

WHY FINANCIAL SERVICES FIRMS NEED AN OPEN HYBRID CLOUD TO SUCCEED IN THE DIGITAL ERA

FROST & SULLIVAN EBOOK

CONTENTS

- 3** Introduction—Rapid Transformation in Financial Services Industry
- 4** Top Objectives of IT Leaders in Financial Services Firms
- 5** Business Challenges
- 6** The Cloud as a Foundation for Digital Transformation
- 7** Not All Clouds are Alike
- 8** Why Choose an Open Hybrid Cloud?
- 9** App Portability Supports Business Resiliency
- 10** App Portability Supports a Multi-Cloud Strategy
- 11** Cloud-Native Development Supports Business Agility
- 12** Automated Infrastructure Ensures App Consistency
- 13** Putting it all Together
- 14** About Red Hat Open Hybrid Cloud



INTRODUCTION—RAPID TRANSFORMATION IN FINANCIAL SERVICES INDUSTRY

Evolving trends in customer behavior

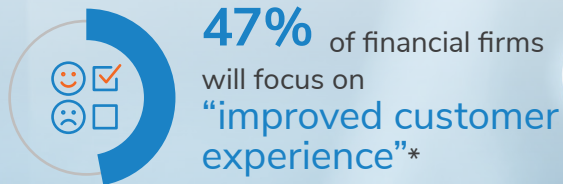
The digital era has brought significant change to the way financial firms interact with customers. To meet escalating expectations, firms must offer an exceptional customer experience, including mobile and internet transactions; automated payments; near-real time insurance quotes/loan acceptances, and flexible, customized product and pricing models.

Amid the disruption brought by digitalization, innovative firms are taking advantage of growth opportunities



EXPANDED DIGITAL CHANNELS

Firms are retooling operations to deliver a consistent experience 24x7 across all channels. They are also using automated, AI-based tools, such as chatbots, to augment or replace local agents or staffers to lower costs.



EXPANDED PRODUCTS

In many jurisdictions, financial firms have greater freedom to offer a range of products, as lines blur between insurance, banking, and capital investments.



EXPANDED MARKETS

No longer tied to brick-and-mortar facilities or neighborhoods, banks can leverage the internet to seek new clients.



* Source: 2020 Frost & Sullivan Global Survey of IT and business decision-makers in the financial services industry

Source: Frost & Sullivan

TOP OBJECTIVES OF IT LEADERS IN FINANCIAL SERVICES FIRMS

In a recent Frost & Sullivan survey, IT and business decision-makers from financial firms worldwide identified their top business priorities.

TOP BUSINESS PRIORITIES

Cited as an important or very important objective

67%



Reduce costs

64%



Support digital transformation

60%



Rapidly respond to market demand and changes

59%



Boosting innovation and creativity

58%



Position company to take advantage of new technologies

Source: Frost & Sullivan 2020 cloud survey

BUSINESS CHALLENGES

Yet the digital era has also brought significant challenges to the financial industry.

TOP BUSINESS CHALLENGE: COMPLIANCE

Financial firms worldwide cite “compliance” as their top business challenge. Regulations are complex, evolving, varied by jurisdiction, and address a range of issues including:

- **Anti-fraud**, with regulations such as Know Your Customer, Anti-Money Laundering/Combating Financing of Terrorism.
- **Data privacy**, with such laws as the EU’s General Data Protection Regulation (GDPR), Brazil’s Lei Geral de Proteção de Dados (LGPD), or California’s Consumer Privacy Act.
- **Data portability**, such as the European Banking Authority’s 2019 guidance on cloud outsourcing, which raises concerns about the risk of “single point of failure” created when a firm or industry relies too heavily on a few dominant cloud providers.



66%

say focusing on meeting regulatory requirements hindered their ability to achieve other business goals.

ADDITIONAL MARKET AND BUSINESS CHALLENGES

- **Disruptive competitors**, including born-in-the-cloud firms with broad presence, low costs/rates, and “instant” responses.
- **Cybercrime growth**, a top focus area as financial firms seek to retain consumer confidence.
- **Customer retention**, Building and maintaining a relationship with clients; meeting their evolving expectations; turning them into advocates
- **Maintaining profitability**, Traditional firms must cut costs to compete with low-overhead, born in the cloud financial technology firms.

THE CLOUD AS A FOUNDATION FOR DIGITAL TRANSFORMATION

Like businesses across every industry, financial services firms are deploying hybrid cloud architectures to support their operations. A Hybrid Cloud is generally defined as any combination of public cloud, hosting and private data center resources that can be orchestrated and integrated to run an application.

43% of financial firms say they **CURRENTLY USE A HYBRID CLOUD**, with another **46%** planning to implement one in the next 2 years.

But “the cloud” is more than an infrastructure configuration or a place to host applications. Instead, it should be recognized as an enabler to modern business: a means to develop and deliver your critical business applications, with the speed, performance, and security you need to be successful. The right cloud platform allows developers and business teams to natively integrate next-generation technologies—such as artificial intelligence and machine learning—into transformative business applications, and then deploy the apps across any environment.

IT LEADERS AT FINANCIAL SERVICES FIRMS WORLDWIDE AGREE



Cloud is essential for remaining competitive in our industry



The cloud is the most critical part of our digital transformation strategy

67%



58%



NOT ALL CLOUDS ARE ALIKE

But not every cloud delivers the flexibility, visibility, next-gen functionality, or control that financial firms need.

46% of financial firms say that they **MANAGE THEIR HYBRID CLOUDS USING ONLY THE CLOUD VENDORS' PROPRIETARY MANAGEMENT TOOLS**, and another **12%** say they use a combination of proprietary cloud-specific and third-party tools.

The problem is that proprietary, single-domain tools make it difficult or impossible to integrate, orchestrate, migrate, and manage workloads across infrastructure environments. As a result, firms experience challenges in deploying their hybrid clouds.

TOP CHALLENGES

Implementing resiliency plans for hybrid workloads



65%

Managing multiple clouds



64%

Deploying an app across multiple IT environments



60%

WHY CHOOSE AN OPEN HYBRID CLOUD?

An open hybrid cloud is built on an open-source platform, enabling the flexibility, portability, interoperability, and control you need to consistently deploy and jointly manage your cloud applications and workloads. Characteristics of an open hybrid cloud:



CLOUD- AND VENDOR-AGNOSTIC

Allowing you to manage not only your current public and private clouds, but those you may add in the future



AUTOMATED INFRASTRUCTURE

Enabling scaling and app deployment across public and private clouds for greater consistency and efficiency



SUPPORT FOR CLOUD-NATIVE DEVELOPMENT

Giving app developers and even non-technical staff access to modern development and deployment tools, such as low-code and serverless, for faster deployment and greater innovation

FINANCIAL FIRMS REQUIRE NOT JUST A HYBRID CONFIGURATION, BUT AN OPEN HYBRID CLOUD

Pursuing an **open source strategy**

Planning to implement open source solutions in the **next two years**

An open source platform is **important or very important** to selecting a cloud service provider

53%

38%

75%

APP PORTABILITY SUPPORTS BUSINESS RESILIENCY

Financial firms require a flexible infrastructure foundation: they must be able to quickly deploy and move apps & data. There are two primary drivers for app portability:



OPTIMAL PRICE-PERFORMANCE

Applications and data can be distributed across clouds and data centers as needed; for example, to minimize network latency or improve cost structure. Financial firms can leverage remote processing to drive insights and to proactively forecast usage needs.



BUSINESS RESILIENCY

As part of their own business continuity plans—and increasingly, to comply with regulatory requirements—financial firms ensure their infrastructure environment is fault-tolerant. If they choose to place critical workloads with a single cloud service provider, they require a tested strategy and process for quickly and safely moving data in case of failure or security breach.

Firms need the freedom run apps in the infrastructure that makes the most sense. Furthermore, the optimal infrastructure may vary by geography and over time—and firms need assurance that apps will still run consistently.

Today, financial firms place 51% of apps in the public cloud and 49% on premises.

By 2025, the split will be 54% to 46%.

APP PORTABILITY SUPPORTS A MULTI-CLOUD STRATEGY

Financial firms expect to utilize a range of deployment models:



PUBLIC CLOUDS

Public cloud is a flexible, cost-effective, on-demand environment that is optimal for many workloads.

49%

of financial firms say they **have a multi-cloud strategy**; on average, each firm uses 3 public cloud vendors.



ON-PREMISES DATA CENTER

For some legacy (non-cloud-native) apps, financial firms may choose to deploy applications on premises. (top reasons: security concerns—52%; compliance/data sovereignty—45%; latency/app performance—47%)

54%

of financial firms are **modernizing data centers** for better hybrid cloud strategy support; another **38% are planning to do so in the next 2 years.**



EDGE LOCATIONS

Increasingly, financial firms are extending their infrastructure environments to the “edge,” where critical data is collected, accessed, analyzed, and acted on, far from the company data center or cloud. Use cases may include facial recognition at ATM machines; virtual tellers at portable or pop-up branches; and AI-enabled video to optimize the customer branch experience. Firms must deploy IT and network infrastructure that ensures data remains consistent, secure, and accurate.

53%

of financial firms currently **deploy an edge strategy**; another 37% plan to add within two years.

41%

of financial firms cite **“SEAMLESS DATA & APP MIGRATION CAPABILITY”** as the feature that would be most valuable to them in a hybrid cloud platform.

CLOUD-NATIVE DEVELOPMENT SUPPORTS BUSINESS AGILITY

To compete with fintechs and introduce agility and flexibility into their business, traditional financial firms need to revamp the way they approach software application development.

Unlike traditional, monolithic apps, modern application development calls for app functionality to be created from building blocks of code—quickly and easily assembled, tested, deployed, and updated.

Traditional (legacy apps) can be refactored, reformatted, or replatformed to leverage cloud-native capabilities.

Financial firms worldwide using
a modern application
development platform

50%

Planning to implement
such a platform in the
next 2 years.

41%



78%

say a modern, cloud-native
development platform is
essential to their future
business success.

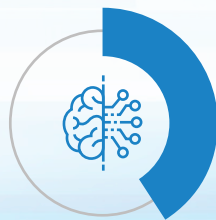
Benefits of cloud-native development:

- **INNOVATION**—Quickly deploy new apps and features that provide competitive differentiation
- **SPEED TO MARKET**—Rapidly add new features & capabilities to respond to changing conditions or regulatory requirements
- **COST SAVINGS**—Require fewer resources for developing, testing, tweaking, and deploying apps
- **API ECOSYSTEM**—Easily integrate next-gen cloud-based functionality, such as AI/ML or blockchain, into apps
- **SUPPORT FOR DEVOPS AND DEVSECOPS APPROACHES**—Embed deployment instructions and security profiles into the app itself, ensuring app consistency even as it is moved across infrastructures
- **ATTRACT TOP DEVELOPER TALENT**—Hire and retain the best developers, with cloud-native technologies that allow tech-savvy post-millennials to focus on solving business challenges.

Source: Frost & Sullivan.

AUTOMATED INFRASTRUCTURE ENSURES APP CONSISTENCY

Integrating disparate infrastructures into a hybrid cloud requires a common management platform. To maximize the value of hybrid cloud implementations and allow organizations to achieve business agility, the platform must include powerful automation capabilities.



41% of financial firms say automated functionality or tools are a key criterion for selecting a cloud platform.

This includes



Automated provisioning and scaling of apps



Automated replication or failover to protect data



Automated security tools

Benefits of automated infrastructure:

- **SCALING AS NEEDED**—delivers consistent app availability and performance—which results in improved productivity and greater customer experience
- **REDUCED COSTS**—fewer IT resources needed to focus on infrastructure provisioning
- **FEWER ERRORS**—ensures consistent deployments
- **DEPLOYMENT FLEXIBILITY VIA OPEN SOURCE TOOLS**—The right open source tools support any and every deployment option—virtual machines, containers, even serverless—allowing you to modernize and optimize your hybrid environment without being locked into a particular cloud provider or vendor's platform
- **BETTER GOVERNANCE**—gain control over your existing and new IT environments

Source: Frost & Sullivan.

PUTTING IT ALL TOGETHER

In the early days of cloud, the conservative financial services industry lagged other industries in adoption of cloud—constrained by onerous regulations and processes designed to support branch operations comprising face-to-face interactions with local customers.

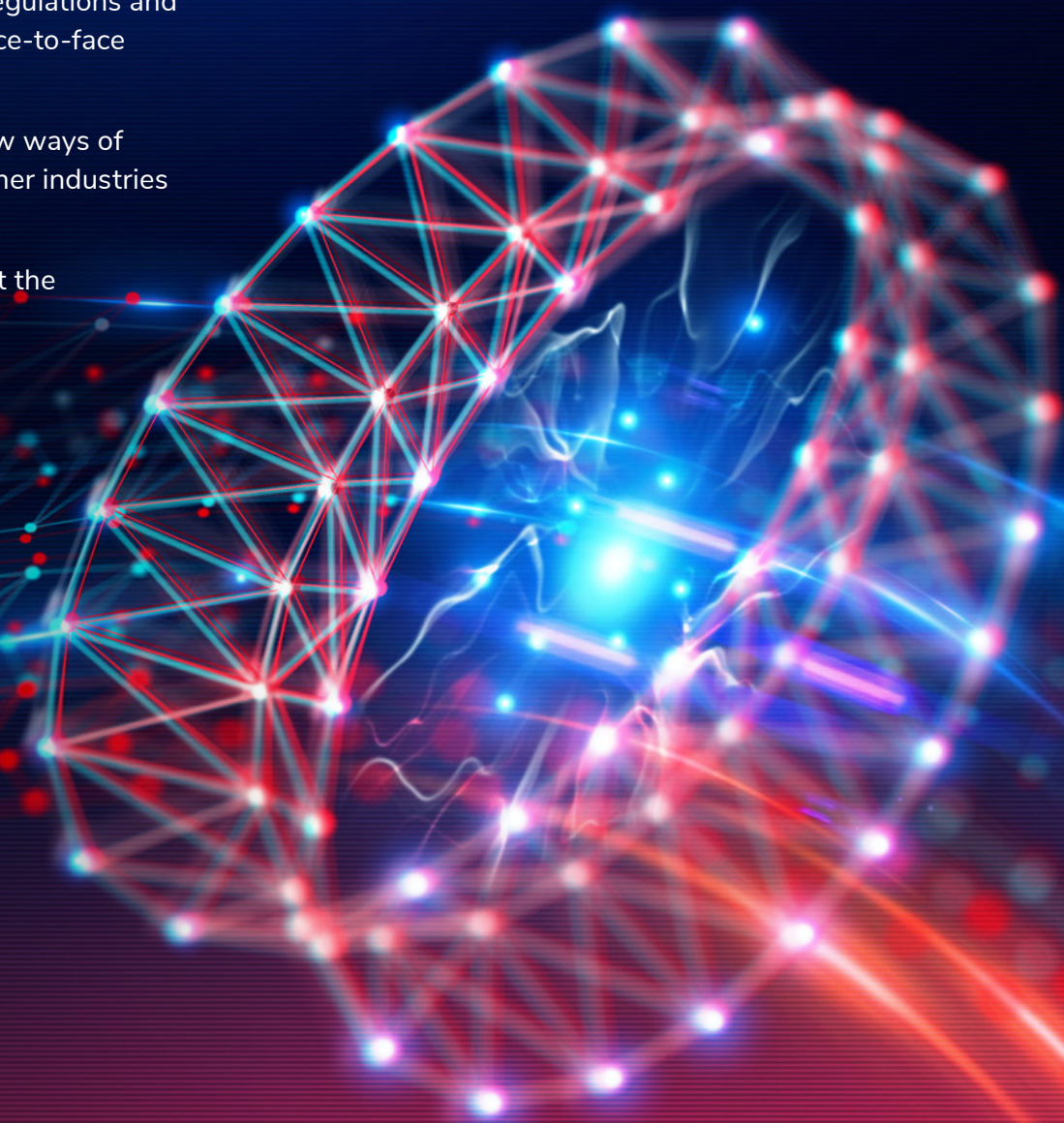
But the digital era opened the doors to new competitors and new ways of serving customers. Today financial firms have caught up with other industries in adoption of public and hybrid cloud.

Doing so enables them to address evolving regulations and meet the changing needs of clients, while maintaining profitability.

To succeed in the future, financial firms must adopt an open hybrid cloud.

- **OPEN**—to ensure flexibility to adopt the best the market has to offer, without being tied to a particular vendor or platform.
- **HYBRID**—to allow portability or splitting of workloads and data across any cloud or IT infrastructure
- **CLOUD-NATIVE**—with self-service capabilities delivered on demand, integrated security and governance, and access to advanced functionality.

By adopting an open hybrid cloud, financial firms can be assured that they have the right foundation to support today's needs, as well as the flexibility and agility to handle tomorrow's changing market landscape.



VENDOR SPOTLIGHT: RED HAT

Red Hat provides cloud technology and tools for organizations to progressively modernize critical systems. With Red Hat, organizations can re-emerge as the key engine for ongoing growth and innovation.

APIs are the connective tissue inside and outside of the organization. Red Hat provides cloud native tools to create and manage APIs securely across any cloud environment.

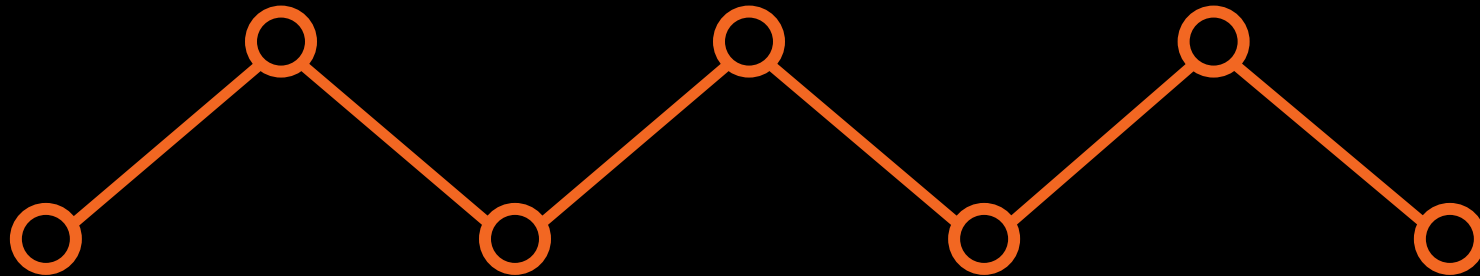
Red Hat's cloud platform contains built in support Nvidia's GPUs and the tools required to access, train, test, and deploy AI/ML applications across cloud environments.

Red Hat provides essential cloud native tools that helps application teams deliver higher quality, faster. With Red Hat, security and governance of apps are integrated into the platform.

APIS

DATA

APPLICATIONS



INFRASTRUCTURE AND OPERATIONS

Red Hat's cloud platform is based on the open source communities that are creating the future of the cloud. It offers both self managed and vendor managed options.

EVENTS/MESSAGING

Increasingly organizations are moving towards a event driven, real time architectures. Red Hat includes cloud native data streaming and traditional messaging.

SECURITY

As infrastructure environments evolve, security automation is critical for the detection and remediation of issues, errors in configuration, and inconsistent policy application.

INFRASTRUCTURE AUTOMATION

Red Hat provides the infrastructure tools that works across the platforms to reduce operational cost and improve productivity so you can spend time on higher-level innovation.

VENDOR SPOTLIGHT: RED HAT

Eight reasons to choose Red Hat as a cloud technology partner.

- 1 **CHOICE**
Your hybrid cloud strategy should give you the ability to choose the optimal solution for each task or workload. Our open source platform provides the flexibility to deploy anywhere.
- 2 **INNOVATION**
Your IT infrastructure should enable, not hinder, innovation. Red Hat provides the tools and services that powers a continuous innovation model, so you can adapt to change quickly.
- 3 **SECURE**
Cloud providers may offer elevated security protocols for financial services companies, but monitoring multiple cloud providers can be problematic. By engineering policy and governance into your hybrid cloud strategy, you help ensure that your systems, software, and people are in compliance
- 4 **SUPPORT**
Adapting to change is what open source is made for. Red Hat is committed to supporting your financial services organization as you navigate an evolving global landscape.

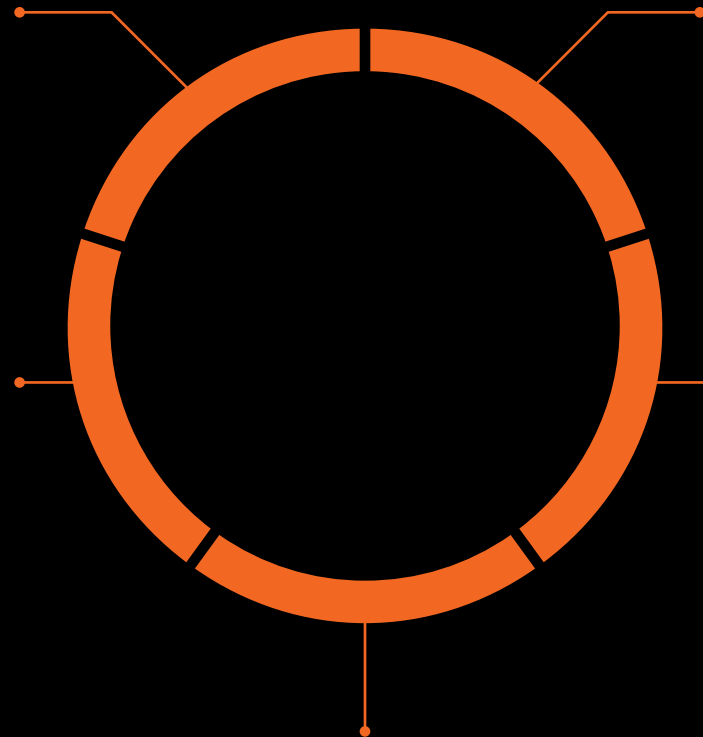
- 5 **PARTNERS**
Our partner network of ISVs, systems integrators, fintechs, and consultants work with and advise business leaders to deploy solutions that address the most critical business issues.
- 6 **COLLABORATION**
Build a foundation of open tools and technologies that align business goals with IT and foster a more productive partnership, empowering developers to design, develop, deploy, and integrate cloud-native applications across any cloud infrastructure.
- 7 **RESILIENT**
Red Hat offers a flexible and interoperable hybrid cloud platform that can increase an institutions' resiliency by providing granular options to shift tasks and applications to alternative environments.
- 8 **OPEN**
As more institutions move away from expensive proprietary software, we believe adopting enterprise open-source technologies helps create more stable, secure, and innovative technologies.

VENDOR SPOTLIGHT: RED HAT

Red Hat partners with financial services organizations to meet the technology challenges facing a competitive and increasingly complex industry.

RAPID RESPONSE TO MARKET DEMANDS: Deliver a scalable and elastic technology environment that is defined to be inclusive of open source to rapidly innovate, automate and scale application into production in any cloud

REDUCE COST: Save time and resource by automating IT functions and reducing production time across infrastructure, network, and engineering organizations



TAKE ADVANTAGE OF NEW TECHNOLOGIES: Infrastructure that securely supports and integrates with new technologies that is optimized to every aspect of your business (e.g., AI/ML, analytics, and edge computing)

BUSINESS RESILIENCE/ CONTINUITY: Continuity preparedness involves a wide range of components, touching nearly every part of your technology infrastructure. Applying IT automation and tool across the enterprise can help proactively identify problems and eliminate cross team dependencies

PARTNER FOR YOUR DIGITAL JOURNEY: Transition to a modern cloud infrastructure based on leading container technology that bridges legacy and provides agility from the data center and any cloud for optimal flexibility



Ready to bring your big ideas to life?

Learn how the pathway to a better customer experience begins with a smarter, more efficient IT infrastructure with Red Hat: red.ht/financialservices

SILICON VALLEY

3211 Scott Blvd
Santa Clara, CA 95054
Tel +1 650.475.4500

SAN ANTONIO

7550 West Interstate 10
Suite 400
San Antonio, TX 78229
Tel +1 210.348.1000

LONDON

566 Chiswick High Road
London W4 5YF
Tel +44 (0)20 8996 8500

Frost & Sullivan, the Growth Partnership Company, works in collaboration with clients to leverage visionary innovation that addresses the global challenges and related growth opportunities that will make or break today's market participants. For more than 50 years, we have been developing growth strategies for the Global 1000, emerging businesses, the public sector and the investment community. Is your organization prepared for the next profound wave of industry convergence, disruptive technologies, increasing competitive intensity, Mega Trends, breakthrough best practices, changing customer dynamics and emerging economies?

For information regarding permission, write:

Frost & Sullivan
3211 Scott Blvd
Santa Clara, CA 95054