Executive Summary

Today, hundreds of organizations rely on their NonStop platforms, which continue to deliver the robust availability and performance that drove the initial hardware selection. However, within the NonStop installed base, some organizations continue to wrestle with ongoing challenges, such as lack of access to the application on NonStop from other systems, failure to integrate with SOA initiatives, old-style text-based user interface of legacy applications, and more. On the other hand, other organizations have given new life to their NonStop platforms, modernizing them, broadening and simplifying system access so they can gain even more value from their NonStop investments and their infrastructure overall. What makes the difference? This article looks at some proven approaches organizations have taken to modernize their NonStop platforms and the significant benefits they have gained by doing so.

Introduction: Benefits and Challenges of Modernizing NonStop

Organizations have deployed HP NonStop for some very good reasons. HP NonStop platforms deliver 24/7 application availability enabling organizations to run their most critical and complex applications in an effective manner. However, over time, many organizations have encountered significant challenges:

- Severe issues with usability. Traditional "green screen" access to Pathway servers results in a fixed 80x25 block mode text-only screen, which means it takes a lot of time and money to get new users trained to be effective.
- High development staffing cost for changes in the user interface. Organizations that have deployed NonStop need to rely on expert SCOBOL programmers, who are increasingly difficult to find, and who can thus charge premium rates for their services.
- High opportunity cost. The complexity and labor-intensive nature of Pathway server access leads to lengthy cycles for development, testing, and roll out. As a result, organizations can't deliver new services as quickly as they need to keep pace with the market. Further, these issues are exacerbated by the fact that organizations can't employ modern software development and deployment approaches, such as enterprise service bus architectures that can enable improved efficiency and speed in application development.

By modernizing their NonStop platform access, organizations can realize a host of significant benefits: reducing operational costs; reducing the reliance on scarce, expensive programming expertise; and improve organizational agility.

While the challenges and benefits are clear, what isn't clear is the path forward. How can organizations practically and efficiently modernize their applications so they can realize the potential benefits? The following sections outline some proven approaches, and then describe some specific customer scenarios and the benefits these organizations have realized through NonStop modernization.

Two Modernization Approaches

When it comes to modernizing NonStop environments, IT organizations can choose from two approaches: one more tactical, and one more strategic in nature. Following is more information on each approach.

Tactical Modernization

When employing this approach, organizations use a rule based engine that converts the traditional NonStop green screen into a graphical user interface (GUI) – see Figure 1 for an example. To be practical, these engines need to be able to convert screens dynamically, without any modification of the NonStop applications. They must also be able to employ such objects as scrollbars, checkboxes, text fields, images, and labels within the new interfaces. Finally, tools should be provided that enable developers to easily augment the GUI by adding functions or interfaces to other applications.

The primary benefit of this approach is that organizations can quickly, easily, and cost effectively move administrative efforts off native NonStop interfaces, and so mitigate a lot of the common challenges of working with complex NonStop green screens.
Strategic Modernization

Organizations can also take a more strategic approach to modernization that enables NonStop integration with Web services models. To Web service enable NonStop applications, IT organizations need to add a component to the NonStop platform that acts as a gateway to Web services. This gateway can be used to deliver access to a variety of client environments.

One way to architect such an approach is to develop a rich client that can access the NonStop directly. The other, more common, approach is to develop a three-tiered architecture, one that features the NonStop at the backend, a Web application environment like WebSphere, Tomcat, or ASP.NET at the middle tier, and the client’s Web browser on the front end. Either way, the client interface will be redesigned from scratch and thus can be fully fitted to the end user requirements – see Figure 2 for an example.

When organizations have employed this strategic approach, IT organizations can use standard languages like C++, C#, and Java and popular development platforms like Eclipse and .NET to develop user applications without any knowledge of the NonStop Pathway environment.

It is important to note that these two approaches aren’t mutually exclusive in nature. In fact, as outlined in the next section, it often makes sense to employ a tactical approach for specific cases, and a longer term, strategic approach for other uses.

NonStop Modernization: Customer Scenarios

Applied Industrial Technologies

Challenge

Applied Industrial Technologies is one of North America’s largest industrial distributors. The company relied heavily on OMNEX, a NonStop application that had been developed and refined over the course of 15 years ultimately to feature hundreds of screens, batch programs, and associated Pathway servers. Accessed through traditional green screens, the system, while extremely powerful, was highly complex to use. To do anything beyond the most basic tasks, new users faced a very steep learning curve. This complexity, and other limitations of the interface, such as the inability to incorporate graphical data from the product catalog, began to pose increasing challenges to the business.

Solution

To address these challenges, the IT organization opted to modernize its OMNEX system. To achieve its objectives, the organization undertook a hybrid initiative that incorporated both tactical and strategic modernization approaches.

First, the team used a rule-based engine that offered “on-the-fly” screen conversion, which meant all screens could be converted without reengineering host-based applications (please refer to Figure 1 on page 2). This solution also enabled seamless integration with the RCP-based GUI, allowing users to move data back and forth between green screens and GUI screens. This was a key to a smooth migration.

Second, the organization employed middleware that enabled NonStop integration via a Web services layer hosted in a WebSphere application server. With this approach, clients on any platform could gain secure, efficient access to HP NonStop systems (please refer to Figure 2).

Benefit

Through the modernization initiative, Applied was able to realize several key benefits:

- Reduced training time. By equipping staff with more intuitive system access, which was comprised of pointing and clicking rather than entering commands, the time required to get new associates trained was reduced substantially.
- Improved customer service. Armed with more streamlined system access, associates are able to respond more quickly to customer inquiries, and enjoy an ability to more consistently meet customers’ needs.
- Leveraged information assets. This initiative helped staff more fully leverage electronic “intellectual capital” such as electronic catalogs and data warehouses that were previously too difficult or time consuming to access.
- Reduced development time and cost. This initiative equipped not only users, but developers, with more intuitive system access, which helped to dramatically reduce the time and cost associated with developing new capabilities.
- Faster development and rollout. Now, when the business needs augmented or new capabilities, the IT organization is able to deliver those enhancements far more quickly. As a result, the
business benefits from increased responsiveness to new opportunities and challenges. Further, Applied was able to realize all these benefits without jeopardizing many existing processes and workflows, and while leveraging its large investment in NonStop applications and infrastructure.

Reservation for Railway Organization

**Challenge**
A national rail operator placed great reliance on its NonStop based reservation systems. Serving millions of passengers every day, its reservation systems had to accommodate rates of up 120 transactions per second. However, when the firm looked to make some of its reservations services available online, the IT team was confronted with a challenge: how would they integrate Web-based transactions with their NonStop applications?

**Solution**
To accommodate its long term objectives, the firm adopted a strategic approach to NonStop modernization. The organization employed a three tier architecture with a WebSphere Application Server in the middle tier. Now employed, here’s how the system works:
- When customers make reservation inquiries online, inquiries from Web browsers are ultimately submitted to the application server’s Web container.
- The Web container contains a cache of the reservation data held on the NonStop platform, which helps reduce resource consumption on the NonStop platform and speeds application responsiveness. The application logic initially seeks to field inquiries through this cache.
- If the inquiry cannot be fulfilled through the cache, the application accesses the requested seat availability information from the NonStop platform, communicating with the NonStop platform through a gateway. Rather than using a SOAP interface, which requires extra processing, the gateway uses a straightforward interface that is highly efficient, enabling the firm to ensure the application delivers the responsiveness required.

**Benefit**
Once the firm rolled out its online reservation system, the organization realized a host of benefits:
- First, it was able to realize the significant benefits of leveraging e-commerce, improving the ease and speed with which customers could research and book their travel arrangements while at the same time reducing the involvement of ticketing agents, which nets the organization significant ongoing cost savings.
- Second, the organization was able to realize its business objectives, while fully leveraging its existing investment in its NonStop backend.

POS Network Operator

**Challenge**
This organization operates a point-of-sale (POS) terminal network for customers in the retail and banking sectors. The organization’s POS network, built on a BASE24 application that runs on a HP NonStop system, plays a critical role in the long-term success of the business. However, the ongoing operation of the BASE24 applications was labor intensive, requiring operators and support agents to navigate several native NonStop green screens, make a lot of manual entries, and copy and paste submissions. This effort required in-depth expertise on the part of users, and it was time consuming and error prone. To reduce the cost, errors, and time associated with these manual efforts, the company sought to modernize its NonStop access mechanisms.

**Solution**
In order to accomplish its objectives in the most practical and effective manner, the organization employed a tactical approach, employing a rules-based engine that converted NonStop green screens, on the fly, into more intuitive, easy to use interfaces without having to make any changes to the BASE24 application. Now, through a custom window that is designed for typical workflows, this organization has significantly streamlined many processes and reduced manual data entry.

**Benefit**
Through this modernization effort, the customer was able to enjoy a host of benefits:
- Improved accuracy and service. Now, in one screen, agents can get all the information they need to service customers, all through a point and click interface. Plus, the intuitive configuration interface led to a direct, sizable reduction in the errors that had been most common previously. Consequently, operators are more efficient and responsive, and new terminals go online faster, which directly translates to improved customer service and satisfaction.
- New service delivery and cost efficiency through
online self-service. The new interfaces enabled the organization to provide customers with direct, Web-based access to their POS terminal data, which led to further improvements in service while reducing the number of support calls that needed to be fielded every day.

- More efficient system integration. In the past, integrating workflows and data transfer with other systems, for example, the company’s SAP platform, required manual effort. Now, the company is able to leverage rule-driven wizards that automate much of the data transfer between systems.

Further, by taking this convenient, tactical approach, the deployment only took a matter of days, which meant the benefits outlined above could be realized quickly and cost effectively.

About comForte NonStop Modernization Solutions

comForte offers advanced solutions that have proven to deliver significant benefits to NonStop customers—enabling them to efficiently and cost effectively modernize NonStop access. With comForte solutions, organizations can effectively integrate HP NonStop systems with a broad range of application platforms.

comForte offers both tactical and strategic NonStop modernization solutions:

- **Tactical.** JPath is a rules-based engine that rapidly provides access to time-tested NonStop applications through a graphical, browser-based interface. JPath offers on-the-fly conversion of green screens into intuitive user interfaces that support such objects as checklists, checkboxes, graphics, and more. With JPath, organizations can enhance application usability, streamline business processes, and flexibly integrate NonStop with other enterprise applications.

- **Strategic.** Client Server Link (CSL) provides a single architecture that enables organizations to use a broad variety of client programming and runtime environments to access NonStop systems. CSL supports both direct access through rich client interfaces, and its supports multi-tier architectures that employ such application servers as WebSphere and Tomcat, as well as .NET environments. Consequently, organizations can leverage their existing NonStop investments while leveraging such application modernization initiatives as service oriented and enterprise service bus architectures.

**About the Authors:**

Thomas Burg, Chief Technical Officer at comForte, has more than 20 years of NonStop experience and is responsible for comForte’s product solutions and product management.

Brad Poole is a Solutions Architect for comForte focusing on data security and Service Oriented Architecture solutions for HP NonStop.