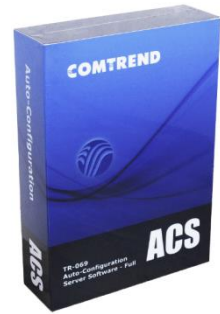


# CT-ACS

## Auto Configuration Server



The Comtrend CT-ACS TR-069 compliant auto-configuration server supports remote management of customer premises equipment (CPE). It includes both remote auto-configuration and control functions within an integrated software platform. Additional features and benefits are listed below.

### FEATURES

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#### **Manage Any TR-069 CPE**

The CT-ACS fully complies with the TR-069 specifications, and is able to manage any TR-069 enabled CPE. The Comtrend ACS has industry-leading interoperability with a majority of other CPEs on the market today.

#### **CPE Parameter Group Management**

By using the Model Profile, ACS administrators can conveniently select CPE parameters to be managed and controlled by the CT-ACS, and group the managed parameters with common values into a CPE Group.

#### **Vendor-Specific Parameters**

If CPEs have vendor-specific parameters, these parameters can be subsequently added to the CT-ACS database to allow the ACS to control them. Most importantly, the CT-ACS can manage and control almost all of the parameters shown on the Comtrend CPE web user interface, despite not being defined in the TR-069 specifications.

#### **High Availability and Scalability**

According to the design of our load balance model, multiple ACS can support thousands of CPE accounts with support for multiple upgrade and configuration tasks running simultaneously.

#### **ACS-Initiated Provisioning**

At any time the ACS can request that a CPE initiate a connection to the CT-ACS using the Connection Request notification mechanism. By using the Connection Request, the Comtrend ACS can ask the CPE to reboot or restore CPE settings to the factory defaults. It can also send Grouping Connection Requests to all of the CPEs that belong to a certain CPE Group.

#### **Security Access**

The CT-ACS uses TR-069 serial numbers to identify each CPE. Before a CPE will be allowed to connect to the ACS, a serial number entry of the CPE must be added to the Devices List. The CT-ACS supports basic and digest authentication, SSL/TLS, and certificate authentication.

#### **Multiple Download Server Support**

Multiple download URLs of the same firmware image, vendor configuration, and web content files are supported. These files can be stored in different download servers to distribute network flow. In addition, the allowed file download time can also be configured and limited to off-hours.

#### **Batch Functions**

ACS administrators can use the Batch Copy function or Batch Add function to simultaneously add many CPE accounts. The Batch Edit function can be used to update customer data and parameter values for groups of CPEs. Similarly, the Batch Delete function can be used to simultaneously delete multiple CPE accounts.

## FEATURES

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### CPE and Customer Data

When a CPE account is added, related customer data can also be added, including customer ID, name, phone number, e-mail, address, city, state/province, ZIP/postal code, and country.

### CPE Search by Keyword

Comtrend ACS administrators can use keywords (MAC address, CPE IP address, SN, CPE Group, Notes, and customer data) to search a specific CPE or multiple CPEs. The Global Search function can search a CPE that may exist in any CPE Models.

### LED Indicators

Status LED indicator (green/red) shows whether or not a CPE maintains a connection to the ACS within regulated periods. Connection Request LED indicator (green/red) shows the present status of connection requests sent from the CT-ACS to the CPE. Firmware LED indicator (green/red/gray) indicates whether or not the CPE has upgraded its firmware to the version designated by the ACS administrator(s).

### Status and Performance Monitoring

The CT-ACS collects CPE information and statistics generated by the TR-069 parameters for monitoring of CPE status and performance. A status web page lists the most recent CPE parameter values reported to the ACS. CPE status information can be exported as a CSV file by CPE group or individually.

### Detailed Logging

Every CPE connection record is logged in the Session Log. Moreover, the Comtrend ACS features Notification, Download, Bootstrap, and Error Logs. Any log entry can be exported or cleared from the log tables.

### CPE Diagnostics

CT-ACS uses CPE information generated by TR-069 parameters to diagnose connectivity or service issues. For example, it can ask the CPE to ping an IP address or hostname and report the result of the ping test.

### Database Backup

The CT-ACS database will automatically be backed-up at the time designated by the ACS administrators. The database can also be manually backed-up and saved locally.

### CWMP Interoperability Test System

The CT-ACS CWMP Interoperability Test System (ITS) is specifically designed for Broadband Forum PD-128 CWMP interoperability tests. It provides convenience and accuracy for stepping through the interoperability tests between the CT-ACS and multiple CPEs. By using ITS, the ACS can scan untested CPEs to discover which TR-069 parameters the CPE supports for greater management and control.

## SPECIFICATIONS

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### Standards and Protocols

- . DSL Forum TR-069, TR-098, TR-104, TR-106, TR-111, TR-135, TR-140, PD-128
- . TCP / IP
- . SSL 3.0 / TLS 1.0
- . HTTP 1.1
- . SOAP 1.1
- . RPC Methods defined by TR-069

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