EMC HYBRID CLOUD SOLUTION FOR HEALTHCARE
Next-Generation Health IT at the Point-of-Care

ESSENTIALS
Delivering ITaaS via a trusted, well-run EMC Hybrid Cloud drives business alignment, efficiency, and end-user satisfaction:

• **Respond to business and clinical requirements immediately:** Offer infrastructure/application services delivery in hours rather than months.

• **Clearly show IT value:** Increase visibility into true costs of IT services while charging business units only for what they use.

• **Put applications in the right cloud:** Applications have varying SLA and PHI security requirements – EMC Hybrid Cloud ensures application workloads can be placed in the right cloud, with the right cost, security, reliability, and performance.

• **Make your resources elastic:** Users and admins alike can add or reduce storage, compute resources, security and data protection on the fly without manual intervention.

• **Support today’s and tomorrow’s apps:** By connecting Private Cloud resources with Public Cloud resources through the EMC Hybrid Cloud, IT can manage both traditional and next-gen apps together in a way that is consistent and seamless.

CHALLENGES
From EMR Meaningful Use and Affordable Care mandates, ICD-10, mergers and acquisitions, population health management, to patient-centered medical homes, healthcare providers are under increased financial and performance pressures. As these organizations transition from a “fee-for-service” to a “pay-for-performance” model based on episodes of care, they also face the challenges of enhanced HITECH and HIPAA requirements to keep patient information private and secure, continuously available, and protected.

To improve care coordination and outcomes across inpatient acute care and extended sites of care, providers are investing in next-generation Health IT foundations to facilitate secure, integrated, real-time data at the point-of-care. These IT capabilities need to deliver higher agility and drive business revenue. And they must do this while maximizing operational efficiency, lowering costs, and managing growth requirements resulting from cloud, mobile, social, Big Data and analytics.

While many healthcare organizations are embracing virtualization, converged infrastructure, and cloud services, they often feel confronted by a binary choice: either the speed and agility of public cloud services or the control and security of private cloud infrastructure. The EMC Hybrid Cloud Solution for Healthcare enables organizations to quickly, easily, and cost-effectively build a trusted hybrid cloud that embodies the best of both worlds.

FOUNDATION FOR COORDINATED CARE
Healthcare providers are adopting cloud solutions as a strategy to lower IT costs with a greater shift toward OPEX versus CAPEX, speed of deployment, and to supplement internal staff and expertise with off-premise resources. A hybrid cloud incorporates both public clouds for access to a wide array of applications and services such as email and backup-as-a-service and private clouds for reliable performance and security for critical clinical applications including the EMR and PACS. In other words, a hybrid cloud foundation can help your healthcare organization deliver the right data to the right caregiver at the right time.

Cloud computing is the key to running IT-as-a-Service (ITaaS), giving IT leaders the flexibility and speed they need to effectively manage expenses, enhance service delivery, and increase revenue while meeting the evolving expectations of mobile caregivers and patients. EMC Hybrid Cloud provides IT leaders with choice without sacrificing control over IT services – including 100% automated provisioning, scale up/down elasticity, and simplified operations - both on-premise and off-premise. Running ITaaS drives business alignment, efficiency, and end-user satisfaction.

REDEFINE
SOLUTION OVERVIEW
And, the solution provides the financial transparency and control to clearly understand how each application workload and service is consuming resources. Delivering ITaaS via a Well-Run Hybrid Cloud involves transformation across the healthcare system and continuum of care.

The EMC Hybrid Cloud Solution for Healthcare enables a well-run hybrid cloud by bringing new functionality to not only IT, but also to developers, end-users, and line-of-business and clinical owners. Beyond delivering baseline Infrastructure-as-a-Service (IaaS), built on the Software-Defined Data Center (SDDC) architecture, like EMC ViPR Software-Defined Storage, the solution also delivers feature-rich capabilities to expand from Infrastructure-as-a-Service (IaaS), to business-enabling IT-as-a-Service. Backup-as-a-Service and Disaster Recovery-as-a-Service are now just a policy that can be enabled with a few clicks.

Healthcare providers can also leverage a Software-Defined Data Center architecture comprising technologies from across the EMC federation of companies including EMC storage and data protection, RSA security, Pivotal CF Platform-as-a-Service (PaaS) and the Pivotal Big Data Suite, VMware cloud management and virtualization solutions, and VMware vCloud Hybrid Service.

Figure 1: EMC Hybrid Cloud Solution for Healthcare

EMC can also help your organization deploy automation and orchestration capabilities which are critical enablers of software-defined datacenters and cloud computing. The SDDC also helps to drive down the cost of deploying and managing traditional applications, while enabling a new breed of applications. The SDDC is fully automated, leveraging application policies and integration across compute, storage and network. EMC and VMware deliver the software-defined data center with its integration of the VMware vSphere Suite, EMC ViPR Software-defined storage, and EMC market-leading storage platforms and backup. EMC helps healthcare organizations choose the right tool as we deliver a portfolio of best-of-breed enterprise storage platforms to meet the needs of all workloads.

In addition, EMC provides industry-leading solutions that help build Trust and keep pace with emerging technologies for new cloud, mobile, social, big data and analytics environments. Our suite of EMC Trusted IT Solutions for Healthcare Providers keep Protected Health information (PHI) highly-available, secure, and private as caregivers...
increase their use of IT to improve patient care delivery. We also apply industry best practices for security, data protection, and availability to every aspect of hardware and software design. EMC delivers Trusted IT solutions that directly address the requirements for HIPAA and HITECH, including: Advanced Security, Continuous Availability, and Integrated Backup and Recovery.

**BROKER OF IT SERVICES**

With a hybrid cloud, IT organizations can act as the internal service provider of choice as they broker IT services from private and public clouds, enabling visibility and control over the best location to run business and clinical applications. The solution can also help profile applications and workloads and identify the most efficient, secure, and cost-effective IT operational model across both private and public clouds.

The EMC Hybrid Cloud solution offers an end-to-end reference architecture built upon EMC’s industry-leading private cloud solutions, providing efficiency, flexibility, and choice. In addition, the solution enables your organization to integrate rapidly with multiple public clouds to create a unified hybrid cloud. The solution enhances the performance, security, and compliance of your organization’s private cloud with compatible, on-demand services from EMC-powered Cloud Service Providers.

The EMC Hybrid Cloud solution enables financial transparency and control to clearly understand how each application workload and service is consuming resources. This transparency enables metering and charge-back to the business units and their users—so users know exactly the cost of services being requested. Your organization gains better financial controls and planning while driving a reduction in wasted resources.

End-users and developers can quickly gain access to a marketplace of application resources, from Microsoft, Oracle, SAP, EMC Syncplicity, Pivotal, as well as the ability to add 3rd-party packages including your EMR and PACS applications as needed. All of these resources can be deployed on private cloud or public cloud services from EMC-powered cloud service providers, including VMware vCloud Hybrid Service (vCHS). And your organization can leverage its existing EMC and VMware investments, keeping costs low.
Our suite of EMC foundational services can help you quickly implement the EMC Hybrid Cloud solution within your IT environment. Once the solution is deployed, your organization can leverage EMC’s portfolio of advanced services to capitalize on all of the benefits provided by a hybrid cloud, application modernization, workload migration, and IT-as-a-Service (ITaaS) models.

**WELL-RUN HYBRID CLOUD**

EMC believes moving to a well-run hybrid cloud environment can help your IT organization shift the balance of focus to innovation through the pooling and sharing of infrastructure resources and greater management automation across all databases and application. The EMC Hybrid Cloud solution addresses requirements of IT, developers, and lines of business and clinical users:

- **The EMC Hybrid Cloud Business and Clinical User:** Users will experience an easy to use self-service portal that offers a personalized catalog of services and are charged only for what they use. This environment is housed in a safe and secure data center that provides lower costs, better efficiency, and enterprise-class service levels.

- **The EMC Hybrid Cloud Developer:** Developers will have on-demand access to the most modern and consistent development environments, leveraging popular programming frameworks such as Java, Ruby, Node.js, and Scala, as well as a wide variety of SQL and NoSQL database technologies. With this increased agility, your healthcare system can quickly achieve the “triple aim” of healthcare reform: improving the experience of care, reducing per capita cost, and managing population health.

- **The EMC Hybrid Cloud IT Professional:** In addition to benefiting from the solution’s support for both private and public clouds, IT professionals will benefit from best of breed technology composition, ease of deployment and more effective IT management, smarter health and performance monitoring, and 100% control over what their users can provision.

**SERVICES TO GET YOU THERE FASTER**

EMC Global Services accelerate the production use of your EMC Hybrid Cloud solution, maximizing the flexibility and efficiency of the solution for your environment while addressing your enterprise requirements for management and control. We assist with every stage of solution deployment with services for every stage of solution lifecycle. Example services to help you move forward your hybrid cloud strategy include:

- **EMC Hybrid Cloud Architecture & Design Service:** Addresses your business needs and IT requirements by specifying use cases for your EMC Hybrid Cloud solution. Using these metrics, EMC will then conduct an infrastructure gap analysis and design the capacity and points of integration between EMC infrastructure and key VMware software in the EMC Hybrid Cloud solution, including VMware vCloud Automation Center, vCloud Operations Manager, NSX, and EMC ViPR.

- **EMC Hybrid Cloud Implementation Service:** Utilizes the output of the Architecture & Design Service to implement the hybrid cloud solution. This service integrates the EMC Hybrid Cloud solution components from VMware and EMC into your environment and creates a fully operational hybrid cloud.

- **EMC Hybrid Cloud Optimization Services:** EMC experts work with you to fully integrate the six key characteristics of a well-run hybrid cloud to ensure end user adoption and ease of management. Through these offerings, EMC can integrate components such as choice of device, a self-service portal, standardized services, transparent pricing, broker of services, and automated provisioning.
READINESS FOR THE FUTURE

The EMC Hybrid Cloud Solution for Healthcare empowers IT to become the internal service provider of choice and broker of IT services while fully leveraging EMR investments and other key emerging technologies like mobile, big data and analytics, and social. EMC can help your organization build a hybrid cloud foundation unique to your organization that incorporates standardization, simplification, management and automation, and governance, risk, and compliance.

We will work with your IT team on an iterative approach and provide key deliverables to advance from strategy to design to deploy. Gain IT efficiency and agility in meeting current and emerging healthcare requirements and the benefits of a hybrid cloud environment including:

- **Automated provisioning**: allocates cloud infrastructure resources to support cloud workloads on demand
- **Self-service portal**: enables users to request and spin up their own workloads using cloud resources
- **Monitoring**: tracks cloud infrastructure uptime, performance, and capacity
- **Metering and chargeback**: ensures that resource consumption is measured and billed as it’s used
- **Multi-tenancy**: groups and partitions workloads according to their security requirements
- **Resource elasticity**: allows users to add resources to their workloads in response to changing capacity and performance demands
- **Workload-optimized storage**: ensures that different workloads are hosted on the appropriate storage tiers for delivering the level of performance that’s needed
- **Backup and recovery services**: protects and recovers cloud applications, workloads and data
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