

While undertaking a necessary infrastructure refresh, Taunton Municipal Lighting Plant recognized an opportunity to leverage next-generation datacenter architecture to enhance its primary infrastructure and backup operations.

Backup and Recovery Platform Refresh Improves Availability and Efficiency for a Public Utility

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Introduction

Taunton Municipal Lighting Plant (TMLP) has operated as a municipal electric utility since 1897 and currently provides electric service to roughly 38,000 customers in southeastern Massachusetts. The company also provides internet and network services to local commercial, residential, and governmental organizations.

While operational technologies have improved within TMLP over the past several years, the seven-year-old datacenter infrastructure had not realized the same level of investment and wasn't designed to accommodate many capabilities now required by TMLP. The system was also cumbersome for the IT department to operate, burdening the seven-person team with many time-consuming transactional and administrative tasks.

TMLP's Technology Challenge

TMLP's infrastructure refresh was spurred by adoption of a new enterprise resource planning (ERP) system, which demanded a performance improvement from the legacy server and storage systems. TMLP operates datacenter infrastructure across three distinct environments: its electricity generation plant, its corporate offices and related functions, and its distribution environment. To more effectively manage these datacenters, TMLP's IT team required a solution that was simple to deploy, easy to manage, and reliable and could scale to support future initiatives.

SOLUTION SNAPSHOT

ORGANIZATION:

Taunton Municipal Lighting Plant

ORGANIZATIONAL CHALLENGE:

The utility is undertaking a full datacenter infrastructure refresh concurrent with a new ERP rollout. The new environment must also support increased availability requirements and streamline operations for the IT team.

SOLUTION:

Nutanix Enterprise Cloud Platform and Nutanix Mine *with* HYCU

PROJECT DURATION:

Staged approach: Phase 1 (generation plant) took roughly a weekend to deploy. Phase 2 (corporate) is much larger and is in the midst of a six-month migration process.

BENEFITS:

Improving availability, increasing safety, simplifying the broader IT environment, facilitating scalability, reducing administrative time spent by the IT organization, and supporting new enterprise applications

Along with this broader infrastructure refresh, IT also faced growing demands from both internal and external clients for improved availability and support services. According to Tom Worthington, MIS Supervising Engineer for TMLP, the company's downtime recovery time objective (RTO) window-decreased by 500% at the generation plant. In TMLP's corporate environment, the RTO window dropped to 2 hours from its previous range of 24 hours to 48 hours. Most notably, downtime at TMLP's generation plant was increasingly unacceptable due to its adoption of modern operational technology. Many of the manual processes for running the generators had been replaced with touchscreen controls attached to servers, driving demand for faster recovery time. TMLP's corporate data availability requirements were driven down by the need to provide 24-hour customer support and remediation. To ensure the IT department could meet these business demands, TMLP needed a solution that was both robust and simple to operate.

TMLP evaluated a handful of solutions from multiple vendors but ultimately chose to adopt Nutanix infrastructure and the Nutanix Mine *with* HYCU backup platform because of the following factors:

- » The Nutanix Enterprise Cloud Platform was easy to operate and quickly demonstrable during the sales process. The sales contact was able to highlight requested features without any external consultations, which engendered confidence amongst TMLP's staff. Other vendor demonstrations required additional engineering resources and multiple meetings during the demo process to show requested functionality.
- » HYCU's specific development around the Nutanix platform was a strong selling point given that other similar solutions were available.
- » HYCU's symbiotic relationship with Nutanix was attractive in that it limited the number of potential support touch points. Additionally, TMLP would gain direct access to HYCU engineers as needed.

Implementation

The project's first phase started in one of the smaller, but arguably most critical, environments within the company — the generation plant. This implementation process included migrating and operating some of the most specialized and highest-value applications between environments, such as the operational technology to run the generators as well as much of the regulatory and compliance workloads for tasks such as tracking plant emissions. The new generation plant environment consists of about 10 virtual servers, each responsible for an individual application.

TMLP engaged with the services arms of both Nutanix and HYCU during the implementation, bringing a Nutanix engineer onsite for most of the deployment process. While all of the installation was done in advance by TMLP's IT team, the process of deploying and ensuring that the Nutanix environment and Mine solution was aligned with TMLP's needs was completed over a weekend with a Nutanix engineer in the datacenter. HYCU's engineers then remotely helped build out the backup and recovery component, including staging multiple backup tiers and data offloading to an archive tier.

TMLP is currently migrating its corporate datacenter as it undertakes the next phase of the implementation. The implementation's rollout across the corporate and distribution environments will allow for location-agnostic redundancy, spreading the company's on-premises assets across all three datacenter locations so that TMLP can still run its mission-critical functions at 100% capacity in the event of a local datacenter outage. Merging the three disparate environments with their dedicated administrators into a single virtual environment with generalist administrators will

also result in physical asset and workforce redundancy. As an additional benefit, this redundancy comes with a unique safety value proposition because losing certain servers on the generation side for an extended period of time could result in catastrophic failure of generation equipment in a worst-case scenario; with datacenter redundancy, that becomes even more unlikely.

Challenges

The TMLP team's biggest challenge was logistical because the physical appliance that ran the Nutanix *Mine with HYCU* environment arrived later than anticipated. To offset this, TMLP initially ran HYCU on a virtual machine, so the IT department had to migrate the software twice. While that scenario was not ideal, TMLP's Worthington noted that the company was very satisfied with the professional and technical services support provided by both HYCU and Nutanix during the process. The HYCU team continues to provide remote engineering support to make sure that any iterative updates to the system roll out correctly and that everything remains dialed in.

Additionally, TMLP must move deliberately and in phases to address the complexity and safety requirements associated with the utilities business. These requirements have been the key drivers behind the staged rollout, and as a result, the company has yet to realize all of the potential upside it expects once the broader corporate deployment is completed in 2020.

Benefits

The most notable benefit of adopting the Nutanix *Mine with HYCU* platform is that TMLP can reach its newly defined availability goals through redundancy and efficiency gains. The platform's simplicity of use has already resulted in a large improvement in both testing and development data refresh time. The old process was manual and time consuming, often taking between one day and two days. In the new environment, the IT team is realizing a 90% reduction in turnaround against prior performance because of the automation of administrative tasks. As a result of both the easy-to-operate environment and task consolidation, TMLP has long-term plans to reallocate an increasing volume of its limited IT resources to supporting line of business (LOB)-driven initiatives.

Increased safety, specifically at the generation plants, is another project benefit. TMLP's case is a unique example where infrastructure solutions from HYCU for redundancy, backup, and archive are used not just to eliminate downtime and data loss but also to ensure the physical safety of the generation plant and personnel. The immediate benefits of safety will then mature into longer-term initiatives to ensure the security and compliance of applications at corporate locations.

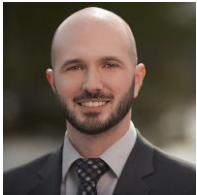
Other benefits are harder to quantify. Evolving workforce demographics at TMLP are increasingly driving process digitization across many functional aspects of the company: Examples include RFID for asset management or the use of tablets for system management and remote information gathering. As new ideas bubble up from the business for ways to utilize technology across the organization, the infrastructure refresh frees up the small IT department to find and deploy technology-led solutions, enabling it to help the company save time and money.

Further, the broader move to the hyperconverged environment came with several operational expense reductions: an estimated 50% savings in yearly licensing and maintenance costs in the new environment, a roughly 60% reduction in physical rack space, and a reduction in related power and cooling costs. This move required an up-front investment, but it will result in a long tail of operational expense savings on top of the already enumerated benefits.

Methodology

The project background and company information contained in this document was obtained from multiple sources, including information supplied by HYCU and questions posed directly to TMLP via a direct interview with IDC.

About the Analyst



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Sebastian Lagana is a Research Manager within IDC's Infrastructure Systems, Platforms, and Technologies group, where he contributes to IDC's core Server, Storage Systems, and Converged Infrastructure data products and research documents and supports custom engagements.

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