

IP Configuration + Project Management Solutions Major NY Metro Area Hospital System



One of **Derive Technologies'** (and the company's dedicated Derive Healthcare practice's) world-renowned, Greater New York Metro area-based hospital clients formed a consolidated care group comprising numerous additional hospitals and satellite clinical practices. During this merger, which created a significantly larger, non-profit care network, legacy and new printers, print servers, computers and other end-user devices had to be updated with new wired and wireless network protocols to standardize all network connectivity and ensure security and regulatory compliance.

The expanse of the Device IP Configuration Project was, and continues to be extensive and laborious, so the hospital – with which Derive has had a long relationship (both with the main hospital carrying the new care network's brand, and other hospitals and facilities now in the care group) – turned to Derive's certified project managers and engineers to augment their own team in support of a smooth IP upgrade path.

Business Challenge

Derive Technologies has maintained a long, successful relationship with one of the New York Metro area's most important hospital systems, having supported various IT needs for this renowned healthcare provider for over a decade. In recent years, the hospital formed a large, non-profit health network through the merger of two well-known, New York-based, care provider systems—the hospital joined with another care group which already comprised additional complete hospital campuses, and a series of physician-led practices distributed throughout New York's five boroughs and Long Island.

During, and immediately following, the hospital merger – which was initiated three years ago – one of the organization's principal operational goals was (and continues to be) to standardize technology management across all facilities. This would include, and includes, infrastructure standardization – core computing, networking, storage – and related IT protocols, end-user systems, and support and purchasing contracts. Streamlined, centralized IT services would ensure a higher overall quality of service for all of the hospital's facilities, as well as reduced data and security risks, and improved compliance with various regulatory guidelines, all while lowering the total cost of technology ownership for the non-profit group.

One of the many challenges that the healthcare provider network faced as it on-boarded multiple new facilities was that disparate, legacy, third-party, **wireless IP protocols** were in place for devices in new locations – and even in the original hospital – and they had to be updated and standardized. Among others, this comprised a series of wireless printers and print servers, as well as additional end-user devices, such as notebook computers, tablets, and specialized wireless point-of-care workstations in multiple locations,

which would have to be updated to conform to new, centralized network standards. These systems would all have to be connected, over time, to the hospital's primary network—both wired and through numerous wireless access points. Facilities housing the devices and print servers would, specifically, comprise point-of-care locations, emergency rooms, operating rooms, and administrative offices. Because of the expanse, and dissimilar nature, of all of the facilities – including different hospital campuses in different building types, geographical locations, etc., and satellite clinical offices in every possible locale – and the number of existing and new technologies that would have to be connected to the network, the scope of updating all IP protocols would be daunting for internal staff. The hospital's consolidated, internal technology team, was, and is, sizeable, but not expansive enough to support this **IP protocol update process** without engaging trusted partners/providers to supplement the overall work effort.

An external technology solution provider company assigned to the augmentation of the hospital's internal team would be required to cost-effectively bring certified networking professionals to the initiative to support extensive efforts to align the hospital's central infrastructure and network with the manifold devices in assorted locations, then redeploy new IP addresses for these systems. In addition to basic engineering skills, the provider's professional services team would have to possess significant knowledge of core networking technology—in the case of this specific hospital system/care network, Cisco switched networking. The consultancy would also have to employ skilled project managers to oversee day-to-day tasks related to such a complex, expansive project. The project managers would undertake supervision of, and even participate in some of the tasks performed by, the hands-on engineers responsible for updating the device protocols, as well as taking responsibility for project documentation, and regular communications with the hospital/healthcare network's senior technology and business leaders—all to ensure that project scope would be properly achieved and smooth processes would be followed to ensure limited-to-no interruption in care provision and business.

As stated previously, Derive provided technology support services to the primary hospital carrying the brand name of the new, consolidated, non-profit care network for ten-plus years. Derive also, separately, throughout the same time period, performed many of the same services, and sold computing systems, to several of the other hospitals that are now part of the newly-amalgamated non-profit care network. Regarding networking and other IT specializations that were, and are, critical to the hospital's initiative, Derive is a **Cisco Premier Certified Partner with Advanced Network Architecture (and now Unified Computing Technology) specializations, a HP, Inc. (HPI) Partner First Platinum, Gold and Silver Specialist, ServiceOne Partner and Value-Added Reseller (VAR)**, with deep expertise in wireless printing and end-user computing, and a Platinum, Gold and other top-level alliance partner of the most well-known and distributed mobile point-of-care workstation and other related technology manufacturers. Derive's Professional Services organization encompasses a Project Management Office (PMO), with certified project management professionals on staff, and with the best practices delineated by the PMO, cost-effectively included in all service-related initiatives. For these reasons, Derive was chosen by the hospital's technology executives to support the IP migration project.

Derive Solution

The project commenced with an operational survey conducted by the hospital's internal technology executives, wherein potential network security risks related to systems used throughout the hospital's pre-merger and new care facilities and administrative offices were identified. This survey was conducted in 2015.

At the end of the year – and in an ongoing effort through the present day – the hospital's technology and business executives, and Derive's professional services team, in concert with clinicians, nursing, and other health-care professionals, established a series of critical functional milestones for the update of these systems. The best practices would ensure that a series of coordinated protocols for the hospital's primary switched network was followed, and that devices with previously-assigned, unsecure, public IP addresses, or legacy addresses not conforming to the new standards, would be updated to meet current requirements with limited business suspension. The project steps would include:

- **Preliminary Network Sweep:** Derive would use a series of professional tools to perform a network sweep of each network switch at each site for targeted networks to be updated.
- **Project Survey:** On-site surveys would be undertaken to physically locate devices that would have IP protocols updated. Part of the on-site survey would be to record all data—which systems, applications and groups would be associated with each instance.
- **Create Schedule and Disseminate:** Create a schedule for the update of devices, and communicate to all parties involved. This would include the hospital system's internal management and office personnel – those to be affected by the update of devices within their facilities/offices/locations – the hospital's internal IT team, and Derive's engineers (to dispatch them and provide benchmarks for completing the update process).
- **Migrate:** This step would be the actual migration by Derive personnel – in support of and collaboration with the hospital group's internal team – to migrate, hands-on, switch ports and devices to new IPs/VLANs/networks.
- **Verify:** Verify both network connectivity as well as application functionality after the switchover would be performed.

Derive initiated the hands-on process of follow up for the regularly-conducted project surveys, locating and gathering additional information before IPs on print servers, printers, computers, and other devices would be updated to new schemas. Derive analyzed the protocols for the hospital's Cisco 3500 Series network switches (as well as a series of Nortel Switches), and reviewed access to HP, Dell and other PCs and printers through wireless and by way of port DSC from the hospital's VLAN. Derive rebuilt the process to create more flexibility and security, and greater access to secure wireless services, instead of having to run end-user computing devices by employing DSC cables.

After devices and print servers were, and are, located, Derive would, and continue to, coordinate with the hospital's specific application groups to make the IP migration as seamless as possible. For actual IP address changes for each device, each print server, each access point and more, an update takes only a few minutes and is virtually transparent to end users. If issues arise with the cutover of the new IP for a device, or for service for an application supported by the device or access point, IP address changes can be quickly rolled back, so users can continue their work while Derive – solely, or in concert with the hospital's technology and/or end-user teams (clinical, nursing, administrative, etc. teams) – investigates the issues. Among the issues that may require additional troubleshooting have been, and continue to be, ones wherein devices, or print servers, do not connect to

the main switched network after the IP address has been updated. A member of Derive's team would then roll back the IP changes so as not to interrupt the facility's ongoing tasks, then re-verify the device's network slot – e.g. for printers that do not print after the cutover – escalate any issues (if required) to the hospital's network team, or, if an application issue is identified instead of a network issue, work with the hospital's application team to resolve the issues.

Derive's support of the IP protocol update project for all devices that connect to the network is performed directly by Derive's professional services team onsite, with collaborative, secure access to the hospital's core network infrastructure provided to Derive by the client for remote monitoring and troubleshooting of any systems that go offline—albeit that this is the primary responsibility of the hospital's own IT group, with second-level support from Derive's team.

Among the most important components of the IP migration project was, and is, to create spreadsheets containing device information and updates on each conversion for each facility on every floor and room of the hospital. Derive's PMO worked with the hospital's internal team to set up a logical protocol for documentation, and manages spreadsheets identifying devices, print servers, access points and other systems that require IP updates. Derive's senior project manager – who works in tandem with other members of Derive's engineering team, both to manage the overall initiative, and to share hands-on tasks for updating IPs on all systems – coordinates the documentation of devices and modifying the spreadsheets with new IP information when the devices are updated. The spreadsheets are shared with all staff through approved global notifications – global by team (e.g. to managers/executives within the hospital's core IT department, its application team, administrative managers of satellite clinical offices, etc.) – which are emailed to departments residing at that particular site. In addition, Derive's team visits each hospital floor, emergency room, other onsite facility, or each satellite clinical practice office ahead of the migrations (typically, a week in advance) to inform the various administrative and nursing managers so everyone will be fully aware that, and when, the process will take place. Derive's team labels each system (physically) with the IP address that will be used following the cutover.

Derive's senior project manager also maintains a master spreadsheet into which all other spreadsheets are compiled. This master spreadsheet is placed on the central hospital IT group's share drive for secure, but easy, access for authorized hospital and clinical practice executives, and for Derive personnel. Derive's PM meets with the hospital's IT and application leadership on a weekly basis to review the overall process, determine further areas for update, and note and set up plans of action to address any identified risks and other discoveries (e.g. systems/devices that may have been located that were not been encompassed in the initial set of surveys and network sweeps for the overall project, or in new satellite clinical facilities that are on-boarded).

The Results

Derive provided, and continues to provide these services – as further discovery is made of new devices not in the initial surveys, as well as for the onboarding of new satellite physician-led practices comprised by the care group – throughout all of the five NYC boroughs, and the greater NYC area (Long Island, Westchester, etc.). The hospital has cited the speed at which changes, upgrades, remediation and more, and the secure resetting/re-configuration of IPs, was and continue to be performed, as being achieved significantly faster than if Derive’s unique professional services staff augmentation and project management were not utilized. It has led to a “best and highest use of time” methodology for use of internal technology staff, with overall hard and soft cost savings realized through the efficiencies provided by Derive. All ongoing remediation and access controls have also, according to the client, surpassed expectations for accuracy and expediency.