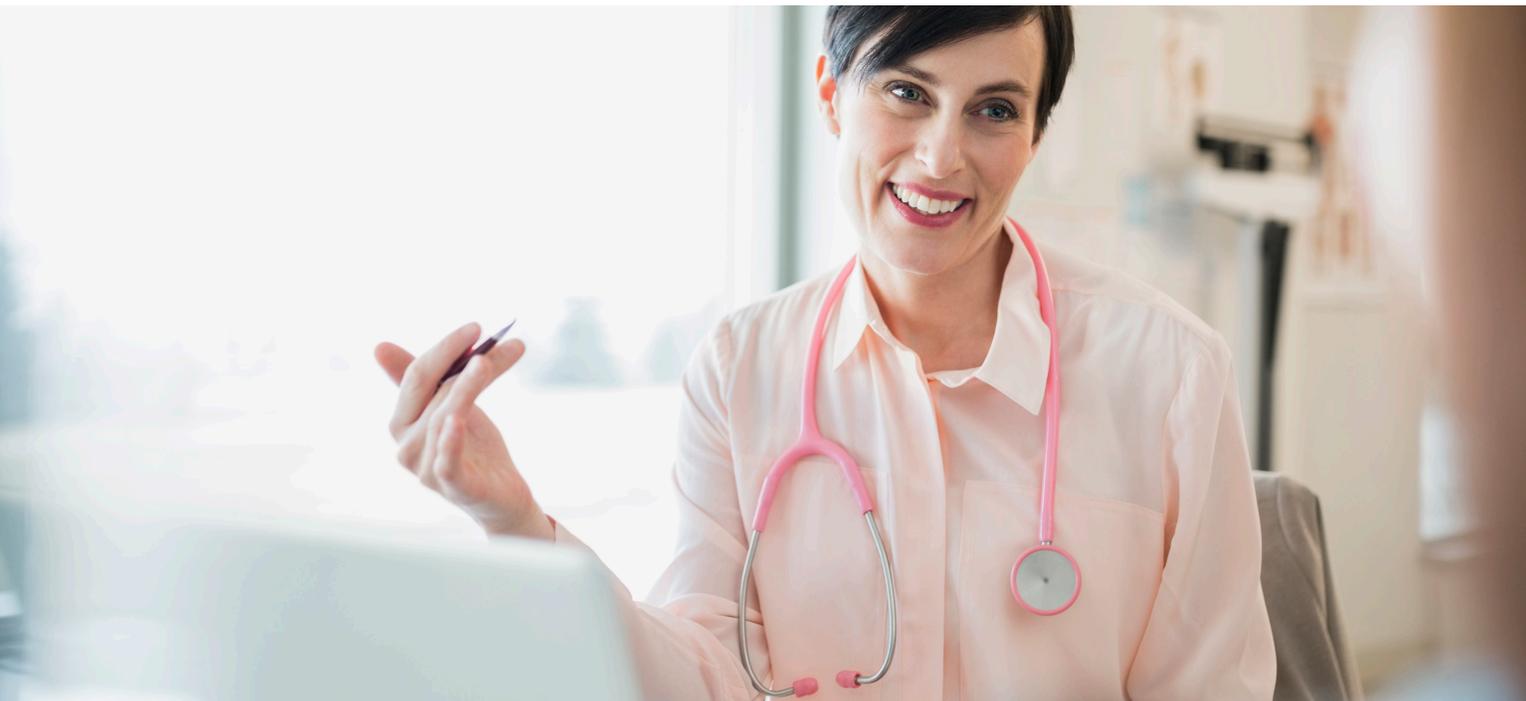


▶ The 5 Virtues of Virtualization in Healthcare IT

WHY VIRTUALIZATION AND VIRTUALIZATION LIFECYCLE MANAGEMENT SHOULD BE TOP PRIORITIES FOR HEALTH IT TEAMS

The transition from paper-based applications to electronic records, coupled with the rise in mobile device use is requiring hospitals to rethink their IT strategies to enable clinicians to access protected health information (PHI) on multiple devices, seamlessly, at the point of care. Challenged by a federal mandate to use electronic health record (EHR) technology to improve accessibility, integrate disparate solutions and streamline operations – while simultaneously enhancing security and meeting Health Insurance Portability and Accountability Act (HIPAA) and Health Information Technology for Economic and Clinical Health (HITECH) Act regulations – many hospitals have responded by making significant investments in health IT (HIT). In fact, in 2014, technology, including EHR systems, was the largest capital investment for nearly half of all US hospitals.¹



▶ Forward-thinking healthcare organizations are beginning to look at the next frontier of HIT investments: specifically, how to integrate existing solutions while streamlining operations – all while using data to provide better patient outcomes.

¹ Gregg, H. (2014, Jun. 2). Survey: Providers Investing Heavily in EHRs, But Dissatisfied With Purchase. Retrieved from <http://commvau.lt/1GtLOWJ>.

In the last several years, healthcare organizations have begun exploring technologies – like virtual machines (VM) – to centralize software applications, seamlessly integrate and manage data, and leverage the cloud. In particular, virtualization is becoming an attractive option for more hospitals due to recent technological advancements that have reduced storage costs and made virtual desktop design and management significantly more customizable and flexible.

▶ REDUCE COSTS, IMPROVE OUTCOMES

The advantages of virtualization and VM lifecycle management cut right to the heart of the healthcare industry’s overarching goal of decreasing costs while improving outcomes. For example, several VMs can run on one physical server, creating efficiencies and reducing costs. Computers, applications, operating systems and networks also can be virtualized, enabling data to be accessed, retrieved and protected in a centralized server. Virtual desktop infrastructure (VDI) then allows clinicians and staff to remotely access these applications and systems from their mobile devices and laptops at the point of care. VM lifecycle management processes can be put in place to efficiently manage the creation, optimization, protection, management and eventual retirement of VMs within an organization, making it viable for HIT teams to better manage the inevitable and varied range of new and legacy apps and systems.

▶ THE ROI OF VIRTUALIZATION

Virtualization and VM lifecycle management are essential for maximizing the value of HIT investments including EHRs, picture archiving and communication systems (PACs) and mobile apps. Furthermore, virtualization plays a critical role in enabling clinical mobility and achieving meaningful use while reducing PHI risk.

ONE: AVOIDS COSTS OF “RIP AND REPLACE”

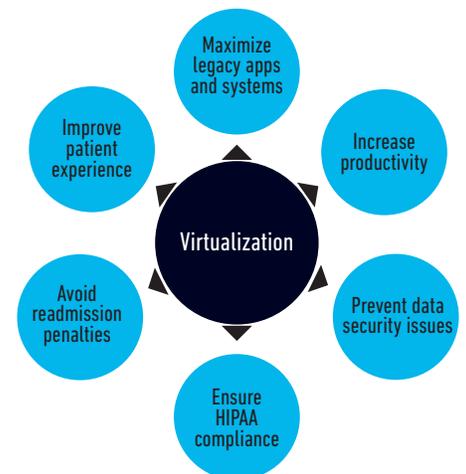
Virtualization allows healthcare organizations to manage legacy apps and systems. For example, hospitals can retain and run legacy clinical apps on modern systems. Also, when combined with cloud technology, new clinical apps can be managed on legacy systems that can’t be retired due to regulations.

TWO: INCREASES CLINICIAN AND STAFF PRODUCTIVITY

On average, clinicians may access workstations for data entry more than 50 times per shift. That’s why streamlining workflow and log-ins and enabling mobile access can translate into big savings over time. Also, a survey of 600 EHR users showed that virtualization and mobile access made their EHR more useful: 58% of providers who were able to access an EHR from a mobile device reported they were very satisfied with the EHR, versus 28% of non-mobile users.⁴

In 2014, three in four (76%) non-federal acute care hospitals adopted a basic EHR system with clinician notes, which represents a 27% increase from the previous year and a more than eight-fold increase in EHR adoption since 2008^{2,3} Therefore, it is no surprise that healthcare organizations are facing server sprawl and virtualization is quickly becoming an attractive way to:

- Reduce IT hardware spend
- Lower data center power consumption
- Enable faster provisioning of existing systems
- Minimize server footprint
- Improve user experience



2 More physicians and hospitals are using EHRs than before. (2014, Aug. 7). Retrieved from <http://commvau.lt/1LdHHLy>.

3 Charles, D. (April 2015) Adoption of Electronic Health Record Systems among U.S. Non-Federal Acute Care Hospitals: 2008-2014 (ONC Data Brief. Number 23.) Retrieved from <http://commvau.lt/1L3zYRy>.

THREE: PREVENTS DATA SECURITY INCIDENTS

Nearly one in five hospitals experience a data breach each year, estimated to set hospitals back an average of \$810,000 per breach, or \$1.6 billion across the industry.⁵ A Ponemon study reveals that the healthcare industry shoulders the highest cost per stolen record, as high as \$363 per record on average.⁶

Although there have been several attempts to replicate the privacy and security features and functionality of virtualization, most of these solutions do not mitigate PHI risk. For example, some healthcare organizations initially tried using a virtual private network (VPN) as a secure communications tunnel for information transmitted between providers. However, these early adopters quickly realized that VPN was riddled with inconsistencies. Challenges included incomplete transfers of large files, the liability of open windows that gave unauthorized users access to PHI, and dropped connections and time lags – even with the best networks – that impacted patient care. With virtualization, you get none of the “virtual pains” of VPN because sensitive information is not stored on users’ devices and desktops. This gives healthcare organizations greater control over the security of data at various endpoints.

FOUR: HELPS ENSURE HIPAA AND HITECH COMPLIANCE

Financial penalties for HIPAA violations can range from \$100 to \$50,000 for each violation, depending on a defined level of culpability.⁷ By creating a centralized resource for clinicians to access PHI seamlessly between devices, virtualization eases the path to meaningful use while complying with HIPAA and HITECH regulations for data security and privacy.

FIVE: IMPROVES PATIENT EXPERIENCE

With patient satisfaction determining 30% of the total performance score for CMS’ incentive-based payments (Hospital Value-Based Purchasing (VBP) Program),⁸ many healthcare organizations are looking for ways to streamline workflows to improve patient satisfaction. By enabling clinicians to use mobile devices on any workstation to quickly access patient records at the point of care, virtualization helps clinical teams provide a more seamless patient experience, and spend less time getting access to the information they need and more time interacting with patients.

► COMMVAULT VM LIFECYCLE MANAGEMENT: KEY FEATURES FOR SUCCESS

Commvault’s comprehensive VM lifecycle management solution addresses the entire VM lifecycle, from configuration and operation to protection and retirement. We understand there is no truly effective one-size-fits-all solution for VM lifecycle management. That’s why the Commvault approach allows healthcare organizations to custom-fit data protection of all VMs. Also, Commvault’s single software solution offers advanced features to save time and money, including array-based snapshots across a wide range of VM platforms to meet demanding recovery requirements; automated VM archiving to reclaim wasted VM resources; and workload portability across physical, virtual and cloud platforms that helps healthcare organizations get more from their infrastructure.

4 Wicklund, Eric. (2014, Oct. 20). Mobile docs get most from their EHRs. Retrieved from <http://commvau.lt/1Lff9WE>.

5 McCann, Erin. (2014, Feb. 3). Healthcare’s slack security costs \$1.6B. Retrieved from <http://commvau.lt/1RrOiYu>.

6 Ponemon Institute’s 2015 Global Cost of Data Breach Study Reveals Average Cost of Data Breach Reaches Record Levels. (2015, May 27). Retrieved from <http://commvau.lt/1jaokgY>.

7 American Medical Association. HIPAA Violations and Enforcement. (n.d.) Retrieved Aug. 15, 2015 from <http://commvau.lt/1L3AnDp>.

8 Frequently Asked Questions Hospital Value-Based Purchasing Program. (2012, Mar. 9). Retrieved from <http://commvau.lt/1OhqLth>.

OTHER KEY FEATURES THAT SET COMMVAULT VM LIFECYCLE MANAGEMENT APART INCLUDE:

- Platform-agnostic design. Our single, unified, platform-independent solution enables healthcare organizations to easily manage, retrieve and maximize the value of their data by integrating disparate data sources. It also sets the foundation for integration with many cloud storage platforms, on-premises infrastructure and existing hardware and software.
- Customizable security options. Our solution helps healthcare organizations strike a balance between enabling access to confidential records and securing PHI.
 - *Permissions*: HIT teams can selectively define levels of data permission by user groups and data types – implementing tight user restrictions to meet HIPAA security regulations.
 - *Endpoint backup*: Organizations can lock files containing PHI on devices and perform periodic encryption to ensure all new and existing sensitive data is locked on an ongoing basis. Secure erase capabilities allow teams to select and permanently wipe data from a device if it's stolen or lost.

▶ SETTING THE FOUNDATION FOR YOUR HIT FUTURE

Healthcare organizations are facing numerous challenges – from data management and security to the complexity brought by regulations and legacy systems – which will impact business revenue and patient care. With the explosive rise in EHR and mobile device use, now is a good time to re-evaluate how virtualization and VM lifecycle management can help alleviate some of these challenges. In addition to helping hospitals maximize the effectiveness of critical technology investments, enabling interoperability of systems and supporting mobile strategies, virtualization's other "virtues" are essential for HIT teams under pressure to increase efficiency; namely, reduced administrative costs, improved server management and the ability to reclaim wasted resources.

- ▶ To learn more about how Commvault can help you get more out of your healthcare technology investments, visit commvault.com/healthcare.

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