volcano™

Automate Your Device & Network Testing.

Reliable, Fast & Scalable Testing— Using Minimal Resources

Volcano is a network performance measurement platform that allows for centralized, scripted control over a fleet of devices—resulting in a true simulation of the user experience. Get test results faster, more accurately and with fewer resources using Volcano.

Test the New with the Existing

New uses cases, including 5G- and IoT-based solutions, will require flexibility in your network: sensor-triggering events, high-speed access/MIMO, wearables, etc. These services need to ride on top of your current primary service offerings to not only test their performance, but to also ensure that they don't break existing ones. Volcano can quickly and easily simulate your new normal traffic patterns and identify potential risks.

Scale for New Devices

Millions of new devices will access your network. Volcano provides the toolset you'll need to characterize, accept and integrate those devices quickly and scale effectively.

Handle Network Load

In addition to new devices, more and more services are expected to be available on the current generation of devices. Unprecedented and accelerating use of streaming videos, location-based services and apps will continue to stretch the limits of your network. Volcano will enable you to repeatably simulate large network loads.

Support for Your Ever-Expanding Network

Volcano can be used to support the commission and integration of new sites. Because the app is so easy to use, the C&I team is able to execute the testing without the need for a validation or drive-test team. The collected data can be remotely accessed by the network operations team, enabling the site to be up and running more quickly than with traditional approaches.

Customize the Solution

DCmobility can quickly and cost-effectively customize Volcano to meet the unique needs of a new initiative, replace legacy tools or help streamline your current processes. Whether it's to modify data collection, analyze logs or develop custom reports, your engineers will have direct access to our engineers to ensure your business needs are met.
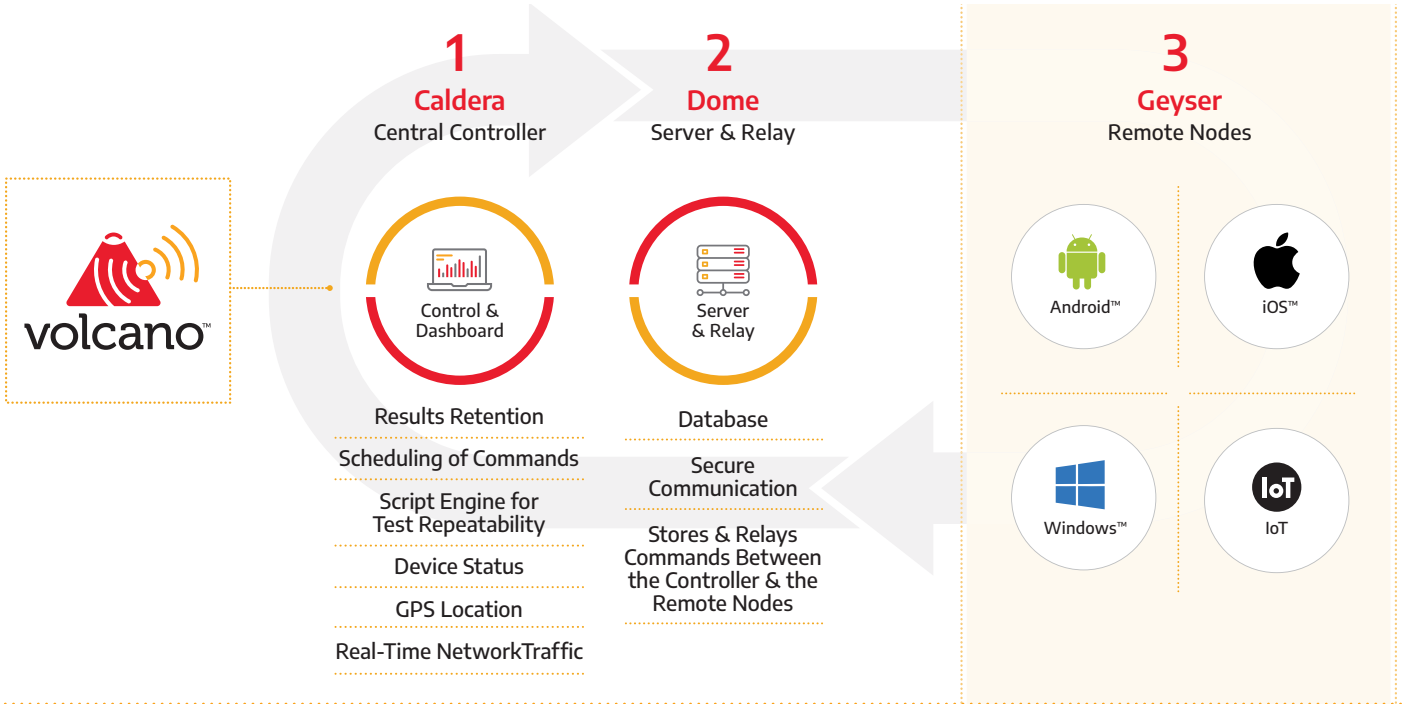
Many Use Cases

Volcano can do it all, from load testing of networks and applications (including voice, data and messaging services) to automated drive testing for field validation of newly commissioned or upgraded sites.

Volcano offers quick and easy troubleshooting of customer-reported issues—without the high cost of deploying engineering resources. It streamlines site commissions and integrations as well as supports network monitoring and real-time SLA management.
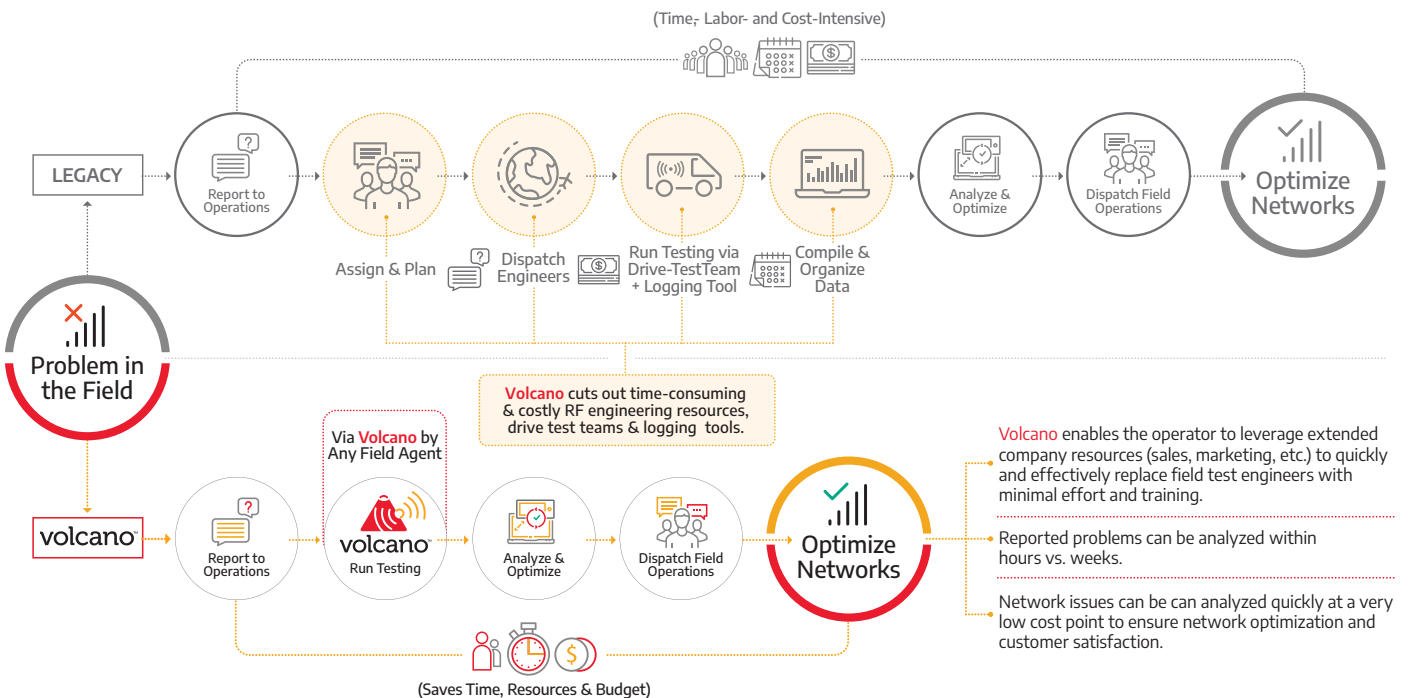
How Volcano Works

The Volcano platform allows you to quickly adapt any device in the field to become a test unit, working with both commercial and custom terminals to execute test campaigns and scripts that have been developed from a central controller. The controller sends the message to a relay server which in turn sends the test instructions to the terminals and collects back the results once the tests are completed.

1
Caldera
Central Controller

Control & Dashboard

Results Retention

Scheduling of Commands

Script Engine for Test Repeatability

Device Status

GPS Location

Real-Time NetworkTraffic

2
Dome
Server & Relay

Server & Relay

Database

Secure Communication

Stores & Relays Commands Between the Controller & the Remote Nodes

3
Geyser
Remote Nodes

Android™

iOS™

Windows™

IoT

Volcano Saves Time & Money—While Improving Accuracy

Compared to legacy processes, Volcano does more with less—faster. No need to deploy fleets of test vans or wait weeks to compile results.

(Time-, Labor- and Cost-Intensive)

LEGACY

Report to Operations

Assign & Plan

Dispatch Engineers

Run Testing via Drive-TestTeam + Logging Tool

Compile & Organize Data

Analyze & Optimize

Dispatch Field Operations

Optimize Networks

Problem in the Field

Volcano cuts out time-consuming & costly RF engineering resources, drive test teams & logging tools.

Via **Volcano** by Any Field Agent

Report to Operations

Run Testing

Analyze & Optimize

Dispatch Field Operations

Optimize Networks

Volcano enables the operator to leverage extended company resources (sales, marketing, etc.) to quickly and effectively replace field test engineers with minimal effort and training.

Reported problems can be analyzed within hours vs. weeks.

Network issues can be can analyzed quickly at a very low cost point to ensure network optimization and customer satisfaction.

(Saves Time, Resources & Budget)

Components

1. CALDERA: The Central Controller & Remote Node Status

Caldera is a controller that commands and orchestrates the Remote Nodes. It creates network traffic using a powerful and easy-to-use scripting engine, and can generate traffic sessions for **Ping, Web Browsing, FTP, HTTP, iPerf, Voice and SMS.** Caldera provides real-time status of the Remote Nodes, including a detailed traffic timeline, location information, radio cell information/metrics and more. It renders a running view of all tests being performed by each attached node in real-time.

2. DOME: Server & Relay

Dome is the server and relay that moves information and commands back and forth between the Caldera and the Remote Nodes. It securely retains all logs in its database and easily scales to handle large volumes of traffic.

3. GEYSER: Remote Nodes

Geyser accepts commands from the Caldera Controller relayed from the Dome Server Relay. Remote Nodes are determined based on device platform.

Android™—The Remote Node can be downloaded and launched within minutes. It can execute many typical end-user activities such as HTTP traffic tests, web browsing, SMS and voice calls. It also supports network test tools like iPERF and enables off-the-shelf commercial-grade hardware to be remotely managed—delivering critical real-time network information that would otherwise be very costly to collect.

iOS™—The iOS version of the Remote Node supports many of the Android features.

Windows™—The Windows version of the Remote Node can be used to command and control specialized modem types via AT commands or IP connectivity.

IoT—The embedded software version of the Remote Node supports command and control over IoT devices.

Volcano KPI & Measurements

These are just a small subset of the items that Volcano can track:

LTE: asuLevel, ci, cqi, dBm, earfcn, level, mcc, mnc, pci, RSSNR, RSRP, RSRQ, tac, timingAdvance

UMTS: CID, LAC, MCC, MNC, PSC, UARFCN, ASU, Serving dBm, Level

CDMA/EVDO: asuLevel, basestationId, cdmaDbm, cdmaEcio, cdmaLevel, dBm, evdoDbm, evdoEcio, evdoLevel, evdoSnr, latitude3gpp2, level, longitude3gpp2, networkId, systemId

GSM: ASU, DBM, Level, Timing Advance, ARFCN, BSIC, LAC, CID, MCC, MNC

SMS: generated count, errors, received count, delivery time

Web Browsing: destination page, page load time

Location: UE physical location

Voice Call Statistics: voice call generated count, voice call received count, call setup time, total call time, call drop rate derived: call completion percentage, call error percentage, setup to call time (given call length)

Data/IP: throughput (iPERF UDP/TCP, HTTP), jitter, DNS lookup time, header transfer time, body transfer time, 0 byte transfer seconds, resolved IP addresses

Device Info: MEID, IMEI, SERIAL #, device items including codename, incremental, release, SDK, serial #, SIM carrier ID, SIM carrier ID name, SIM country ISO, SIM operator, SIM operator name, Bootloader, brand, device, display, fingerprint, hardware, host, manufacturer, model, product, radio, tags, time, type, user

Developed by Test Engineers, For Test Engineers

Volcano grew organically from our experiences spent working in the field. Our team has developed and fine-tuned tools over the past decade to remain on the technological edge of accepting new products and features into telecommunications and satellite networks. Volcano fills the gaps left by commercial test solutions and innovates beyond those of niche players.

Our team has worked at and with top wireless communications providers. From strategy to software development to test execution, we understand how networks work—and what it takes to keep them running. We have managed and executed the entire lifecycle management for customers, from concept to acceptance to care, for:

> user equipment (UE)
> radio access network (RAN)
> core network
> feature integration (including PTT and encryption)

We have worked on unique programs and projects for custom one-off technologies as well as highly standards-driven solutions. Our technical capabilities are only surpassed by our commitment to customer service.

Learn more at www.dcmobility.com

Schedule a Demo

Seeing is believing. Contact us to schedule a demo and see Volcano in action.

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Our mission: To fuel your vision using our expertise.