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*

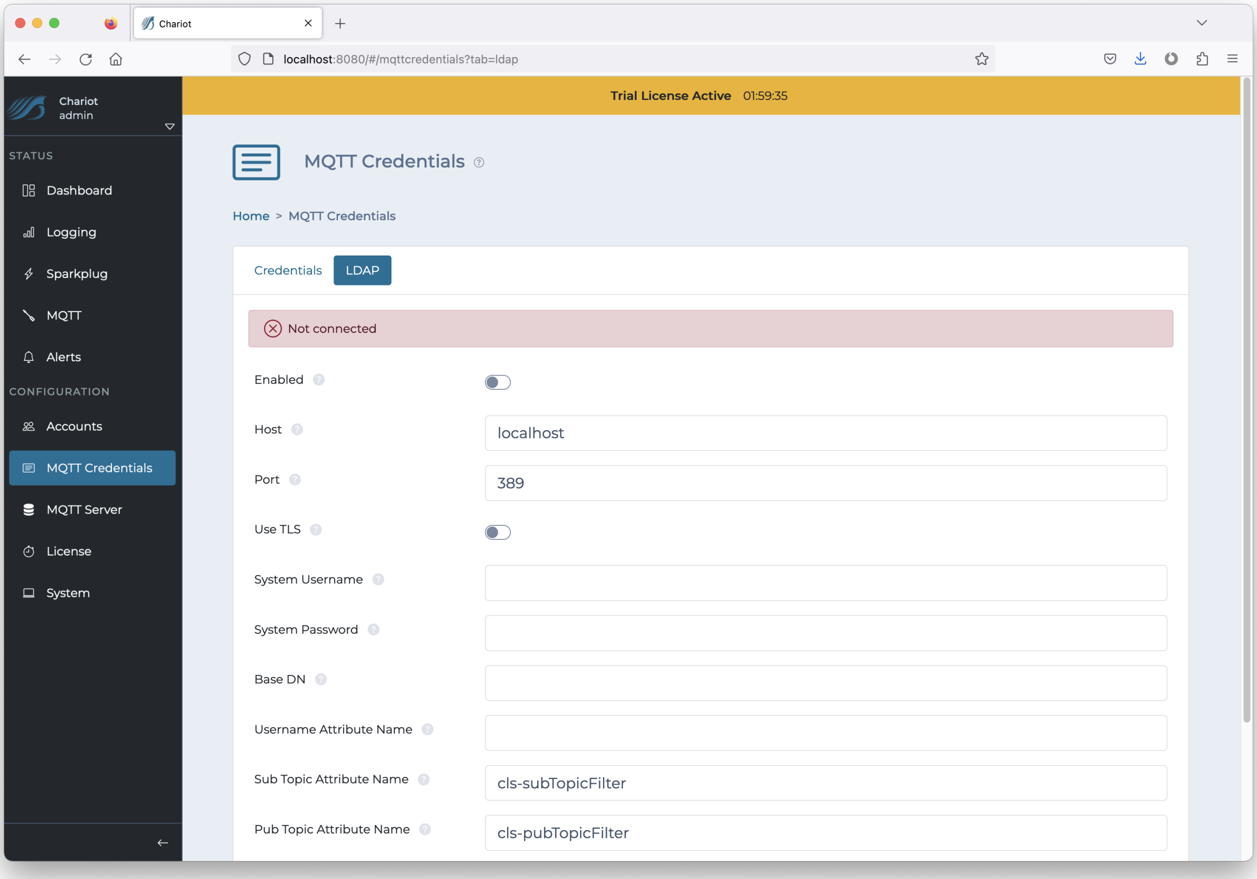
LDAP Schema Attributes

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

CONFIGURATION MQTT Credentials



Not connected

Enabled: off

Host: localhost

Port: 389

Use TLS: off

System Username:

System Password:

Base DN:

Username Attribute Name:

Sub Topic Attribute Name: cls-subTopicFilter

Pub Topic Attribute Name: cls-pubTopicFilter

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).

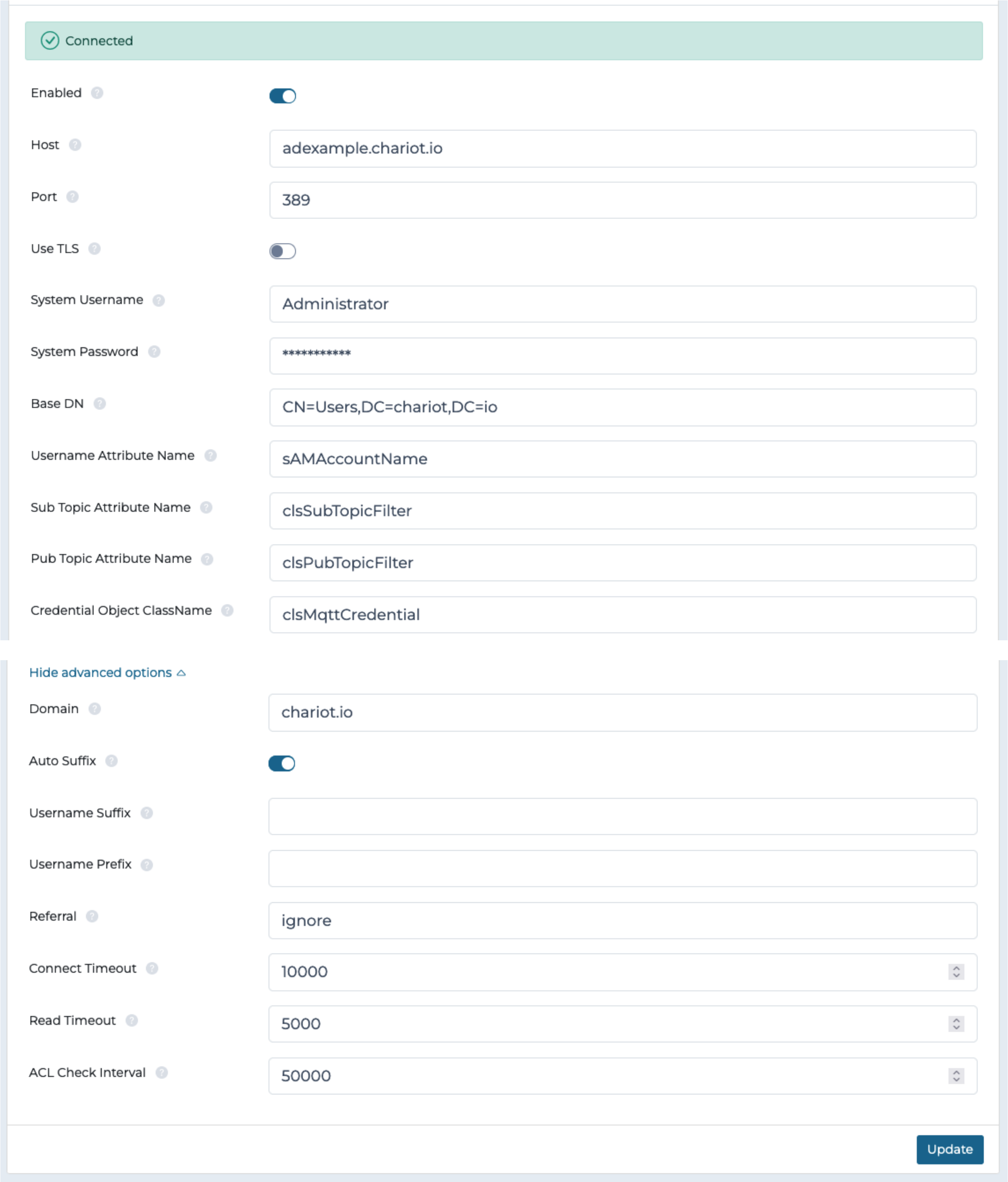
Configuration properties:

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

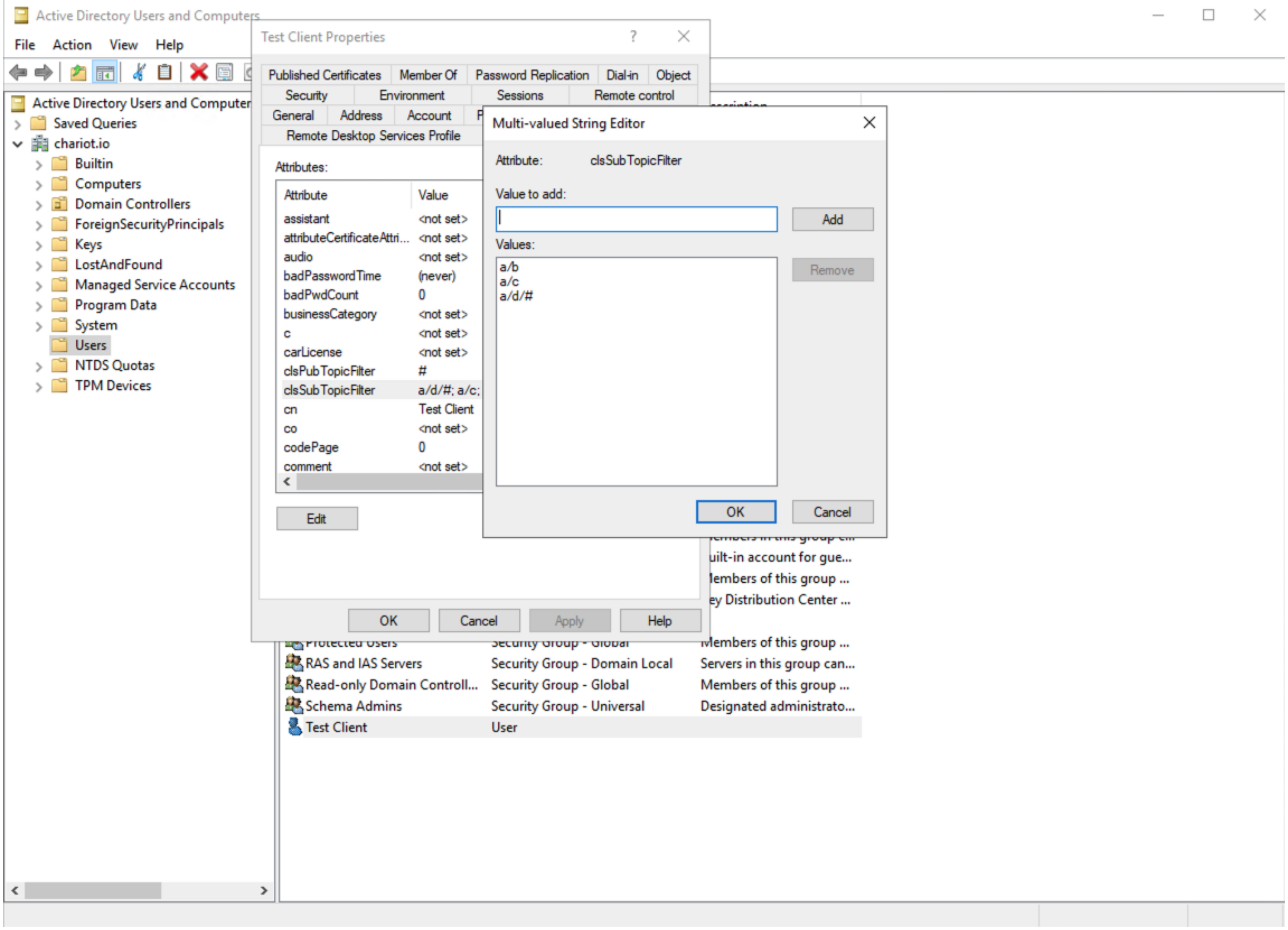
Example Microsoft Active Directory configuration:



Connected

Enabled	●
Host	adexample.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	clsMqttCredential

Domain	chariot.io
Auto Suffix	●
Username Suffix	
Username Prefix	
Referral	ignore
Connect Timeout	10000
Read Timeout	5000
ACL Check Interval	50000



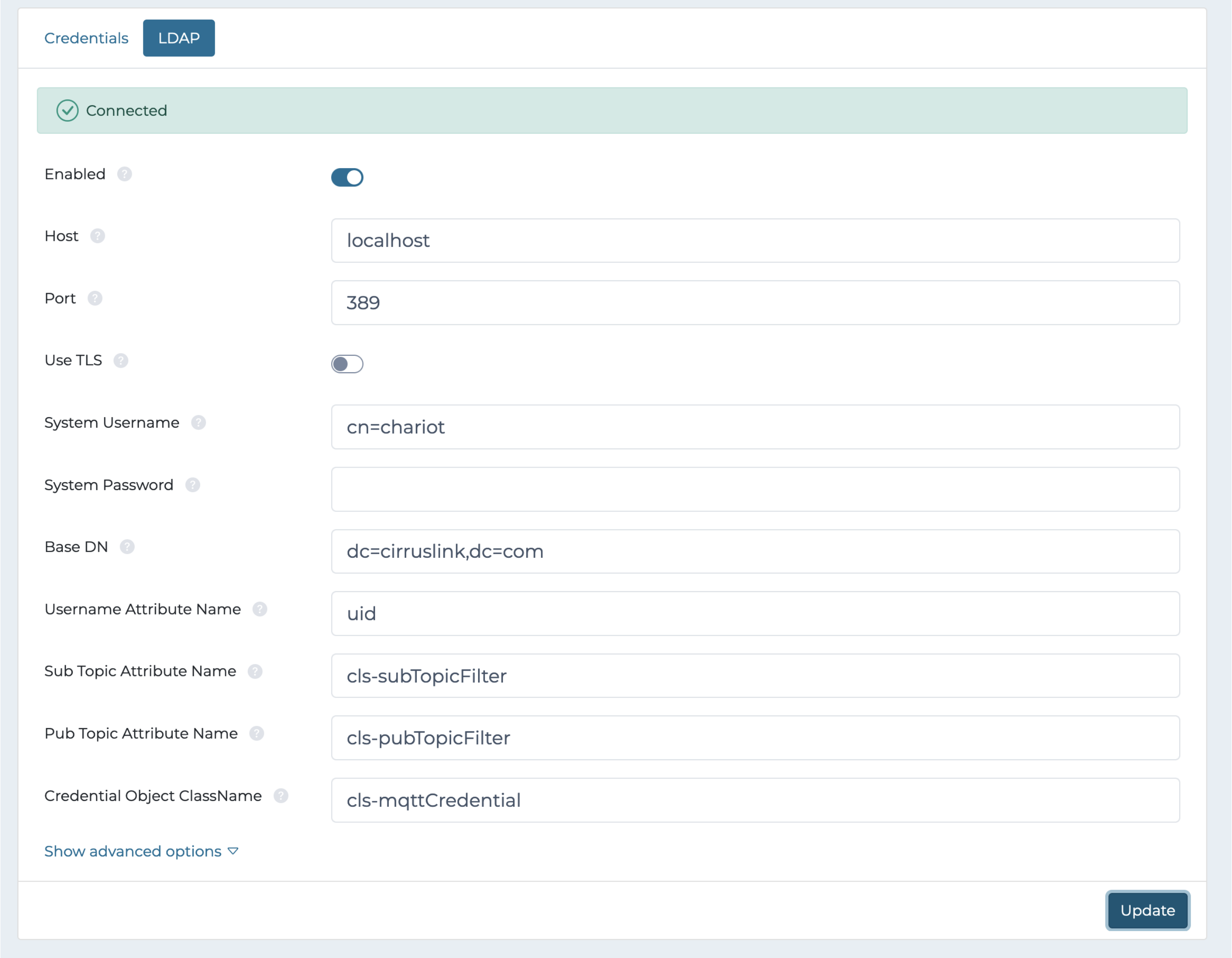
Attribute	Value
assistant	<not set>
attributeCertificateAttri...	<not set>
audio	<not set>
badPasswordTime	(never)
badPwdCount	0
businessCategory	<not set>
c	<not set>
carLicense	<not set>
clsPubTopicFilter	#
clsSubTopicFilter	a/d/#; a/c;
cn	Test Client
co	<not set>
codePage	0
comment	<not set>

Attribute: clsSubTopicFilter

Values:
a/b
a/c
a/d/#

		uilt-in account for gue...
		lembers of this group ...
		ey Distribution Center ...
Protected Users	Security Group - Global	Members of this group ...
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:



Connected

Enabled	●
Host	localhost
Port	389
Use TLS	○
System Username	cn=chariot
System Password	
Base DN	dc=cirruslink,dc=com
Username Attribute Name	uid
Sub Topic Attribute Name	cls-subTopicFilter
Pub Topic Attribute Name	cls-pubTopicFilter
Credential Object ClassName	cls-mqttCredential