Dell Mobile Clinical Computing

Healthcare Technology Solutions that Deliver Greater Security, IT Productivity and Clinician Efficiency

Today's healthcare environment relies heavily on the latest technology to increase the speed and accuracy of patient diagnosis and treatment. Healthcare professionals interact with a range of endpoint devices to access medical applications that are hosted locally or on servers in a centralized data center.

The problem: interaction with endpoints has historically presented a challenge because each device may not have all of the necessary applications available. As a result, healthcare professionals may have to wait to use a specific endpoint, potentially delaying patient care. The process can be further delayed by internal security policies and Health Insurance Portability and Accountability Act (HIPAA) regulations, which require all users to first provide credentials and be individually authenticated for each application, then log out of individual applications and from their user session when they leave each exam room. Over the course of a typical workday, these processes can seem increasingly cumbersome and time-consuming, leading some healthcare professionals to skip the log off process altogether, thereby creating unintended security vulnerabilities.

What do healthcare IT professionals need to provide?

Fast access to Electronic Medical Records (EMRs) and other commonly used applications

Complete data security that complies with internal policies and government regulations

The ability to accommodate a wide range of endpoints, including consumer devices such as tablets and smartphones

Dell's Desktop Virtualization Solution

Desktop virtualization offers a single solution to all these challenges. It lets healthcare institutions transform the ways they provide computing resources to workers by moving application processing and data storage from a physical desktop to the data center. It's an approach that gives workers an anywhere, anytime computing environment and simplifies the process of delivering desktops and applications to many types of devices, all while freeing up IT staff so they can focus on more strategic opportunities. It also gives IT tighter control over access, security, and storage of data.

Dell's **Mobile Clinical Computing** (MCC) is a desktop virtualization and identity access management solution designed specifically for healthcare professionals. MCC lets clinicians access applications and data securely anywhere and from nearly any device.

Dell MCC addresses many of today's key challenges:
- Limiting the amount of time caregivers spend searching for available endpoints as well as the time spent accessing desired applications
- Providing a single sign-on that the caregiver can use to authenticate seamlessly against multiple applications
- Providing quick and secure access to patient information on-demand using proximity and/or biometric authentication methods
- Reducing the time spent by IT staff managing client systems in their environment

Dell MCC lets medical professionals leverage the benefits of desktop virtualization in a way that encourages the right security behavior without impeding clinical workflow. MCC's desktop virtualization and identity access management features enable single sign-on and strong authentication, allowing clinicians to log in or approach a terminal and be presented with a workstation or a desktop that delivers the applications and patient information they need without requiring password authentication for each application. Clinicians can log into endpoints in patient exam rooms or anywhere in a hospital seamlessly through a variety of end point devices, letting them spend more time with patients, see more patients per week, and provide a higher level of service.

The Three Big Benefits

Dell MCC's flexible approach serves the specific needs of the healthcare sector with an enterprise-class solution that provides enabling technology and critical clinical workflow features with a compelling end-user experience. It delivers:

- **Data Security:** Information is stored in the data center — not on the endpoint device — thereby reducing the risk of lost or stolen data. Multi-factor authentication helps prevent unauthorized access.
- **IT Productivity:** Dynamic provisioning of desktops and user applications simplifies deployment and provisioning. Centralized control of virtual images simplifies application upgrades and ongoing maintenance.
- **Clinical Efficiency:** Single sign-on solutions enable fast login to electronic medical records (EMRs), thus reducing time to access patient records. Proximity cards or contact access

smartcards provide easy clinician single sign-on authentication. Roaming session transfer enables access to a virtual desktop from any location and a range of endpoints.

Enhancing Security

Of all those winning attributes, none is more important than data security. That's why Dell MCC keeps data where it belongs, in a secure data center, while giving authorized users seamless access to the applications and data they need. Security features include:

- **Endpoint Security.** End-user devices are access points, not data storage locations. If a device is lost or stolen, the data remains secure.
- **Multifactor Authentication.** MCC reduces risk of unauthorized access. Options include one or more combinations of manually typed passwords, badge RFID contactless smartcards, and biometrics such as facial or fingerprint reader recognition.
- **Role-based Delivery of Information:** MCC reduces the risk of data security breaches due to unauthorized use of data; with MCC, data is only accessible by those authorized.
- **Workstations Lock When Authorized User Is Away:** MCC can detect when the user moves away and will lock the screen until the user returns and re-authenticates.
- **Additional Security Layer for All Data and Applications:** MCC enhances security for older applications with a new, constantly monitored layer that protects against unauthorized use.
- **Fast Updates for Security.** MCC allows administrators to run virus and malware scans on virtual desktop pools without impacting user performance or access.
- **Real-Time Monitoring of Security Status.** Users can monitor the entire infrastructure from a central data center.
- **Configurable Firewall Features.** The virtual infrastructure lets administrators configure firewalls at the device, group, application, department, and data center levels.
- **All Components Tested at Dell Labs Before Deployment.** Dell validates for compatibility, scalability, and availability.

Enhancing IT Productivity

Whether the objective is to secure patient data or improve clinical efficiencies, IT managers will benefit from Dell MCC. By centralizing the management of client systems, deployment is streamlined, issues are resolved quickly, and maintenance tasks that once took hours now take minutes.

- **Fast Deployment:** The deployment and management of end user devices is streamlined in a virtualized MCC environment. Instead of having to build each machine—including relevant applications and device drivers—a virtualized desktop can be configured and deployed as an image independent of the client hardware device.
- **Reduced Desk-Side Visits:** With reduced configuration requirements, physical visits to individual systems decrease. With the ability to rebuild a desktop environment and manage endpoint devices remotely, most issues are rapidly and remotely resolved.
- **Easier Maintenance:** With the ability to manage deployment centrally, IT managers can layer patches as necessary and quickly roll them out user environments. Password-related help desk calls decrease, saving time while boosting productivity and staff satisfaction.

Enhancing Clinical Efficiency

The primary objective of technology in healthcare is to improve clinical efficiency. Driving greater efficiency of clinicians results in better decision making, more time for patients, and ultimately higher patient satisfaction.

- **Rapid Authentication:** Single sign-on capability removing the need for users to remember or input multiple different passwords, and auto-launch of applications and customization of desktop environment defined per user profile.
- **Multiple Authentication Options:** acceleration of user access via ID badges, fingerprint biometrics, and smartcards, where credentials are governed by IT role-based access definitions and regulatory compliance requirements.
- **Anywhere Access to Applications and Data:** availability of desired applications and data quickly, on-demand, regardless of location or device.
- **Session Continuity:** Fast desktop roaming between devices, supported via badge or fingerprint login, allowing users to retain session state regardless of the location or type of device.
- **Follow-me Printing:** Seamless redirect of print jobs to the printer closest to the user's terminal.

Dell Wyse Cloud Clients: Easy Access to Applications

Dell Wyse cloud clients enhance Dell MCC's clinical benefits. Dell Wyse Thin and Zero Clients integrate critical healthcare-specific features, including single sign-on, tap and go, and dual-factor authentication to reduce access time. The devices offer Imprivata® "instant on" capability to speed up access to patient data, and all Dell Wyse client options are tested and validated to work within the MCC solution.

Dell Wyse cloud clients also tell a great security story, enhancing MCC security benefits by:

- **Supporting Security Protocols:** Dell Wyse Thin and Zero Clients integrate critical healthcare-specific features that reduce access time for users, encouraging compliance with security protocols.
- **Securing Authentication:** Dell Wyse Thin and Zero Clients offer dual-factor authentication to help ensure that only authorized users gain access.
- **Scaling Security Features Easily:** Dell Wyse offers zero touch management, and Wyse Device Manager simplifies end point management.
- **Reducing Vulnerability:** With an unpublished API and no attack surface, Wyse ThinOS is largely immune to malware and viruses.

Dell and Citrix®: Working Together to Empower Your Mobile Workforce

Dell partners with Citrix to deliver the end-to-end desktop virtualization solutions that today's mobile workforce needs.

Dell Wyse Datacenter VRTX for Citrix XenDesktop®

This solution is the first integrated IT solution designed specifically for remote-office and small-office environments with up to 500 users. The Dell PowerEdge VRTX is a customer-inspired design that meets their need for reduced complexities by combining servers, storage, and networking into a compact chassis while still offering the power to efficiently support virtualized environments and workloads. The solution is easy to deploy, configure and manage – often for a limited number of virtual desktops and without on-site IT support

Dell Wyse Datacenter for Citrix XenDesktop

This solution is ideal for organizations of 50 to 50,000 users where a sophisticated IT environment and IT resources require robust, flexible, and highly scalable desktop virtualization at an optimal price/performance ratio for their workload. It provides a purpose-designed architecture based on industry standards and gives you a wide variety of options through an array of prequalified components.

Dell Wyse Datacenter for Virtual Workstations

This solution is designed to offer Dell Precision-class high performance workstation functionality in a secure, efficient and optimized virtual desktop environment with certified applications. It leverages Citrix XenDesktop as the desktop virtualization platform, and graphics virtualization enabled through NVIDIA® GRID graphics cards to deliver seamless, reliable, high-performance access to data and graphically intensive applications.

Below is a quick overview of how each of the 3 solutions outlined above are structured:

Virtualization Software	Citrix XenDesktop
Identity Access Management	Imprivata, Indigo, Caradigm™
Multi-Factor Authentication	Proximity, smart card, biometric
Endpoints	Dell Wyse Thin Desktops, Zero Clients, Mobile Thin Clients, Dell Latitude™, Tablet & OptiPlex™

Getting Started with Consulting and Implementation Services

The Dell MCC Consulting Services team provides discovery, blueprint, and design services to design the optimal reference architecture based on a holistic understanding of a customer's requirements, computing environment, and clinical workflows. Dell experts work with customers to understand their specific business needs, requirements, and constraints through onsite Discovery workshops. They also help customers map a transformational blueprint from the "As-Is" state to "To-Be" state, then create a robust and scalable design to define detailed hardware and software requirements and services scope of work.

Dell MCC Implementation Services teams are responsible for project management and end-to-end integration services including desktop and application virtualization, identity access management, data center installation and configuration, and client deployment. The teams can deploy a 50 to 500 user production pilot to let healthcare customers experience the flexibility and enhanced productivity benefits that the solution delivers. And when customers are ready to roll out the solution, Dell services teams will be there to help design and implement a scalable solution.

Dell ProSupport™ is a portfolio of premium hardware, software and solutions support services available 24x7x365, globally. It helps customers simplify their internal support processes and fill gaps in their IT support resources, expertise, and coverage to ensure uptime and meet user demands, while providing a single source of accountability.

Powerful ROI, Meaningful Improvements

In a Total Economic Impact™ (TEI) study conducted by Forrester Research, the Dell MCC deployment by Tallahassee Memorial Hospital achieved a risk-adjusted return on investment (ROI) of 83 percent with a payback period of 13 months. Staff productivity was up nine percent, or more than 215 minutes per user every week, reducing backlogs and unproductive work hours.

Desktop virtualization is an ideal strategy for stressed healthcare environments. Dell MCC delivers patient safety and clinical satisfaction, better IT resource management and support, a reduction in clinical issues arising from information access errors, and vastly improved information security. It can help you cut costs, increase clinical efficiency, improve IT productivity, and ultimately deliver "faster time to care," which, in the final analysis, matters most of all.

Dell is a premier provider of computer products and services on which health care providers build their information technology and Internet infrastructures. Dell listens to customers and delivers what they value: comprehensive solutions to help them make better, faster decisions and enable improved quality of service. Dell designs, manufactures, and tailors products and services to customer requirements and offers an extensive selection of software and peripherals. For more information, visit www.dell.com/mcc