Cloud Enabling
Mainframe Applications
While the cloud is truly becoming an integrated part of our IT infrastructures, an important set of systems is commonly left behind. Mainframe systems, despite their intrinsic value, are often considered less “friendly” to the cloud than other, more open systems. That’s understandable because mainframe applications, by design, keep their legacy data and logic locked up, even when it’s sorely needed elsewhere.

This paper presents reasons for exposing mainframe application data to the cloud, and explores methods for doing it quickly, economically, and safely.

**The Business Case**

Why open your mainframe application data to other uses? Although many compelling reasons exist, consider these potential business improvements:

- Integrating legacy data with cloud-based applications helps those applications become a more integrated part of your overall IT picture.
- When you integrate your legacy data with the external systems of business partners, you can offer better service to your mutual customers.
- You can move fully into 21st century IT once you integrate your legacy data with other in-house systems, which are built on more modern technologies such as Java, .NET Framework, and web services.

In addition to these overall business advantages, the cloud connection can offer the solution to some real-life IT challenges. Here are just a few: You might need to expose certain mainframe data elements to your business intelligence system, so that data can help inform strategic decision making. Or suppose you need to import rewards points from a partner’s credit card program, to populate your own customer-loyalty program with real-time information. Or, what if you simply need to integrate a new in-house shipping-management system with your mainframe-based order-management system? In all these scenarios, cloud connecting your legacy data is the modern, streamlined way to get the results you need.

Whatever your own situation, don’t let the mainframe impede your efforts to improve business agility, competitive opportunities, or operating paradigms. In fact, the mainframe needs to play a pivotal role in any of those initiatives. While that necessity is clear, many IT organizations have not been successful in integrating legacy with the cloud. Let’s look at some typical approaches and see why.
Top-Down Approach
A top-down strategy usually calls for wholesale component exposure, ultimately opening the entire mainframe application to the outside world. Although laudable in intent and elegant on paper, this type of enterprise-wide exercise has some serious deficiencies:

- It becomes a painstaking process to discover all the elements that need to be integrated and all the things they'll need to integrate with—a planning process that will drag on and on.
- You'll spend too much money and too many development cycles doing the required mainframe-side programming (assuming, of course, that you can get the time from your mainframe team to begin with).
- Executive-level commitment will be needed to tamper with systems that are critical to core business applications.

For those reasons and more, the top-down method is not recommended, especially if your immediate need is just a single integration project with a short window of time for success.

Mainframe Modification
Another approach is to rewrite the mainframe application so it can talk to the newer technology. This method lets you address your exact needs as they arise. But don't be misled; it's fraught with pitfalls:

- The element of risk is high any time you modify the mainframe.
- You'll still have to get on the mainframe team's overbooked schedule, and that means your immediate-need project is not likely to see immediate fruition.
- You'll incur the expense and time involved in any mainframe modification.
- Your modifications will meet only the needs for this particular project; the next one will require a whole new, start-from-scratch effort and ultimately result in an ever-more-modified mainframe application.

Furthermore, it's tremendously difficult to re-create legacy application abilities and quality of service. And QoS can be critical when dealing with resource-allocation mechanisms or real-time processing workflows. The challenge of maintaining a specific QoS greatly complicates any project, but one that directly modifies mainframe-application code will always require exhaustive attention.

Mainframe-Web Interface Installation
A third approach is to web-enable your mainframe by installing software designed specifically to create the necessary mainframe-web interface. But once again there are some sizable drawbacks:

- You're not only modifying the mainframe; you're adding a potentially performance-draining service that will cost too much and take too long to implement.
- Executive commitment will be required for this approach as well (and for a single integration project, the answer might very well be no).
- The risk factor to the mainframe remains because you need to load software on it and integrate that with other mainframe applications. There has to be a better path to the cloud. One that minimizes implementation time. One that reduces risks and up-front costs. One that improves long-term ROI by not being exclusively tied to a single project.

The Zero-Impact Approach
The Micro Focus® Verastream® family of modernization solutions can cloud enable your critical business data without modifying the mainframe application in any way. That's because Verastream runs on an external, PC-based server that communicates with the mainframe through its standard protocols, including standard terminal emulation. Verastream exposes Java Beans, .NET assemblies, or web services to your external systems and partners. Each component can represent entire, multi-screen mainframe processes, with Verastream coordinating all the activity.

Essentially, a single web services transaction can result in Verastream “manually” entering data into the same screens a human operator would use. Your mainframe application is untouched, and its business logic remains in force. Verastream can also communicate with the mainframe application’s business data objects or objects at other layers, depending upon your situation.

How Verastream Works: A Customer Scenario
To illustrate the value of cloud enabling mainframe applications, let's look at the real-life IT challenges of a large department store. As part of daily operations, the store deploys field-based collections and sales personnel throughout their greater metropolitan area. Because computer use is not feasible for the functions and travels of the field force, their operations are done on a paper system. They receive activity rundowns (batched from the corporate mainframes) each morning and return in the evening with their new results to be entered overnight. The company would clearly benefit from an automated system.

The ideal direction for this department store would build on the advances of a cloud-computing approach. While the field force cannot carry computers, they do travel with company phones—in this case, smartphones. So why not build an online collections and sales-activity application using the phone as the client?
Building a smartphone app for this need is relatively easy compared to the other challenge: how to include the mainframe applications in the automated process. The good news is that Verastream can quickly create services from your mainframe applications—services that can be deployed and used as needed. With a little security and firewalling, the traveling sales force can use smartphone apps to query and update the system.

That means the field staff can conduct dynamic business operations in real time. Redundant tasks are removed from the process. And use of a cloud-style architecture ensures that critical company data is never stored locally on the smartphones.

Verastream enables fast migration to the cloud by permitting you to map only as much of the mainframe application as needed to enable your desired transactions. When a new project comes along, Verastream continues to earn ROI by letting you simply map new external transactions to the appropriate parts of the mainframe application.

With the Verastream family of legacy modernization solutions, your mainframe can become a back end to your own data integration cloud. You can quickly implement new integration projects as needed, capitalizing on business opportunity and giving yourself maximum IT agility. And the best news is that you can do it with less time, cost, and risk.

Competitive Advantage via the Cloud Connection

The business solution above, although entirely plausible, might never be considered in some IT organizations. That's because it's often assumed any solution of this magnitude must be a large and daunting endeavor. The Verastream edge lies in its ability to integrate, expose, and control access to your mainframe applications, without risk. No new mainframe coding is needed. You simply use the Verastream Design Studio to create reusable services and to control them with governing workflows and processes.

About Micro Focus

Since 1976, Micro Focus has helped more than 20,000 customers unlock the value of their business logic by creating enabling solutions that bridge the gap from well-established technologies to modern functionality. The two portfolios work to a single, clear vision—to deliver innovative products supported by exceptional customer service. www.microfocus.com