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ClearPath Forward Connection

A Quarterly Newsletter for Unisys ClearPath Forward Clients

Contents

Where Innovation Begins

By Steve Koss, Distinguished Engineer and Global Team Lead, Product Services Solution Office, Unisys

The last 18 months have seen us advance the ClearPath Forward™ program in momentous and exciting ways. From announcing the game-changing ClearPath® Software Series to embracing an application-centric mindset to charting a path into the cloud, we're taking big, bold steps to keep the environment aligned with clients' changing business and IT demands.

The pace with which we've pushed the ClearPath Forward program toward the cutting edge is certainly a boon to the organizations that rely on our hardware and software every day. But, it also means clients might not be aware of how everything we've done in recent months could benefit their businesses.

After all, we're busier than ever. We're working in dynamic, competitive markets. And we're juggling a number of responsibilities that continually pull our attention in several directions at once.

So while it's understandable that clients may not readily recognize how to take advantage of all the capabilities we've added into the environment, the ability to put everything to use is essential to realizing the full value the ClearPath Forward program has to offer.

And that's where our new Innovation Workshops come into play. **>>**

ClearPath Forward
Over 180 Videos Online!

ClearPath Forward Connection

Prioritizing Collaboration

Facilitated by trained Unisys personnel and built around a methodology that encourages open collaboration, our complimentary Innovation Workshops gather together people from different functional areas of your organization – business, IT, operations, development, and so on – and allow them to discuss the goals they're looking to achieve and the barriers standing in their way.

The Innovation Workshops begin with pre-session scoping discussions aimed at making sure the right roles are represented in the room and everyone involved knows how the workshop will unfold. As part of this pre-work, both the Unisys facilitator and your attendees will have an opportunity to share and agree on the pain points, business needs, and long-term strategies to be addressed during the workshop.

Then comes the core part: the innovation session. We begin by giving attendees access to a web-based decision-support tool they can use to capture and categorize ideas based on pre-defined areas. This helps to structure the session around a set of topics and gives the individuals who generated each idea an opportunity to share with the group why they're important, how they feel each should be addressed, and what must be done to transition them from concept to initiative.

Attendees then vote on each idea to pare down the list to only the concepts and strategies they feel are most crucial – usually things like increasing business value, simplifying implementation, or accelerating application evolution. Based on where this discussion lands, we'll generate a brief "initial findings" report outlining your "quick wins" and "must haves," as well as a longer, more detailed report illustrating how the ClearPath Forward environment can bring these to life.

The longer report will also note which capabilities your team can implement today, what might require a bit more lead time, where Unisys help may be required, and more.

From Workshop to Working Features

Upon completion of an Innovation Workshop, clients consistently tell us they found the exercise to be extremely valuable. The ability to set aside their day-to-day responsibilities, convene with peers, and dig deeply into important issues isn't something they typically have the freedom to do. So simply being able to get in the same room and interact free of distraction is particularly appealing.

They leave the workshop surprised by the wealth of capabilities they can put to use today. And this new-found knowledge empowers them to come up with unique and interesting ideas for their environments – new ways to connect applications, leverage big data analytics, ready existing services for mobile devices, and bring third-party technologies into their data centers, to name a few. >>

Specifically, one of our clients spent much of their workshop talking through what would be needed to make their disaster recovery environment more robust. What they found, however, was that simply automating recoveries using Unisys Business Continuity Accelerator and SMA OpCon software held the answer to many of their concerns.

Another client wanted to make it easier to attract new development talent to its team, while also simplifying integration with external systems. The workshop helped the client's team determine that an upgrade from Enterprise Application Environment to Agile Business Suite (AB Suite®) could deliver the advanced capabilities they needed.

And, after hearing another client tell us they wanted to replace some aging integration technology, we proposed a "bakeoff" between the ClearPath Forward ePortal and Application Integration Services product, two Unisys technologies they were already using elsewhere in the organization.

As these examples show, our Innovation Workshops are truly living up to their name. They're catalyzing innovation by enabling clients to view their operations from a fresh perspective. They're enabling stakeholders to come together around common goals. And, most importantly of all, they're helping clients – along with their business and IT leadership – understand the value of the ClearPath Forward environment, as well as the central role it will play in their organizational strategies for years to come.

For a more detailed look at how an Innovation Workshop unfolds, please download our brochure. And if you'd like to schedule your own Innovation Workshop, please contact your Unisys sales representative today.

What's New in Data Exchange 4.0?

Unisys Data Exchange enables selective and near-real-time data replication and transformation from a source data store to one or more target data stores.

With it, you can propagate a selected set of data across data stores, and while doing so, apply transformations that help you support business process integration, reporting, big data analytics, and business intelligence activities. And when you do, you'll be able to increase operational efficiency, reduce development and maintenance costs, minimize overhead, and make IT more flexible and responsive.

And now, with Data Exchange 4.0, we're extending these benefits by delivering new capabilities designed to help you:

- **Increase interoperability with Oracle databases:** You now have the freedom to propagate data to Oracle databases from either Enterprise Database Server for ClearPath MCP (DMSII) or Relational Database Server for ClearPath OS 2200 (RDMS) databases.

- **Recover from errors faster:** To help minimize the interruptions errors can cause during bulk data transformations, you can now restart the transformation from the point it stopped when the error occurred.

- **Align data transformations with business requirements:** With the help of standard and user-defined functions, you can customize your data transformations in ways that help them reflect and align with changing business demands.

- **Avoid propagating unneeded data:** You'll have access to a new set of filters that enables you to pare down the data you propagate to a subset that satisfies specific criteria.

- **Transform data faster and with more flexibility:** With the Data Manipulation Language (DML) command substitution, you can map a set of source commands to another set of commands at the target.

- **Strengthen security:** Data Exchange 4.0 helps you more effectively protect your organization's data assets by enabling you to create an exclusive Data Exchange account to use when logging on to the target SQL Server, use the HTTPS protocol to view the Administration Site, and configure the product's components to enhance security outside of the ClearPath Forward environment. **>>**

Data Exchange in the Real World

So, how are Unisys clients putting these and other features in Data Exchange to use?

One client is using Data Exchange to propagate data in real time from DMSII to an Oracle database, while also building a data warehouse to support reporting, trend analysis, and mobile banking. This is helping the organization connect to a Common Reporting Standard (CRS) system, which enables it to fight financial fraud by automatically exchanging information about an individual's assets and income.

Data Exchange is helping another client extract data from its Unisys Financial Services System (UFSS) and send it to a management information system with an Oracle database as its target.

And Data Exchange is giving a third client a single view of its customers and centralized data source for analytics and marketing purposes by extracting large amounts of new and historical data – including account, mortgage, and loan information – from multiple sources, including RDMS.

Data Exchange is available on ClearPath Forward Libra and Dorado 4300, 6300, and 8300 systems, as well as all ClearPath Software Series products. Please visit our web site to learn more about Data Exchange and the benefits it can bring to your organization. And for even more information about Data Exchange, check out our technical documentation and YouTube playlist.

Advanced Data Analytics on ClearPath Forward: A Case Study

What do you do when your organization is processing more data everyday – and changing its operational structure at the same time – but the systems you have in place to extract and analyze this data can't keep pace?

That's the dilemma we recently helped one of our clients address.

The trouble started in the organization's existing analytical database. Though its ability to handle around two gigabytes of data at a time, access four months of stored data, and process roughly two million transactions had been sufficient, the client's changing operational structure and evolving business requirements made this current model insufficient.

With a plan in place to spread its operations across defined geographic zones, the client suddenly needed to extract, process, and perform predictive analytics on large amounts of data, so it could better combat fraud. Role-based access was also an important requirement in the area of data security. These changes put immense stress on the organization's existing database environment, emphasizing issues around the shareability of information, as well as the speed and efficiency with which it could process these growing volumes of data.

Given these issues, the client put a new plan in place: Improve its data storage and retrieval capabilities using a database that's able to house large volumes of information.

As part of this effort, the client wanted to allow its users to tap directly into data around the clock, and perform intricate, robust analysis – without affecting performance for users in other locations.

And they needed to be able to do this using multiple data mining, statistical, and visualization techniques.

The Unisys Solution

After listening to the client's goals and concerns, we built a Proof of Concept (PoC) solution that illustrated how to pull together several data transfer and visualization tools, while continuing to leverage the company's ClearPath Forward system.

To that end, we recommended installing the Red Hat® Enterprise Linux® operating system and the Hortonworks Data Platform® for Apache™ Hadoop® on the client's ClearPath Forward system. Together, these technologies would form the core Big Data platform underpinning the rest of the solution.

In the area of data analysis and visualization, we selected the RStudio integrated development environment and Pentaho business intelligence software. In the PoC deployment, RStudio facilitated predictive analytics by performing the statistical modelling required to spot fraudulent activity in the client's environment. Meanwhile, the Pentaho software was used to build a data pipeline between the company's ClearPath MCP environment and Hadoop data lake, while also helping end users visualize data in reports and dashboards. >>

To facilitate the Extract, Transform, Load (ETL) process from the client's Enterprise Database Server for ClearPath MCP (DMSII) database to the Hadoop environment, the PoC solution created a data pipeline using the Relational Database Server for ClearPath MCP JDBC resource adapter, Apache Sqoop™ tool, and Pentaho Data Integrator (PDI).

With these technologies in place, the PoC project helped to show how the client could efficiently and securely make over seven years of financial and credit card data directly available to its user population. Accessing this information from a scalable foundation that can extract and process data from different sources in parallel meant the organization would no longer handicapped by growing data volumes.

And with the ability to process large amounts of data quickly, cost effectively, and with a minimal impact on internal resources, the organization should be able to get more value from this data than it previously could. This way, the client can make decisions with the speed, accuracy, and certainty required to confidently enact new operational strategies. Moreover, the solution is expected to help the client increase revenue by enabling it to effectively detect – and proactively prevent – fraud.

Announcing Application Integration Services Release 4.0

When you leverage the <u>ClearPath Application Integration Services (AIS) product</u>, you gain the flexibility to develop distributed applications with business logic running across both the Microsoft® Windows® and ClearPath MCP and OS 2200 environments. The product makes this possible by working together with the Microsoft .NET framework and Microsoft Visual Studio® to create a unified development environment that fosters seamless interaction between .NET and ClearPath components. This way, building cross-platform applications becomes an easy, intuitive process.

This latest version of the product packs in a number of noteworthy enhancements, including:

- **.NET Program Access to MCP COBOL85 file record fields:** In MCP environments, .NET programs can now access COBOL85 file records field by field, rather than whole records at a time. This is made possible by an XSD file created in the COBOL85 compiler that describes the format of records within a file, as the program is being compiled. AIS uses this file to generate code that provides access to individual fields, enabling your .NET programs to programmatically know the format of the record data. As a result, you'll find it easier to access and process just the data you want.

- **Gaiji support:** AIS 4.0 enables you to map arbitrary Unicode code points – and, as a result, arbitrary glyphs – with the ClearPath character encoding of your choice. This way, you can freely use locally defined glyphs in AIS and AIS-dependent products.

- **Connection configuration automation:** An update to the AIS Configuration Utility makes it possible for programs to use APIs to modify the server connection string in the ClearPathHosts.config file. This enables programs that use AIS to automatically add connections to known hosts, simplifying configuration.

- **Connectivity Services support for Windows Servers:** In prior releases, Connectivity Services was available only as a Windows Client, which meant connections could be initiated only from Windows. This release adds a Windows CS Server, enabling Windows to both receive and initiate connections. As a result, you'll now be able to send multiple requests from a Windows CS client to the Windows CS server and have them addressed in parallel.

- **.NET program CALL IN support for the MCP COBOL85 FILLER CLAUSE:** Changes made to the compiler in the area of heterogeneous record handling enable the MCP COBOL85 FILLER CLAUSE to be handled by the CALL IN feature, extending the number and type of records it can handle. This opens up new opportunities to increase interoperability between .NET and MCP applications.

Check out <u>our web site</u> to learn more about everything the AIS product can do for your business. And if you need help implementing AIS 4.0, don't hesitate to contact your Unisys sales representative.

What Can You Do With ePortal 7.1?

In the <u>January 2017 issue of ClearPath Forward Connection</u>, we detailed some of the key new features included in ClearPath Forward ePortal 7.1.

This time around, we're digging a bit deeper into a few of these features and focusing on the specific things each can help you do.

Let's get started…

Message Filters for Orchestration

Web, web services, and other message-oriented applications often require that some type of common functionality be applied to all messages that flow through a given system. This functionality, which encompasses things like user authorization, encryption, diagnostic and audit logging, and session control, is typically referred to as a "cross-cutting concern."

Message Filters, a new activity added to the ePortal Orchestration feature, enable you to implement cross-cutting concerns in ePortal. With them, you can specify custom C# code to be executed for every message sent or received from the server.

The Message Filter activity is available in the Toolbox. The methods it uses to process messages are generated as stubs in a file called "OrchExtensions.cs," which also allows you to apply custom logic when processing messages.

This new feature allows you to apply two message filters:

- **ServerSendMessageFilter** is the filter applied to all messages before they are sent to the server application
- **ServerReceiveMessageFilter** is the filter applied to all messages received from the server application

To implement these filters, locate the specified filter method definition in OrchExtensions.cs and add the required message-handling logic. You'll then be able to process all messages sent or received between Orchestration and the host application. **>>**

Automating Application Build-Stage-Deploy Operations

With ePortal 7.1, you now have the ability to automate application build, stage, and deploy operations using command-line interface (CLI) tools that employ new methods included in the Management Web Service.

For instance, you can stage the presentation project by executing the "eportalstage" command-line utility. Once you do, you just need to run the "eportaldeploy" command-line utility to deploy the application.

The process is quite simple: All you have to do is supply the required parameters to these commands, and you'll be able to automate these operations in a script or batch process. In addition, this feature introduces additional DevOps capabilities you can incorporate into your organization's development and release processes.

Redundant Host Applications

With the new Redundant Host Applications feature in ePortal 7.1, you can configure multiple connections to a redundant host application on the same or different back-end system.

By building these connections, you'll be able to eliminate single points of failure across back-end connections, applications, or systems. In addition, you'll help to keep performance predictable by enabling your workloads to be distributed among a pool of back-end resources.

You can establish connections in either round-robin or active-standby configurations to help increase host resiliency. Four new attributes have been added to the Application Configuration Dialog to help you set up and govern application resiliency:

- **Enable Redundant Connections:** Enables the Redundant Connection feature.
- **Redundant Connection List:** Specifies redundant application connections in a string.
- **Redundant Connection Load Balancing:** Applies load balancing in either "round-robin" or "fail-over" configurations.
- **Redundant Connection Retry Interval:** Notes the number minutes before an unreachable connection is retried.

Updated ePortal Business and Enterprise Systems

With the updates added to the ClearPath ePortal Business and Enterprise systems, you'll now be able to manage platform software maintenance, management operations, and diagnostics. In addition, you can also manage platform-specific operations, such as initiating Manager rebuilds, installing operating system updates, obtaining hardware diagnostics, and performing general platform operations like shutdown and restart.

The ePortal Enterprise system receives an additional NLB operation mode called "IGMP Multicast." With it, you can avoid switch port flooding, helping you improve performance on dedicated front-end network configurations that use Multicast NLB.

Interested to see how you can put these features to use in your business? Contact your Unisys sales representative to learn more, review our technical documentation, or visit our web site to see everything ePortal can bring to MCP and OS 2200 environments.

ClearPath OS 2200 Technical Details?
We've Got You Covered

There's a lot of goodness packed into ClearPath OS 2200 Release 17.0 – more than we could ever hope to cover in a single announcement webinar.

So instead of a single, catch-all announcement, we opted for a new approach: a 27-video series, called "ClearPath OS 2200 Release 17.0 Technical Update," detailing the use and value of the major new capabilities in release 17.0.

As many clients have noted to us, the playlist is incredibly convenient and easy to consume. It's a great way for them to get acquainted with the release's major features and new capabilities, while also helping them understand what to keep in mind when planning their upgrades to the operating environment's latest version.

The videos are available as a YouTube playlist and on our support site. They're designed for self-paced viewing, so you can feel free to watch them at a time – and in a sequence – that works best for you. A Webinar introducing the release is available on YouTube and the support site, as well, but it only covers a fraction of the material in the videos.

If you have yet to check out the playlist, give it a watch today!

And if you'd like to learn about new features in the operating environment's previous version, ClearPath OS 2200 Release 16, similarly focused technical update videos are available on YouTube and the support site. Some of the content, such as videos that explain Configured Password Profiles, applies equally well to release 17, too.

Flash Storage Newsflash!

From mobile devices to enterprise-class storage arrays, flash storage is now part of the hybrid cloud infrastructure that secures the data your applications – and business – depend on every day.

And as flash continues to make its mark on the data storage world, we're extending our partnerships in ways that bring the value of flash storage into the ClearPath Forward environment. That's why we're once again drawing on our long-standing relationship with Dell EMC to test, qualify, deliver, and support flash storage solutions that address new requirements while continuing to provide the reliability and availability your infrastructure demands.

To that end, we're happy to announce that we've recently qualified the **Dell EMC VMAX® All Flash 250, 450, and 850 storage systems** with the ClearPath MCP and OS 2200 environments.

The VMAX All Flash storage systems are built to embrace the modern data center and hybrid cloud, and leverage the latest, high-density flash technology to provide a rich set of data services that can help you simplify, automate, and consolidate your IT operations.

The systems easily manage high-demand, transaction-intensive workloads while delivering consistent, sub-millisecond response times. Built for scalability, the VMAX All Flash systems use advanced multi-core, multi-threading algorithms and a flash-optimized design to meet strict SLAs.

With the help of these systems, you can:
- Consolidate ClearPath Forward platforms, open systems, and block and file data
- Simplify planning and deployment with packaging designed for scale-up and scale-out flexibility

In addition, we've also qualified the **Dell EMC Unity™ storage family** with ClearPath Forward Libra systems, with Dorado systems soon to follow. The Unity family is available in all-flash or hybrid models, ranging from the entry-level Model 300 to the 10-petabyte Model 600.

Whichever model you choose, you'll benefit from point-in-time snapshots, local and remote data replication, and built-in encryption. And you'll be able to manage your Unity storage array through a sleek HTML5 interface and management dashboard.

These products join a growing list of storage solutions, including Dell EMC VNX2 and VMAX 3 hybrid systems, virtual tape libraries, and traditional tape libraries, we've qualified with ClearPath Forward Libra and Dorado systems. To learn more about these and other storage products, please contact your Unisys sales representative or email us at storage@unisys.com.

Resources

The list below contains quick links that will help you stay up to date on all things ClearPath Forward.

- ClearPath Forward homepage
- Agile Business Suite homepage
- Business Information Server homepage
- ClearPath Forward & Innovation Blog
- ClearPath Forward How-To Videos on YouTube
- ClearPath Forward Libra/MCP Webinars
- ClearPath Forward Dorado/OS 2200 Webinars
- eBook: The Power of Innovation: ClearPath Forward Systems in Action (**Updated**)
- eBook: Built for Today, Ready for Tomorrow: Unisys ClearPath Forward Systems (**Updated**)
- eBook: The Road to Innovation: ClearPath Forward Services (**NEW**)
- eBook: Understanding the Economics of ClearPath Systems
- eBook: How to Shift Your IT Focus from Administration to Innovation

- Brochure: Evolve, Implement, Manage: The New ClearPath Forward Services Portfolio (**NEW**)
- Video Playlist: ClearPath OS 2200 Software Release 17.0 Technical Update (**27 Videos**)
- Video: The Sky is No Longer the Limit (**NEW**)
- Video: When Every Transaction Matters
- ClearPath Forward Client Education Homepage
  - Guide: ClearPath OS 2200 Course Catalog
  - Guide: ClearPath MCP Course Catalog
  - Guide: Agile Business Suite Course Catalog
- Newsletter: Developing *Agility* December 2016
- Newsletter: ClearPath Forward Connection January 2017
- White Paper: ClearPath Middleware Strategy and Products for OS 2200 Systems
- White Paper: ClearPath Middleware Strategy and Products for MCP Systems