LDAP for MQTT Clients

Chariot can be configured to use an LDAP server for MQTT client authentication and authorization instead of Chariot's MQTT Credentials.

> This feature is available in Chariot v2.4.2 and newer

LDAP Server

- LDAP Server schema and sample data can be found in the following directory:
  - `samples/ldap/ldif/`
- Entries in the LDAP Server used for authentication must support simple bind requests
- Entries in the LDAP Server used for authorization must extend the *cls-mqttCredential* Object Class and use the *cls-subTopicFilter* and *cls-pubTopicFilter* attributes to declare their ACLs (see description below)

LDAP Schema Object Classes

Name	Identifier	Type	Description
cls-mqttCredential	1.3.6.1.4.1.60051.2.2.1	Auxiliary	This class represents ACLs associate with an MQTT client. It may include one or more of either of the attributes *cls-subTopicFilter* or *cls-pubTopicFilter*

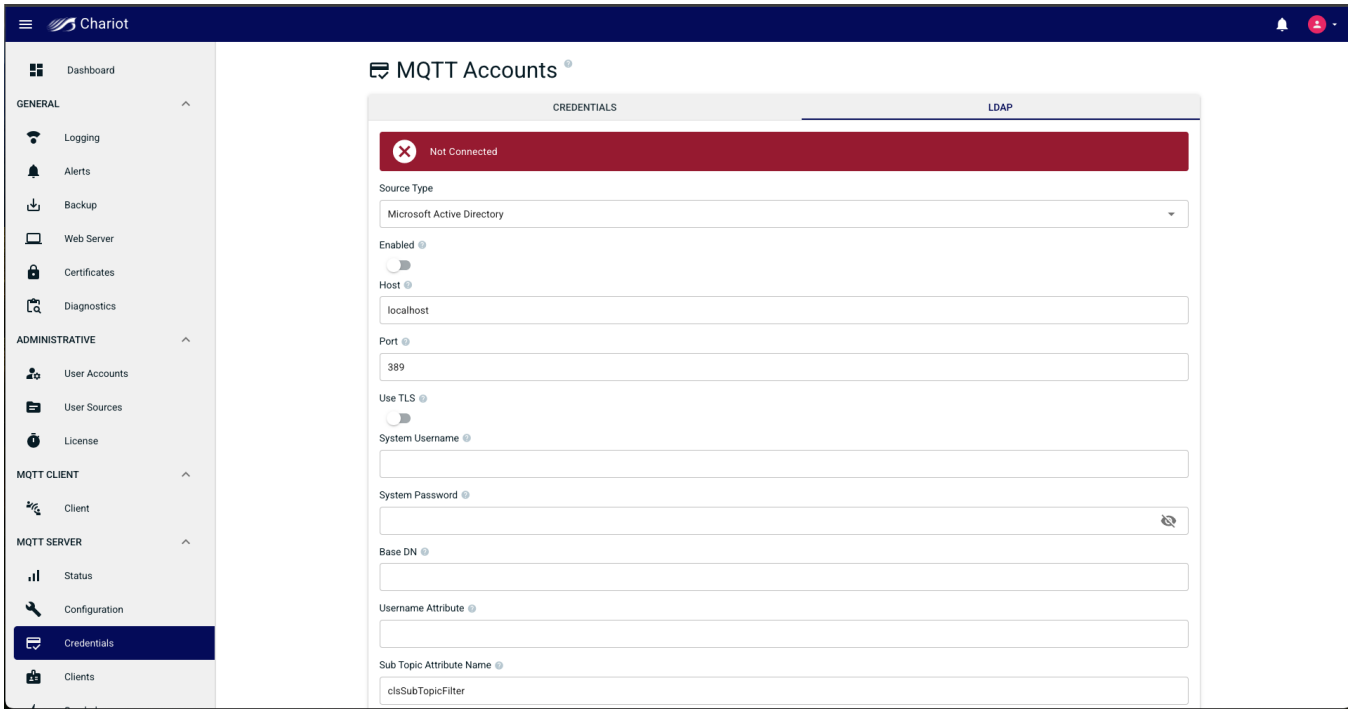
LDAP Schema Attributes

Name	Identifier	Description
cls-subTopicFilter	1.3.6.1.4.1.60051.2.1.1	An MQTT topic filter to subscribe on
cls-pubTopicFilter	1.3.6.1.4.1.60051.2.1.2	An MQTT topic filter to publish on

Chariot Configuration

The MQTT Accounts LDAP configuration can be found by navigating to the following page on the Chariot UI and selecting the LDAP tab:

Main Menu MQTT Accounts LDAP



The configuration fields are described below. Note that the format of the attributes and object class name might differ in the configuration than the name in the schema (as is the case with Microsoft Active Directory). An administrator for the LDAP directory server should be consulted to fill in the correct values for the configuration (see examples below).

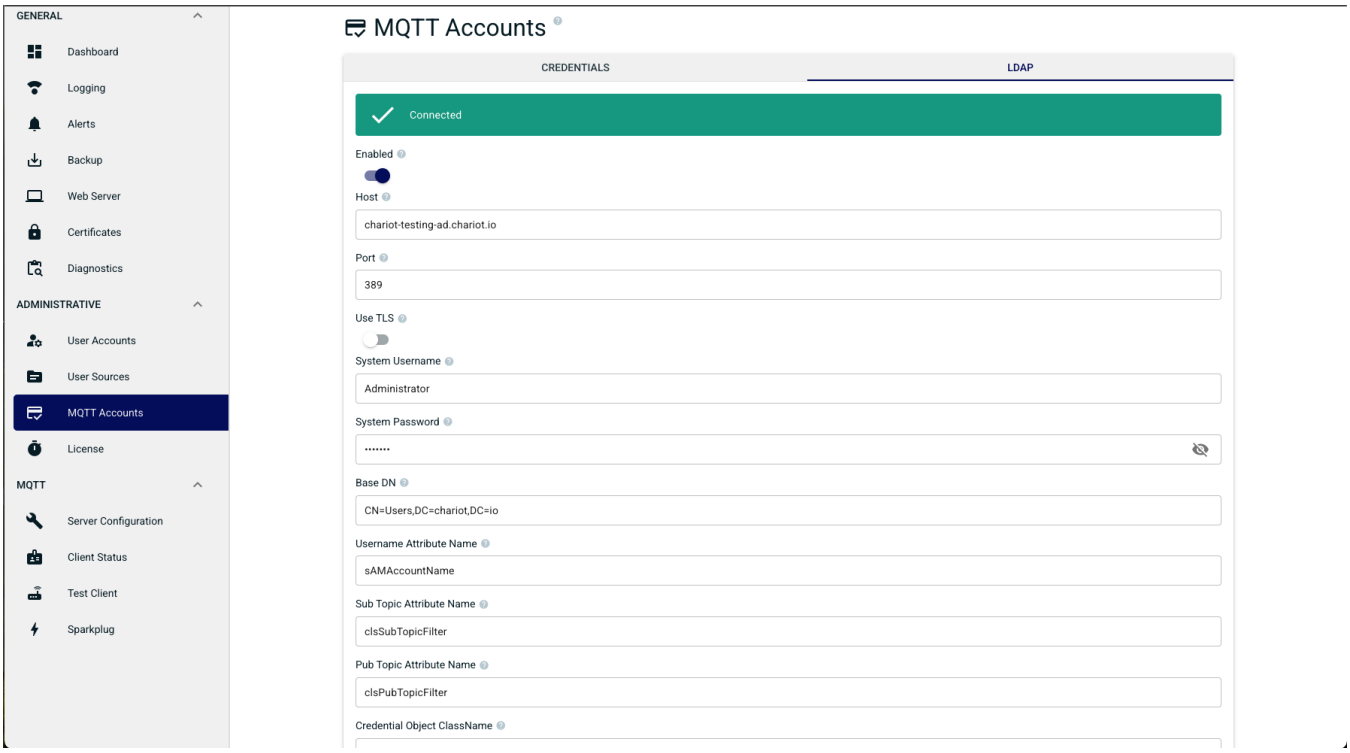
Configuration properties:

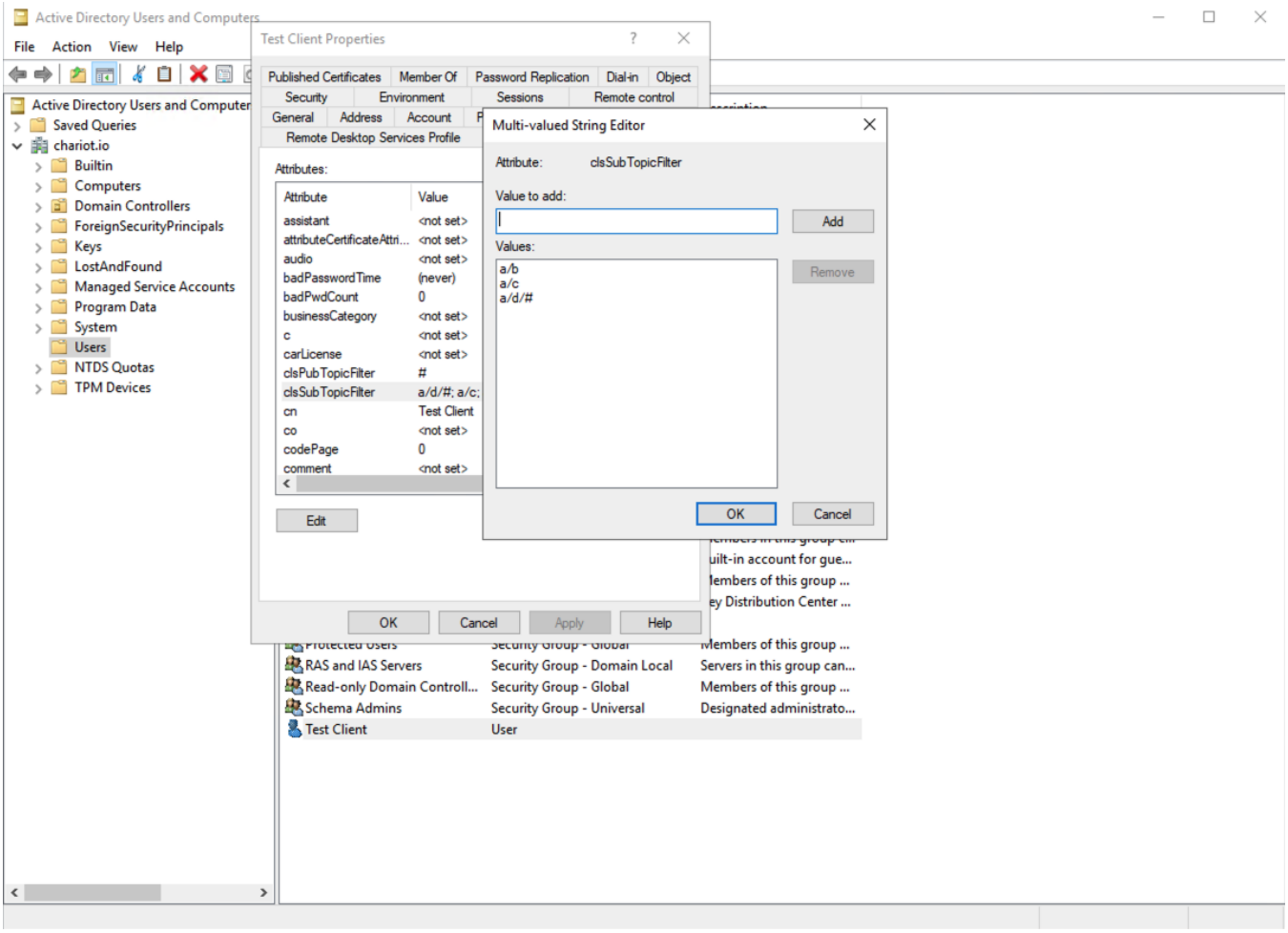
As of release v2.5.0 Chariot will use the supplied login username as the name for the simple bind request with the Microsoft AD server. Additionally the **Domain, Auto Suffix, and/or Username Suffix & Prefix** properties can be configured to support bind requests with a user principal name (UPN) of another form.

Property	Required	Default	Description
Username Attribute Name	yes		The attribute of an entry that represents the username of the MQTT client to authenticate
Sub Topic Attribute Name	yes		The multivalued attribute of an entry that represents a subscription topic filters
Pub Topic Attribute Name	yes		The multivalued attribute of an entry that represents a publish topic filters
Credential Object ClassName	yes		The ObjectClass of an entry that holds the credentials
Host	yes		The URL of the LDAP server
System Username	yes		The distinguished name (DN) that Chariot uses to authenticate with the LDAP server
System Password	yes		The password that Chariot uses to authenticate with the LDAP server
Base DN	yes		The base distinguished name (DN) where entries used for ACLs will be searched for
ACL Check Interval	yes		The interval (in ms) between ACL updates
Domain	no		The Windows Active Directory domain name. Example: "MyDomain.com".
Auto Suffix	no	false	If Chariot should automatically append "@<domain>" to the username when authenticating
Username Suffix	no		A manually specified suffix to append to the username when authenticating
Username Prefix	no		A manually specified prefix to prepend to the username when authenticating

Examples

Example Microsoft Active Directory configuration:


GENERAL
Dashboard
Logging
Alerts
Backup
Web Server
Certificates
Diagnostics
ADMINISTRATIVE
User Accounts
User Sources
MQTT Accounts
License
MQTT
Server Configuration
Client Status
Test Client
Sparkplug
MQTT Accounts
CREDENTIALS
LDAP
Connected
Enabled
Host
chariot-testing-ad.chariot.io
Port
389
Use TLS
System Username
Administrator
System Password
Base DN
CN=Users,DC=chariot,DC=io
Username Attribute Name
sAMAccountName
Sub Topic Attribute Name
clsSubTopicFilter
Pub Topic Attribute Name
clsPubTopicFilter
Credential Object ClassName


Active Directory Users and Computers
File Action View Help
Active Directory Users and Computer
Saved Queries
chariot.io
Builtin
Computers
Domain Controllers
ForeignSecurityPrincipals
Keys
LostAndFound
Managed Service Accounts
Program Data
System
Users
NTDS Quotas
TPM Devices
Test Client Properties
Published Certificates
Member Of
Password Replication
Dial-in
Object
Security
Environment
Sessions
Remote control
General
Address
Account
Remote Desktop Services Profile
Attributes:
Attribute
Value
assistant
attributeCertificateAttri...
audio
badPasswordTime
badPwdCount
businessCategory
c
carLicense
clsPubTopicFilter
clsSubTopicFilter
cn
co
codePage
comment
<not set>
(never)
0
#
a/d/#; a/c;
Test Client
Edit
OK
Cancel
Apply
Help
Multi-valued String Editor
Attribute:
clsSubTopicFilter
Value to add:
Add
Values:
a/b
a/c
a/d/#
Remove
OK
Cancel
RAS and IAS Servers
Security Group - Domain Local
Servers in this group can...
Read-only Domain Controll...
Security Group - Global
Members of this group ...
Schema Admins
Security Group - Universal
Designated administrato...
Test Client
User

Example (OpenDJ) LDAP configuration: