control UP

5 Ways To Optimize a Clinician's Digital Experience

A look at survey results for the biggest challenges in supporting virtual applications and desktops

Telehealth Is the Future for Clinicians and Patients

Over the next **5 years,** consumers expect to make greater use of virtual healthcare opportunities (Bain)

Consumer adoption of telehealth services jumped from 11% in 2019 to **49%** in 2020 (McKinsey)

82% of consumers view digital options as the best way to monitor health (McKinsey)

74% of millennials prefer telehealth visits to in-person doctor exams (GlobalMed)

52.5% of clinicians report more effective treatment with virtual healthcare visits vs. in-office treatment (ResearchGate)

85% of patients who receive telemedicine services are satisfied with their medical care (MDPI)

Virtualization of EHR Software is Becoming More Essential

- HIPAA and HITECH compliance
- Consistent clinician experience
- Empower care teams
- Extend reach of care
- Simplified access
- Prevent PHI theft
- Streamline management

GE Healthcare

Cerner

Allscripts

Epic

McKESSON

MEDITECH

Unfortunately, Virtualization Cannot Solve Every Problem

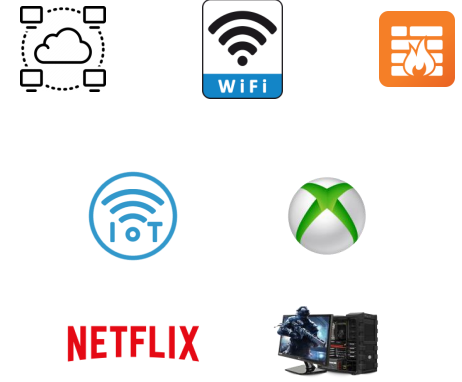| Hospital Information System	Hospital Data Center Virtualization	Clinicians' Virtual Desktops or Applications	Clinicians' work-from-anywhere connections
Epic	citrix	Horizon Client	
Cerner	okta	Citrix Client	WiFi
GE Healthcare	Microsoft	mac OS	
McKESSON	vmware	IGEL	IoT
NUTANIX	Windows Virtual Desktop		
Allscripts	amazon WorkSpaces	Windows	NETFLIX
MEDITECH			

| **Slowdowns, DDoS, Outages** | **Gateway, Hypervisor, Authentication, Latency** | **Logon time, application load time, and devices** | **Wi-Fi, ISP, Firewall, Router, and other home users** |
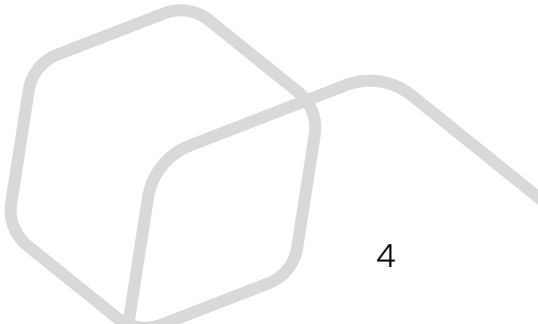
5 Ways To Optimize a Clinician's Digital Experience

At ControlUp, we have analyzed billions of hours of operational metadata, and have discovered the top 5 areas that produce the greatest benefit for supporting work-from-anywhere clinicians.

1 Ensure patient care resources are available

2 Increase performance for VDI / EUC sessions

3 Reduce logon time

4 Optimize unified communication

5 Analyze and enhance work and home networks

Ensure Patient Care Resources Are Available

Today, healthcare applications collect data from a variety of internal and external resources.

These resources must all be proactively monitored in order to ensure that patients receive the care that they need.

ControlUp provides the necessary monitoring capabilities to ensure patient care resources are available.

Hospital Information System

Epic

Cerner

GE Healthcare

MCKESSON

Allscripts

MEDITECH

Hospital DC Virtualization

citrix

okta

Microsoft

vmware

NUTANIX

Windows Virtual Desktop

amazon WorkSpaces

Common key resource inhibitors

HIS	DC
• ISP	• Hardware
• DNS	• Networking
• DDNS attack	• Latency
• High latency	• Overused resources
• Overused resources	• Right sizing

Ensure Patient Care Resources Are Available

A full functioning IT environment is key to delivering outstanding patient care. When proactively alerted and equipped with an understanding of patient care resources, the IT department can solve problems before clinicians start calling the help desk.

ControlUp Scoutbees uses synthetic transaction monitoring to determines whether resources like virtual applications and desktops, SaaS applications, web applications and services, and network resources are available.

Based on historical reporting of the availability of patient care resources and applications, ControlUp provides a detailed analysis and breakdown of test results.

ControlUp then alerts IT with email and webhooks to third-party systems. This allows IT operations to address issues before they impede productivity.

Increase Performance for VDI/EUC Sessions

Performance of a clinician's virtual desktop or applications can be subjective. To gain an objective view of the clinician's digital experience, you must be able to observe key metrics in real time, analyze data against averages, and remove bottlenecks to increase performance.

Clinician's Virtual Desktop or Applications

citrix™

vmware®

Microsoft

Windows Virtual Desktop

NUTANIX

amazonWorkSpaces

Common VDI/EUC performance inhibitors

Gateway	Hypervisors	Operating System
• Broker overload	• Data store performance	• Under-resourced virtual machines
• Broker misconfiguration	• Network latency	• High-latency sessions
• Load balancer misconfiguration	• Over-committed CPUs	• Improper OS optimization
• Authentication	• Mixed hardware	• Runaway processes
		• VDI client version and protocol selection

Increase Performance for VDI/EUC Sessions

ControlUp observes the clinician's digital experience in real time from hypervisors, such as Citrix and VMware Horizon. ControlUp then collects over a thousand metrics from the hypervisor, desktop, and application layers to determine a digital experience score.

ControlUp compares the clinician's digital experience with those of other clinicians and customers for an objective understanding and identify where deviations might exist. For a deeper analysis, ControlUp's AI and machine learning-based Virtual Expert™ is used to guide IT through troubleshooting and root-cause analysis.

Once you have determined an area to improve, the Virtual Expert is there again to suggest a remediation. And with an extensive community-based script action library, you can easily optimize a single clinician's digital experience or thousands with just one click.

Reduce Logon Times

Often, clinicians assume lengthy logon times are normal and think they are a product of IT imposing outdated, lackluster technology on them. Reducing logon times is one of the best ways to reduce frustration, increase productivity, and show clinicians the value of IT services.

Clinicians work from anywhere

Horizon Client

Citrix Client

Common logon performance inhibitors

Pre-Startup Phase	Logon Phase	Shell Start
• Authentication	• User profiles	• Startup applications
• EUC-VDI broker	• Group policy	• AppX & Active Setup
• Protocol connection	• Logon scripts	• Citrix WEM
• Workspace app	• Print & driver mapping	• VMware DEM
• Horizon client	• Client-side extensions	• Scheduled tasks
	• App Volumes	• Startup scripts
	• FSLogix	

Reduce Logon Times

ControlUp collects real-time metrics and displays detailed information about the entire logon process.

Once a slow logon is detected, ControlUp's Virtual Expert provides contextual help to search for root cause, using our Analyze Logon Duration script. With just one click, every major event related to the user's logon process can be seen and the output will pinpoint the technology responsible for any logon delay.

Using ControlUp Insights' historical reporting, you can see how your logons improve over time or are affected by changes made to an Instant Clone gold image or GPOs. You can also compare your environment with those of other customers using ControlUp's anonymous community benchmark reporting.

Optimize Unified Communications

Accessing Unified Communications applications—such as Zoom or Microsoft Teams—in a VDI or RDS session can be problematic.

UC Vendor

Clinicians' Virtual Desktop or Applications

Horizon Client

Citrix Client

Common VDI / EUC performance inhibitors

UC Vendor	VDI / EUC
• Outage	• Not optimized for UC
• Overused resources	• Host-side rendering
• Latency	• Media hairpinning
• DDoS	• Latency
	• Bandwidth consumption
	• No QoS

Optimize Unified Communications

ControlUp's synthetic testing ensures UC applications are running as expected and will send proactive alerts when the services are unavailable or experiencing problems.

ControlUp uses configuration checking to analyze the VDI/EUC environment to see if it is optimized.

Citrix HDX RealTime Optimization users can improve the user experience for Teams video or audio use.

VMware multimedia redirection optimization users can improve the user experience for web browsing and Unified Communications video or audio use.

These optimizations will also significantly reduce the resource consumption on the virtual desktop application (VDA).

Optimize Home Networks

Supporting clinicians working from home pose challenges as unique as each user. Some users have robust internet service, but experience connectivity issues because others at home share the same Wi-Fi. Conversely, some homes have poor internet connections, but a sophisticated high-speed Wi-Fi mesh.

Common home network inhibitors

ISP	Wi-Fi	Firewall
• Bandwidth	• Signal strength	• Bandwidth
• Throughput	• Bandwidth	• Throughput
• Latency	• Throughput	• Latency
	• Latency	

Optimize Work from Home

ControlUp can capture detailed information about the clinician's digital experience, including NIC speed, Wi-Fi Signal strength, and LAN latency to calculate total session latency.

From here, you can determine whether a home user needs to move closer to their Wi-Fi router, upgrade their ISP bandwidth, or if the problem lies somewhere else.

ControlUp's Virtual Expert is there to guide you through troubleshooting and remediation. And with an extensive community-driven script library, you can easily optimize the digital experience for a single clinician—or thousands—with a single click.

Conclusion

ControlUp has solved the Top 5 most-reported problems in optimizing a clinician's digital experience, plus some of the most troublesome work-from-anywhere issues—and we can help you, too.

- Slow logons in EUC environments
- Application performance issues
- Work-from-home issues
- Unified communications issues
- Slow virtual sessions

Let us show you how we can help you gain control of application and desktop issues so your clinicians can provide the best quality care to their patients.

In just 15 minutes, you've learned 5 ways ControlUp can optimize a clinician's digital experience. The next step would be to try ControlUp yourself and there are no salespeople needed. It takes just 10 minutes to get started.
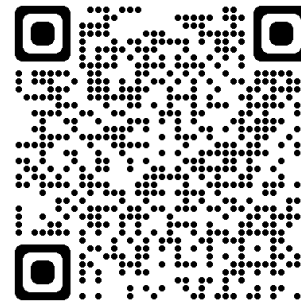
Offices **in US, Europe, and Israel**

"ControlUp allows us to bypass egos and external influences and just see the raw information. There's no ego in ControlUp; it's just information, unvarnished by humans."
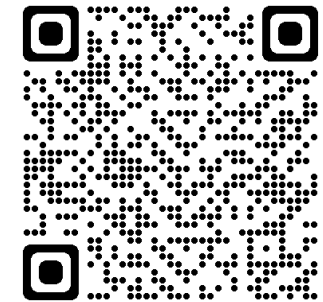
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Learn more about ControlUp!

Contact our team

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