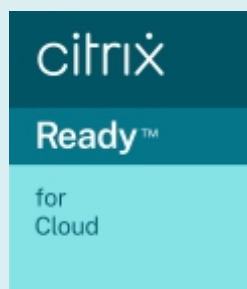
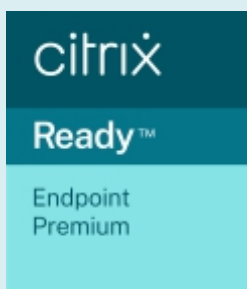




Modernizing the Learning Environment in Higher Education with Citrix and IGEL

Enable a secure and productive remote learning experience for faculty and students.



Introduction

In institutions of higher education, leveraging digital technology is vital to the student, faculty, and staff experience, impacting student recruitment, retention, success and even university rating. Universities, colleges and centers of research and training serve a variety of users, from students and researchers to professors and administrators, requiring immediate access to online lessons, tests, labs, and other resources such as e-books and journals for both traditional and online programs. In addition to this, universities also provide a range of on-campus ancillary services such as retail kiosks, stores, and medical care. Oftentimes hindered by a patchwork IT infrastructure, and with geographically dispersed campuses and distant education programs more numerous than ever, providing a secure, consistent, and streamlined learning environment presents complex challenges for IT teams.

The pandemic shone a spotlight on the importance for such institutions to have an education continuity plan in place. Enabling faculty, staff, and students with a collaborative learning environment whether on-campus or from diverse remote locations is key to ensure future resilience and student success. During this time where universities and colleges adapted to mandatory remote learning many challenges were unveiled. A digital equity gap was highlighted when students did not have equal access to technology resources. Many students did not have a personal endpoint device and had to share one device among several family members,

greatly increasing security risk. For administrative staff and faculty, the gap lies in enabling a reliable remote administration and teaching solution. Also, the challenge of network quality due to variable network access and bandwidth can greatly impinge on the delivery of remote one-to-many tutorials and lectures.

The benefits of virtual desktop infrastructure (VDI), and cloud workspaces are only fully realized when the endpoint is secure and standardized. There are several use cases within higher education that are optimized by enabling a flexible learning environment. Let's look at how Citrix Virtual Apps and Desktops, Citrix Workspace, and IGEL OS on the endpoint create a flexible, consistent and secure learning environment and enhance user experience while leveraging existing hardware, infrastructure, and IT resources.

Collaborative Learning Space at Scale

Establishing a collaborative learning environment empowers faculty, staff, and students to securely access applications and resources whether on-campus, at their home, or in their dorm room. With IGEL OS on their endpoint device of choice they can easily and quickly log into their university's Citrix Workspace. Even in areas of variable network bandwidth, or a change of location while working on a task, the user can reconnect to the last point in their session on another device. Enabling faculty and staff with reliable lecturing, tutorial and administrative capabilities from a remote location plays a crucial part in this space.



Virtual Computer Labs

Providing virtual computer labs means students no longer have to physically go to the campus to access important apps even graphic intensive 3D apps to design blueprints.

Secure computer-based exam environment

Delivering assessment and tests via a virtual environment optimizes hardware resources and supports the IT Admin by avoiding the need to lock down PCs, install test software or images on the endpoint, or the need to allocate separate “exam” rooms or halls.

Support Regulatory Compliance

Strict compliance with General Data Protection Regulation (GDPR) standards to protect personal identifiable information (PII) and intellectual property (IP) is difficult to attain and manage across diverse environments. Standardized endpoint devices, centralized application management, and enterprise grade file sync and sharing with Citrix Workspace from any IGEL OS -powered endpoint device help to keep staff and student data secure.

Secure confidential and proprietary research data

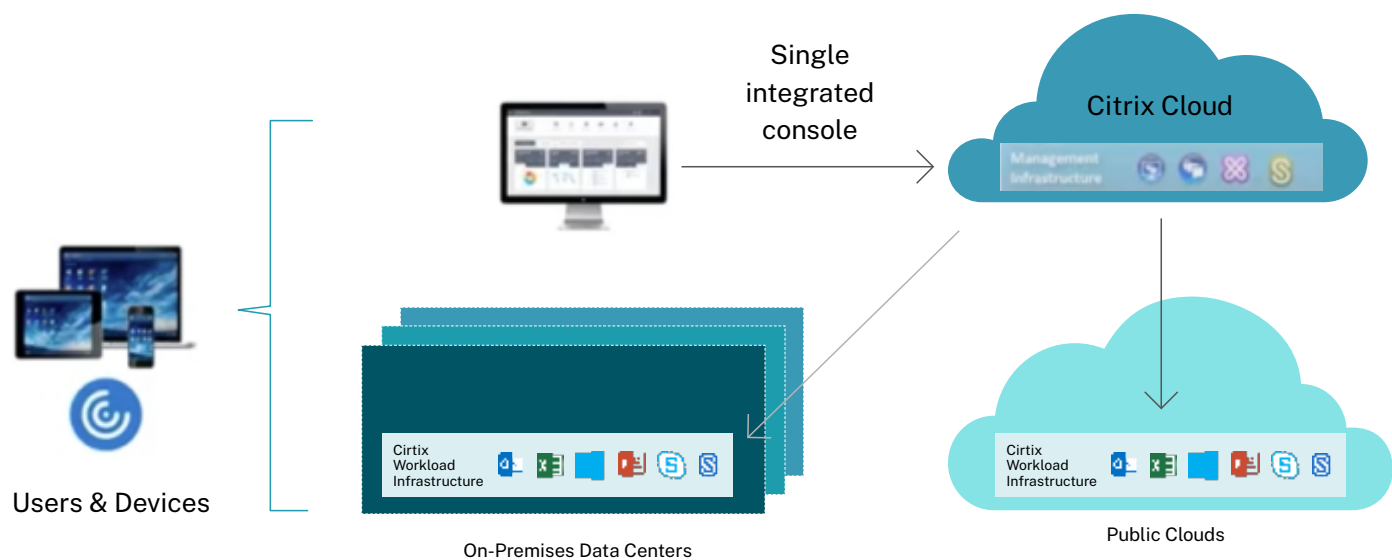
Research and development projects serve an important source of funding and prestige for major universities. Protecting this data is paramount to avoid exposure to security breaches and possible litigation. A multi-layered approach of physical, technical, and administrative controls can help to safeguard an organization from ransomware threats. Securing the edge with lean, read-only, modular IGEL OS helps to protect the endpoint, and Citrix security approach in the network all the way to the cloud infrastructure helps protect against loss or stolen data.



Citrix and IGEL deliver streamlined, secure access to any workspace or learning environment from any endpoint device.

Citrix Workspace and IGEL OS modernize the education experience by empowering faculty, staff and students with a secure and high performance combination for seamless access to workspaces. Regardless of whether the workspace is deployed across any cloud or infrastructure (on-prem, public cloud, private cloud, or hybrid cloud), the Citrix Cloud platform hosts and administers Citrix services. It helps IT admins extend existing on-premises software deployments by connecting to resources on any cloud or infrastructure. It allows IT to create, deploy, and manage secure digital workspaces with apps and data to end-users from a single console.

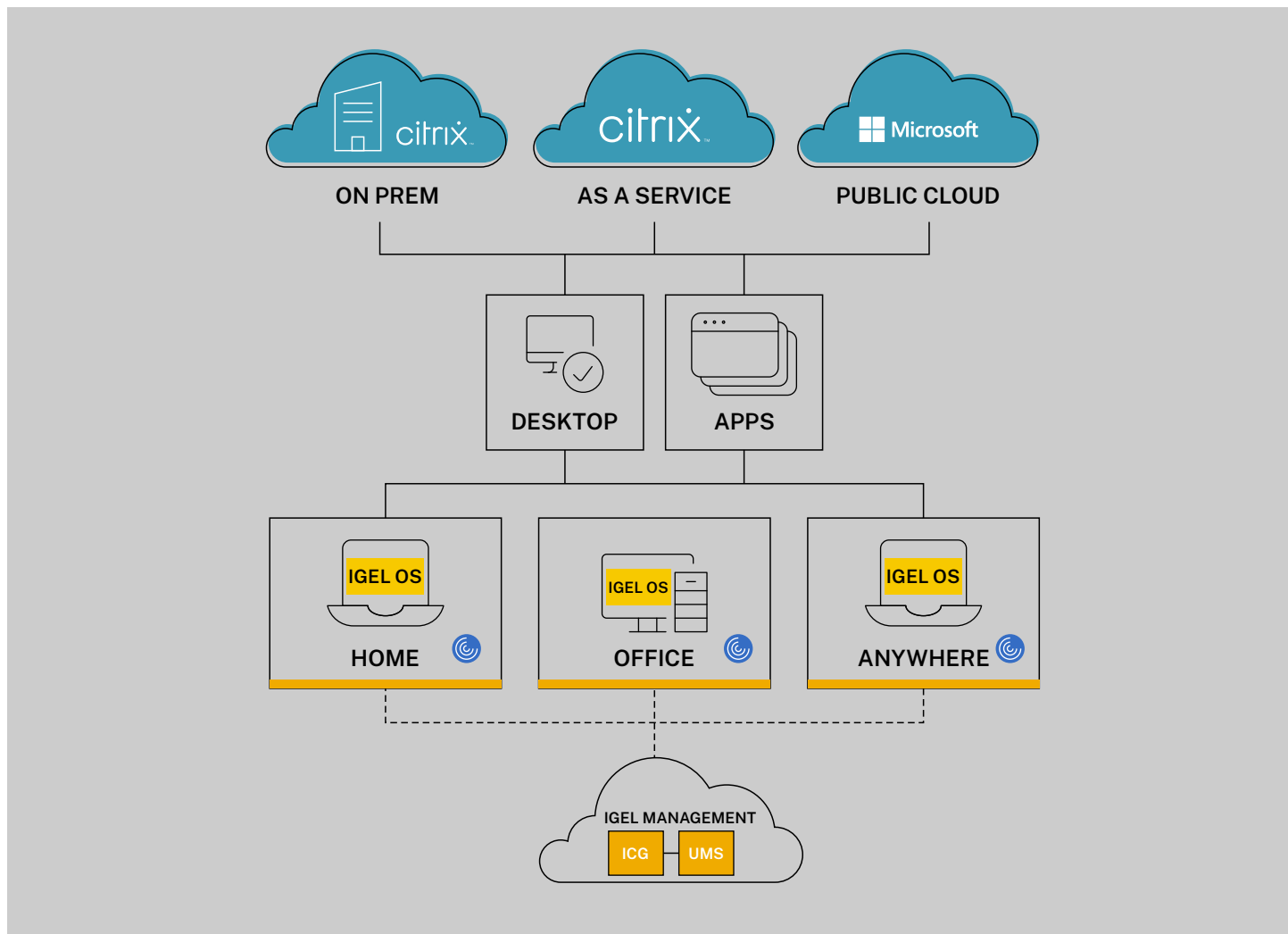
Citrix Cloud unifies management across clouds



citrix

IGEL OS is the next-gen edge OS for cloud-delivered digital workspaces, purpose-built for enterprise access to virtual environments. It can run on any compatible x86-64 device, and with over 110 technology partners supports a vast array of remote display protocols and technology integrations. The unified endpoint management and control solution allows IT admins to deploy and manage hundreds of thousands of IGEL OS-powered endpoints from a single console.

Let's take a look at how Citrix Workspace and IGEL OS increases choice, agility, and user experience while reducing capital expenditures and simplifying complexity.



The Choice is Yours – Avoid Unnecessary Hardware Costs

- Citrix and IGEL enable institutions of education to leverage their existing resources and technology investments. With Citrix Cloud they can efficiently migrate to their cloud(s) of choice, at their pace – from any infrastructure (on-prem, public cloud, private cloud, or hybrid cloud).
- Citrix is hardware agnostic as is IGEL OS, which runs on any compatible x86-64 device – PCs, laptops, all-in-one devices, and thin clients. This enables IT to use existing hardware or provide a secure BYOD strategy for distributed professors, trainers and students. IGEL OS can be temporarily installed on a personal endpoint device such as PC or laptop by inserting the IGEL UD Pocket, a USB device to boot from IGEL OS and access Citrix Workspace directly.
- IGEL OS (RPI4) is purpose-built to access Citrix environments. IGEL OS for Arm architecture supports the [NComputing RX420\(IGEL\)](#) device that is based on the Raspberry Pi 4 platform, offering you further choice of endpoint hardware.



Don't Miss a Beat – Simplify Management and Increase IT Agility in a Learning Environment

- IGEL OS is Citrix Ready Endpoint Premium and Citrix Ready for Cloud validated, and stays in lockstep with the latest version of Citrix Workspace App, and Citrix Virtual Apps and Desktops.
- Achieve eagle-eyed visibility with Citrix and IGEL through unified endpoint management and control.
- The IGEL Universal Management Suite (UMS) enables IT to easily configure up to 300,000 IGEL OS-powered endpoint devices from a single console. Simply drag and drop to connect to new workloads or move users from on-prem to cloud workloads.
- The Citrix Cloud platform hosts and administers Citrix services by connecting to resources on any cloud or infrastructure. It creates, manages, and deploys workspaces with apps and data to your end-users from a single console.
- IGEL OS provides seamless integration with enterprise software and peripherals through IGEL's ecosystem of over 110 integrated technologies.



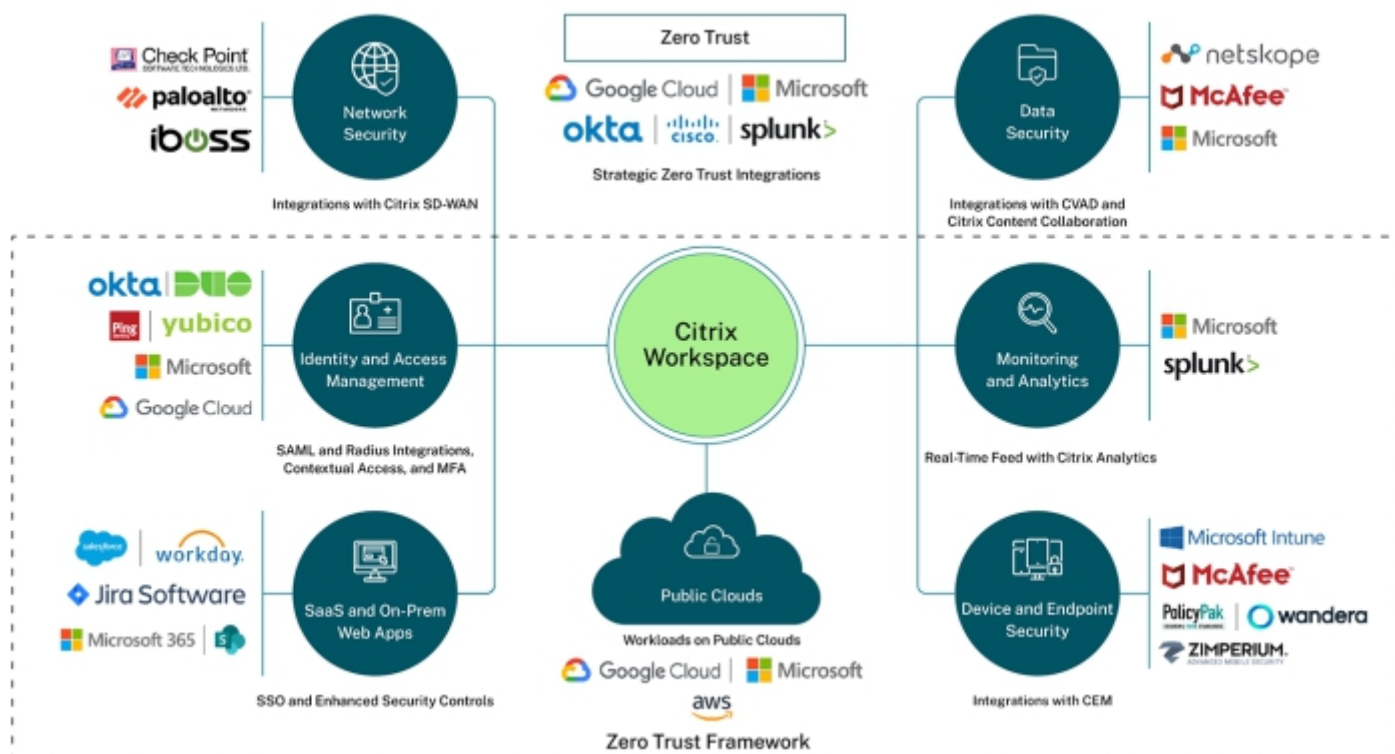
Deliver an Outstanding User Experience – Streamline Workflows Across Any Device

- Provide the rich, productive user experience students and staff expect. Citrix Workspace makes it easy for people to find everything they need from one dashboard. Every app, desktop, and file — all together in one place, regardless of where they are stored, orchestrated by Citrix Cloud services.
- Citrix Workspace and IGEL OS enable high-fidelity unified communications, optimized for MS Teams and Zoom. IGEL OS supports offloading much of the multimedia processing to the local operating system, while running critical real-time communications components on the device.
- IGEL OS supports Citrix HDX 3D Pro and Citrix Realtime Media Engine. HDX technology is designed to enable intelligent redirection, adaptive compression, and data de-duplication. These capabilities are implemented in different combinations as needed to simplify IT administration and optimize user experience.

From the Edge to the Cloud – Protect System Integrity

Citrix Zero Trust Approach

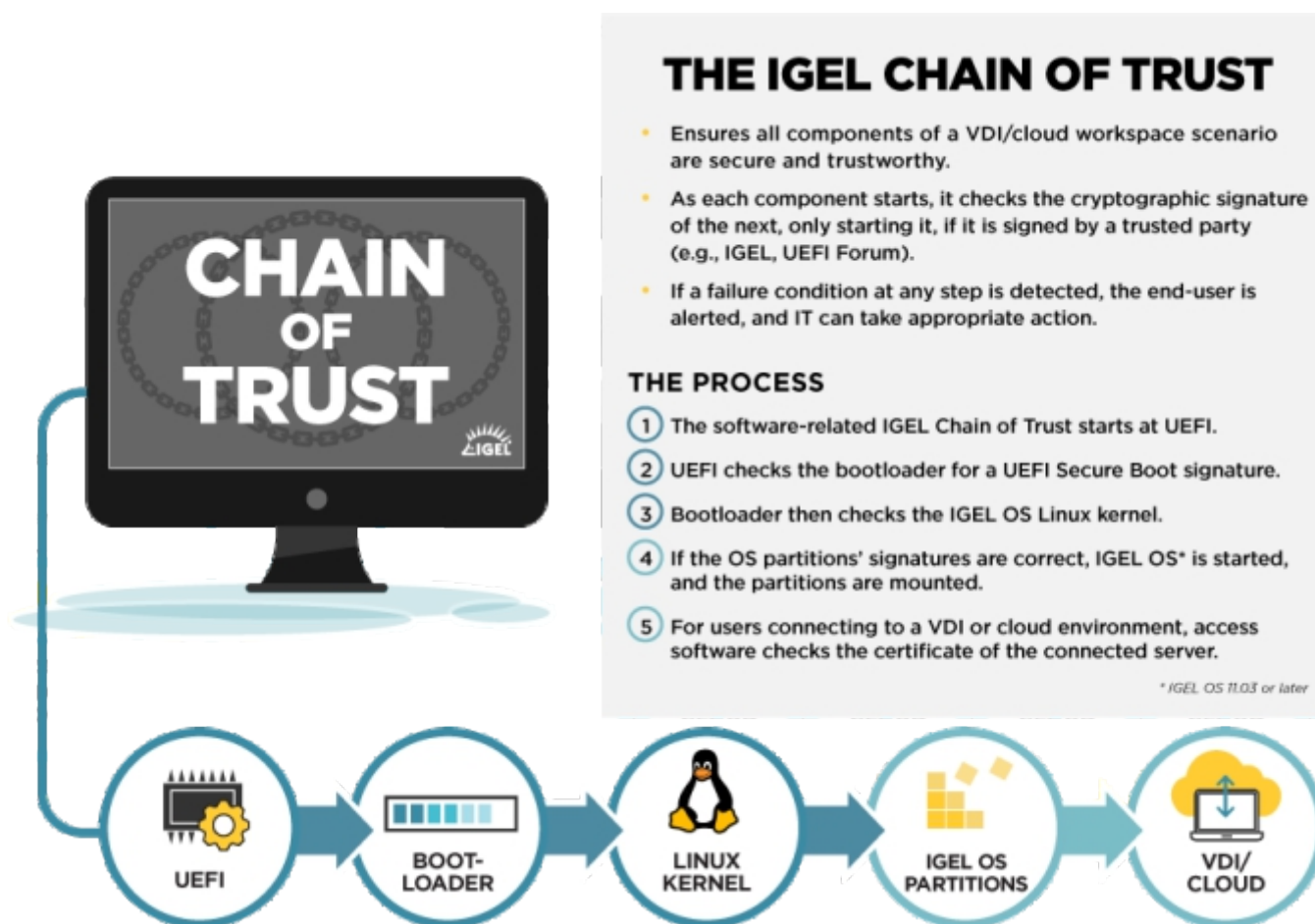
Citrix equips companies, universities, and colleges with end-to-end solutions for realizing a zero trust architecture that defends protected surfaces. From Citrix Analytics for Security to Citrix Gateway, organizations are able to implement all mission-critical components of a zero trust architecture – all in one secure digital workspace solution. The Citrix Trust Center provides the latest information on our approach to security, privacy, and compliance.



Endpoint Security Made Easy with IGEL OS

IGEL helps safeguard against endpoint breaches and malware attacks at the network edge by making it unappealing to hackers through an array of integrated security capabilities within the IGEL OS operating system and management console.

Moving Windows from endpoints to the cloud provides immediate security benefits by eliminating the need for remote Windows patching. As a modular, read-only operating system, IGEL OS presents a much smaller attack surface on the endpoint. It also features a unique chain of trust architecture that validates every step of endpoint execution—from the endpoint device to the cloud—cryptographically.



- The Universal Management Suite, IGEL's management console enables the IT admin to monitor every workspace in real-time and automatically push security updates helping to mitigate fraudulent access and breaches
- While working with IGEL OS, no data is stored on the endpoint device—even if staff and students use their own PC or notebook, all data is stored in the cloud and not on the user's private hardware. Your network edge is more secure, and compliance with key security requirements becomes easier to manage.

Citrix and IGEL Support Sustainability and Wellbeing

Corporate social responsibility, green IT agendas and wellbeing initiatives for students and staff are an important factor to attract and retain staff and students. Citrix and IGEL can help university management to accelerate their transition to sustainable IT. By reusing existing hardware and enabling a secure BYOD strategy, IGEL OS can offset investment in new hardware, saving capital expenses and reducing emissions and energy consumption incurred by production and procurement of new devices. Citrix Workspace enables remote learning environments which directly reduces carbon emissions from daily commuting to the campus to study or work.

Begin Your Journey to an Efficient, Secure and Productive Learning Environment

Empower your distributed faculty and students to connect, communicate, and collaborate by accessing Citrix Virtual Apps and Desktops on endpoint devices powered by IGEL OS. Providing a secure and consistently compatible workspace on a familiar graphical user interface makes it easier for students to navigate across various devices from anywhere. Citrix and IGEL are focused on providing choice of devices, apps, and cloud services to shape the higher education space of tomorrow.

For more information and customer stories, visit:

<https://www.igel.com/customer-stories/education-research/>

<https://www.citrix.com/en-gb/solutions/education/>



Enterprise Sales

North America | 800-424-8749

Worldwide | +1 408-790-8000

Locations

Corporate Headquarters | 851 Cypress Creek Road, Fort Lauderdale, FL 33309, United States

Silicon Valley | 4988 Great America Parkway, Santa Clara, CA 95054, United States

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