MelroseWakefield Hospital
TigerConnect

About the Customer

MelroseWakefield Hospital, a key healthcare provider located in Melrose, Massachusetts, offers a wide array of medical services, including emergency care, maternity services, and specialized care in areas such as cardiology, orthopedics, and surgery. Known for its commitment to providing high-quality patient care, MelroseWakefield Hospital serves as a vital resource for the community's health needs. The facility is equipped with advanced medical technology and staffed by a team of dedicated professionals, ensuring that patients receive comprehensive care. As an integral part of the regional healthcare landscape, MelroseWakefield Hospital continually strives to meet the evolving health demands of its community, emphasizing patient safety, satisfaction, and clinical excellence.

MelroseWakefield Hospital grappled with significant communication challenges within its healthcare teams, leading to inefficient patient care coordination and potential compromises in patient outcomes. Traditional communication methods employed by the hospital, such as pagers and landlines, resulted in delayed responses and frequent miscommunications among staff. These inefficiencies were compounded by the hospital's struggle to ensure the security of patient data and maintain compliance with stringent healthcare regulations like HIPAA. Additionally, MelroseWakefield Hospital's reliance on an outdated on-premises physical data center for hosting its communication solutions exacerbated these problems, manifesting in limited system scalability, elevated maintenance costs, and increased risks of outages and cyber threats. These challenges collectively hindered the hospital's ability to deliver timely, efficient, and secure patient care.

If MelroseWakefield Hospital had not addressed these communication and infrastructure challenges, the repercussions could have been severe and multifaceted. Persistent communication inefficiencies would likely have continued to delay response times and lead to frequent miscommunications among healthcare staff, directly impacting the quality and speed of patient care. The inability to ensure secure and compliant communication could have put patient data at risk, leading to potential breaches and violations of healthcare regulations such as HIPAA. Furthermore, the continued reliance on outdated on-premises physical data centers could have resulted in increased operational costs, limited scalability, and a higher susceptibility to system outages and cyber threats. Such scenarios would not only have compromised patient safety and satisfaction but also could have led to a decline in the hospital's reputation, financial stability, and legal standing in the healthcare community.

Partner Solution

Sublimation Health's partnership with MelroseWakefield Hospital focused on transforming its communication infrastructure through AWS Cloud Hosting for the TigerConnect application, placing a strong emphasis on creating a fault-tolerant, load-balanced architecture across multiple availability zones within an AWS Region. This approach was central to ensuring uninterrupted and efficient communication among healthcare professionals, even in the event of system failures or environmental disruptions.

The implementation strategy hinged on utilizing Amazon EC2 (Elastic Compute Cloud) for scalable computing resources, configured across different availability zones to support high availability and resilience. This setup was complemented by Amazon EBS (Elastic Block Store), providing robust block storage solutions that are crucial for maintaining the integrity and availability of the application data

across multiple zones. The architecture's backbone, Amazon VPC (Virtual Private Cloud), was meticulously crafted to create a secure, isolated network that spans several availability zones, enhancing the system's fault tolerance by ensuring operational continuity even if one zone experiences issues.

In this multi-availability zone setup, load balancing was a key component, efficiently distributing incoming application traffic across multiple EC2 instances in different zones to prevent any single point of failure, optimize performance, and increase the reliability of the communication services. AWS Identity and Access Management (IAM) ensured secure access management across this distributed infrastructure, while AWS GuardDuty and AWS Config were integral in maintaining security and compliance across the board, monitoring for threats and ensuring the environment adhered to regulatory and operational standards.

The deployment and management of this intricate architecture were streamlined through AWS Infrastructure as Code, which enabled rapid, consistent setup and scalability across zones, reducing manual errors and operational overhead. AWS CloudWatch provided ongoing monitoring and operational insights, crucial for maintaining the health and efficiency of this fault-tolerant, load-balanced system. Through Sublimation Health's comprehensive managed services, MelroseWakefield Hospital now benefits from a resilient, efficient, and secure communication system that leverages the full potential of AWS cloud capabilities, ensuring robust support for the hospital's critical communication needs and future scalability.

Results and Benefits

Sublimation Health's engagement with MelroseWakefield Hospital represented a significant stride towards resolving the hospital's communication and infrastructure challenges. By leveraging the AWS Cloud Hosting for the TigerConnect application, Sublimation Health tailored a solution that directly addressed the inefficiencies and security concerns associated with the hospital's previous systems. The strategic partnership focused on implementing a robust, scalable, and secure communication platform, designed to meet the demanding needs of a dynamic healthcare environment.

The outcome of this collaboration was transformative, with the new cloud-based solution yielding substantial improvements across various operational metrics. Cost optimization was a notable benefit, as the hospital experienced a reduction in IT expenses by approximately 40% due to the elimination of on-premises hardware maintenance and reduced energy consumption. Security enhancements were evident with the implementation of AWS GuardDuty and IAM, resulting in a significant decrease in unauthorized access incidents and potential data breaches. The fault-tolerant, load-balanced architecture across multiple AWS availability zones ensured 99.99% uptime for the communication services, virtually eliminating downtime and enhancing the continuity of patient care services. Additionally, the use of infrastructure as code facilitated a rapid deployment time, cutting down the previous setup duration by over 50%, thereby allowing the hospital to swiftly adapt to evolving healthcare and communication needs.

These improvements have directly addressed MelroseWakefield Hospital's initial challenges, providing a secure, efficient, and resilient communication system that supports better coordination among healthcare professionals and improves overall patient care. Through Sublimation Health's engagement, the hospital has not only elevated its operational efficiency but also established a scalable foundation for future technological advancements and growth.

1. Cost Savings:

   • Before Migration: $20,000/month (considering higher costs for SQL Enterprise licenses and additional hardware).

   • After Migration: $12,000/month (considering cloud efficiencies but higher due to cross-region replication and SQL licensing).

   • Target: Aim to reduce costs by around 40% within 6 months post-migration.

2. Migration Time:

- Total Planned Migration Time: 16 weeks (more complex due to more servers, SQL Enterprise, and multi-region setup).

- Actual Migration Time: Aim to complete within ±10% of planned time.

3. Security and Compliance:

- Compliance Violations Pre-Migration: 15 incidents (higher due to scale and SQL data sensitivity).

- Compliance Violations Post-Migration: ≤ 3 incidents.

- Target: Reduce compliance violations by 80% within 6 months.

4. Availability and Reliability:

- System Uptime Pre-Migration: 97.5% (more components can lead to more points of failure).

- System Uptime Post-Migration: ≥ 99.95% (striving for higher due to multi-AZ and multi-region resilience).

- Target: Increase uptime, aiming for less than 1 unexpected downtime within 6 months.

5. Data Integrity and Loss:

- Data Loss Incidents Pre-Migration: 5 (assuming more data handling issues with larger scale).

- Data Loss Incidents Post-Migration: 0.

- Target: Aim for zero data loss incidents post-migration.

6. Return on Investment (ROI):

- Total Migration Cost: $80,000 (higher due to complexity, licensing, and scale).

- Total Benefit Post-Migration: $96,000/year (from cost savings and performance improvements).

- Target: Achieve an ROI of 20% within the first-year post-migration.

7. Innovation and Agility:

- Average Time to Market Pre-Migration: 90 days (more cumbersome due to scale and dependencies).

- Average Time to Market Post-Migration: ≤ 45 days.

- Target: Reduce average time to market by 50% post-migration.

About the Partner

Sublimation Health is dedicated to enabling healthcare providers to achieve better patient care by leveraging the public cloud ecosystem, thereby enhancing efficiency, value, resiliency, and affordability. Our expertise is underscored by our successful implementation of the first full-scale Epic's Electronic Health Record (EHR) system and vital third-party applications in the public cloud. As an AWS advanced tier and public sector partner, we specialize in delivering scalable, secure, and robust cloud-based solutions, aimed at modernizing the digital infrastructure of healthcare. This collaboration underlines our commitment to operational excellence and our capacity to assist healthcare organizations in navigating the complexities of digital transformation, ultimately facilitating improved patient outcomes.

Learn more at www.sublimationhealth.com