home Directory Path that be used for users when logging into the Linux/Unix host.

• Default: [systemhome]/[domain]/[username]

### Default Login Shell

The Shell that will be assigned to the user when logging into the Linux/Unix host.

• Default: /bin/bash

### **POSIX Data for Users**

Defines if User POSIX data to be defined by Active Directory before Users are able to login into the Linux/Unix Hosts.

- Default: Automatic
- Automatic If there is no POSIX data on the user in Active Directory (i.e. No UID/Shell/Home Dir), then generate POSIX data for the user during authentication.
- Manual POSIX data will need to be specified for each User in ADUC before being able to authenticate to Linux/Unix Hosts
- Always Always generate POSIX data during authentication, even if POSIX data has been set on user object

### **Default Group Settings**

### Starting GID

The starting GID that will be taken as starting point for all GID assignments.

- Initial Starting GID: value should be 1000000
- Only positive numeric characters can be set
- A maximum of 9 numeric characters can be used

### **POSIX Data for Groups**

Defines if Group POSIX data to be defined by Active Directory before Users are able to login into the Linux/Unix Hosts.

- Default: Automatic
- Automatic If there is no POSIX data on the group in Active Directory (i.e. No GID), then generate POSIX data for the group during authentication.
- Manual POSIX data will need to be specified for each Group in ADUC before being able to authenticate to Linux/Unix Hosts.
- Primary Group Only Generate GID for users primary group if Primary Group does not have an existing GID.
- Always Always generate POSIX data during authentication, even if POSIX data has been set on group object.

## **Default Computer Settings**

### **Default Computer Container**

Defines the default OU container for Linux/Unix Hosts joining the Active Domain.

• Default: CN=Computers

Assign Active directory groups at a Global level to allow or deny login access to your Linux/Unix hosts.

If the Access Control List is empty All users are granted allow permissions.

For best practice a group should contain both user and computer objects, to create an effective Access Control List.

Thycotic Identity Bridge	for Active Director	y Configurati	on —	
ile Help				
General Attribute Mappin	ng Agent Setting	s Cache L	ogging Cust	om Text License
Exclusions Custom Varia	ables Access Co	ntrol List C	U Override	Service Accounts
Use this tab to configure A is a global setting. Also no permissions Global Access Control Set Allow logon when no AG	te that if this list is			
Access Control List				
			Add Acce	ess Control Entry
Filter Access Control Entries				
User Accounts	Unix/Lin	ux Hosts	Denied	Expand
Test Access of User/Com	<u>guter</u> Global Configura	ation		
Domain Controller:	DC101.demo.cor			
<u>Undo Changes</u>			Show Con	figuration Objects
		OK	Apply	Cancel

## **Global Access Control Settings**

#### Allow logon when no ACL defined

Allows all Active Directory users logon permissions to all registered Linux/Unix hosts

- Default Allow logon when no ACL defined value: Enabled
- Once an ACL is defined, this option will become disabled and all access is controlled through the ACL definitions

### Access Control List

Thycotic Identity Bridge	for A	Active Directory	Configura	ation	-	- 55	
e Help							
eneral Attribute Mappir	ng	Agent Settings	Cache	Logging	g Cu	stom Te	ext Licen
xclusions Custom Varia	ables	Access Con	trol List	OU Ove	rride	Servi	ce Account
Jse this tab to configure A s a global setting. Also no permissions Global Access Control Set Allow logon when no AC	ote th	at if this list is a					
Access Control List					44.0		atural Faster
Filter Access Control Entries				A	aa Aco	ess Co	ntrol Entry
User Accounts		Unix/Linu	v Hosts	De	enied	E,	pand
DEMO\Demo 1						0	
		L DEMO\Do					
LEMO\Domain User	st	DEMO\cen	tos7.dem	<u></u>			
LEMO\Domain Use	f		main Adm				
	pute						
Test Access of User/Comp							
		obal Configura	tion				
Test Access of User/Comp Currently Configuring: Domain Controller:	GI	obal Configura 101.demo.com					
Currently Configuring:	GI			<u>Sh</u>	now Co	nfigura	tion Objec

#### Add Access Control Entry

Opens a modal to define User or User Group and Host or Host Group definitions for individual ACLs.

• An ACL must be unique combination

Filter

Allows filtering of exiting ACLs defined in the display panel

#### Panel

Displays that ACL combinations of Users and Hosts defined at a Global level.

- Once an ACL has been defined all access must abide by ACL rules.
- By default when an ACL is added permission for the ACL is enabled.
- Denied When selected login access to the user host combination will be denied.
- Expand When selected will display nested groups in the ACL report on the Unix/Linux Hosts.

#### Test Access of User/Computer

Test utility provided by Thycotic that reports access of users to computers against the defined ACLs.

Interface with Unix/Linux agents to manage settings that are passed to each agent.

		COLUMN TO NO.				
Exclusion			ontrol List	OU Overric		Accounts
General	Attribute Mappir	g Agent Settin	gs Cache	Logging	Custom Text	License
Linux Age Authenti	cation Settings	ow authentication	n is handled	on the Thyo	otic Identity	Bridge
Time Sy	ync: [	$\checkmark$				
Global U	ser/Group Defau	ts				
Expand	Group Members	hip 🗌				
Force H	lome Directory O	wnership:				
Recurse	e Files/Folders:					
GID/UID	Generation					
UID Ge	neration Mode:	Algorithmic		۷.	0	
Separato	or Characters					
Replace	ement character f	or names with spa	aces: ^		~	
Currently	y Configuring:	Global Configu	ration			
	y Configuring: Controller:	Global Configu DC101.demo.cc				

## Authentication Settings

#### Allow Cached Logon

Allows Active Directory Users to access Unix/Linux hosts using the encrypted cached information stored on the host

- A user must of logged onto the Unix/Linux Host previously for a cache entry to of been created.
- Default: Enabled.

#### Time Sync

Updates the Unix/Linux Hosts date & time to be the same as the Domain Controller of the Active Directory.

- Synchronises date and Time upon the host joining the Domain
- Enables a service on the host to keep the time within a minute of the Domain Controller
- Default value for Time Sync: Enabled

### **Global User/Group Defaults**

#### **Expanded Group Membership**

Displays Active Directory Users extended group memberships when logged into the Unix/Linux hosts.

- When Disabled, the logged in Active Directory user will only see the groups the user is a member of directly.
- When Enabled, the logged in Active Directory user will also see any additional groups the users assigned groups are members of.
- Default: Disabled

#### Force Home Directory Ownership

When Active Directory users log into the Unix/Linux hosts the home directory ownership will be forcibly set to be owned by the user logging in.

• Default: Disabled

### **Recurse Files/Folders**

Used in conjunction with Force Home Directory Ownership, when enabled all files and folders within the user's home directory will also have the ownership set to the Active Directory user logging into the Unix/Linux host.

- Can't be enabled unless Force Home Directory Ownership is enabled
- Default: Disabled##GID/UID Generation

#### **UID Generation Mode**

Defines the format in which the UID and GID will be generate starting from the defined Starting ID values.

- Incremental Will select the next ID available ID for user or group starting from the defined id
  - If a value has been previously assigned and removed it will not be added back to the available pool
- Default: Algorithmic

Provide the ability to directly map existing Active Directory fields to Thycotic ID Bridge fields.

We provide the ability to map attributes in the event a customer is leveraging a third party product in the AD environment that is already leveraging that value.

License	Excluded Users	Custom Va	riables	Access Co	ntrol List	OU Overrid
General	Attribute Mapp	ing Agent	Settings	Cache	Logging	Message
Use this ta Mapping	ab to configure ho s	w Thycotic Ide	ntity Bridg	e stored da	ta in Active	Directory
UID Nu	mber:	uidNumber			Select	
GID Nu	mber:	gidNumber			Select	
Home [	)irectory:	unixHomeDire	ectory		Select	
Unix Us	ername:	uid			Select	
GECOS:		gecos			Select	
Unix Lo	gin Shell:	loginShell			Select	
Group A	Alternate Name:	displayName			Select	
Group (	GID Number:	gidNumber			Select	
Group [	Description:	description			Select	
Currenthe	Configuring	Global Config	iration			
Currently	Configuring:	Global Config	uration			

## **UID Number**

The UID Number assigned to the Active Directory user

- Default value: uidNumber
- Thycotic value
- ADUC I User Properties I Thycotic I UID Number

### **GID Number**

The GID Number assigned to the Active Directory Group

- Default value: gidNumber
- Thycotic value
- ADUC I Group Properties I Thycotic I GID Number

## **Home Directory**

- Default value: unixHomeDirectory
- Thycotic value
- ADUC I User Properties I Thycotic I Home Directory

### Unix Username

- Default value: uid
- AD value
- ADUCIUser

### GECOS

- Default value: gecos
- Thycotic value
- ADUC I User Properties I Thycotic I Comment (GECOS)

### **Unix Login Shell**

- Default value: loginShell
- Thycotic value
- ADUC User Properties Thycotic Login Shell

## **Group Alternative Name**

- Default value: groupAltName
- Thycotic value
- ADUC Group Properties Thycotic Alternative Group

### **Group GID Number**

- Default value: gidNumber
- Thycotic value
- Querying

## **Group Description**

- Default value: description
- Thycotic value
- ADUC Group Properties Thycotic Description

Configures how the Thycotic Identity Bridge caches account information, values are sent down to the \*nix Identity Bridge every 5 minutes or upon restart of the Agent.

The Cache tab contains two values:

- Agent Cache Expiry Time (days)
- Agent Cache Update Time (seconds)

These values are configurable.

Thycotic	c Identity Bridge	for Activ	e Directory Con	figuration		
File Help						
License	Exclusions	Custor	m Variables	Access Cor	ntrol List	OU Override
General	Attribute Map	ping	Agent Settings	Cache	Logging	Custom Text
Agent Ca Agent C	ıb to configure h che ache Expiry Time ache Update Tin	e (days):	30 7200	bridge cach		ntormation.
Currently	Configuring:	Global	Configuration			
	Controller:					
Domain	ontroller:	DCTUT	lemo.com		Show Config	uration Objects
				ОК	Apply	Cancel

## Agent Cache Expiry Time (days)

Sets the amount of time until the Agent Cache expires on a local system.

Default: 30 days

## Agent Cache Update Time

Sets the amount of time the local Linux/Unix agent will store a copy of the users password within the agent which can be used in the event the Agent is unable to contact AD to verify the users credentials. This value is user configurable, except when a trial license is in use. When licensed the Configuration Utility will enable the field and set the agents to use a default value of 7200 seconds. The field is disabled when the Identity Bridge is running with a Trial license and a hard coded value of 10 seconds on the \*nix Agents, although the Configuration Utility will display the licensed default value.

• Default value: 7200 seconds with permanent key; 10 seconds with trial key

pmagent -s bridge.cachestale=7200

The Custom Text tab allows custom messages to be defined, that will be displayed to user when accessing the Linux/Unix hosts.

The following options are available:

- Password Prompts
- Friendly Messages
- <u>Warning Messages</u>
- <u>Access Control Messages</u>

Password message types can be customized via the Custom Text tab in the configuration utility.

Select Password Prompts from the drop-down options.

License	Exclusions	Custom V	ariables	Access Co	ntrol List	OU Override
General	Attribute Map	ping Age	ent Settings	Cache	Logging	Custom Tex
Use this ta Linux Age	b to configure contigure continue content of the second second second second second second second second second	ustom mess	ages display	ed on the T	hycotic Iden	tity Bridge
Password	Prompts	~				
Password	Prompts					
Active D	irectory		Active Dire	ectory Pass	word:	
Local Sy	stem:		Local Pass	word:		
Other			Other Pass	word:		
Old Acti	ve Directory Pass	sword:	Current Ad	tive Directo	ory Password	Ŀ
New Ac	tive Directory Pas	sword:	New Activ	e Directory	Password:	
Confirm	Active Directory	Password:	Confirm New Active Directory Password:			
Passwor	d Policy Violation	n:	The new p	assword en	tered does r	not meet the
Currently	Configuring:	Global Col	nfiguration			

Note: Custom Variables cannot be used in the message fields.

### **Active Directory**

Password prompt text displayed to Active Directory users when logging into Linux/Unix host

Default Active Directory value: Active Directory Password

## Local System

Password prompt text displayed to locally defined Linux/Unix users when logging into Linux/Unix host.

• Default Local System value: Local Password:

## Other

Password prompt text displayed when user accessing Linux/Unix host via 3rd party remote user credential service.

• Default Other value: Other Password

### **Old Active Directory Password**

Displayed when Active Directory users are changing their password on the Linux/Unix host.

- Request to define users existing password
- Default Old Active Directory Password value: Current Active Directory Password

## **New Active Directory Password**

Displayed when Active Directory users are changing their password on the Linux/Unix host.

- Request to enter a new password
- Default New Active Directory Password value: New Active Directory Password:

## **Confirm New Active Directory Password**

Displayed when Active Directory users are changing their password on the Linux/Unix host.

- Request to confirm new password
- Default Confirm New Active Directory Password value: Confirm New Active Directory Password

## **Password Policy Violation**

Displayed when Active Directory users are changing their password and the new password does not meet the Active Directory policy requirements.

- Request to meet the AD password policy requirements
- Default: The new password entered does not meet the password policy defined in Active Directory.

Friendly Message message types can be customized via the Custom Text tab in the configuration utility.

Select Friendly Messages from the drop-down options.

License	Exclusions	Cust	om Variables	Access Co	ntrol List	OU Override
General	Attribute Mapp		Agent Settings	Cache	Logging	Custom Tex
Jeneral	Attribute Mapp	ing	Agent Settings	Cache	Logging	Custom lex
Jse this ta inux Age		istom i	nessages display	ed on the Ti	hycotic Iden	tity Bridge
Friendly N	lessages		~			
Message	;					
Welcom	e Message:		Welcome [	username] t	o the Thyco	tic Identity
	ation Messages					
Show	Friendly Messag	es				
Account	Disabled:		User accou	unt (usernar	ne] is disable	ed in Active
Account	: Locked:		User accou	unt (usernar	ne] is locked	in Active D
Access (	Control Deny:		No valid A	ccess Contr	ol List (ACL)	found for u
Account	: Expired:		User accou	unt [usernar	ne] has expi	red in Activ
Invalid F	assword:		Invalid Act	tive Director	y Password	
User No	t Found:		User accou	unt [usernar	ne] not foun	id in Active
	Configuring:		al Configuration			
A COLLEGE IN L	ond oner:	DCIU	aemo.com			

### Welcome Message

Message displayed to all Active Directory users as they login to the Linux/Unix Hosts

- Supports customer variables in the message field, such as [username] and [hostname]
- Default Welcome Message: Welcome [username] to the Thycotic Identity Bridge on [hostname]

#### **Authentication Messages**

Messages displayed to all Active Directory users when various Active Directory states are discovered upon logging into Linux/Unix hosts.

• Supports customer variables in the message field, such as [username] and [hostname]

#### **Show Friendly Messages**

Option to enable/disable all Authentication messages.

- With trial license in place, option will be defaulted to enabled.
- With a perpetual is license applied, option will be defaulted to disabled, but it can be enabled.

#### Account Disabled

Displayed when Active Directory user has been disabled within ADUC.

• Default Account Disabled value: User account [username] is disabled in Active Directory

#### Account Locked

Displayed when Active Directory user account has become locked through to many invalid password attempts.

• Default Account Locked value: User account [username] is locked in Active Directory

### Access Control Deny

Displayed when the Active Directory user does not have a valid Access Control list entry within the Thycotic Configuration Utility.

• Default Access Control Deny value: No valid Access Control List (ACL) found for user [username] on [hostname]

### Account Expired

Displayed when Active Directory user account has passed defined Account expiry value in ADUC.

• Default Account Expired value: User account [username] has expired in Active Directory.

#### Invalid Password

Displayed when Active Directory user enters an invalid password.

• Default Invalid Password value: Invalid Active Directory Password

### **User Not Found**

Displayed when username entered can not be found within Active Directory.

• Default User Not Found value: User account [username] not found in Active Directory

Warning Messages message types can be customized via the Custom Text tab in the configuration utility.

Select Warning Messages from the drop-down options.

License	Exclusions	Custo	om Variables	Access Co	ontrol List	OU Override
General	Attribute Mapp	oing	Agent Settings	Cache	Logging	Custom Tex
Jse this ta inux Age	ab to configure cu nt.	ustom r	nessages display	ed on the T	hycotic Ident	tity Bridge
Warning I	Messages		~			
Warning	Messages					
Home D	Home Directory Ownership: No Required POSIX Data:		Home direc	tory detect	ed with diffe	rent user pe
No Req			Required PO	OSIX data n	ot found for	user [usern
Change	Shell Disallowed	2	Active Direc	tory users	are not allow	ed to chan
Currently	Configuring:	Globa	Configuration			

Messages displayed to all Active Directory users when configuration discrepancies occur.

• Supports customer variables in the message field, such as [username] and [hostname]

## Home Directory Ownership

Displayed when Active Directory user logs into Linux/Unix host and home directory location exists, but with different ownership rights.

• Default Home Directory Ownership value: Home directory detected with different user permissions

## No Required POSIX Data

Displayed when Active Directory users require POSIX data to be defined in ADUC before being able to access Linux/Unix hosts.

• Default No Required POSIX Data value: Required POSIX data not found for user [username]

## **Change Shell Disallowed**

Displayed when the Active Directory user attempts to change their Linux/Unix default shell type.

• Default: Active Directory users are not allowed to change their assigned shell.

Access Control Messages message types can be customized via the Custom Text tab in the configuration utility. These message can be displayed when running the ACL report command from the Linux/Unix agent.

Select Access Control Messages from the drop-down options.

License	Exclusions	Cus	tom Variables	Access Co	ntrol List	OU Override
General	Attribute Map		Agent Settings	Cache	Logging	Custom Text
Jse this <mark>t</mark> Linux Age		ustom	messages display	ed on the T	hycotic Ident	tity Bridge
Access Co	ontrol Messages		*			
ACL Mes	sages					
No Use	rs:	N	o Active Directory	users are a	llowed to log	gin to this h
All User	5:	A	II Active Directory	users are a	llowed to log	in to this h
Bridge	Jsers:	A	ctive Directory use	ers with PO	SIX data are a	allowed to I
Select L	Jsers:	Li	sted Active Direct	ory User(s)	and Group m	embers are
Select B	ridge Users:	Li	sted Active Direct	ory User(s)	and Group m	embers wit
	Configuring:		al Configuration			

The following message are displayed when the ACL report is run on the Linux/Unix agent by performing the following command: pmagent -- bridge --acl

## No Users

Message displayed when No Active Directory users have access to the Agent running the ACL report.

Default	No Active Directory users are allowed to login to this host.
Settings	Allow Logon when no ACL Defined: Disabled
	Access Control List: No ACL defined for user/host
General	POSIX Data for Users & Groups: Manual/Automatic

## All Users

Message displayed when all Active Directory users have access to the Agent running the ACL report.

Default	All Active Directory users are allowed to login to this host.
Settings	Allow Logon when no ACL Defined: Enabled
	Access Control List: No ACL defined for user/host
General	POSIX Data for Users & Groups: Automatic

## **Bridge Users**

Message displayed for Active Directory users with POSIX data defined and have access to the Agent running the ACL report.

Default	Active Directory users with POSIX data are allowed to login to this host.
Settings	Allow Logon when no ACL Defined: Enabled
	Access Control List: No ACL defined for user/host
General	POSIX Data for Users & Groups: Manual

## Select Users

Message displayed when Active Directory users and group members defined within the configuration utility ACL panel have access to the Agent running the ACL report.

Defau	It Listed Active Directory User(s) and Group members are allowed to login to this host.
Settin	gs Allow Logon when no ACL Defined: Enabled (not changeable)
	Access Control List: No ACL defined for user/host

General	POSIX Data for Users & Groups: Automatic

## Select Bridge Users

Message displayed for Active Directory users and group members defined within the configuration utility ACL panel with POSIX data defined to have access to the Agent running the ACL report.

Default	Listed Active Directory User(s) and Group members with POSIX data are allowed to login to this host.
Settings	Allow Logon when no ACL Defined: Enabled (not changeable)
	Access Control List: No ACL defined for user/host
General	POSIX Data for Users & Groups: Manual

Use this tab to configure the custom attribute variables for use within the Default User & Group Settings. Please note that these settings are global to the entire enterprise.

se this tab to configure the custom attribute macros for use within the Default User & roup Settings. Please note that these settings are global to the entire enterprise.  Custom Variable  Custom Variable AD Attribute [username] [name] [domainname] [domainname] [shell] Global Configuration	Access Contro	l List	OU OV	verride	Servi	ce Accour	nts	User/Gro	up Naming
se this tab to configure the custom attribute macros for use within the Default User & roup Settings. Please note that these settings are global to the entire enterprise.  Custom Variable          Custom Variable       AD Attribute         [username]       [name]         [home]       [domain]         [domainname]       [shell]	General		Attribute	Mapping		Agent	Settings		Cache
roup Settings. Please note that these settings are global to the entire enterprise.          Custom Variable       Add Variable         Custom Variable       AD Attribute         [username]       Image:	Logging	Cust	tom Text	Licen	se	Exclusio	ons	Custor	m Variables
Custom Variable AD Attribute   [username]   [name]   [domain]   [domainname]   [hostname]   [shell]	roup Settings.	Please						ire enterp	orise.
[name]   [home]   [domain]   [domainname]   [hostname]   [shell]	Custom	Variat	ole	AD A	ttribut	e		1	
[home]   [domain]   [domainname]   [domainname]   [hostname]   [shell]	[username]								
[domain]   [domainname]   [hostname]   [shell]	[name]								
[domainname]         [hostname]         [shell]	[home]								
[hostname] [shell] urrently Configuring: Global Configuration	[domain]								
[shell]	[domainna	me]							
urrently Configuring: Global Configuration	[hostname]	]							
	[shell]								
omain Controller: DC01.reds.com	urrently Conf	igurin	g: Glol	bal Configu	iration				
			DCO	1.reds.com					

## Add Variable

Adds a new line to the panel and allows you to define a variable name and then select from a list of Active Directory attributes and define a single attribute mapping per variable.

### Defaults

A number of predefined default variables have been added by Thycotic, these are also used in the Messages panel.

Allows to provide a list of local and domain user accounts that will automatically bypass the Identity Bridge portion of the authentication stack. This excludes the domain the configuration utility is connected to.

Groups are masked from the list. It's possible to define individual or ranges of UIDs and GIDs to be excluded.

		for Active Director	ry Configura	ation	3 <u>—</u> 3	
e Help						
eneral /	Attribute Mappin	g Agent Setting	s Cache	Logging (	Custom T	ext License
xclusions	Custom Varia	bles Access Co	ntrol List	OU Override	e Servi	ice Accounts
he auther Group(s) v JID Numb plocked w	ntication stack. will be masked fro per(s)\GID Numbe	omains to automat om the user group er(s) can be define UID Number\GID uters.	o list. ed as individ	dual values or	ranges a	and will be
Exclusion	5					Add
Filter Excl	usions					
	Туре		Name		Re	move
User	r(s) v	root			Re	move
Currently	Configuring:	Global Configur	ation			
	Configuring: Controller:	Global Configur DC101.demo.col		Show	Configur	ation Object

## User and/or Group Exclusions

Add

Open a text based modal where the Linux/Unix username can be defined and added to the list of excluded user.

Filter

Allows the defined excluded user list to be filtered.

## **Exclusions Panel**

The panel shows the applied exclusions types, the values assigned and an option to remove.

### User(s)

Users will automatically bypass the Identity Bridge portion of the authentication stack on the \*nix agents.

- Users can be defined singular or by a comma separated list
- Both Local and Active Directory users can be defined
- Default: root
  - By default the root user will always bypass the Identity Bridge portion of the authentication stack on the \*nix agents.

#### UID(s) Number

UID value/range will be excluded as an applicable value as UID Number in the Thycotic User Data extension of ADUC.

• UID numbers can be defined as a single value, comma separated list or range of values.

#### GID(s) Number

GID value/range will be excluded as an applicable value as UID Number in the Thycotic User Data, Thycotic Group Data and Thycotic Overrides extensions of ADUC.

• GID numbers can be defined as a single value, comma separated list or range of values.

#### Domain

Users defined within the domain will automatically bypass the Identity Bridge portion of the authentication stack on the \*nix agents.

- The domain is required to be defined in full FQDN format, for example: child.demo.com.
- Exclusion will not apply to the root domain the Configuration Utility is connected to.

### Group(s)

Defined Groups will be masked from the Active Directory users group list on the \*nix agent.

• Groups can be defined singular or by a comma separated list.

Licensing Panel to view, add, and remove Thycotic Identity Bridge Licenses.

- Multiple licenses can be applied
- Licenses apart from the Trial license can be removed

	Attribu	te Mappin	g Agent Se	ttings Cache	Logging	Message
icense	Exclude		Custom Varia		ontrol List	OU Overrid
icense	Exclude	u osers	Custom vana	Dies Access ci		ou overnu
se this t	ab to man	age license	es. You can view	v, install and remo	ve licenses.	
icense						
Summa	ary					
5 agent You hav	(s) are cur	rently cons e(s) remain	f 10 agents. suming a licens ing for new age		Adi	d new license
E	xpiry	Agen	ts Allocate	ed Details	R	emove
	02/2020	10	5	View	Re	emove

### **Default Trial License**

By default installing the Thycotic Identity Bridge a 10 agent Trial license is provided with a 30 day expiry.

## Add new license

Provides a modal to allow addition of Thycotic allocated licenses.

Allows the Linux/Unix host to utilize SysLog functionality, either logging the agent information locally or to a defined remote SysLog server.

		-				
License	Exclusions		tom Variables	Access Co		OU Override
General	Attribute Mapp	ping	Agent Settings	Cache	Logging	Custom Tex
to a Syslog Logging Turn on Log Suc Log Sen	g server. syslog: cessful/Failed Au d Friendly Messa d Warning Messa	thenti iges:	Cations:	Bridge Linu	x Agent logs	· information
Facility:	1		Auth			Ŷ
Туре:			Local			~
	syslog server:		0			_
Remote	syslog port:		0			-
	Configuring:		al Configuration			

**Note**: Making changes to the syslog settings in the Configuration Utility, will also require a restart of the \*nix Agent for the updated settings to take effect.

## Logging

## Turn on SysLog

Defines if Agent logging also sent to SysLog as well as existing agent pmlog.

• Default: Disabled

#### Log Successful/Failed Authentications

Sends Active Directory Authentication outcomes to the syslog.

• Default: Disabled

### Log Send Friendly Messages

Send Friendly Messages displayed to users to syslog.

• Default: Disabled

### Log Send Warning Messages

Send Warning Messages displayed to users to syslog.

• Default: Disabled

### Protocol

The communication protocol used to send Linux/Unix host information to SysLog.

• Default: TCP

### Facility

Defines the Linux\Unix host process component that will be sent to the SysLog.

• Default: Auth

### Туре

Defines if Linux\Unix host will use a local or remote SysLog server.

- Default: Local
- If remote selected the Remote SysLog server and Remote SysLog port fields will become enabled.

### Remote SysLog Server

Defines the address of the remote SysLog server to which the Linux/Unix hosts send their defined SysLog information.

- Default: Blank
- When enabled defined by the resolvable host name or IP address.

### Remote SysLog Port

Defines the port SysLog uses for communication.

• Default: 0

Shows an overview of where all Thycotic Identity Bridge configuration objects are stored in Active Directory.

e Help							
General	Attribute Mappir	ng Agen	t Settings	Cache	Logging	Mess	age
License	Excluded Users	Custom Va		Access Co		OU Ove	-
OU Typ	e: Global						
Resto	ore ALL Settings						
		l Blobal Confi <u>c</u>	guration				
Currently	Configuring: 0	Global Confi <u>c</u>		1e			

## **Configured OUs**

### Filter

Allows filtering of Configured OU's defined in the display panel.

#### **Restore ALL Settings**

Will restore all configuration settings back to defaults, as if clean install has been performed.

Service Accounts allow to define Active Directory accounts across different domains that Identity Bridge can utilise to function effectively across multi-domain environments.

Thycotic Identity Bridge for	or Active Directory Configu	ration	>
e Help			
eneral Attribute Mapping	Agent Settings Cache	Logging C	ustom Text Licens
xclusions Custom Variab	les Access Control List	OU Override	
Credentials that Thycotic Ide Configured Credentials	entity Bridge can use for in		nality Id New Credential
Filter Credentials			
Target	Usernan	ne	Remove
Currently Configuring:	Global Configuration		
Currently Configuring:			
	Global Configuration DC101.demo.com	Show (	Configuration Object

## **Configured Credentials**

#### Add New Credentials

Opens a new modal that allows to define the domain, username and password of the credentials to access domains within the Active Directory environment.

### Filter

Allows filtering of existing Credentials defined in the display panel.

## Panel

Displays the Target Domain and Username for the Configured Credentials. A remove option is available.

Note: Defined Configured Credentials won't be included in Identity Bridge Configuration exports.

Used to configure how Users and Groups are displayed.

General	Attribut	e Mapping		Agent Settir	ngs	Cache
Logging	Custom Text	Lice	nse	Exclusions	Cust	om Variables
Access Contro	ol List OU C	Override	Serv	ice Accounts	User/G	roup Naming
Bridge Agent Separator Cha Space Replac Domain/Use	ement Characte		* *	re displayed in i	the Thyco	ac identity
User Name Fo	rmatting					
User Unique	ness Processing:	Autom	atic	*		
User Unique	ness Format:	Domain	n/User	~		
Group Name I	Formatting					
Group Uniqu	eness Processin	g: Auto	matic	,		
Group Uniqu	eness Format:	Dom	ain/Gro	up ~		
Currently Con Domain Contr		obal Confi <u>c</u> 101.demo.				

### **Separator Characters**

#### Space Replacement Character

Defines how spaces in User and Group names will be displayed on the Unix/Linux hosts.

Default: ^

### Domain/User Separator

Defines how the separator between the Domain and User name is displayed.

#### Default: *I*

#### Domain/Group Separator

Defines how the separator between the Domain and Group name is displayed.

Default: *I* 

### **User Name Formatting**

#### User Uniqueness Processing

Defines how Identity Bridge will process Duplicate Active Directory usernames when user logs into the Unix/Linux Hosts

- Default: Automatic
- Never Ignore Duplicate users
- Automatic Generates a unique user name by adding or appending the domain information to the user for all domains except for the joined domain.
- Only Duplicates Generates a unique user name by adding or appending the domain information to the user when a duplicate name is detected.
- Always Generates a unique user name by adding or appending the domain information to the user for all domains.

#### User Uniqueness Format

Defines the order in which the Active Directory username will be displayed on the Unix/Linux Host when the Active Directory username is duplicated due to a Multi Active Domain environment

- Default: Domain/User
- The selection will reflect the defined Domain/User Separator.

## **Group Name Formatting**

#### **Group Uniqueness Processing**

Defines how Identity Bridge will process Duplicate Active Directory groups with users logging into the Linux\Unix Hosts

- Default: Automatic
- Never Ignore Duplicate groups
- Automatic Generates a unique group name by adding or appending the domain information to the group for all domains except for the joined domain.
- Only Duplicates Generates a unique group name by adding or appending the domain information to the group when a duplicate name is detected.
- Always Generates a unique group name by adding or appending the domain information to the group for all domains.

#### **Group Uniqueness Format**

Defines the order in which the Active Directory group will be displayed on the Unix/Linux Host when the Active Directory username is duplicated due to a Multi Active Domain environment.

- Default: Domain/Group
- The selection will reflect the defined Domain/Group Separator.

### **Domain Controller Selector**

When the Configuration Utility is opened, it connects to the nearest Domain Controller according to the environmental setup in Active Directory Sites and Services.

Users can change the connected Domain Controller on their Configuration Utility pages. At the bottom of each utility tab is the Domain Controller information. Click on the link to select a different Domain Controller.

Thycotic Identity Bridge for Act	tive Directory Configuration —	
File Help		
Exclusions Custom Variables	Access Control List OU Override	Service Accounts
General Attribute Mapping Ag	gent Settings Cache Logging Custo	om Text License
and Groups in the selected conta	d Group defaults. These settings will app iner and all child container unless there i ainer or manually overriden in Active Dire	is a default
Default User Settings		
Starting UID:	1000000	
Default Unix Home Directory:	[systemhome]/[domain]/[username]	+ 0
Default Login Shell:	/bin/bash	+ 0
Check All Domains:	0	
POSIX Data for Users:	Automatic (Default) v	
Duplicate User Processing:	Only Duplicates v	
Duplicate User Format:	Domain\User v	
Default Group Settings		
Starting GID:	1000000	
POSIX Data for Groups:	Automatic (Default) v	
Duplicate Group Processing:	Only Duplicates v	
Duplicate Group Format:	Domain\Group v	
Default Computer Settings		
Default Computer Container:	CN=Computers	Select
	al Configuration	
		iguration Objects
	OK Apply	Cancel

A modal opens, displaying available Domain Controllers for the users environment.

Domain Controlle	r Selector		<u> </u>		>
Search					
Domain Controller	Site	Global Catalog	 		
DC101.demo.com	Default-First-Site-Name	True			
			OK	Ca	ance

The Thycotic Identity Bridge Configuration Utility provides the ability to Export and Import all settings from the Configuration Utility via a backup file (.IBBAK).

The functionality can be accessed view the File Menu and the menu items are **Export Backup** and **Import Backup**.

2	Thycotic Identity Bridge for Ac	tive Directory	Configuration -	- 🗆 ×
ile	Help			
	Location	Ctrl+O	I List OU Override	Service Accounts
	Refresh	Ctrl+F5	Cache Logging Cu	stom Text License
	Restore All Defaults	Ctrl+D	ts. These settings will a	only to all Users
	Export Changes To File	Ctrl+S	d container unless ther	
	Go to Global Configuration	Ctrl+G	ly overriden in Active D	irectory Users and
	Export Backup			
	Import Backup			
	Exit			
[	Default Unix Home Directory:	[systemhor	ne]/[domain]/[username]	+ 0
(	Default Login Shell:	/bin/bash		+ 0
(	Check All Domains:	0		
F	OSIX Data for Users:	Automatic	(Default) v	
[	Duplicate User Processing:	Only Dupli	cates v	
[	Duplicate User Format:	Domain\U	ser v	
De	efault Group Settings			
S	Starting GID:	1000000		
F	OSIX Data for Groups:	Automatic (	Default) v	
[	Duplicate Group Processing:	Only Duplic	ates v	
(	Duplicate Group Format:	Domain\Gr	oup v	
De	efault Computer Settings			
[	Default Computer Container:	CN=Compu	iters	Select
		10-0		
		oal Configurat		
00	man controller: DCI	01.demo.com		onfiguration Objects
				January Collecto
			OK Apply	y Cancel

#### **Export Backup**

Opens a modal to provide a location and name for the settings to be exported to.

- Any applied licenses will not be included in the export.
- Any accounts defined in the Service Accounts Panel will not be exported.

#### Import Backup

Provides a modal to select a previously created backup.

#### **Backup Files**

Backup files can be edited using a standard text editor. Exercise caution when modifying backup files as not to cause corruption.

**Warning**: Exporting and and Importing backups across different domains connected to the Identity Bridge Configuration Utility may cause unexpected behavior. Backups contain settings that are domain specific based on the domain they were created in and not all domains contain the same structures or information.



### ADUC Extension

The Thycotic Identity Bridge Extension provides Thycotic Panels in Active Directory Users and Computers (ADUC) MMC for a number of container types.

The Thycotic extension panel can accept settings from the ID Bridge Configuration Utility allowing certain fields to be pre-populated, although there is no dependency between the Utility and the Extension.

From the Thycotic panel you can manage fields independently as well as generate UID and GID values for users and groups respectively.

- Panel that allows you to manage the ID Bridge values on an individual user basis.
- This includes UID Number, primary group membership and additional Linux/Unix user attributes.

Panel that allows creation of an alternate username (logon alias) which can be used when accessing the Unix/Unix host.

- Panel that allows you to manage the ID Bridge values on an individual group basis.
- This includes GID Number, Description and additional Linux\Unix group attributes.

Allows override of some global POSIX user fields at the OU level.

Displays a list of all the Active Directory users that can access this computer and their associated user mapping name (username alias).

### Thycotic User Data

The Thycotic panels under user properties of ADUC allows you to manage the ID Bridge components related to Linux/Unix user attributes.

Member (	)f Dial-in	Envir	onment	Sessions	Remote control
	Remote Desktop Servic			003310113	COM+
General	Address	Account		Telephon	es Organization
Th	ycotic User [	Data		Thycotic Us	ser Mapping
Thycotic	Identity Bridg	e for Active	Directory		
configur These u (RFC 23		er data (POS were added	IX informat by Micros	ion) on each	
UID Nu	mber	A	uto Genera	ated (	Generate
Primary	Group	Do	o <mark>main Use</mark> n	S	
Primary	GID Number	51	301		
Home D	irectory	A	uto Genera	ated	
Login S	hell	A	uto Genera	ated	
Commer	nt (GECOS)	A	uto Genera	ated	
Cle	ear				

When the POSIX Data for the Users & Groups field in the Thycotic Configuration Utility is set to Automatic the user fields will be displayed with Auto Generated, meaning when the user accesses a Linux/Unix host the fields will automatically be generated.

Mousing over the fields will display the parameters that have been assigned to that field.

These fields can be manually overridden and will display as such once saved.

- This is the unique user id number to both the active directory forest and each AD user account for accessing Linux/Unix agents.
- The Generate button will create a unique UID Number in accordance to the chosen method for that user account.
- UID's will not be re-used
- The generated UID value will be greater than the Starting UID defined in the ID Bridge Configuration utility
- If the User has a UID Number the generate button will not create a new UID

David Curzo	on Properti	es				?	Х
Published C	ertificates	Member Of	Passwor	d Replica	ation	Dial-in	Object
Security	Er	vironment	Sess	ions	F	Remote c	ontrol
Re	emote Desk	top Services P	rofile			COM+	
General	Address	Account	Profile	Telepl	hones	Orga	nization
Attribute	Editor	Thycotic Us	ser Data	Th	nycotic	User Ma	apping
configure These us (RFC 23)	e specific us ser attribute 07) nux Acco	) that have be ser data (POSI s were added I unt Details	X informatio	on) on ea	ach us 2003 F	er object	
Primary C	Group	Linu	<u>ux Servers</u>	ACL			
Primary C	GID Number	943	72353				
Home Di	rectory	/ho	ome/DEMC	)/DCurz	on		
Login Sh	ell	/bi	n/bash				
Commen	t (GECOS)	Da	ve Curzon				
Clea	ar						
	0	к	ancel	Ap	oply		Help

The GID number of the Primary group assigned to the user under the Member of Panel of the User Properties.

- Defines the home location of the user when they log into the Linux/Unix agent.
- This is normally their landing folder.
- Defines the Linux/Unix shell that will be assigned to that user on login.
- Gecos is are short text fields in /etc/passwd of the Linux/Unix Agent that keeps the users real name

### Thycotic User Mapping

User Mappings create an alternate username (logon alias) which can be used when accessing Linux/Unix hosts. You may have one global mapping that applies to all hosts and one mapping per specified host.

Vindows <mark>T</mark>	est2 Prope	rties				?	×
Published (	Certificates	Member Of	Password	d Replica	ation	Dial-in	Object
Security	Er	nvironment	Sess	ions	F	lemote co	ontrol
R	emote Desk	top Services P	rofile			COM+	
General	Address	Account	Profile	Telepl	nones	Orga	nization
Attribute	Editor	Thycotic Us	ser Data	Th	vcotic	User Ma	pping
used wh	nen accessir	te an alternate ng Unix/Linux I s to all hosts ar	nosts. You	may har	ve one speci	global	
Unix l	Jsername	Unix	Compute	er Name	l	inked	
	0	к	ancel	Ap	ply		Help

Open a modal with a free text username field and optional hosts selection field.

### **Thycotic ID Bride - Computers**

The Thycotic Identity Bridge panel under group properties of ADUC, displays a list of all the Active Directory users that can access this computer and their associated user mapping name (username alias).

Agent-1	Prope	rties								?	×
General	Ope	rating Syst	em	Memb	er Of	De	legation	Passwo	ord Replication	ı l	ocation
Manage	d By	Object	Se	curity	Dial-	in	Attribute	e Editor	Thycotic Ide	entity	Bridge
The f this c	ollowin ompute ive Di	ntity Bridge Ig list show er and thei rectory Us	r ass	the Act sociated	ive Dir userr	napp	oing name Usernar	e (usema			
				ОК			Cancel		Apply	1	Help

### Thycotic Group Data

The Thycotic panels under group properties of ADUC allows you to manage the ID Bridge components related to Linux/Unix user attributes

General	Members	Member Of	Managed By	Obj
Security	Attr	ibute Editor	Thycotic Gro	
When allo (Unix/Linu configure These use (RFC 230)	wing users to a ux/MacOS) that specific user da er attributes wen 7)	have been joined ta (POSIX informa e added by Micros	on-Windows mach to the domain, you tion) on each user soft in the 2003 R2	object.
GID	iux Account [	Jetails	Contra	-
GID		<u> </u>	Generate	
Descriptio	n			
Alternate	Group Name	Windows G	roup	

- This is the unique group id number assigned to each AD group account, which is assigned to a user account for accessing Linux/Unix agents.
- The Generate button will create a unique GID Number in accordance to the chosen method for that group account.
- GID's will not be re-used.
- The generated GID value will be greater than the Starting GID defined in the ID Bridge Configuration utility.
- If the User has a GID Number the generate button will not create a new GID.
- Selects the method applied to creating the GID Number
- Algorithmic algorithm based GID generation
- Incremental Add ones to the last allocated GID
- Provides a Linux/Unix appropriate display name of the Active Directory group.
- Field limit is defined in AD schema. Thus no limit will be enforced in the GUI. If limit is exceeded, data will fail to save and a message will be shown to the user.

### **Thycotic Overrides**

The Thycotic Overrides panel under OU properties of ADUC allows you to override some of the POSIX user fields normally set Globally in the Thycotic Configuration Utility or Individually under ADUC User Properties.

These will then be used as the default values for any users created under that OU.

When using the global configuration a banner will be displayed.

	perties			?	×
General	Thycotic Overrides				
Thyco	tic Identity Bridge for A	Active Directory			
Defau	ult Home Directory	[systemhome]	/[domain]/[use	mame]	
Default Home Directory [systemhome]/[domain]/[username] Default Login Shell /bin/bash					
The	se settings are inherite	ed from the global	configuration c	container	

- Defines the home location of the user when they log into the Linux/Unix agent.
- This is normally their landing folder.

Defines the Linux/Unix shell that will be assigned to that user on login.

The GID number of the Primary group assigned to the user under the Member Of Panel of the User Properties.

A **Clear** button is available with an override implemented on an OU Container. When clicked, the OU overrides are cleared and default back to the Global values as defined in the Thycotic Configuration Utility.

	Bridge Pro	perties		?	)
General	Manag	jed By	Object	Securit	,
COM+	Attrib	ute Editor	Thyco	tic Overrides	
Thycotic Identi	ty Bridge for )	Active Directo	ry		
Default Home	Directory	/Thycotic	c/[domain]/[user	name]	
Default Login	Shell	/bin/sh			]
Primary Group		Domain A	dmins		
Primary GID N	umber	51201			
Clear					
,	These setting	s are set on th	ne current object		

When viewing any child OU properties with an override in place on an OU Container, a message is display that it's Thycotic Overrides are inherited from the parent container.

The Clear option is also available to default back to the Global values as defined in the Thycotic Configuration Utility.

	s			?	
General	Manag		Object	Secu	-
COM+	Attrib	oute Editor	Thyco	tic Override	es
Thycotic Identit	ty Bridge for a	Active Direct	tory		
Default Home	Directory	/Thycol	tic/[domain]/[usen	name]	
Default Login	Shell	/bin/sh			
Primary Group		Domain	Admins		
Primary GID N	umber	51201			
Clear	1				
Thes	e settings are	e inherited fr	om a parent conta	iner	
Thes	e settings are	e inherited fr	om a parent conta	iner	

#### **Release Notes**

This section includes the most recent Identity Bridge Release Notes.

- <u>1.1.3 Release Notes Bug Fix Release</u>
- <u>1.1.2 Release Notes Bug Fix Release</u>
- <u>1.1.1 Release Notes Feature Release</u>
- <u>1.1.0 Release Notes Feature Release</u>
- <u>1.0.1 Release Notes Bug Fix Release</u>
- <u>1.0.0 Release Notes Initial Release</u>

#### 1.1.3 Release Notes

February 24th, 2021:

- When using "User Name Formatting" configurations from the Thycotic Configuration Utility ensure that Active Directory Users are able to update their passwords regardless of the username format they are assigned.
- When Active Directory updates the Computer Object Password, this is now correctly updated on the Agent to ensure continued Kerberos Ticket renewal between Active Directory and the Agent.
- Updating the CentOS, Redhat Enterprise and Oracle Linux agents requires a change to the upgrade command and a pmagent service restart.
  - For RPM you will need to perform the following upgrade command:

rpm -U --force ./pmagent\_x86\_64\_v1.1.3.xx\_<platform>.rpm

• For YUM you will need to run the following downgrade command:

yum downgrade ./pmagent\_x86\_64\_v1.1.3.xx\_<platform>.rpm



#### 1.1.2 Release Notes

January 11th, 2021:

Enhancements available with the 1.1.2 release of Identity Bridge.

- Added an <u>About</u> modal to provide version details.
- Fix to improve local AD group caching in API.
- Group checking performance fix.
- Improvement to Group expansion for users defined in ACL.
- Clean Install of Configuration Utility/Removal of Thycotic Folder in ADSI Edit causes a Configuration Utility login error.

#### 1.1.1 Release Notes

December 8th, 2020:

Enhancements available with the 1.1.1 release of Identity Bridge.

- Added Expand option to Access Control List Panel.
- Added <u>Global User/Group Defaults</u> on Agent Settings tab.
- Added <u>User/Group Naming</u> tab.
- Fix to ensure the ACL report on the \*nix agents correctly reports users extend group memberships across multi-domain environments.
- Improvement to displaying Active Directory extended group memberships when using the id command.

### 1.1.0 Release Notes

November 24th, 2020:

#### Enhancements available with the 1.1.0 release of Identity Bridge.

- The Message Tab in the Configuration Utility was split to provide friendly message setup.
- Overhaul and renaming of the Excluded Users tab now called Exclusions.
- Full Configuration Utility backup support via ex- and imports options on the File Menu.
- Added <u>DC Selector</u> option to Configuration Utility.
- <u>User/Group support</u> for multi-domain environments.
- Added <u>Service Accounts</u> support to the Configuration Utility.
- The Primary Group configuration option was removed from the Configuration Utility and MMC extension.
- Added libjansson for pmagent to fullfil prerequisite regarding Ubuntu 18.04 and 20.04 live server issue mentioned as a known issue <u>here</u> and as a prerequisite <u>here</u>.
- Changes to the Thycotic Configuration Utility > Custom Text > Friendly Messages > Account Expired filed are now being correctly applied.
- User Properties Thycotic User Data Panel Auto population of fields corrected when using Automatic POSIX data generation.
- Reduced number of PreAuth calls made to Active Directory when users authenticating against locally cached information.
- When duplicate users exist across Parent/Child domain environments, entering the domain with the username now correctly accesses the correct user information.

### 1.0.1 Release Notes

October 8th, 2020:

- Improvements to the pmagent functionality in the event the Hosts UUID changes.
- The Agent Kerberos Ticket renewal in the event Active Directory Domain controller is unavailable at point of renewal. If the Agent is unable to contact the DC it moves to an unjoined status. With this fix it moves to a connecting status and continues to reattempt a renewal.
- Improvement to agent cache purging for users. Group cache will remain when associated with multiple users.
- Agent number reported on join is incorrect. \*nix agent versions now display as short version number in ADUC, e.g. Thycotic Identity Bridge (1.0.1).
- Error resolved when loading Server Manager I Tools I Active Directory Administrative Center with Identity Bridge installed on Server.
- When creating an Active Directory user's home directory on the \*nix agent, it will pull the files and folders from the /etc/skei directory or the skeleton directory defined under /etc/default/useradd.
- Authenticating AD users shouldn't pass through /etc/login.defs. These should be AD defined.
- Show success message following a license import instead of reporting an error.
- Improved license import functionality. Errors will be better captured.
- Improved feedback to user when running an invalid custom json script for syscfg command.
- AD User login appears to be defaulting as Failover login.
- \*nix Agents are now able to join Active Directory Domains when BASE enabled within the hosts /etc/openIdap/Idap.conf file
- For Ubuntu 18.04 and 20.04 Operating System installs from the Ubuntu-xx.xx-live-server.iso you will need to install the libjansson-dev package on the system before installing the Identity Bridge agent. This can be done using the following command:

sudo apt-get install libjansson-dev

### 1.0.0 Initial Release

#### August 12th, 2020:

With this release, Thycotic is rolling out the Identity Bridge (ID Bridge) for CentOS 7 Active Directory integration support.

Thycotic Identity Bridge provides centralized authentication and authorization for Unix and Linux systems. This enables organizations to validate that someone is who they say they are, so they can be granted access to the resources they need to perform their job. This software utilizes the organization's existing directory service (e.g. Active Directory) to achieve consistency in identities across the enterprise regardless of platform and operating system. The ID Bridge simplifies access as users have one username and one password to remember. It also streamlines identity management as administrators have a single place to manage users, groups, and the systems they have access to.

- Joins a non-windows host (CentOS 7) to Active Directory, creating a computer object in Active Directory and a Kerberos trust between the CentOS 7 and Active Directory.
- Allows User and Group POSIX data (UID/GID/Home Dir/Shell/GECOS) to be set directly in Active Directory without the need for any schema extension.
- Provides Kerberos Authentication against Active Directory.
- Allows User and Group POSIX data (UID/GID/Home Dir/Shell/GECOS) to be generated on the fly when a user logs on.
- Stores all agent data centrally without the need for an external database or schema extension.
- Honors password and account policies when authenticating from non-windows systems (CentOS 7).
- Allows for users to be locked and/or de-provisioned in the central directory and take immediate effect on all CentOS 7 endpoints.
- Allows for a user to authenticate using their Active Directory username and password on Unix & Linux systems that have been joined to Active Directory.
- Allows for a user to authenticate using their Active Directory username and password on Unix & Linux systems that have been joined to Active Directory even when disconnected from Active Directory, so long as they have authenticated within the last 30 days.
- Allows Access Control Lists (ACLs) (users and hosts) to be defined using native Active Directory groups. Provide selective access to target hosts based on group membership.
- Automatic Time Sync with Active Director.
- Identity Bridge Configuration Tool for Centralized Configuration Management.
- \*Nix Command Line Tools:
  - Domain Join/Leave
  - System Configure/Unconfigure
  - ACL Reporting
  - User Testing
  - Cache Management
  - Agent Stats
- If you are running the Thycotic Identity Bridge Configuration Utility on a Domain Controller, while being logged in as an account that is not the primary administrator for the Domain Controller, you will have to perform one of the following actions so that the Thycotic Identity Bridge Configuration Utility has the appropriate permissions to write configuration settings to Active Directory:
  - 1. Use a specific user when attempting to connect to Active Directory in the Thycotic Identity Bridge Configuration Utility.
  - 2. Log into the Domain Controller with the primary administrator account.
  - 3. Run the Thycotic Identity Bridge Configuration Utility as Administrator.
  - 4. Grant the user you are attempting to connect with explicit read/write permissions to the Configuration Partition of your domain.

This is due to a security feature implemented by Windows on Domain Controllers to enhance security."

Root will always have SU access to user accounts.

- Standard ftp (vsftp) doesn't display the Windows Messages.
- Root will not have permission to change Active Directory users passwords via the passwd command.
- When AD Accounts disabled, telnet and su display an additional message stating "User account has expired". Unfortunately Thycotic is unable to control these additional messages.
- If a an Active Directory Username or Alias matches a Local Agent Username, the login will be blocked, with the exception of of root SU.
- If an Active Directory users UID Number matches a Local Agents users UID, the Active Directory user will be blocked. The Local Agents user will be granted access.
- If the agent has a default hostname of localhost.localdomain, the pmagent service will not function as expected and will return an error. Updating the agent hostname post installation will require a re-initialization of the agent configuration using the pmagent --init command.
- VNC and Remote Desktop will not be supported authentication methods for version 1 of Thycotic Identity Bridge. We recommend that these methods are disabled.
- A reboot will be required after the Agent joining the Domain to allow AD users to login via Gnome desktop.
- Logging into an Agent with cached credentials can only accept the case of the username as defined in Active Directory.
- SSH logins drop-back to a local login attempt following 3 failed Active Directory attempts.
- Chsh command is not currently supported for Active Directory users, if you are required to change the shell for an Active Directory user, please use the Thycotic User Data panel in ADUC.

### **Documentation Changelog**

This topic provides a chronological list of documentation changes. Minor content alterations are not tracked.

- Added version <u>1.1.3 Release Notes</u>, including a known issue pertaining to upgrades on CentOS, Redhat Enterprise and Oracle Linux endpoints only.
- Added version <u>1.1.2 Release Notes</u>
- Added <u>About</u>

#### Added information to:

- Added version <u>1.1.1 Release Notes</u>
- <u>Access Control List tab</u>.
- <u>Agent Settings tab</u>.

Changes in support of the Identity Bridge 1.1.0 feature release.

- The Message Tab split to provide friendly message setup.
- Excluded Users tab is now called Exclusions.
- Backup support via ex- and imports options on the File Menu.
- Added <u>DC Selector</u>.
- User/Group support for multi-domain environments.
- <u>Service Accounts</u> support.
- The Primary Group configuration option was removed from the Configuration Utility and MMC extension.

Changes in support of the Identity Bridge 1.0.1 bug fix release. Refer to the <u>Release Notes</u> for details. Expanded the list of verified and supported systems. Refer to the <u>Software Downloads</u> reference.