

RDK Device Management

Overview

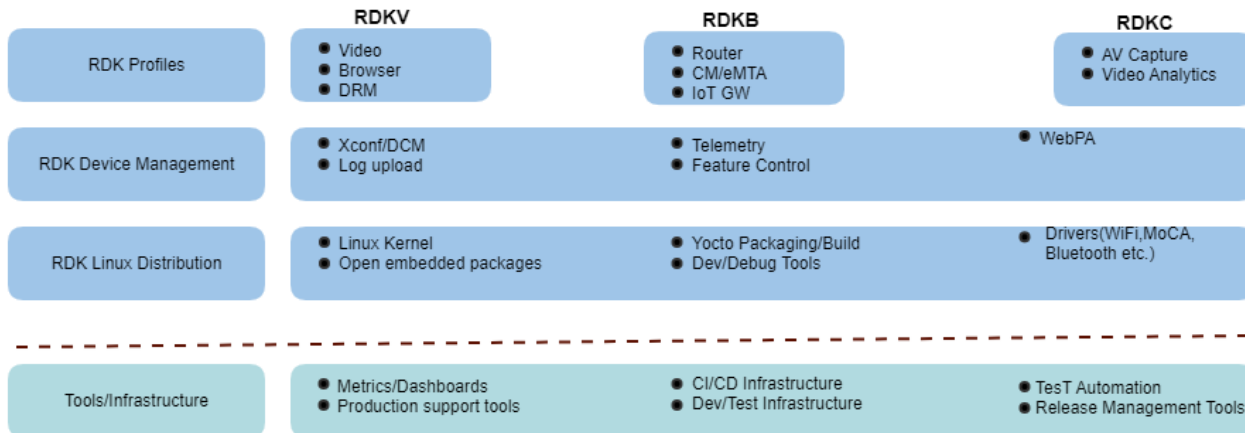
Device Management is an indispensable requirement to support large scale deployment. This helps in:

- Controlled bulk operations/data retrievals
- Firmware(code) download
- Dynamically enable/disable features
- Retrieving field matrices

XCONF/DCM is a management service that delivers certain configuration details to set-top-boxes (STB). Remote devices like set top boxes have settings to control certain activities. For instance, STBs need to know when to upload log files, or when to check for a new firmware update. In order to remotely manage a large population of devices, we need a solution that lets support staff define instructions and get the instructions to the devices. These are Device Configuration Manager (DCM) and Xconf (X1 Configuration Manager). DCM and Xconf are management services that delivers certain configuration details to set-top-boxes (STB).

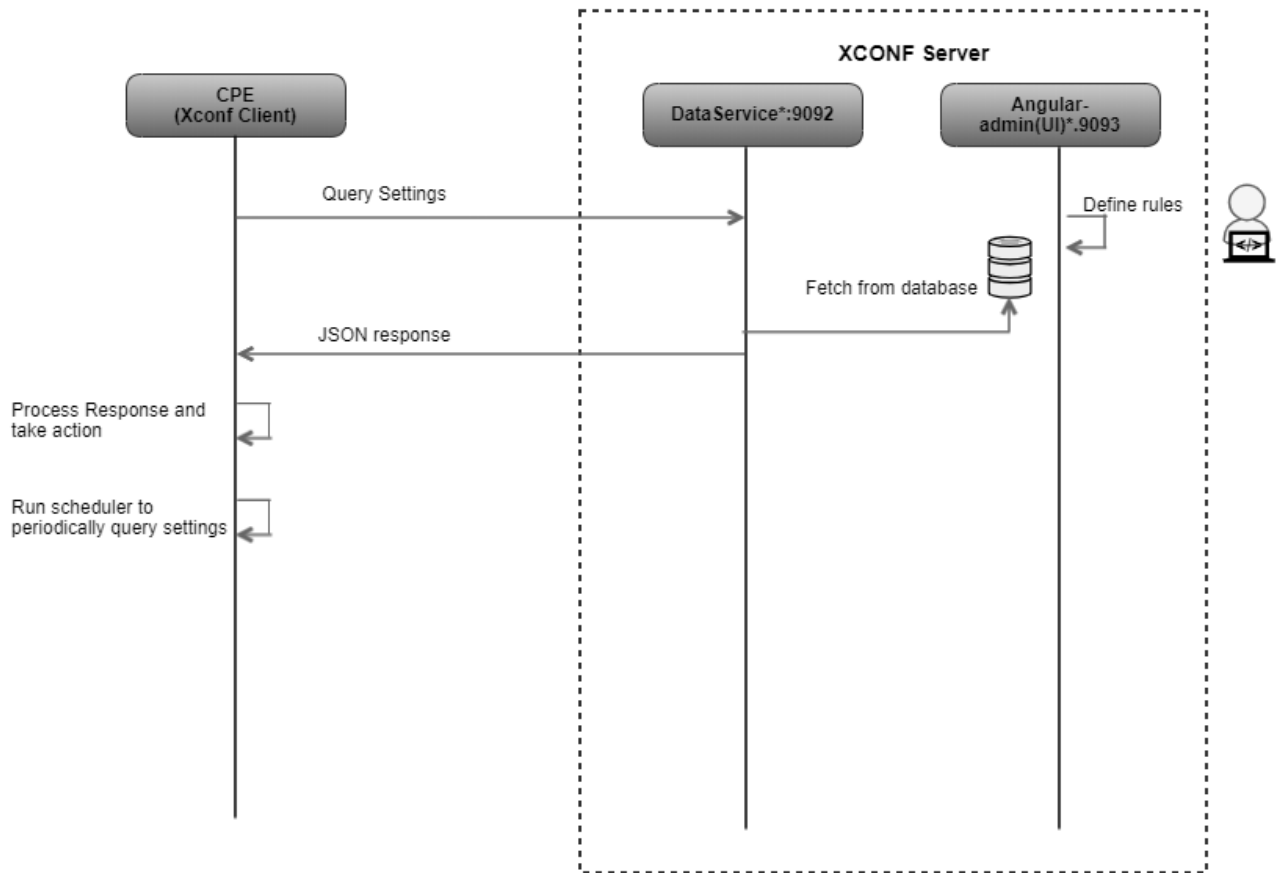
Xconf (X1 Configuration Manager) and Device Configuration Manager (DCM) began as separate solutions. Both the server and STB implementations evolved separately, yet both had overlapping functionality. Now, engineers have consolidated the server modules. The single name of the device configuration management service is XCONF. In the client side, the scripts and components are still named as DCM.

Device Management feature is horizontally scaled between different RDK profiles (like RDK-V, RDK-B and RDK-C) as shown in the below diagram. This means that the same code can be shared between different RDK profiles.



XCONF has client component ie CPE device component and server side component. XCONF's primary purpose is to tell STBs where to send their log files and what telemetry metrics they should be sending. XCONF does not receive logs or telemetry from the boxes. It simply tells the STB where to send log files or telemetry and what specific metrics it should be sending. XCONF also tells STBs when, where (host), and how (protocol) to send this data.

XCONF server consists of two web applications: the Data Service part and Angular-admin (UI). STBs query the XCONF Data Service to get their configuration details. Angular-admin (UI) allows administrators to create targeting rules and enter all the necessary configuration details for a rule.



The Xconf-Angular-Admin(UI) provides the web interface for the user. It lets the user define different types of Model, Environment, MAC Address, firmware configuration, Device setting configuration and telemetry rules. The rest controllers handle the request from UI and modify the data in Cassandra through dataservice. Xconf-dataservice is the main component of Xconf-OSS which communicates with the STB. The Firmware Configurations, Common data sets (MAC list, Model and Environment), telemetry profile, Download location, RFC and feature that are created, updated or deleted in Admin-UI is stored in cassandra. Dataservice is responsible to fetch the data from the Cassandra database and send it as a Response when a STB makes a request to Xconf-dataservice for the configuration.

Device Management features (using XCONF) include:

1. [Code Download \(Xconf, DCM\)](#)
2. [Log Upload](#)
3. [Telemetry](#)
4. [RDK Feature Control \(RFC\)](#)