ZTC
Zero Touch Configurator

Why Zero Touch Configurator?

Wide Area Networks consist of many components (hubs, switches, routers, residential gateways, set-top boxes, etc) that need to be configured. The amount of operational and maintenance work can be very high. Moreover, these components are often difficult to get at and the intervention activity can be very expensive. Zero Touch Configurator (ZTC) is a framework that enables the network components to be remotely configured.

ZTC consists of different parts: the Client and the Server. The ZTC Client is embedded in the CPE firmware. The ZTC Server manages the configuration data for the network devices. Basically, it supports all devices that have a ZTC Embedded Client implementation available. Its main purposes are:

- Device configuration
- Firmware release update
- Events logging

The client periodically asks the ZTC Embedded Server for a newer configuration (configuration pull). When a new configuration for the device is available, the client downloads and executes it. All the connections made by the device are outbound. This implies that no listening service has to be started on the device. This minimizes security issues related to accepting inbound connections.

The ZTC Server is a very flexible application that adapts itself to the network needs. Based on J2EE™ technology, it offers the main goals of this platform:

Scalability

ZTC can run on a simple PC, but is also able to take advantage of a multi-processor environment. The distributed nature of the application enables it to run in a clustered environment or in a server farm.

Security

All users that access the configuration database must be authenticated. The ZTC Server manages profiles for users, with different degrees of visibility and permissions..

Reliability

Configured in a clustered environment, ZTC Server provides high availability and database redundancy.

Multi-tier Architecture

The ZTC Server architecture is structured in functional modules communicating via standard interface (TFTP, HTTP, SOAP).

Easy to Use Installation Package

Including all the software packages for the ZTC server support.

Key Features

- Support for RG600, iMG600 and iBG900 series devices
- Multi-tier protocol
- Support for high availability and fault tolerance
- Horizontal and vertical scalability
- Flexibility
- Security and user profiling
- Creation of views on configuration data
- Minimum HW requirement:
  - Processor speed 3GHz*
  - RAM 1GB
  - Hard Disk 1GB recommended
- OS platform
  - Linux Red Hat Enterprise 3 AS and ES

** Depends on number of managed devices*

Ordering Information

AT-ZTC500 (EU 990-12568-00, NA 990-12677-00)
Licence for up to 500 users.

AT-ZTC5000 (EU 990-12696-00, NA 990-12679-00)
Licence for up to 5,000 users.

AT-ZTCUNLIMITED
(EU 990-12570-00, NA 990-12681-00)
Licence for more than 10,000 users.

AT-ZTCUPGRADE
(EU 990-12569-00, NA 990-12680-00)
Upgrade licence from AT-ZTC500 or AT-ZTC5000 to AT-ZTCUNLIMITED.

AT-ZTC250 (EU 990-12697-00, NA 990-12678-00)
Per Node licence fee to be added over initial licenses for 250 units steps.

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Powerful Logging Framework

The framework offers to the ZTC operator a complete set of tools for the monitoring of the network events. One single log per cluster can report operations on nodes (structural, configuration or device nodes), device interactions with the ZTC server and administrative operations on the ZTC server. It gives a view of log events and of log history, shows the real time log events monitoring, can export log information. Logging framework can be managed via setting of schedulable log rotation (monthly, weekly, daily) and schedulable clean-up (by age, by size or both).

Device Display and Search Engine

The device network can be organized in a tree structure and variable values can be displayed in viewed in a clear tabular view. In addition, a powerful search engine for can search device nodes, structural nodes and configuration nodes.

The devices status is clearly represented on the ZTC tree with identification colours:

- BLUE status: the device has been created but not configured yet
- YELLOW status: the device configuration is in progress
- GREEN status: the device is up-to-date
- RED status: the device is unreachable from the ZTC server
- GREY status: the device is forced by the operator in a stand-by status

Open Network Ready

The access rights can be configured down to each device parameter level. This allows the network provider to enable each service provider to configure each service by himself interacting directly with ZTC, once access is gained to a specific device and/or parameters.

Web Services

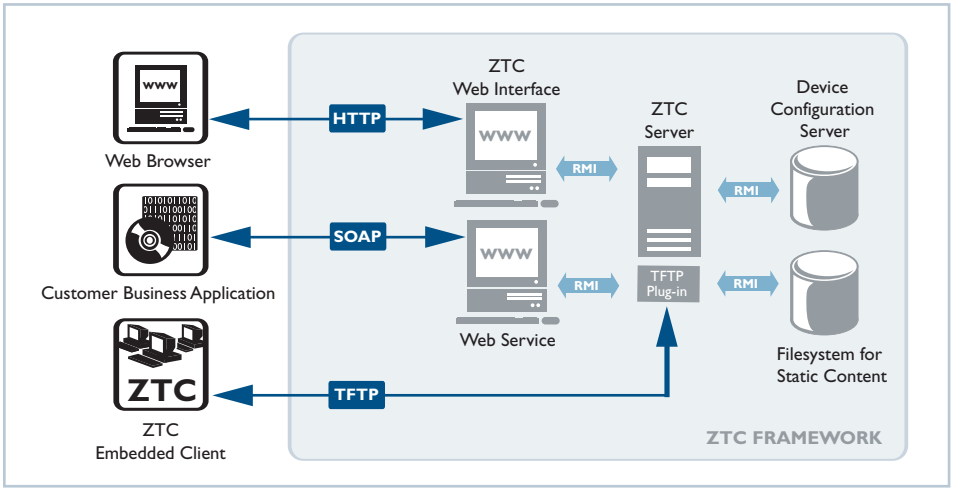
Web services are next generation business-to-business application, used for two main purposes:

- Integration of ZTC with customer specific application (i.e. OSS, billing system, etc…)
- ZTC function extension by external applications development (i.e. Import tool)

ZTC Server functionalities exported as a Web Service allow operations on devices like: add/remove a device, read/write a configuration variable, get the current device status. Web services architecture is based on Simple Object Access Protocol (SOAP) standard: the XML-based communication protocol used to access ZTC Web services. Applications can be developed in Java or .NET.

Import Tool

Import Tool is an application that allows the ZTC database creation via an external file. The file can be in text or Excel format and must contain a set of 'batch mode' operations: add, delete and modify. ZTC reads the commands file and quickly populates the database.



ZTC Components

ZTC Applications

The ZTC Server exposes device data through the ZTC WEB Interface. This application can run on the same machine of the ZTC Server or on a different one. Through the ZTC WEB Interface, different actors can contact the ZTC-Server:

IT Managers, Global Network Administrators

These users have the main visibility on the global network. Their role is to organize the configuration database to reflect the logical and physical distribution of the network. They also create new users with different profiles to which they assign sub-zones. They can set some variables that are visible to the whole network. They can define the support for new types of devices, defining the set of variables that have to be used to create a configuration file.

Zone Network Administrators

Are delegated to their zone and have visibility only on that. In that scope, they can add users, define a template for a configuration file and validate some variables.

Device Administrators, Configuration Testers

Their interest is focused on a single device or on a single type of device.

Call Center Operators, Help Desk

They can view a restricted set of variables in some defined zones.

All these profiles can be constructed with a high degree of customization. In each case it will be possible to assign different roles and to create views on data specific for a user.

The devices communicate with the ZTC Server using a local application called ZTC Embedded Client. Basically, a client periodically asks the ZTC Server for a newer configuration (configuration pull). When a new configuration for the device is available, the client downloads and executes it. Note that all connections made by the device are outbound. This implies that no listening service has to be started on the device. This minimizes security issues related to accepting inbound connections.

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