

Infinity ACS

PRODUCT BROCHURE

Prepared by Dictionary Networks

www.dictionarynetworks.in

June 28, 2025

Dictionary Networks

© All Rights Reserved.

CIN: U62013MP2025PTC076601

Product Summary

Smart CPE Control. Maximum Efficiency. Built for your Infinite Possibilities.

Infinity ACS gives you complete command over your network with powerful, one-click CPE management tools. From real-time WAN control and bulk configurations to intelligent Wi-Fi analytics and TR-143 diagnostics, everything you need is at your fingertips.

Contents

1. Introduction	4
2. About Us	4
3. Our Objectives	4
4. Key Features	5
5. Architecture of Infinity ACS	6
6. Deployment Topology Simplified	9
7. CPE Management Features in the ACS	10
8. Glimpses of the ACS	12
Contact US.....	27

1. Introduction

Infinity ACS is a robust and feature-rich Auto Configuration Server (ACS) designed to streamline the management and provisioning of devices in broadband and telecommunications networks. Built on the TR-069 protocol, Infinity ACS offers unparalleled support for both TR-098 and TR-181 data models, ensuring compatibility with a wide range of Customer Premises Equipment (CPE).

TR-069, the backbone of Infinity ACS, enables seamless remote management of CPEs, allowing service providers to automate configuration, firmware upgrades, diagnostics, and monitoring processes. By supporting both the TR-098 data model (optimised for gateway device management) and the TR-181 data model (ideal for device and service management in complex environments), Infinity ACS caters to diverse operational needs. As it stands today, it has the possibility to bypass/make OLT independent from configuration and CPE management perspective.

2. About Us

We are a dedicated team of software and embedded engineers from India, part of Dictionary Networks driven by a shared passion for creating impactful networking solutions. With extensive experience in developing networking-based devices such as ONTs, routers, FW development, and web servers using the .NET framework, our expertise spans both software development and embedded systems.

Our diverse team includes professionals skilled in modern frontend technologies like React and Angular, ensuring that our products not only perform exceptionally but also provide a seamless and intuitive user experience.

3. Our Objectives

Our mission is to empower Indian ISPs with cutting-edge technology solutions tailored to their unique needs. Infinity ACS is our flagship product, designed to simplify device management and enable infinite possibilities for growth and innovation. We aim to expand our portfolio of software products in the coming

days, creating tools that address challenges and unlock opportunities across the networking ecosystem.

Together, we believe in making the dream of infinite possibilities a reality through our commitment to excellence and innovation.

4. Key Features

Infinity ACS – Powerful, Scalable, and Modern TR-069 Device Management

1. Comprehensive Device Management

Easily manage a wide range of devices, including gateways, modems, routers, and IoT equipment. Infinity ACS offers centralised control and monitoring across diverse network topologies.

2. Full Support for TR-098 and TR-181 Standards

Ensure compatibility with both legacy and modern multi-service devices. Infinity ACS is future-proof, providing seamless support for evolving broadband standards.

3. Secure and Flexible Communication

Supports both HTTP and HTTPS protocols, catering to environments with TLS encryption as well as non-encrypted configurations.

4. Scalable and High-Performance Architecture

Built to scale—from small setups to large ISP deployments. Infinity ACS ensures reliable performance and responsiveness, regardless of network size.

5. Intuitive and Modern Interface

Features a fast, clean, and responsive UI built on **Next.js**, making device configuration, diagnostics, and monitoring simple and efficient.

6. Advanced Remote Diagnostics

Quickly identify and resolve device or network issues through integrated diagnostic tools, reducing operational overhead and improving customer experience.

7. Complete WAN Management

Includes full WAN interface lifecycle support—create, edit, delete WAN interfaces directly from the ACS. No manual provisioning needed.

8. Backup and Restore Capabilities

Supports remote configuration backup and restore, providing safety and ease for CPE management and rapid recovery from device failures.

9. Docker-Based Deployment for Full Stack Control

Running in Docker, Infinity ACS delivers a flexible and portable deployment model that includes everything—from IP allocation to full CPE lifecycle management.

10. Robust Backend with .NET Core

The ACS backend is powered by a secure, scalable, and high-performance **.NET Core** stack, delivering enterprise-grade reliability and extensibility.

Infinity ACS empowers service providers with the tools they need to enhance operational efficiency, improve service delivery, and deliver an exceptional customer experience. With its adherence to industry standards and focus on flexibility, Infinity ACS is the ultimate solution for managing modern networks effectively.

5. Architecture of Infinity ACS

Infinity ACS is built with a modern, modular architecture designed for scalability, reliability, and ease of deployment. It leverages proven technologies to provide a seamless and powerful TR-069 device management experience.

Core Components

1. Backend – .NET Core

- Developed using **.NET Core**, the backend provides high-performance APIs and services for device communication, data processing, and configuration management.
- Handles TR-069 protocol logic, WAN interface operations, diagnostics, backup/restore functionality, and more.

2. Frontend – Next.js

- A fast, responsive, and intuitive user interface built on **Next.js**, designed to simplify device management, diagnostics, and user interactions.
- Delivers a single-page app (SPA) experience with server-side rendering (SSR) for performance and SEO benefits.

3. Database – Microsoft SQL Server (MSSQL)

- Stores all configuration data, device parameters, user accounts, logs, and operational history.
- Ensures data integrity, transactional consistency, and high availability for production-grade deployments.

4. Docker-Based Containerization

- Every component of Infinity ACS—backend, frontend, and database—is containerized using **Docker**.
- Simplifies deployment, scaling, and environment replication across test, staging, and production.

System Workflow

1. **CPE Device** connects to Infinity ACS via TR-069 over HTTP/HTTPS.
2. **Backend (.NET Core)** processes query, interacts with the device, and handles configurations.
3. **Frontend (Next.js)** presents all device data, diagnostics, and configuration tools to the user.
4. **Database (MSSQL)** persists device states, parameters, sessions, logs, and backup data.
5. **Docker Orchestration** ensures modular deployment, rapid updates, and scalable environments.

Key Technologies

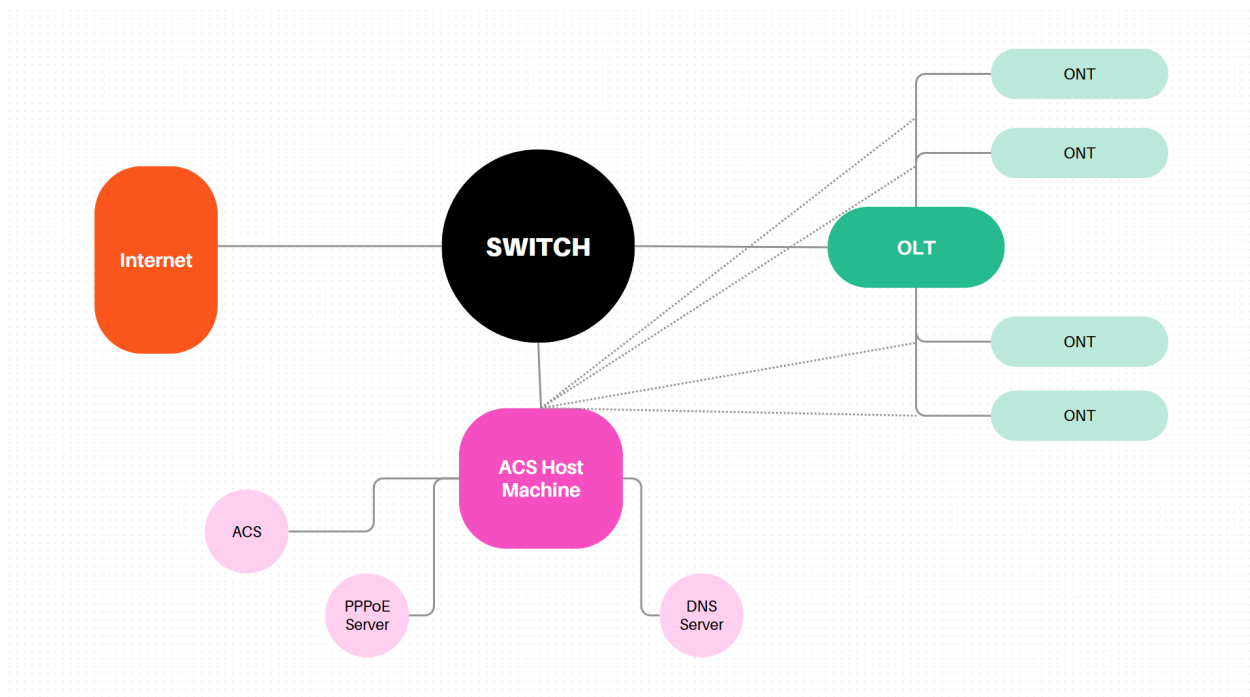
Layer	Technology
Frontend	Next.js (React)
Backend	.NET Core API
Database	Microsoft SQL Server
Deployment	Docker (containerized stack)

Layer	Technology
Protocol	TR-069 / CWMP over HTTP/HTTPS

6. Deployment Topology Simplified

Infinity ACS is designed with a container-first approach, enabling rapid deployment, easy scaling, and environment consistency across development, staging, and production. It uses **Docker** to package each component into isolated, lightweight containers for efficient orchestration and maintenance.

Topology Map



The topology that we follow make Infinity ACS more than just a normal ACS. We have designed it in a way that it will allow operators to move towards an OLT agnostic network.

The deployment packages include ACS, PPPoE Server and the DNS server in complete. It will help operators to have any kind of OLT they like while doing all their major WAN and CPE management from the ACS. We have achieved similar behavior to $OLT \leftrightarrow ONT$ simulated but in IP layer between CPE and the ACS. The ONT as soon as it comes up in the customer's premises it will report to the ACS and the ACS can have track of everything.

7. CPE Management Features in the ACS

Key lessons include the importance of rigorous beta testing prior to launch and the value of proactive customer education. Incorporating user feedback early in the development phase ensured a more refined final product.

Infinity ACS offers a rich set of features to streamline and enhance Customer Premises Equipment (CPE) management. Key capabilities include:

1. **Broad ONT Support**

Full compatibility with both **RTK** (Realtek) and **MTK** (MediaTek) based ONTs.

2. **Bulk Operations**

Execute **bulk GET/SET actions** across all online devices for efficient mass configuration.

3. **WAN Interface Management**

Create, edit, and delete WAN interfaces directly from the ACS.

4. **Mass Firmware Upgrade**

Schedule and execute firmware upgrades across multiple devices simultaneously.

5. **Configuration Backup & Restore**

Back up current device settings and restore them when needed for quick recovery.

6. **Wi-Fi Analytics & Channel Optimisation**

Analyse Wi-Fi performance and receive intelligent **channel recommendations** to improve network quality.

7. **Optical Parameter Monitoring**

Real-time alerts and recommendations based on optical signal strength and other key metrics.

8. **Full Parameter Access**

View and modify all available TR-069 parameters at any time.

9. **TR-143 Diagnostics**

Comprehensive support for **Download, Upload, UDP Echo, TCP Echo**, and **HTTP** diagnostics defined in TR-143.

10. **Event Timeline Viewer**

Visual representation of TR-069 sessions, device events, and provisioning history.

11. **Expert Developer Mode**

Access a low-level RPC execution interface for full control over all supported TR-069 methods.

12. **Logs Management & Export**

View, manage, and download device and system logs for detailed analysis and troubleshooting

8. Glimpses of the ACS

Login Page



Good Evening.
Welcome back!

Sign in

[Forgot your password?](#)

Don't have an account? [Sign up](#)

Registration Page



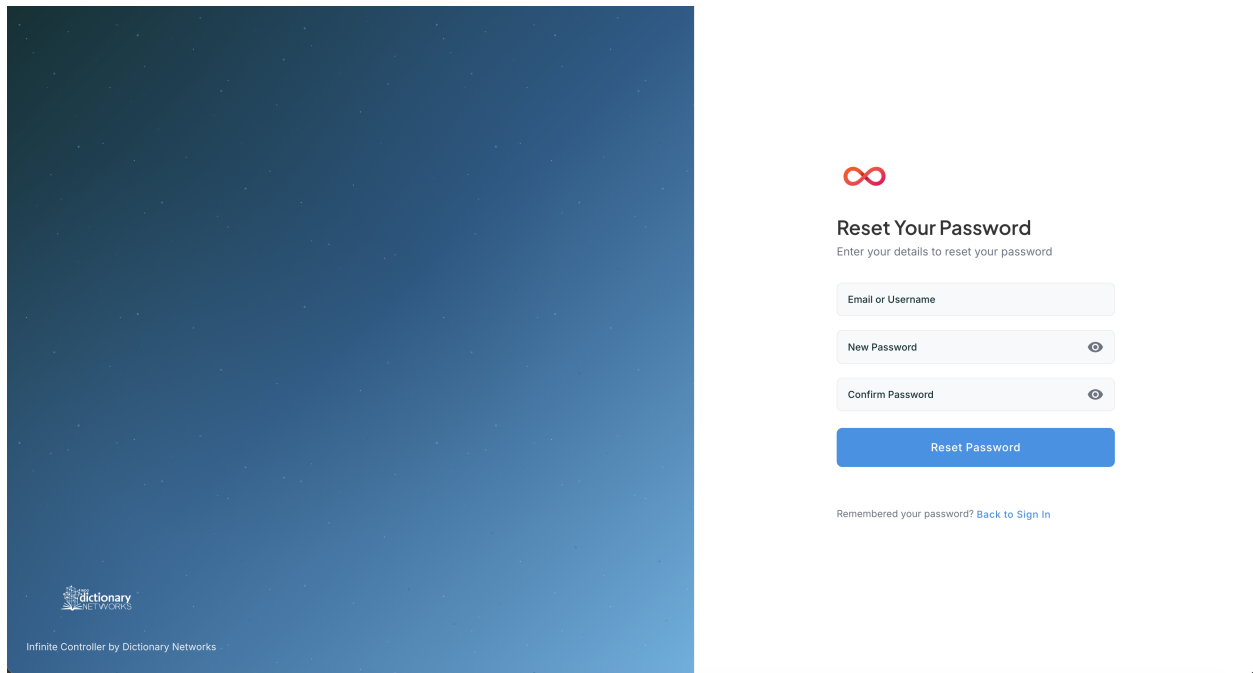
Create Account

Add new users to manage your CPEs

Create Account

Already have an account? [Sign in to your account](#)


Forgot Password




The image shows a 'Forgot Password' form on a dark blue background. The form includes a red infinity logo, the title 'Reset Your Password', and a subtitle 'Enter your details to reset your password'. There are three input fields: 'Email or Username', 'New Password' (with an eye icon), and 'Confirm Password' (with an eye icon). A blue 'Reset Password' button is at the bottom. A link 'Remembered your password? [Back to Sign In](#)' is below the button. The Dictionary Networks logo and 'Infinite Controller by Dictionary Networks' are in the bottom left corner.

Reset Your Password
Enter your details to reset your password


Email or Username

New Password 

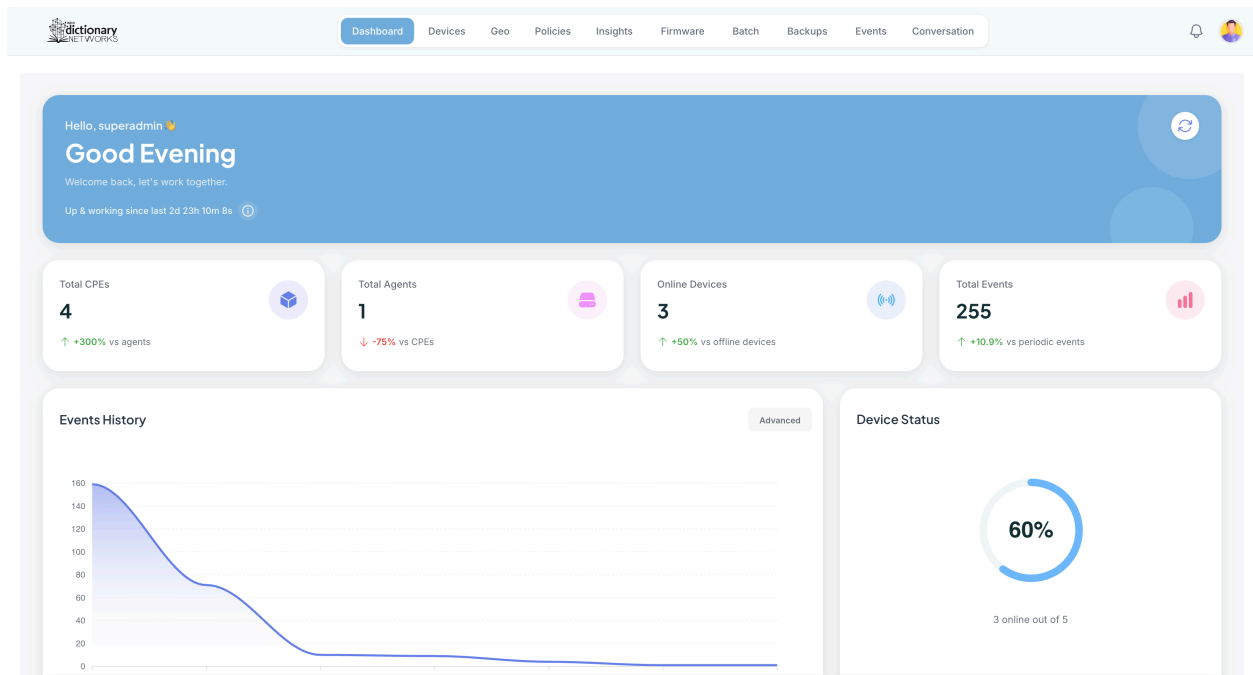
Confirm Password 

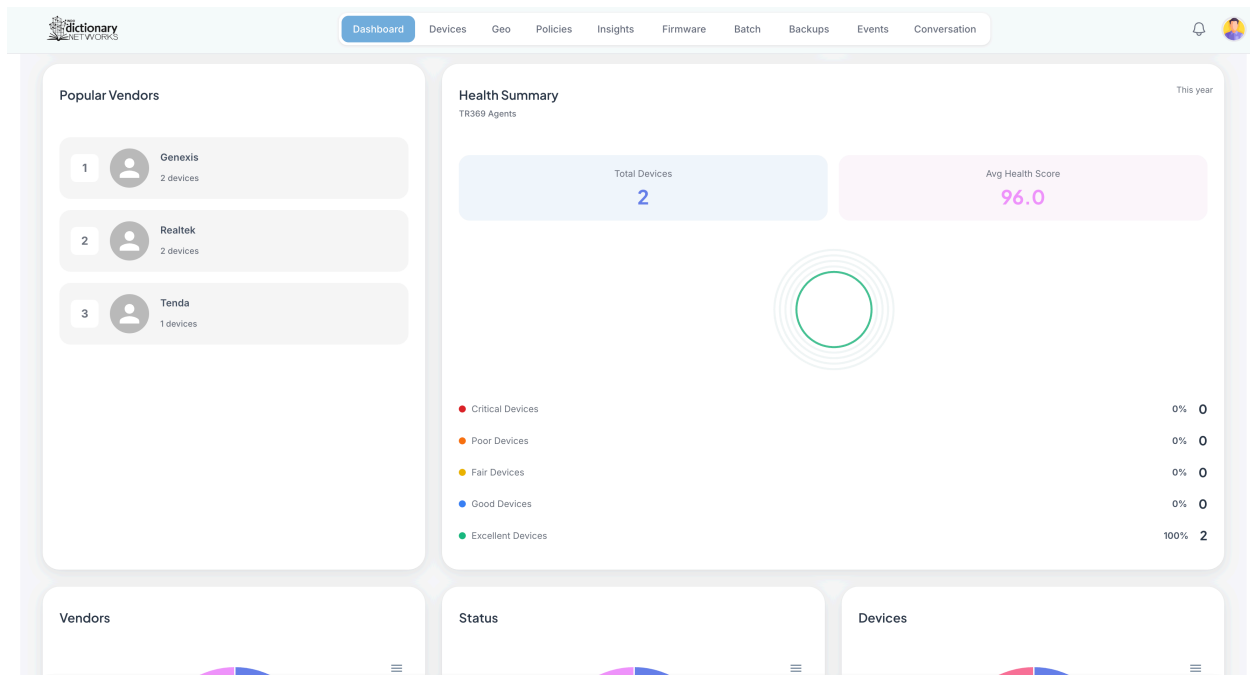
Reset Password

Remembered your password? [Back to Sign In](#)

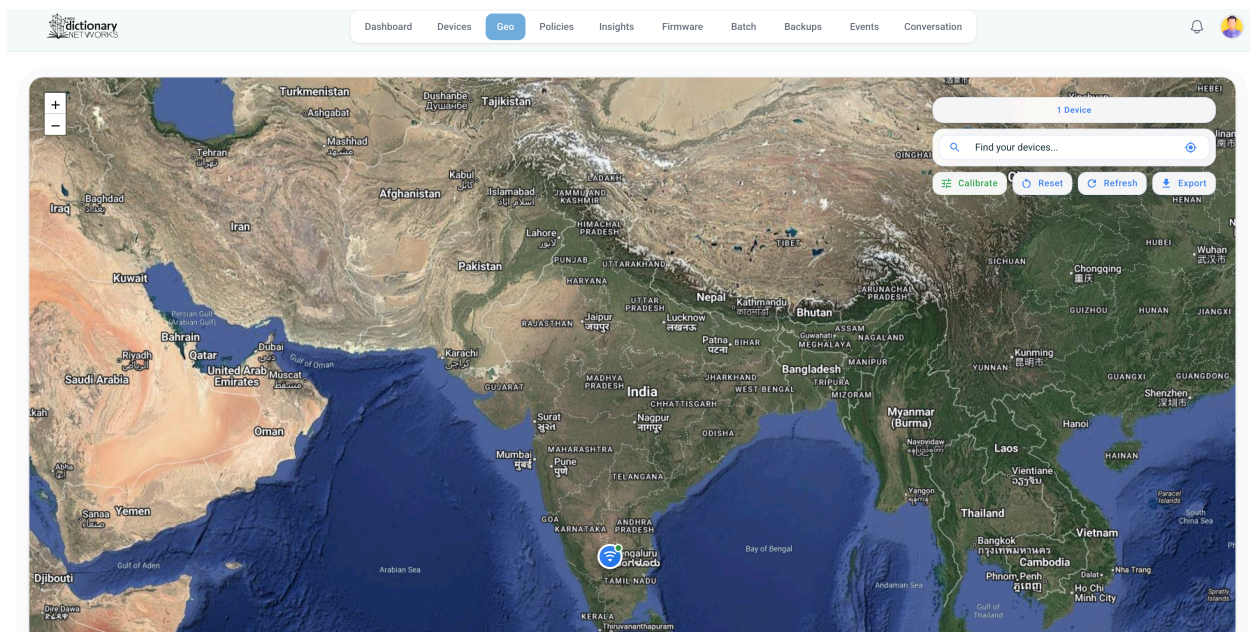

Infinite Controller by Dictionary Networks

Dashboard





GEO Page



CPE List Page

dictionary
NETWORKS

DashboardDevicesGeoPoliciesInsightsFirmwareBatchBackupsEventsConversation

Device Control Hub

Simplify operations — monitor, manage, and update CPEs in one place.

Filter your CPE

Devices

Total: 4

SERIAL NUMBER	PRODUCT CLASS	DESCRIPTION	SW VERSION	TX/RX POWER	IP ADDRESS	LAST SEEN	STATUS	ACTIONS
123453894E0F002D3	SY-GPON-1110-WDAONT	30Mbps-BUI	V2.0.15-200308	-/-	10.10.4.208	2025-12-29 21:57:27	Online	<div></div> <div></div>
123459890B26D56C3	SY-GPON-2000-WADONT	-	V2.1.06-240824	-/-	192.168.29.148	2025-12-27 20:46:27	Offline	<div></div> <div></div>
E7883110104012034	AC10	office msp	V1.0.18	-/-	100.64.78.46	2025-12-29 21:57:26	Online	<div></div> <div></div>
GNXS81900CBA	Earth-2022	-	E2022-1.1UR	-/-	192.168.1.41	2025-12-13 09:08:10	Offline	<div></div> <div></div>

Rows per page: 101-4 of 4<>

CPE Basic Info Page

dictionary
NETWORKS

DashboardDevicesGeoPoliciesInsightsFirmwareBatchBackupsEventsConversation

Devices > E7883110104012034 > General

Online

TR069

Product Class

AC10

Software Version

V1.0.18

IP Address

100.64.78.46

Last Seen

2025-12-29 21:59:25

General

Wi-Fi

LAN

WAN

LAN Hosts

Diagnostics

TR069

Events

System Chart

Host Chart

Stats

Tree

RPCs

Admin

Device Information

Last Refreshed: 29/12/2025, 21:59:36

PARAMETER

VALUE

Manufacturer

Tenda

Manufacturer OUI

C83A35

Product Class

AC10

Model Name

Tenda

Serial Number

E7883110104012034

Software Version

V1.0.18

Hardware Version

V1.0

Memory Usage

87.63%

Used of 48756 MB

WLAN Config

Dictionary

Networks

DashboardDevicesGeoPoliciesInsightsFirmwareBatchBackupsEventsConversation

Devices > E7883110104012034 > Wi-Fi

OnlineTR098

Product Class

Software Version

IP Address

Last Seen

AC10

V1.0.18

100.64.78.46

2025-12-29 21:59:25

GeneralWi-FiLANWANLAN HostsDiagnosticsTR069EventsSystem ChartHost ChartStatsTreeRPCsAdmin

Wi-Fi Settings

Set up your Wi-Fi options from this screen

Select Wi-Fi Access Point

2.4 GHz Primary

Status

Up

Wi-Fi Enable

Enabled

BroadCast Enable

Enabled

SSID

Raj Broadband

Security Mode

WPA+WPA2

Password

Operating Band

b/g/n

Channel Width

20 MHz

LAN – DHCP & Ethernet

Dictionary

Networks

DashboardDevicesGeoPoliciesInsightsFirmwareBatchBackupsEventsConversation

Devices > E7883110104012034 > LAN

OnlineTR098

Product Class

Software Version

IP Address

Last Seen

AC10

V1.0.18

100.64.78.46

2025-12-29 21:59:25

GeneralWi-FiLANWANLAN HostsDiagnosticsTR069EventsSystem ChartHost ChartStatsTreeRPCsAdmin

LAN DHCP

Ethernet Interfaces

LAN Configuration

Manage your LAN DHCP settings

D H C P Server Enable

Enabled

Min Address

192.168.1.100

Subnet Mask

255.255.255.0

Domain Name

www.tendawifi.com

I P Routers

192.168.1.1

Max Address

192.168.1.200

D N S Servers

192.168.1.1

D H C P Lease Time

1 Day

WAN Page

dictionary
NETWORKS

DashboardDevicesGeoPoliciesInsightsFirmwareBatchBackupsEventsConversation

🔔👤

Devices > 123453894E0F002D3 > WANOnlineTR0694

Product Class
SY-GPON-1110-WDAONT

Software Version
V2.0.15-200308

IP Address
10.10.4.208

Last Seen
2025-12-29 22:01:30

<GeneralWi-FiLANWANOpticalLAN HostsDiagnosticsTR069ServicesEventsSystem ChartOptical ChartHost ChartStats>

WAN Configuration

Add, delete, and modify WANs as needed.

WAN 1 - 1_TR069_INTERNET_R_VID_100

Add WAN

Delete WAN

WAN Name
1_TR069_INTERNET_R_VID_100

WAN Type
PPPoE

Enable
Enabled

Connection Status
Connected

LastConnectionError
ERROR_NO_CARRIER

Uptime
1d 19h 5m 7s

MAC Address
38:94:e0:10:02:de

dictionary
NETWORKS

DashboardDevicesGeoPoliciesInsightsFirmwareBatchBackupsEventsConversation

🔔👤

Devices > 123453894E0F002D3 > WANOnlineTR0694

Product Class
SY-GPON-1110-WDAONT

Software Version
V2.0.15-200308

IP Address
10.10.4.208

Last Seen
2025-12-29 22:01:30

<GeneralWi-FiLANWANOpticalLAN HostsDiagnosticsTR069ServicesEventsSystem ChartOptical ChartHost ChartStats>

WAN Configuration

Add, delete, and modify WANs as needed.

WAN 1 - 1_TR069_INTERNET_R_VID_100

Add WAN

Delete WAN

WAN Name
1_TR069_INTERNET_R_VID_100

WAN Type
PPPoE

Enable
Enabled

Connection Status
Connected

LastConnectionError
ERROR_NO_CARRIER

Uptime
1d 19h 5m 7s

MAC Address
38:94:e0:10:02:de

Create a new WAN

Fill in the WAN configuration parameters. Some devices may support a max of only 6 WAN interfaces.

VLAN Mode
UNTAG

Channel Mode
IPoE

IP Mode
IPv4 only

Application Type
INTERNET

Port Binding

CancelCreate WAN

Optical Info Page

dictionary
NETWORKS

DashboardDevicesGeoPoliciesInsightsFirmwareBatchBackupsEventsConversation

OnlineTROSS

Devices > 123453894E0F002D3 > Optical

Product Class
SY-GPON-1110-WDAONT

Software Version
V2.0.15-200308

IP Address
10.10.4.208

Last Seen
2025-12-29 22:01:30

GeneralWi-FiLANWANOpticalLAN HostsDiagnosticsTR069ServicesEventsSystem ChartOptical ChartHost ChartStats

Optical Parameters
Live GPON Module Readings

Status: Up

RX Optical Power
-21 dBm
-27 to -7 dBm

TX Optical Power
1.8 dBm
0.5 to 5 dBm

Supply Voltage
3425.20 mV
3000 to 3500 mV


Bias Current
8,050 mA
0 to 90 mA

Transceiver Temp
15 °C
-10 to +85 °C

Upload Data
791.32 MB

Download Data
2477.00 MB

Parameter Trends



Voice Page

BasicAdvancedMetrics

Voice - Basic

Line Status
Disabled

Line Enable
Disabled

Server Type
Soft Switch SIP

Registrar Server

Registrar Server Port
5060

Proxy Server

Proxy Server Port
5060

Auth User Name

Auth Password

Phone Number

Outbound Proxy

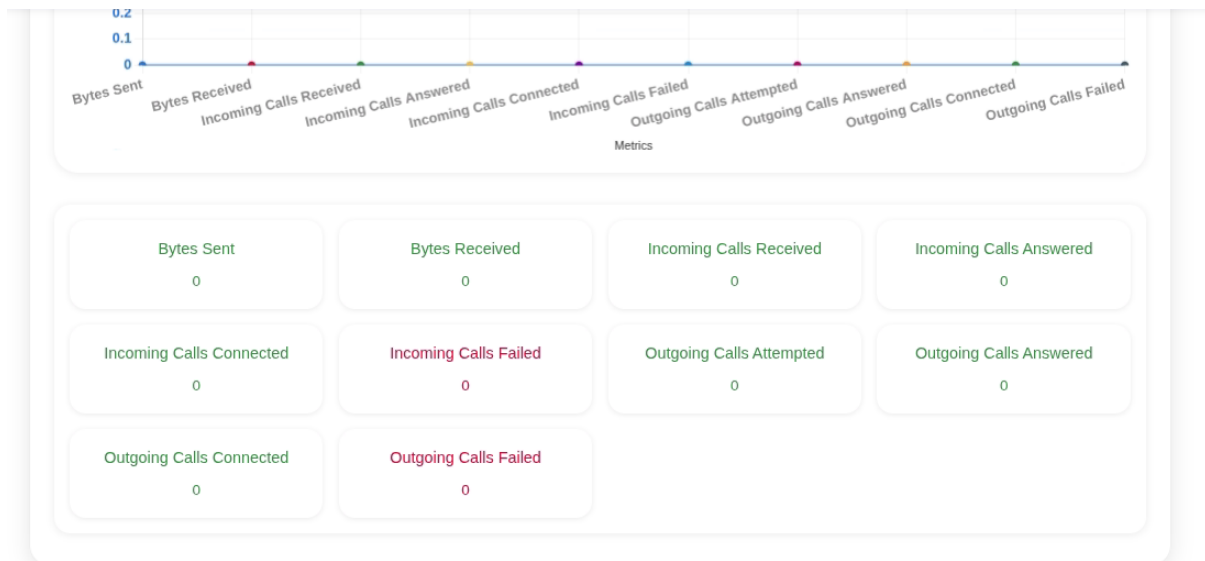
Outbound Proxy Port
5060

SIP Domain

Register Expires
3600

Secondary Registrar Server

pg. 18



TR069 Page

dictionary
Network Works

Dashboard Devices Geo Policies Insights Firmware Batch Backups Events Conversation

Devices > E7883110104012034 > TR069 Online TR069

Product Class AC10	Software Version V1.0.18	IP Address 100.64.78.46	Last Seen 2025-12-29 22:06:36
-----------------------	-----------------------------	----------------------------	----------------------------------

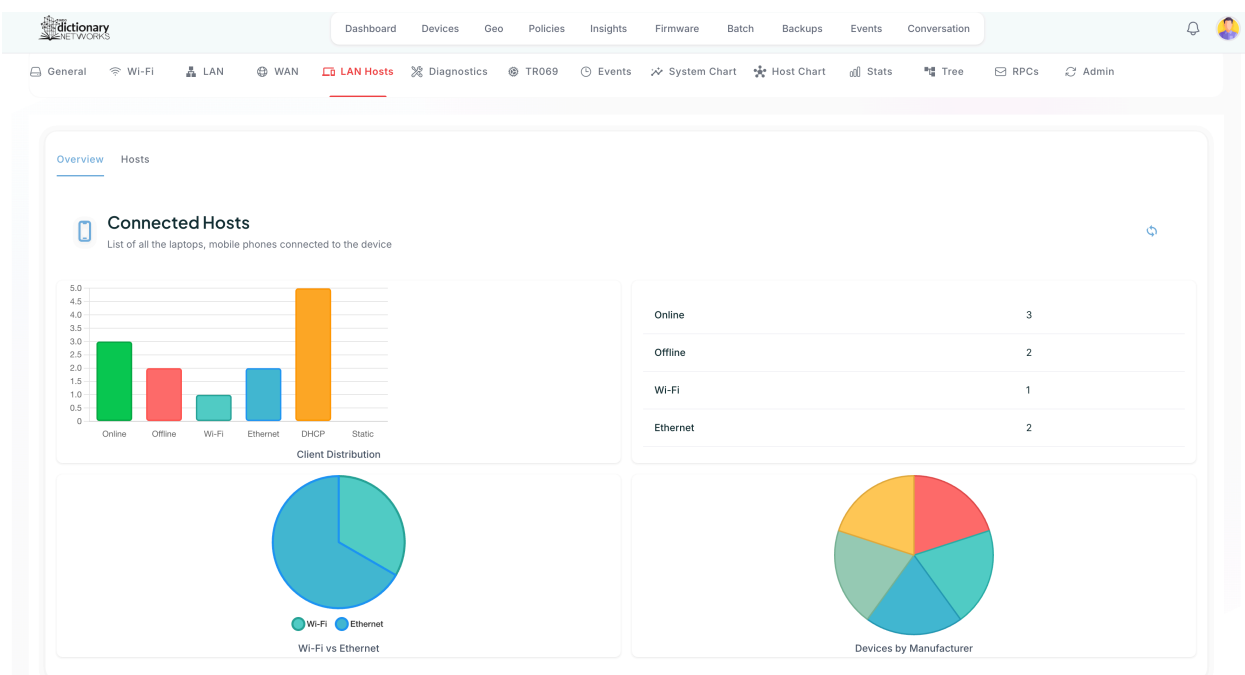
General Wi-Fi LAN WAN LAN Hosts Diagnostics **TR069** Events System Chart Host Chart Stats Tree RPCs Admin

TR069 Configuration

Manage TR069 settings for the device

ACS URL http://infinityacs.ddns.net:7547/api/inform/ACS1	ACS Username infinityacs	ACS Password *****
Periodic Inform Enable Enabled	Periodic Inform Interval (Seconds) 5	
Connection Request URL http://100.64.78.46:7547	Connection Request Username infinityacs	Connection Request Password *****

Connected Hosts



Diagnostics Page

BasicWi-FiLANWANVoiceOpticalLAN HostsDiagnosticsTR069EventsStats

Diagnostics

Select Interface1_TR069_INTERNET_R_VID_

TRACEROUTEPINGUPLOADDOWNLOAD

Hostwww.google.com

dictionary

DashboardDevicesGeoPoliciesInsightsFirmwareBatchBackupsEventsConversation

Network Diagnostics

Run traceroute, ping, upload, and download speed tests on your device

Select WAN Interface

TRACEROUTEPINGUPLOADDOWNLOAD

Download URLhttp://34.131.229.189/100MB.bin

Start Diagnostics

Diagnostics Results

Download Speed

33.33 Mbps

Services Page

Basic Wi-Fi LAN WAN Voice Optical LAN Hosts Diagnostics TR069 Services Events >

Users ALG

ALG Settings

Configure Application Layer Gateway (ALG) features.

☒ H323

☐ SIP

☒ RTSP

☒ L2TP

☒ IPSEC

☒ FTP

☒ PPTP

Stats Page

< Basic Wi-Fi LAN WAN Voice Optical LAN Hosts Diagnostics TR069 Events Stats >

☒ Auto-Refresh Unit:

MB

 Interval:

10s

Ethernet Statistics

Data Consumption per LAN Interfaces (in MB)

Interface	BytesSent (MB)	BytesReceived (MB)
Ethernet 2	3.2	1.6
Ethernet 4	0	0

Wi-Fi Statistics

Data Consumption per Wi-Fi Interfaces (in MB)

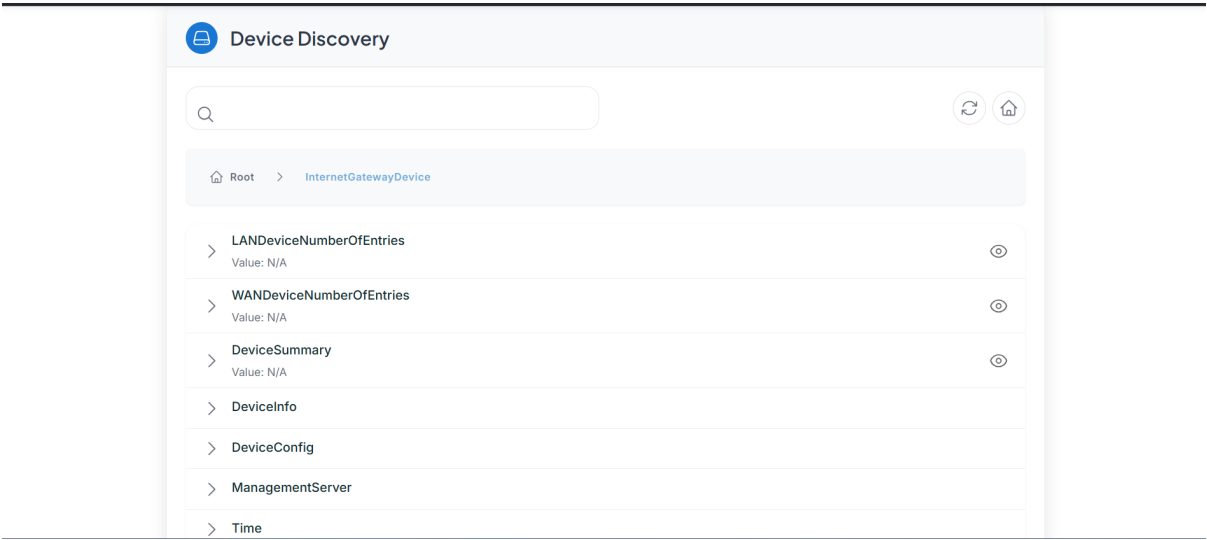
Interface	TotalBytesSent (MB)	TotalBytesReceived (MB)
WiFi 5GHz	4	4
WiFi 2.4GHz	1	1

WAN Statistics

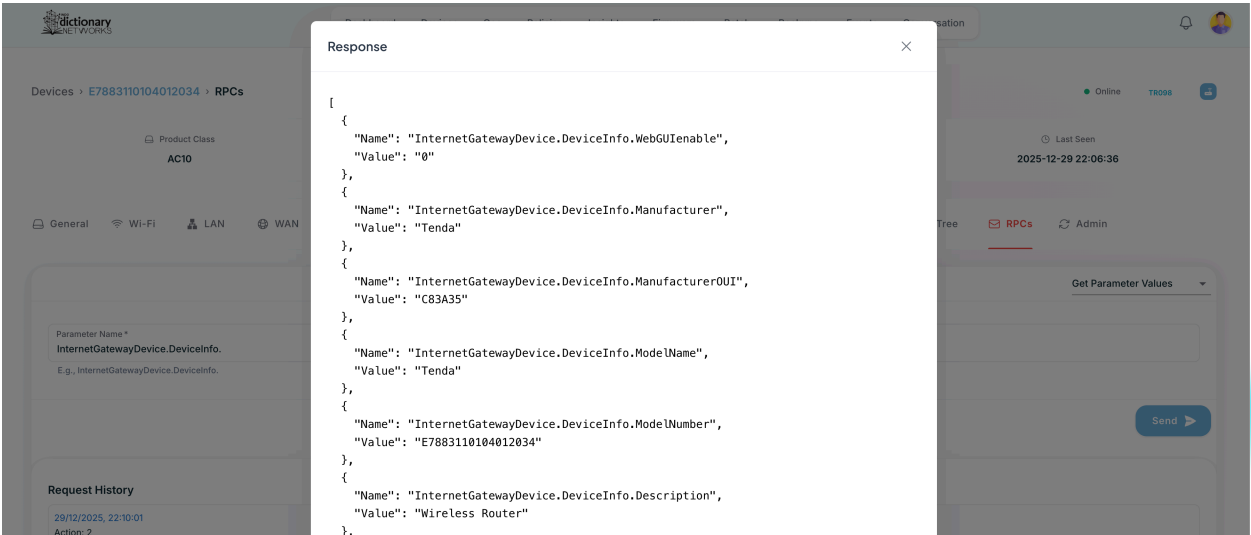
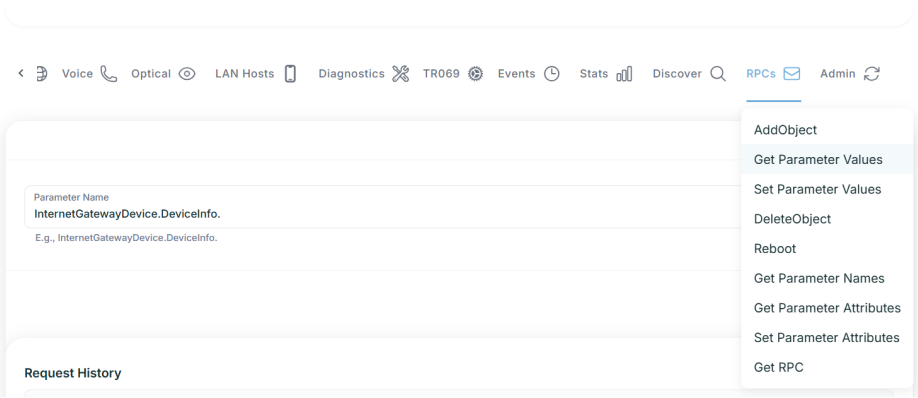
Data Consumption at the WAN Interfaces (in MB)

Interface	TotalBytesSent (MB)	TotalBytesReceived (MB)
WAN	0	0

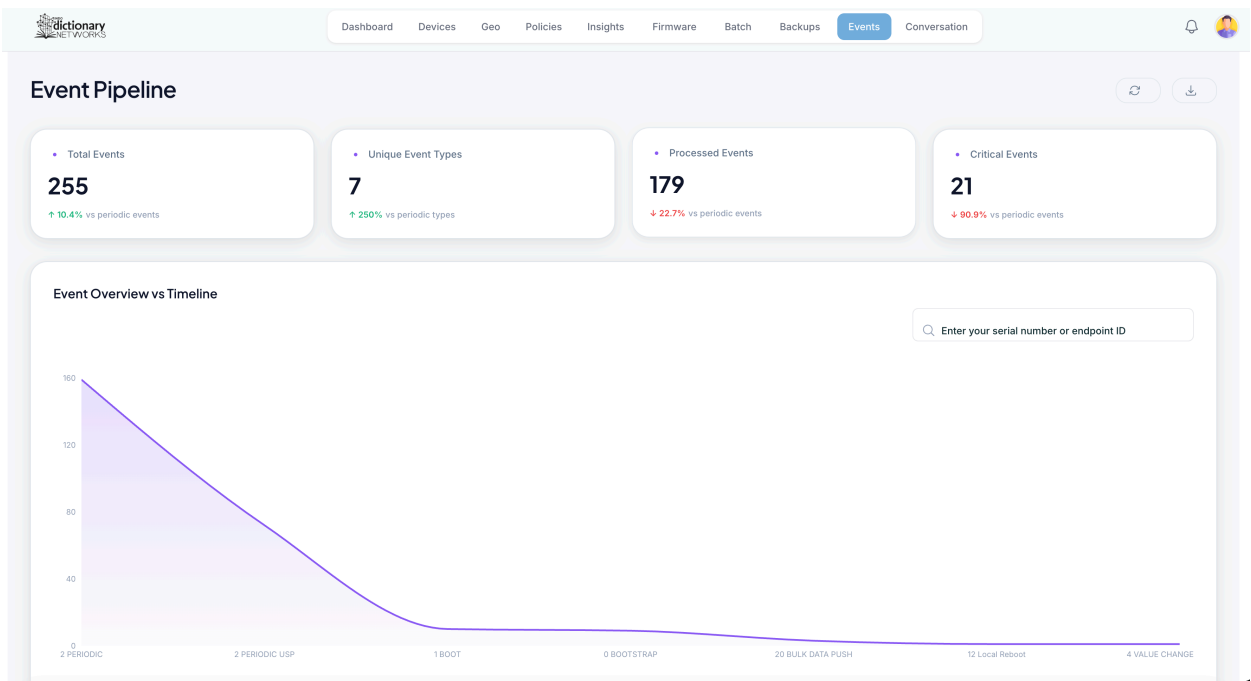
TR098 Data model tree view page



RPC Calls Page



Events Timeline



Mass FW Upgrade

dictionary
NETWORKS

DashboardDevicesGeoPoliciesInsightsFirmwareBatchBackupsEventsConversation

Devices

	SERIAL NUMBER	MODEL	SOFTWARE VERSION	STATUS	LAST UPGRADE STATUS
<input checked="" type="checkbox"/>	123453894E0F002D3	SY-GPON-1110-WDAONT	V2.0.15-200308	Online	<button>Check</button>
<input type="checkbox"/>	12345989DB26D56C3	SY-GPON-2000-WADONT	V2.1.06-240824	Offline	
<input type="checkbox"/>	E7883110104012034	AC10	V1.0.18	Online	
<input type="checkbox"/>	GNXS81900CBA	Earth-2022	E2022-1.1UR	Offline	

Rows per page: 10 1-4 of 4 < >

Upgrade Firmware for 1 Devices

Firmware List

Upgrade Firmware ⓘ

FW Upgrade Report

DashboardDevicesGeoPoliciesInsightsFirmwareBatchBackupsEventsConversation

Firmware Upgrade Report

View, filter, and export firmware upgrade results for your device fleet.

Start Date
12/29/2025

End Date
12/31/2025

Search

Export

No results to display. Please select a date range and fetch results.

Bulk Action

DashboardDevicesGeoPoliciesInsightsFirmwareBatchBackupsEventsConversation

Devices

SERIAL NUMBER
<input checked="" type="checkbox"/> 123453894E0F002D3
<input type="checkbox"/> 12345989DB26D56C3
<input checked="" type="checkbox"/> E7883110104012034
<input type="checkbox"/> GNXS81900CBA

Bulk Operation for : 2

Get Parameter Values

Parameter Name
InternetGatewayDevice.DeviceInfo.SoftwareVersion

All Device Responses

Download JSON

Download Failed Only

SERIAL NUMBER	STATUS	RESPONSE
123453894E0F002D3	200 OK	[{ "Name": "InternetGatewayDevice.DeviceInfo.SoftwareVersion", "Value": "V2.0.15-200308" }]
E7883110104012034	200 OK	[{ "Name": "InternetGatewayDevice.DeviceInfo.SoftwareVersion", "Value": "V1.0.18" }]


Close

LAST OPERATION



10 1-4 of 4 < >

Execute

CPE and ACS Conversation Logs



[Dashboard](#) [Devices](#) [Geo](#) [Policies](#) [Insights](#) [Firmware](#) [Batch](#) [Backups](#) [Events](#) [Conversation](#)

Device Log Management

Manage device logs: download, view statistics, clear content, and delete log files.

Download

Log Actions

Log File Operations

Get detailed statistics and actions to perform for a specific device's log file.

Serial Number

123453894E0F002D3

Fetch Info

Clear

Statistics for 123453894E0F002D3

File Name	File Size	Line Count
123453894E0F002D3.log	3.59 MB	63426
Created At	Last Modified	Last Accessed
29/12/2025, 22:04:57	29/12/2025, 22:04:57	29/12/2025, 22:04:59

Clear Log Content

Delete Log File

Dictionary Networks

Infinite Controller v1.0.0 | Build: 291225 2151

[Website](#) [LinkedIn](#) [Email](#)

Contact US

For queries and questions regarding purchase, contracts, trials, deployment, joint venture, MOUs, please reach us at,

Email : dictionarynetworksindia@gmail.com, info@dictionarynetworks.in

Website : www.dictionarynetworks.in

LinkedIn: <https://www.linkedin.com/in/dictionary-networks-a64b70356/>

WhatsApp/Phone : +91 9663681258