LEGRAND'S CONNECTED INFRASTRUCTURE: 5 CRITICAL ELEMENTS FOR DATA CENTER OPERATIONS

Connected Infrastructure



Management always demands more. How can you bring your data center to new levels of efficiency and deliver substantial gains in effectiveness to meet these demands? This is the question that Legrand's® approach, Connected Infrastructure, answers. The Connected Infrastructure approach moves data center efficiency and savings beyond a focus on power and cooling to a more holistic perspective.

Connected Infrastructure delivers new synergies and efficiency by identifying five critical areas for data center efficiency and reducing operating expenses. This approach is strongly aligned with the real-world issues and management challenges that face nearly every data center – and delivers 5 critical elements, for data center operations.

5 Critical Elements For The Real World

As the demand to "Do more with less" continues into the future, it is imperative for data center operations to find new sources of efficiency and savings. Connected Infrastructure targets aspects of the data center that are ripe for cost savings, specifically:

1. Performance

Data center performance demands have now reached a critical level. With the rapid movement to virtualization and cloud infrastructure and its importance to business, performance is essential. This dependence on infrastructure also makes downtime reduction essential to ensuring overall performance. Reducing downtime is as important as improving innate data center performance. The importance of highly reliable and higher-performing structured cabling systems to solve both of these problems cannot be overstated. Connected Infrastructure meets that challenge with real benefits and savings that include:

- **Structured Cabling to Improve Performance –** By using nCompass™, a structured cabling system by Legrand, in partnership with Superior Essex®, a number of performance benefits can be realized. First, insertion loss can be cut substantially for fiber systems, particularly on 40 Gb and 100 Gb networks with very small loss budgets. In addition, copper cabling systems have performance headroom to provide the future growth you need. An additional benefit that nCompass provides is network protection against Alien CrossTalk (AXT), a potentially serious problem. This solution also has extended warranties and performance guarantees.
- **Improving Cable Management –** This aspect of the data center may be the source of substantial performance gains. Improved cable management that supports appropriate bend radius and cable connection is another method of removing performance inhibitors.
- **Reducing Downtime –** The single most important issue of poor performance is downtime. It is also the most costly problem in the data center. The Uptime Institute says 73% of downtime is caused by human error. Poor cabling practices and management are a major aspect of human error. Connected Infrastructure provides solutions to mitigate this issue.

2. Time

With the number of data center staff shrinking, the ability to reduce the amount of time required for new installs or moves, adds and changes delivers efficiency. However, this type of cost savings has received very little attention in the past. Connected Infrastructure encompasses solutions and processes that deliver staff time savings. The most important of these include:

- **Flexibility and Scalability –** Research shows that 90% of all active devices in the data center will be replaced during a five-year period. To support this constant change, Legrand's® solutions provide the flexibility with support for multiple cabling types and the scalability for future needs within the modern data center.
- **Make New Deployments or Moves/Adds/Changes Faster –** Device changes, and the resultant cabling modifications for moves, adds and changes are constantly occurring in the data center. Cable solutions from Legrand are designed to be installed much more quickly, saving staff and contractor's installation time with features such as pre-termination, improved rack assembly, and simpler termination options. In addition, there is seamless integration of the cable tray and rack to further simplify and speed up deployments.
- **Improved Cable Physical Infrastructure –** Simplifying and improving how cables are routed and managed can save a substantial amount of installation time and time to make moves, adds and changes. Connected Infrastructure provides better physical infrastructure, and this includes wider vertical managers to support more cable without adding new cable management.
- **More Flexible Cable Infrastructure –** A flexible infrastructure can support all cabling approaches without having to change cable management, including Top of Rack, Middle of Row, and End of Row. This allows data center operations to change orientation more quickly. In addition, this flexibility includes integrated cable tray mounting options on racks and cabinets.

3. Space

As the cost of major data center redesigns or changes skyrockets, the ability to optimize space in the data center is critical. While optimizing power and cooling has provided benefits, a focus on increasing rack density, using open space outside the rack to free up space within the rack, and "going vertical" offers new ways to gain space. Connected Infrastructure supports the space-saving vision of Gartner's "Infinite Data Center" initiative. New ways to save data center space include:

- **Taller Racks –** One of the key points of Gartner's Infinite Data Center initiative is to grow racks vertically. A 9' rack will have up to 38% more RU space than a comparable 7' rack. This gain of a third more space is a very attractive benefit.
- **Support for Improved Air Flow and Cooling –** Connected Infrastructure delivers rack-based cooling, passive cooling and other methods to increase rack density. Improved cooling and air flow makes it possible to host more active devices within the same amount of rack space. Legrand has a full portfolio of cooling solutions, ranging from integrated closed-coupled cooling solutions, to air flow management and containment, to provide further space-saving benefits of leading-edge cooling options.
- **Improving Cable Solutions for Higher Port Density –** Increasing port density opens space in the rack for active devices. For example, Connected Infrastructure solutions from Legrand can support 144LC connectors in one rack unit, reducing the number of RUs dedicated to connections.
- **Supporting Both Fiber and Copper in One Rack Unit –** An additional way to save space in the data center is to provide a single rack unit where both copper and fiber infrastructure can be connected. Legrand provides these mixed-media offerings as part of Connected Infrastructure.
- **Smaller Outside Diameter Cable –** This may seem a small point, but the use of cable with smaller outside diameter can be a critical part of increasing rack density or deploying more active devices without changes to physical infrastructure. Smaller OD cable can also increase space available in cable runs or in a raised floor environment. A lot of smaller OD cable can add up to big space savings.

4. Experience

Improving the ownership and customer-vendor experience also provides efficiency gains, but it is often overlooked. Connected Infrastructure addresses several elements of the problem:

- **Seamless Integration of Products –** Among the most frustrating problems for data center staff occurs during installation when products will not work together as expected. Too often, the customer is the

one to integrate the disparate elements of the solution and poor integration results in a negative experience. Legrand is committed to truly seamless integration with its Connected Infrastructure offerings.

- **Simplify the Customer/Vendor Relationship –** Providing a single point of contact is among the most important ways to simplify customer/vendor relationships. Legrand® provides a single point of contact that can coordinate solutions, help coordinate delivery schedules, work with contractors, and support other tasks that make the project run more smoothly. The Legrand contact will also find the specific experts at Legrand when their knowledge is needed, at the appropriate point in time.
- **Provide Project-Specific Expertise –** Each data center enhancement or improvement project tends to have unique and specific demands. Legrand brings their experience and talent to bear in a way that specifically supports that project, taps their intellectual property to shorten the project timeline, and allows the internal data center staff to be more efficient. Providing project-specific guides and documentation is a key deliverable of Connected Infrastructure.

5. Sustainability

Starting in approximately 2005, energy use in the data center became a focal point for reducing costs. This challenge has morphed and now includes sustainability goals. Legrand has made a corporate commitment to sustainability for our own activities, and to also support our customers' efforts as well. Legrand has developed a leadership position in both the manufacturing process and the products built using this process. Legrand is often recognized by the US Department of Energy (DOE) for its sustainability efforts.

- **Reduction in the Amount of Hazardous Material –** Legrand products use less hazardous material during the manufacturing process, which means fewer issues for data centers using these products. Legrand's products are also RoHS compliant.
- **Increased Use of Recycled Material and Waste Reduction –** The products within the Connected Infrastructure portfolio utilize recycled content where appropriate.
- **Assistance in Meeting LEED Compliance –** Together, Legrand and Superior Essex® deliver nCompass™ Structured Cabling Systems, the first and only systems that contribute points toward achieving LEED certification.
- **Next-Generation Air Flow and Cooling Improvement –** Legrand provides support for both front-to-back and side-to-side air flow with solutions that minimize mixing hot and cold air to improve efficiency. This includes products that manage air flow such as baffles, blanking panels and containment, providing the specific solution needed for optimal airflow. Close-coupled cooling solutions are also available to further enhance cooling efficiency.

Summary

Data center operations teams need their vendors to provide new ways to save money and time. Legrand answers this challenge with a set of integrated products and solutions designed to work synergistically to meet this demand, collectively described as Connected Infrastructure. Connected Infrastructure goes beyond power and cooling, focusing on five elements for the data center and its operations. This complementary approach provides a more holistic solution to delivering a more effective data center that operates at higher levels of efficiency.

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