RingCentral

Reliability and Analytics

Curtis Peterson

SVP of Global Operations

CUSTOMER

EMPLOYEE

Outbound/Blended Customer Engagement

Cloud PBX

Digital Customer Engagement

COLLABORATIVE COMMUNICATIONS

Team Messaging

Contact Center

Video and Meetings

RingCentral®

RingCentral's core foundation

Modern cloud architecture

Global footprint

Quality of service

99.999% reliability

Secure & compliant

Carrier-grade core tenets

SCALABILITY

Multi-tenant
Microservices
Global

REDUNDANCY

Geo-redundant
Distributed
24/7/365 NOC

QUALITY

Network peering
Standards-based QoS
QoS dashboards

SECURITY

Secure voice
Data encryption at rest
SSL data security

Global operations

28
Data centers
(Private & multi-cloud)

12
RingCentral offices

7
R&D centers

5
Customer support locations

4,000+
Workforce

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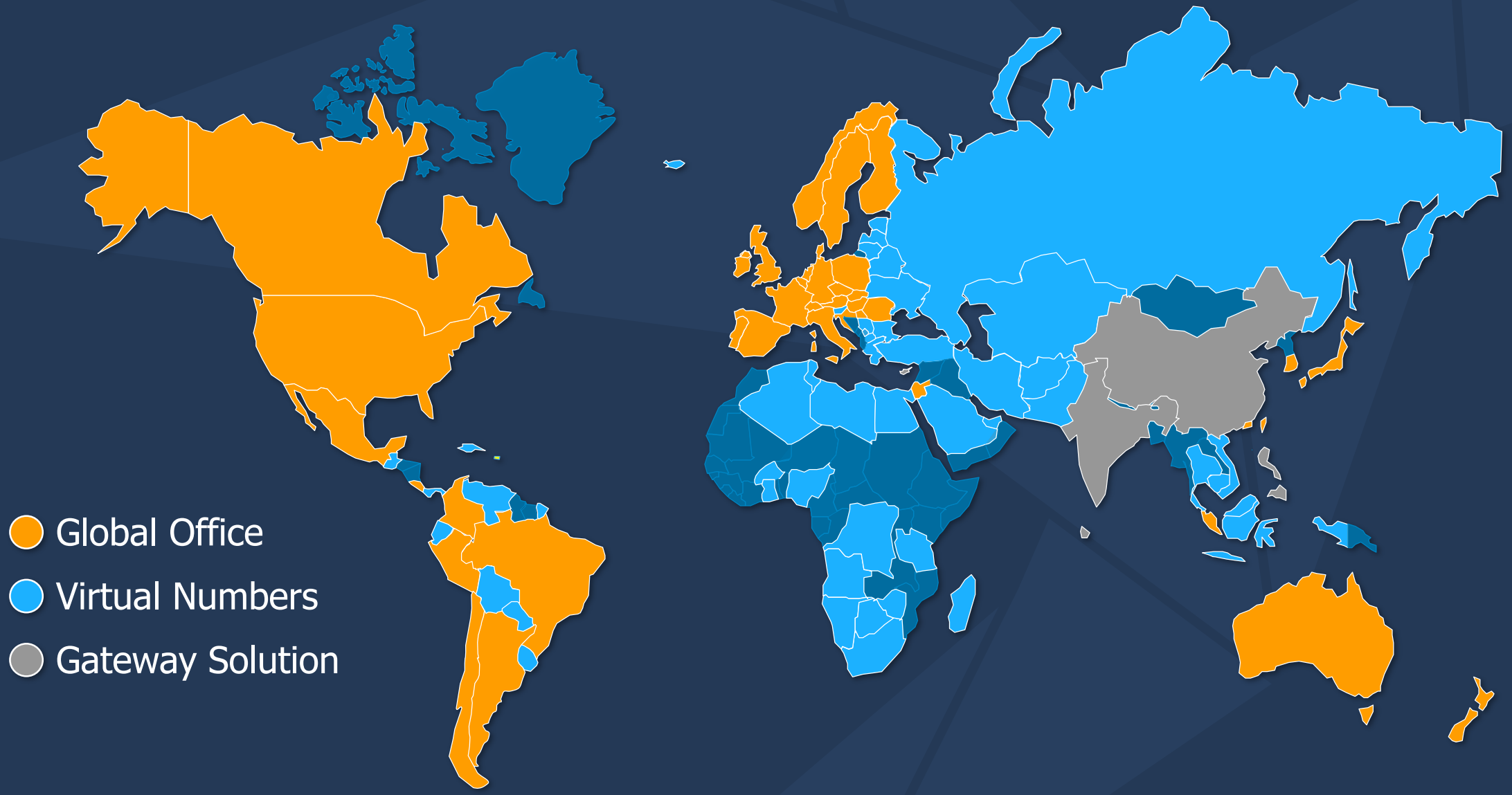
RingCentral global delivery footprint



Enterprise connectivity options

SD-WAN certification program

- Partnering program/certification
- Many options—many networks
- Enhance QoS
- Instant failover—no dropped media
- Single RingCentral profile
- Customer network visibility

velocloud™ Now part of VMware

riverbed

gtt

silver peak

CATO NETWORKS

CLOUDGENIX

cradlepoint

ORACLE + TALARI Networks

RingCentral security and fraud prevention ecosystem

Network, VoIP, and application security

Cloud security infrastructure

Monitoring and analytics

Compliance and certifications

RingCentral's approach to analytics

Make it easy to discover the trends that an admin truly has control over—and monitor impact.

COMPREHENSIVE

Customer environment
Network environment
Daily, weekly, or longer

UNIFIED EXPERIENCE

Hard phone, mobile
Desktop, web
WiFi, ethernet, roaming

GLOBAL

Geolocation monitors
Early warning alerts
Filter false positives

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Extensive analytics platform

REPORTS

Quality Reporting
- QoS
- MOS Reporting
- Registrations

Activity Reporting
- Call Activity
- Live Reports

Meetings
- Meeting Usage
- Room Status

Contact Center
- Dashboards
- Historical Reports

PROCESSING

Big-data Aggregation

Real-time Analysis

Machine Learning

INPUTS

Carrier API

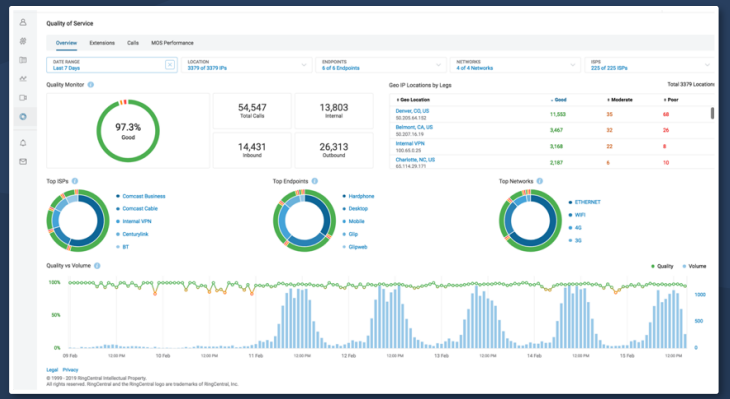
Network Connections

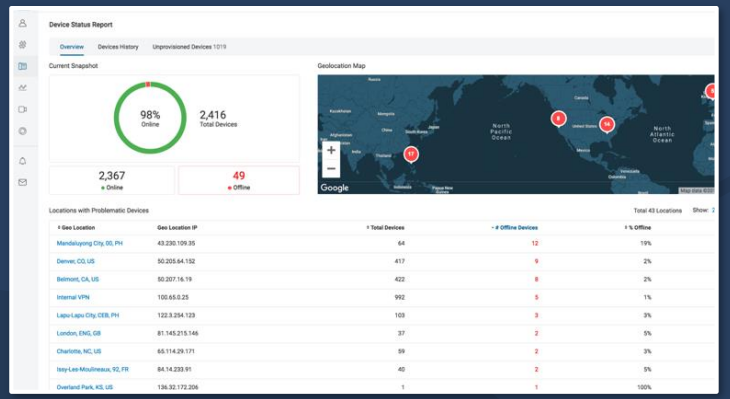
Applications & End Points

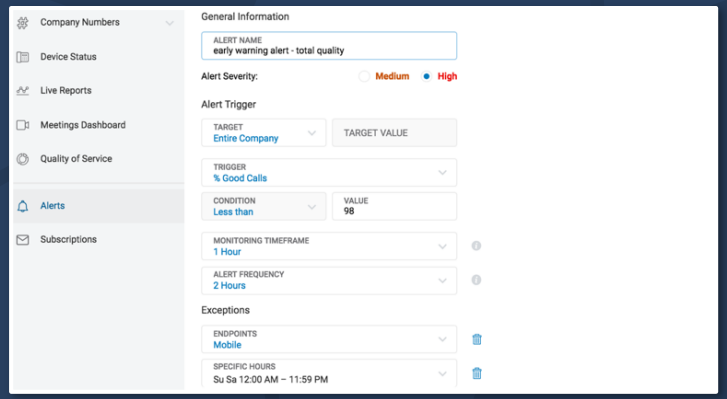
Partner Data

SBC

Actionable insights for enterprise IT admin







Quality of service

At-a-glance insights

Call detail depth

Network troubleshooting

Device status

Real time

Worldwide and location

Enterprise grade

Alerts

Automated monitoring

Proactive notifications

Fully customizable

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Actual RingCentral AI Example: Datasets for MOS

Measuring media quality at scale

- Customers need a way to troubleshoot quality.
- MOS score: 1=poor, 5=perfect.
- Billions of calls.
- Millions of endpoints.
- Each “leg” of a call generates data.
- Need to present information within seconds.
- The devices, network, and infrastructure are global.

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Problem statement

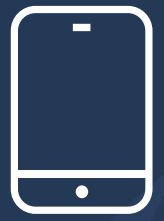
- Scores must be precise & accurate
- Network devices
- Many edge devices

- No WebRTC built-in standard
- MOS scores do not match
- Not comparable = not usable

PHONE

MOBILE PHONE

SOFTWARE CLIENT

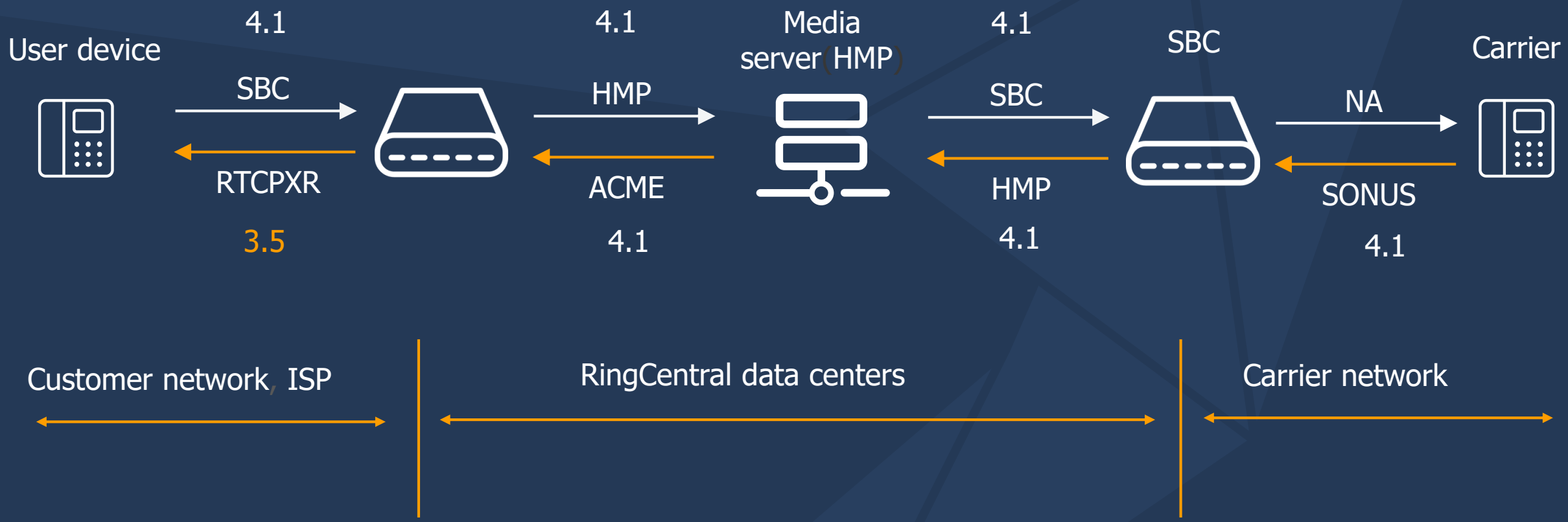


TABLET

WEBRTC

VIDEO

Example: MOS score measurement



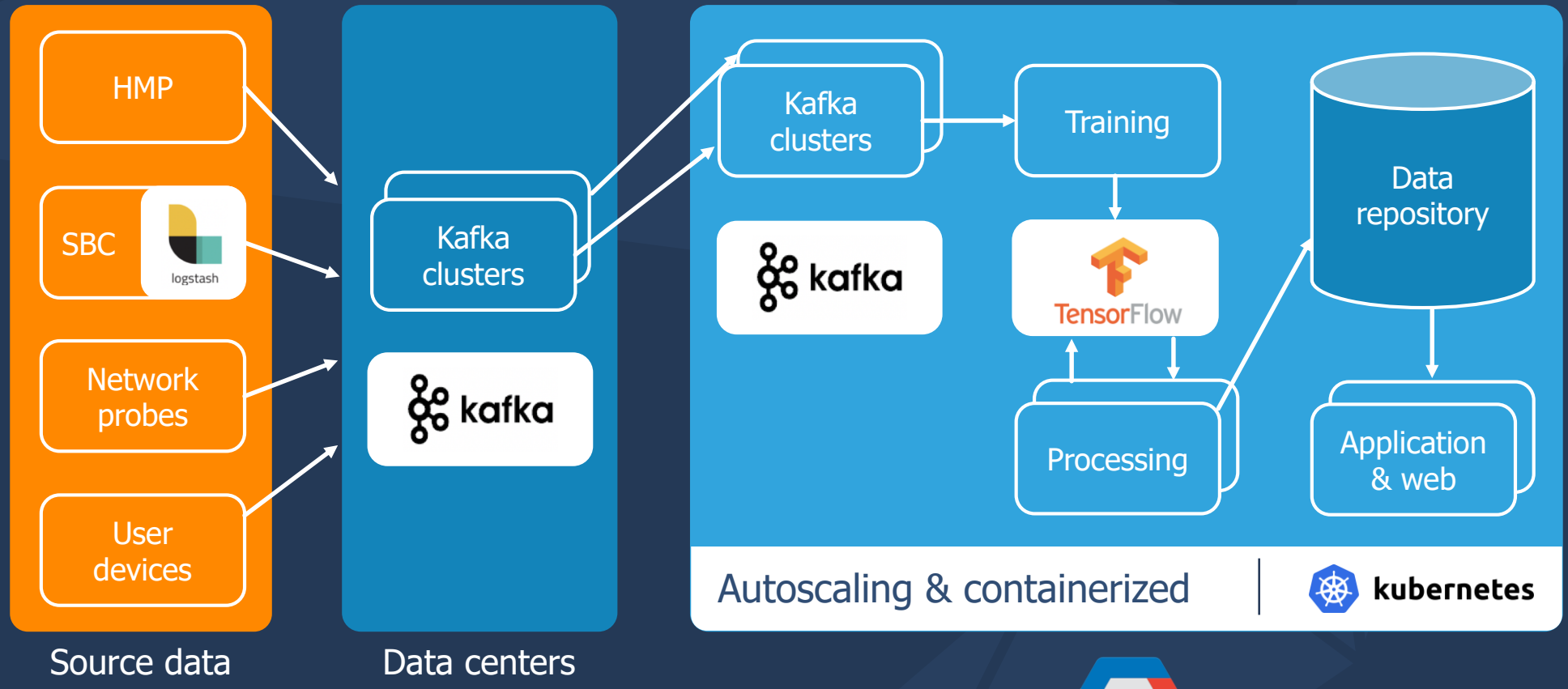
Training data

Takes approximately 1M records to achieve >96% accuracy

SOURCE	EXAMPLES	HOW USED
Device	HMP, SBC, endpoint like phone or web browser	Input layer—higher weighting
CODEC	g.711, opus, 9.729, etc.	Input layer
Packet loss	0-100	
Jitter	0-any integer	
Peak jitter	0-any integer	
Latency	0-any integer	
Burst loss	Varies	Hidden layers
Packets out of order	Varies, integer	
Echo estimator	Varies	
Vendor proprietary info	Varies	
Nearly 10,000 unique	Varies	

Data architecture

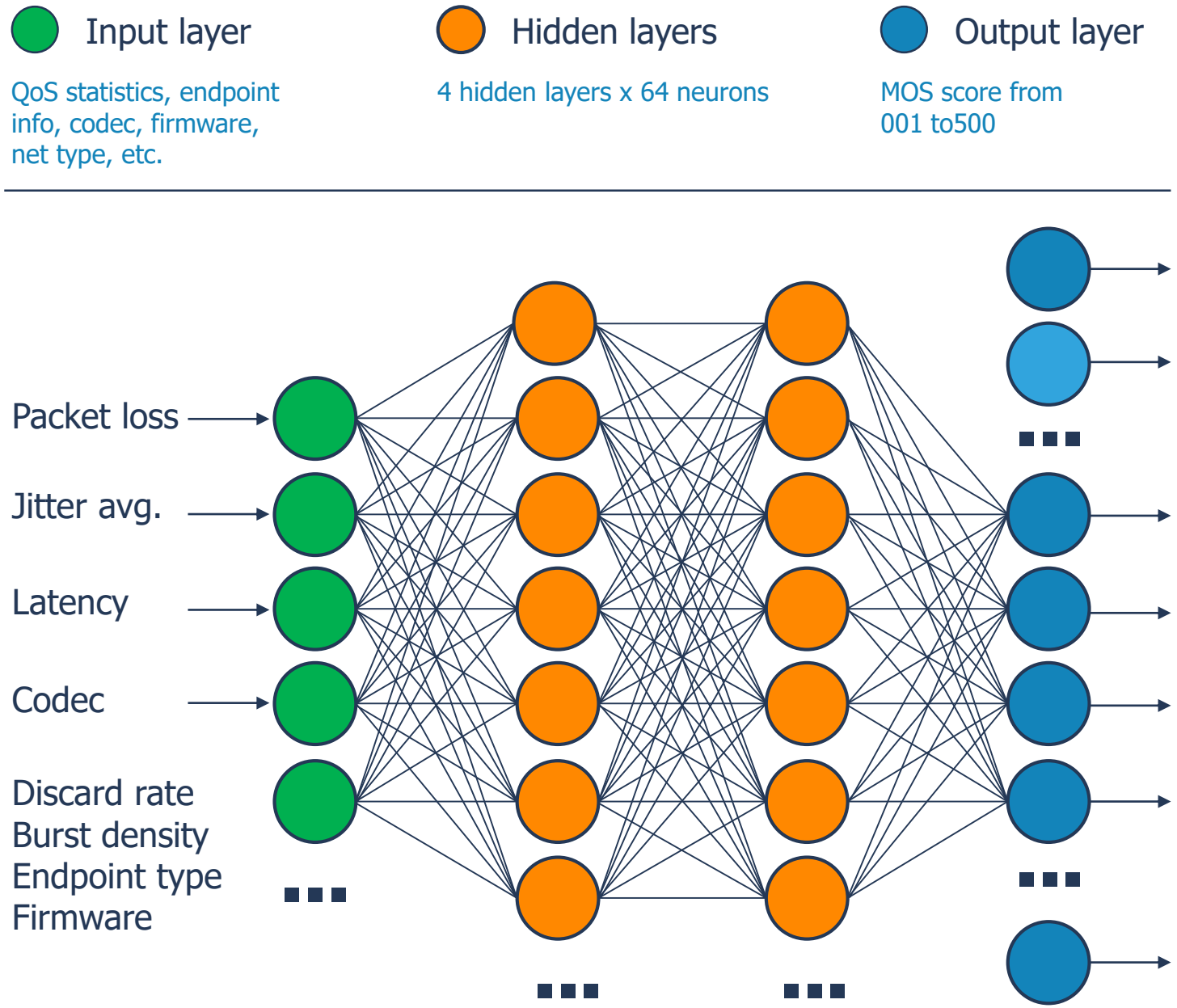
Scale, speed, and high availability drive design.



Google Cloud Platform

Training model

- Deep neural network
- 10,000+ parameters
- 500 clusters (output neurons)
- Trained on 1M+ records
- Above 96% prediction rate
- Retrain on new devices



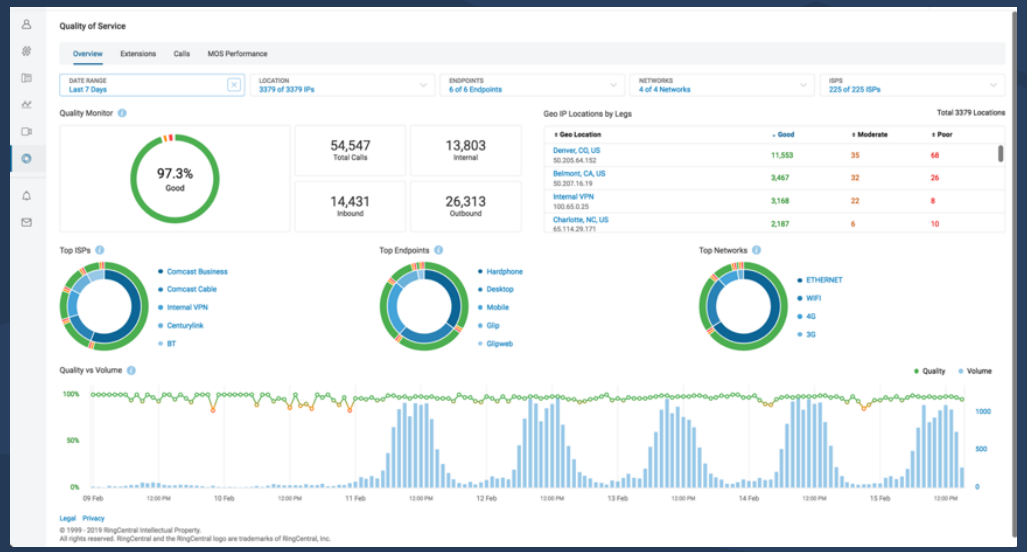
Results

- >96% accuracy on all data sources
- 460% more degree of precision (DOP) than required

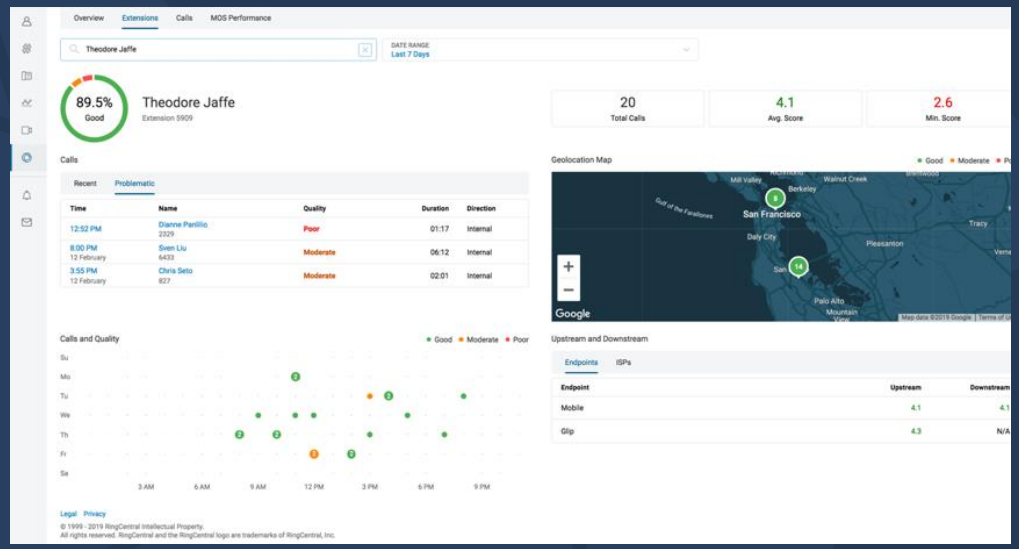
  (75th percentile human can only distinguish .46 difference in MOS)

- Unified and comparable results across data sets
- Simple user interface to distinguish data

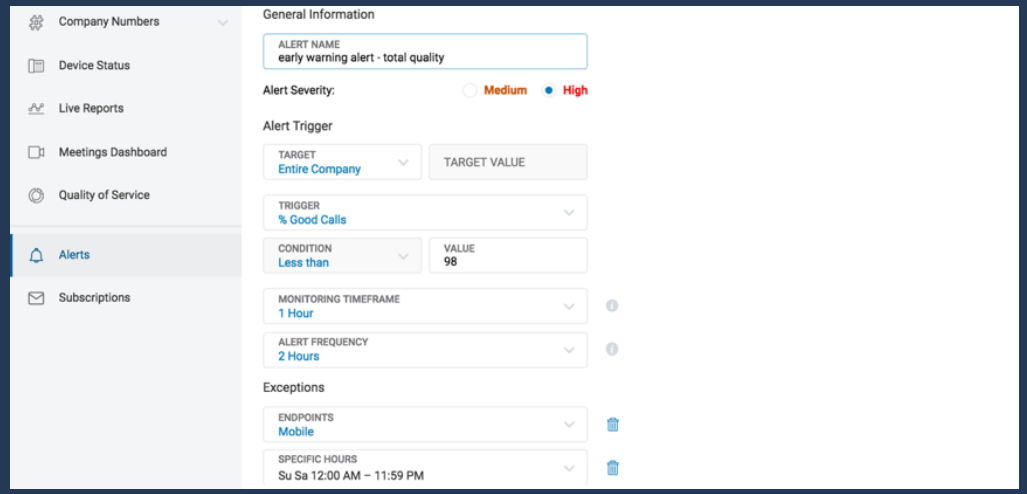
Customer Portal with unified QOS listed in top reasons enterprises select RingCentral. Reduction in customer support cases on QoS.



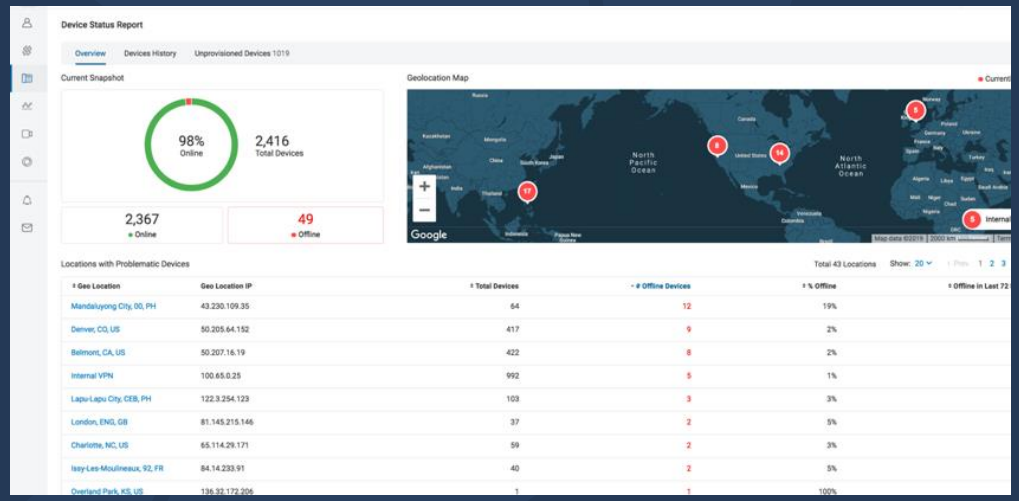
Quality of service



User profile



Alerts



Device status

Next Steps

- Stay and learn more about RingCentral’s products

- Get a personalized demo at the booth

Thank you

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