What you need to know about decommissioning data centers

The composition of worldwide data center capacity has changed significantly over the last five years. Synergy Research Group reports that the percentage of total data center capacity operated on-premises by enterprises fell from nearly 60% in 2017 to 40% in 2022 and will drop to under 30% by 2027. The big shift is due to hyperscale capacity nearly doubling over the next five years, accounting for about half of all capacity by 2027.

Many organizations are finding that moving processing operations to the cloud is both less costly and more efficient than operating their own data centers. Cloud hyperscalers not only have enormous economies of scale, but they also operate more sustainably. All have aggressive goals to achieve zero-carbon footprints and to operate entirely on renewable energy sources within the next few years.

Organizations that want to reduce IT infrastructure investments as they move to the cloud or consolidate operations will find decommissioning an on-premises data center is a complex task that requires attention to security, asset tracking, environmental considerations and logistics, among other factors. Among the critical items to consider are the following.

Data security and backup

In most cases, data will need to be shifted to a new location, such as a cloud service or colocation facility. It's important to ensure that all sensitive data is securely backed up and encrypted. A best practice for backup is the "3-2-1" principle: Maintain three copies of the data, with one backup connected to the production network and one stored in a secure off-site facility.

Asset inventory

Before moving anything, create a detailed inventory of all assets within the data center, including servers, storage devices, networking equipment, and software licenses. Document the relationship between racks, servers, drives, networking and power equipment to create a blueprint of the assets to be decommissioned. The inventory provides a critical record of all assets moving to other locations or disposal.

To take this a step further, special software can automate the discovery of every serialized asset and maintain parent-child data relationships to ensure precise auditing and tracking. Identifying server components (e.g., CPU, Memory DIMMs) and key drive attributes (e.g., power-on hours, logical serial number), this discovery report provides a detailed blueprint of the relationships between the rack, server, and drive and helps identify any variance between discovered assets and your inventory list.

Data erasure and destruction

Critical data is at the highest risk when infrastructure is in motion. After making at least two backup copies, thoroughly sanitize storage equipment such as hard drives, solid-state drives, tape backup, attached devices, temporary storage such as USB drives, and even printers, which hold data in temporary storage.

A common misperception is that deleting data or formatting hard drives is sufficient for data destruction. In fact, special software can still recover data from disk drives even after multiple formatting passes. Sanitize all hardware by fully wiping data using specialized software that passes Test Level 2 of the Asset Disposal and Information Security Alliance Threat Matrix.

Devices that can't be sanitized should be disposed of securely and environmentally soundly. Disk drive shredding, which disintegrates storage devices into unrecoverable pieces, is the most secure and effective method. Understanding the method of destruction that renders data recovery impossible, coupled with recycling efficiency, is the best path to ensure environmental sustainability.

Professional IT asset destruction firms can save significant time by wiping data from multiple devices in parallel, and many provide certificates that confirm that erasure or destruction was completed.

Logistics

Whether equipment is to be repurposed or recycled, it is essential to track the status and location of every device at all times. Items in the asset inventory should be logged when they leave the data center, at every hand-off point, and when they reach their destination to ensure that no asset has been misplaced or stolen. A best practice is to employ a professional IT asset management firm with documented chain-of-custody capabilities, secure transportation and automated tracking features such as RFID tags and GPS transponders.

Legal and regulatory compliance

Depending on the location and industry, stringent rules may apply to procedures for moving equipment, protecting data, and meeting environmental standards. Familiarize yourself with the regulations that apply to you before the decommissioning process begins. IT asset management vendors with deep regulatory knowledge can be valuable partners in maintaining compliance.

The circularity imperative

Over 61 million metric tons of electronic devices were discarded in 2022, and the annual total is expected to grow to nearly 75 million metric tons by 2030. Less than 18% is recycled.

Circularity is a sustainability model and process focused on reuse and minimized waste. It is becoming a core component of corporate social responsibility initiatives and a mandate for IT organizations. Circular data centers are at the center of a global circular IT hardware industry.

Much of the equipment retired during decommissioning can find new uses through internal redeployment, refurbishment, remarketing, and donation. Substantial value can be recovered when refurbished equipment is sold through secondary market channels. Circuit boards can even be processed to recover precious metals.

When recovery options are exhausted, equipment should be disposed of in a secure and environmentally responsible way. Few trash disposal vendors specialize in IT asset disposal. An IT asset disposition (ITAD) provider provides IT organizations with a reliable and efficient way to manage IT asset life cycles with a secure chain of custody, comprehensive tagging and tracking, end-to-end logistics and expertise in sanitization and disposal. Secure ITAD is a salve for the headaches of data center decommissioning.