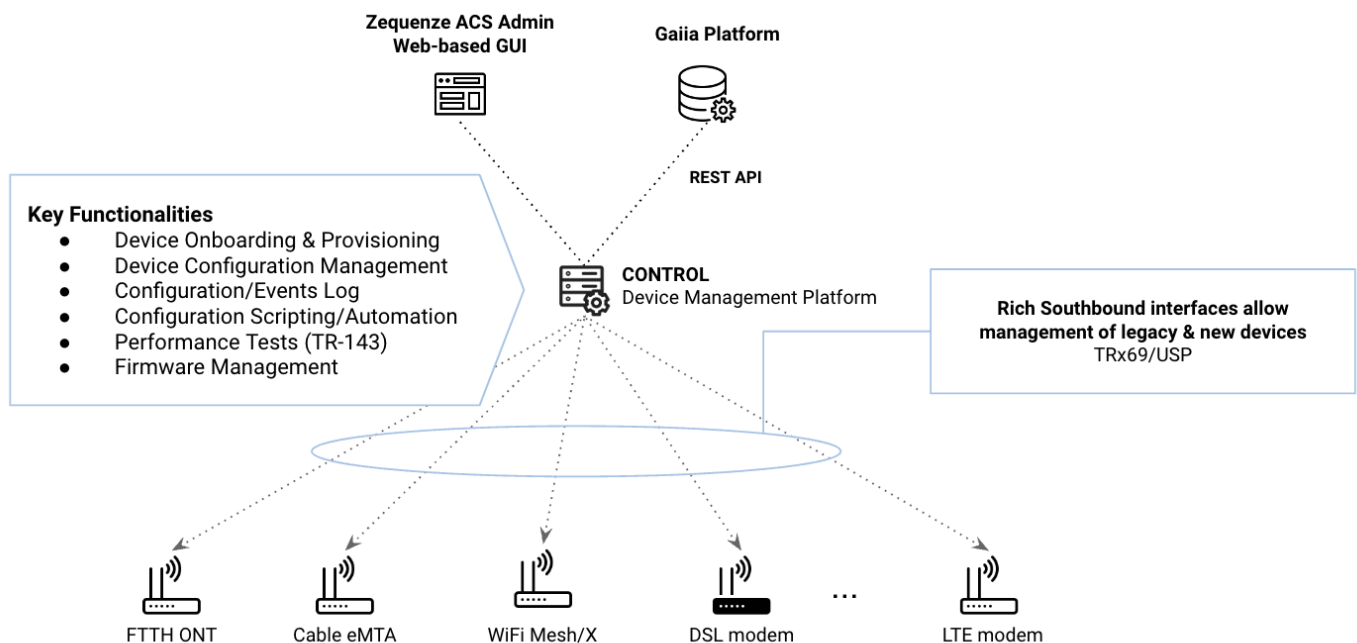


How to onboard devices into zequenze CONTROL ACS

Overview

Onboarding devices into **Zequenze CONTROL** is a straightforward process. This guide provides the key considerations and steps to successfully connect your devices to the CONTROL Access Control Server (ACS).



Key Concepts

Before beginning the onboarding process, understand these fundamental aspects:

1. **Cloud-Based Architecture:** Zequenze ACS is hosted in the Public Cloud (AWS/GCP), so all devices must have Internet connectivity to communicate with the platform.
2. **TR-069 Protocol:** The protocol follows a *client-to-server* model where devices (CPEs) periodically report to the ACS at intervals defined by the *Report Interval* parameter. For a comprehensive understanding of TR-069, refer to this [tutorial](#).
3. **Remote Management:** Once successfully onboarded, the ACS enables remote configuration and management of CPEs using TR-069 variables supported by each device.

These variables are defined in TR-098/TR-181 [Data Models](#) and can be managed through the ACS platform GUI or REST API.

Requirements

Mandatory Parameters

For a CPE to communicate with the ACS platform via TR-069, configure the following four (4) parameters:

1. **ACS URL:** The [FQDN](#) where devices will initiate TR-069 sessions.
2. **Username & Password:** Onboarding credentials used by the CPE to authenticate with the ACS platform.
3. **Report Interval:** Time interval (in seconds) for periodic Inform messages from the CPE to the ACS platform.
4. **Internet Connectivity:** Required for cloud-based ACS access. **Note:** Some CPEs, such as FTTH ONTs, may require specific WAN VLAN configuration to permit TR-069 traffic.

DNS Configuration

Internet Service Providers (ISPs) must define their own FQDN as a CNAME record pointing to the Zequence ACS platform. For example:

```
acs.myISP.com    CNAME    A    control.zequence.com.
```

Configuration

Default TR-069 Parameters

Once DNS is configured, set up your devices with the following default TR-069 configuration:

- **URL:** `https://acs.myISP.com/cwmp`
- **Username:** *Provided by Zequence (unique per device model)*
- **Password:** *Provided by Zequence (unique per device model)*
- **Report Interval:** *Provided by Zequence (typically 7200 seconds)*

Configuration Methods

There are two (2) primary methods for mass-configuring default TR-069 settings on devices:

1. **Vendor Integration:** Request your CPE vendor to embed this information into the device's software default values.
2. **DHCP Option 43:** Use DHCP Option 43 to provision TR-069 parameters automatically.

For more details on ACS Discovery methods, consult this [tutorial](#).

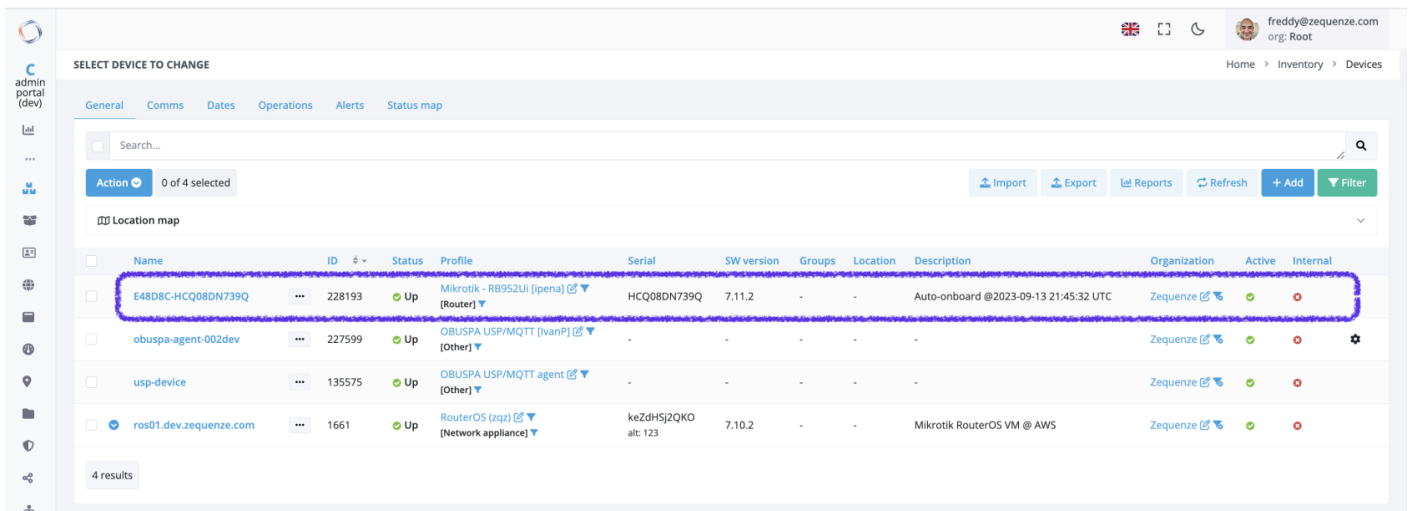
Important Considerations

CRITICAL: Verify that the default TR-069 configuration persists after a factory reset. This ensures devices remain under ACS management even after being reset to factory defaults.

Validation

Verifying Successful Onboarding

Once properly configured with Internet access, devices will automatically onboard to the platform. Successfully onboarded devices appear in the [Inventory](#) view of the CONTROL GUI:



The screenshot shows the 'SELECT DEVICE TO CHANGE' interface in the CONTROL GUI. It features a search bar, action buttons (Import, Export, Reports, Refresh, Add, Filter), and a table of devices. The table has columns for Name, ID, Status, Profile, Serial, SW version, Groups, Location, Description, Organization, Active, and Internal. The first row is highlighted with a red dashed box.

Name	ID	Status	Profile	Serial	SW version	Groups	Location	Description	Organization	Active	Internal
E48D8C-HCQ08DN739Q	228193	Up	Mikrotik - RB952UI [ipena] [Router]	HCQ08DN739Q	7.11.2	-	-	Auto-onboard @2023-09-13 21:45:32 UTC	Zequence	Green	Red
obuspa-agent-002dev	227599	Up	OBUSPA USP/MQTT [IvanP] [Other]	-	-	-	-	-	Zequence	Green	Red
usp-device	135575	Up	OBUSPA USP/MQTT agent [Other]	-	-	-	-	-	Zequence	Green	Red
ros01.dev.zequence.com	1661	Up	RouterOS (rqz) [Network appliance]	keZdHSj2QKO alt: 123	7.10.2	-	-	Mikrotik RouterOS VM @ AWS	Zequence	Green	Red

Inventory View Fields

The following table explains the information displayed in the Inventory view:

Field	Description
-------	-------------

Name	Unique device name in the platform. Automatically generated as the concatenation of Device OUI + Serial Number. Upon initial onboarding with model-specific credentials, the ACS assigns unique Username/Password credentials to each device.
ID	Device's unique identifier within the ACS platform.
Status	Indicates whether the device is currently reporting periodically to the platform.
Profile	CWMP (TR-069) profile assigned to this device. Each device model uses a specific profile based on its data model, which can be customized per customer requirements.
Serial	Device serial number.
Groups	Logical groups to which the device belongs.
Location	Physical location assigned to the device.
Description	Notes and metadata about the device. By default, the initial onboarding timestamp is recorded here.

Troubleshooting

Common Issues

If a configured device does not automatically onboard, verify the following:

1. **ACS URL Configuration:** Confirm the ACS URL is correctly set on the device (check in the device's GUI or management interface).
2. **Credentials:** Verify that Username and Password are properly configured on the device (check in the device's GUI or management interface).
3. **Internet Connectivity:** Ensure the device has active Internet access. **Note:** Some CPEs, particularly FTTH ONTs, require specific WAN VLAN configuration to allow TR-069 traffic through the network.

Additional Support

If you continue experiencing onboarding issues after performing these checks, our team is available to assist with detailed troubleshooting. Please [contact us](#) for specialized support.

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