UNISYS

ClearPath Connection

A Quarterly Newsletter for Unisys ClearPath Customers

November 2011

Contents

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ClearPath and the Road Ahead

By Jim Thompson, Engineering Vice President and Chief Technology Officer, Unisys TCIS

For the last five years, the Unisys engineering community has been focused on transforming the ClearPath architecture in a way that embraced industry-standard platform technology, expanded open attributes, and increased flexibility via a unique, enterprise-class virtualization capability. This "NextGen" architecture represents a true transformation of the ClearPath environment, establishing the foundation for innovation and long-term solution support.

As ClearPath customers, you expect enterprise-class computing environments that deliver high levels of security, performance, predictability, scalability, and rock-solid reliability. Therefore, the challenge the NextGen program faced was significant: Change the underlying architecture of the ClearPath platform, and do it in a transparent way that preserves the attributes that make ClearPath, ClearPath.

When we started the transformation of the ClearPath platform from a system of our own processor design to one based on Intel® chipsets, I knew we would be undertaking an architectural change more significant than we had ever previously attempted. The first step was to re-implement the MCP and OS 2200 architectures in a transparent way, preserving object code compatibility and management consistency, while delivering the performance our customers require. The new underlying technologies we developed, such as the Secure Partitioning (s-Par™) architecture, have laid the groundwork for all future ClearPath systems. And by launching the Libra and Dorado 4100 series systems, we built a foundation to change mainframe computing forever. >>

Predicting the mainframe's demise has been a popular sport in the IT industry, especially with the emergence of powerful servers and the proliferation of UNIX®, Linux®, and Microsoft® Windows® operating environments during the 1990s. In contrast with the predictions, the total installed mainframe MIPS is actually growing. In fact, the ClearPath business has been growing, and we have added new customers, as well.

Building for the Future

Work to create the future technology of the ClearPath family began in a conference room in Eagan, Minnesota, in December of 2010. The engineering teams had just completed the Libra 4100 and the Dorado 4100 platform launches. It was time to look to the future once more, project what ClearPath needed to be, and establish a strategy to make that vision a reality.

To respond to this challenge, we will exploit the underlying capability of the Intel® architecture, while continuing to provide the mission-critical characteristics MCP and OS 2200 clients demand – and deliver them to select other operating environments compatible with the Intel® processor architecture. This enables a new dimension for data center transformation, supporting a spectrum of operating environments within one automated, enterprise-class processing complex.

When completed, the ClearPath system of the future will be able to deliver its core attributes to Windows and Linux in a transparent way, just as it does for OS 2200 and MCP operating environments.

This will be due in large part to s-Par™, which lies at the heart of today's NextGen program.

This architecture will make the reliability, resiliency, and security of a ClearPath mainframe available to other operating environments deployed on the system – helping them become more robust, secure, and reliable. In addition, we plan to update the core databases, application environments, and file systems of the platform in a way that enables the various operating environments to seamlessly function as one.

With the strategic goals outlined in this innovative ClearPath vision, the help of the ClearPath engineering community, and ongoing input from our clients, the future of the platform looks incredibly promising. Stay tuned...

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A Perfect Track Record

By Bob Supnik, Vice President, Engineering and Supply Chain, Unisys TCIS

System and data security have become increasingly intense points of focus in today's highly interconnected business world. As the services and information we create, access, distribute, and share each day grow at an exponential rate, it's only natural that keeping systems and data safe and secure has become one of our biggest concerns. But, if you're using a ClearPath mainframe, you can put many of these worries to rest.

Take a look at the chart below for a moment, and try to internalize what it means, and how it relates to data security. In all the years that the National Institute of Standards and Technology (NIST) has been tracking security issues with the National Vulnerability Database, there has never been a data compromise on a ClearPath Libra or Dorado system, nor has there been a security vulnerability in the OS 2200 operating environment. And the last security vulnerability in MCP happened nearly nine years ago – and that was a denial of service attack, which, while annoying, is not a compromise. In contrast, there have been more than 7,000 vulnerabilities, and multiple data compromises, in commodity operating systems. The chart shows that even IBM's mainframes have been compromised.

The ClearPath mainframe's unmatched security record is not the result of "security by obscurity." In fact, ClearPath systems, like commodity systems, are under attack every day. The key difference, according to one of our federal government clients, is that the attacks on the commodity systems sometimes succeed – the attacks on the ClearPath systems don't.

This unmatched security record is the direct result of thoughtful designs and careful implementations that have been refined over many years. In fact, the patents on some of the pioneering ClearPath security features, like data-execute prevention, expired before commodity systems got around to considering them. In addition, ClearPath environments have inbuilt checking for buffer overruns – to prevent one of the most common forms of attack – which is still not implemented on commodity systems. >>

Operating System	Number of Vulnerabilities	Date of Last Vulnerability	Compromised User Data
ClearPath OS 2200	0	N/A	No
ClearPath MCP	1	12/31/2002	No
IBM zSeries	3	4/5/2011	Yes
IBM iSeries	13	11/23/2007	Yes
UNIX	613	9/6/2011	Yes
Microsoft Windows	2,830	9/6/2011	Yes
Linux	3,587	9/6/2011	Yes

It's reasons like these that led Symantec Corporation to conclude in a 2006 report on MCP, "The design and implementation of mainstream operating systems could be improved greatly by examining the security engineering decisions that were made while developing the ClearPath MCP environment."

This unparalleled security record is something you, our ClearPath clients, rely on every day. But perhaps more importantly, it's something that many other enterprises could and should consider. I often hear that ClearPath is "overkill," that many enterprises don't need its superb availability, scalability, and transaction throughput.

But when it comes to data security, there's no such thing as too much protection. Can public sector agencies, banks, healthcare providers, or credit card companies afford data compromises? The legal and financial penalties – and brand loss – associated with a data compromise are increasing all the time. What may be looked upon as too much security is a small price to pay when compared to the potential damage that a successful attack on an enterprise's commodity systems can cause.

So the next time you're talking with your management and peers about their business and IT concerns, drop the data from NIST into the conversation. Find out whether security is a critical issue (hint: it will be). And if it is, then it's time to tell the ClearPath story. It's really hard to do better than perfect, and even harder to argue with a perfect track record.

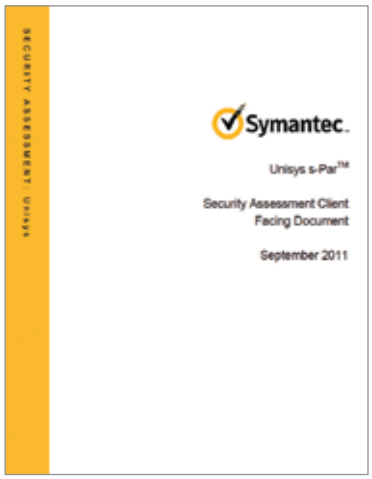
Symantec Studies s-Par, Confirms Security

ClearPath mainframes have a long and rich history of delivering secure, reliable performance in the most mission-critical environments. With the introduction of our Secure Partitioning (s-Par™) technology in 2010, we've extended this commitment by enabling Intel® based ClearPath servers to securely and effectively isolate workloads in a single platform. With s-Par™, ClearPath users have a true, secure, multi-tenant experience that is similar to running multiple independent physical servers.

Earlier this year, Symantec worked with Unisys to conduct a comprehensive security review of the s-Par™ architecture. This study assessed the current security posture of the s-Par™ environment, including the hardware isolation mechanisms, Trusted Code Base (TCB), and partitions allocated to service functionality and users.

The Symantec team concluded that the security features implemented within the s-Par™ operating environments allow ClearPath users to deploy operating systems and applications with confidence in their security. This is due in large part to the fact that the s-Par™ architecture supports all of the necessary security capabilities, including error containment, performance, and predictability – mitigating the risk of attacks directed between guest partitions, from guest to service partitions, and against the TCB and all hardware-based controls.

To learn more about the security capabilities of the s-Par™ architecture, read the full study on Unisys.com.



ClearPath ePortal: Develop Once, Deploy Many for Mobile

The mega trend of today's marketplace is mobility. But did you know that if you're developing mobile applications using a tool *other* than ClearPath ePortal, you're likely making more work for yourself and impeding your ability to bring innovative solutions to market when the business needs them?

It's true. The majority of mobile development solutions require you to develop dedicated code or employ a specific toolset depending on which device the app will be used. But ePortal is different – it allows you to leverage a common development approach across all applications and devices.

This way, you'll be able to extend MCP and OS 2200 applications to smartphones and tablets from today's leading manufacturers in a simple, repeatable manner. In fact, ePortal has recently been updated to support smartphones and tablets from Apple®, Android, and BlackBerry.

And because ePortal is a mature, end-to-end application modernization solution, you'll be able to rapidly extend your ClearPath applications into mobile environments. What's more, since you don't need to be a programming whiz or an expert in mobile technologies to use ePortal, you'll find it quite easy to mobile-enable applications for these devices – and provide the added agility your business needs to remain competitive.

CEDAE Maximizes Mobility with ePortal

In order to serve a customer base that's demanding more convenient online account services, utility company CEDAE, a provider of water services to approximately 9 million people in Rio de Janeiro, sought to make its core payment application available on smartphones.

A long-time technology innovator, CEDAE launched an initiative to not only streamline its operations, but also give its customers greater flexibility in managing their interactions with the utility.

CEDAE leveraged the ClearPath ePortal specialty engine to create a web interface into its payment application, enabling customers to pay their bills and manage their accounts when and where it's most convenient – in the office, at home, at the supermarket, or anywhere else.

This new solution gives CEDAE's customers direct, secure access to the web portal right from their smartphones. Users have the ability to scan a small barcode, called a Quick Response Code, with the smartphone's optical reader and transmit the payment through the banking network – without requiring them to print a receipt. In addition, customers also have the ability to download electronic proofs of payment and view their payment histories.

With the help of ClearPath ePortal, CEDAE was able to make use of readily available consumer technologies in a secure, mission-critical environment – and realize its goal of making customer convenience a key part of its IT and business strategies.

Airline Application Benefits from ePortal Modernization

Airlines have some of the largest and most complex business systems in use today. And in such a dynamic and changing industry, business agility, flexibility, and user productivity are vital.

One resource to help airlines achieve these goals is the Unisys Standard Airlines Software (USAS) Check-In (CKI) application, a component of Unisys Passenger Service Solution. A mission-critical ClearPath OS 2200 application written in FORTRAN, the CKI application performs many complex activities, such as managing passenger lists, seating, and baggage, as well as interacting with other airports and carriers.

But because many of these processes are performed on a character-based "green screen" interface, the workflows are complex and agent training takes a considerable amount of time.

However, for a system that is in use 24 hours a day, 365 days a year, productivity and ease of use are imperative. After all, when check in stops, planes can't leave the gate!

It is with these considerations in mind that we recently modernized the CKI application for one of our airline clients. Using ClearPath ePortal, we were able to give agents a true graphical user interface (GUI) in which to perform their day-to-day activities. By eliminating the old green screen look and feel, we've improved the application's clarity, ease of navigation, and user assistance capabilities – while retaining the proven back-end business logic. >>

BEFORE: The original "green screen" interface of the CKI application.

```
▶PD: UW028S/03JUN10 MSP                                              PC/NAM
D10/LFCY GTD/???? POS/GATE BDT1235 SD1300 ED1300
CAT/022/076/136
POSSIBLE DELAY DUE TO WEATHER   *JFK* DRIVERS LICENSE OR ID REQ.
  1. 1ANDERMAT/S              BN001   27C     Y JFK UM O BLND URES-BKD UGPA SPML
                                      27D     EXST PIL PCTC
  2. 1BAILEY/F LE+            BN002   14A     C JFK CHD PSM UPGV
  3. 1BARDOT/B          E3    BN003   18H     C PHL I O PSM UPG
  4. 1BEATLES/RING+     F6    BN004   27A     Y PHL PSM DEAF EXBG MCO
  5. 1BEATLES/GEOR+     F6    BN005  *27B     Y PHL PSM WCHR
  6. 1BOND/JAME+        A2    BN006   36C     Y JFK DNG SPML WCBD WEAP
  7. 1BROWN/CHAR+             BN037   9H      C JFK CHD EXBG
  8. 1BROWN/SALL+             BN007   27G     Y JFK NRS PSM BLND URES-BKD EXBG
  9. 1CAMEL/SOPW+       B20           36E     Y JFK O RES
 10. 1CARD/A            G15   SB039   PAD     Y PHL PSM ID RES
 11. 2DANES/A            H3   SB042   OFL     Y PHL INF PSM BSCT EMIG WCBW
     DANES/B             H3   SB043   OFL     Y PHL PSM
 12. 1DANZER/TINY            BN010   28C     Y PHL I EMIG
 13. 2DENEUVE/C          E3          26G     Y PHL PSM ID RES JMP
     DENEUVE/MS          E3          26F     Y PHL PSM ID RES
 14. 2DUNCES/NERD        C3   SB040   PAD     Y JFK PSM ID WCBW
     DUNCES/MRS          C3   SB041   PAD     Y JFK ID
 15. 1ELMOSFIRE/SAIN+        BN011   2C      F JFK INF PSM BSCT                +
▶
                                  Pg=1 Row=24 Col=  2                    POLL
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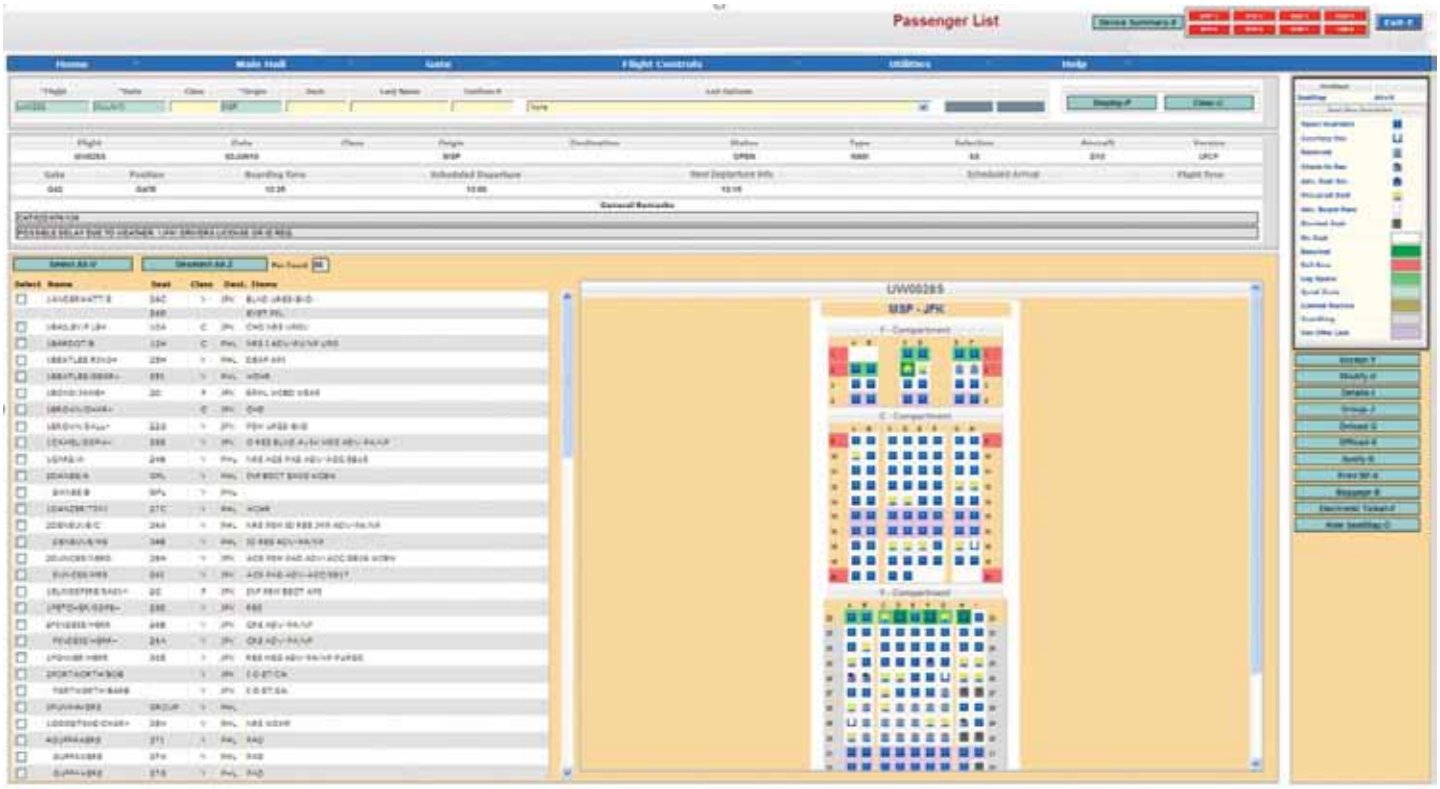
AFTER: The CKI application's user interface following ePortal modernization.



For example, whereas the older version could only display a set number of names – and required an additional transaction input to show more – the updated application allows users to scroll through a detailed list and instantly view all passengers on a specific flight. Flight details are now displayed at the top of the screen and include clear, straightforward headings. Likewise, entry fields are colored to indicate which are mandatory and which are optional. And, a workflow guide shows the agent which actions are valid given the situation.

This is only one example of the multitude of check-in functions that are now handled via the GUI. In addition, the modernized application allows airlines to rapidly deploy and deliver such capabilities as self-service check in to mobile phones, tablets, and other technologies.

And because ClearPath ePortal integrates natively into the ClearPath architecture, it requires no additional components to function. Likewise, its ability to automate development and deployment processes eliminates the need for specialized skills and expertise. This ease of use enabled the airline to cost-effectively modernize the CKI application and quickly make the updated version available to the agents responsible for processing passengers.

Although this example shows how ePortal technology was employed in an airline passenger services environment, this specialty engine is certainly not industry-specific and can easily modernize any ClearPath application – bringing the benefits of a familiar, browser-like interface and greater ease of use to any ClearPath application or solution.

Announcing the Unisys ClearPath MCP Mobile Monitor

Today's fast-paced business world thrives on mobility. And while we often think of this concept in terms of the IT end-user community, mobility is just as important to the administrators tasked with maintaining critical systems.

To this end, Unisys is pleased to announce the availability of the Unisys ClearPath MCP Mobile Monitor. An intuitive new mobile solution that leverages the power of the ClearPath ePortal for MCP and Workload Management for ClearPath MCP products, MCP Monitor enables you to easily and securely track the performance of an MCP server from anywhere, at anytime using an Apple iPhone®, iPad®, or iPod Touch®.

With MCP Monitor, you can check the following critical system performance metrics:

- **System Utilization** – the percentage of time CPUs are in use
- **I/O** – input and output activity measured in kilobytes per second
- **Memory** – the percentage of free (unused) memory
- **MIPS** – the processing power consumed month to date (available only on metered MCP systems)
- **Waiting Entries** – the number of processes on hold pending operator action

In addition, you have the flexibility to define a specific threshold for each performance metric and receive a warning alert any time the threshold is exceeded.

And here's the best part – if you find a problem in any area of your system, you can fix it right from your mobile device – there's no need to be near a laptop or PC. The MCP Monitor gives you an interface to enter the necessary commands and take the proper corrective action using the MCP Monitor's MARC feature. Please note that you'll need credentials with appropriate access privileges to use this option.

Finally, you gain visibility into past performance and the ability to make well-informed decisions about future requirements with MCP Monitor's easy-to-read pie charts and bar graphs about:

- CPU usage (both on a system-wide and workload-group-specific basis)
- Workload Management policy compliance
- I/O usage
- MIPS usage (for metered systems only) >>

Explore all that the MCP Monitor has to Offer

We have built a dedicated demonstration server you can access to view the capabilities of the MCP Monitor over the Internet. To access the demonstration server:

1. Download and install the app on your mobile device

2. Enter the following on the User Profile Settings screen and click "Save"*:
   - ePortal Host: 12.186.137.50
   - User Name: mcpmonitor
   - Password: mcpmonitor
   - No. of Hours (1-8): A number between 1 and 8

**The diskette icon is the "Save" option. Please make sure you receive a confirmation before proceeding. To update the display with the latest data from the host, select the "Refresh" option.*

Download the Unisys ClearPath MCP Mobile Monitor Today!

The MCP Monitor is available for download in the Apple iTunes® App Store. Just log into the App Store, search for "Unisys," and select the MCP Monitor.

Unisys ClearPath MCP Mobile Monitor System Requirements

The MCP Monitor requires the following hardware and software.

ClearPath MCP Server

HARDWARE:

- ClearPath MCP server configured with ClearPath ePortal Business or ClearPath ePortal Enterprise specialty engine

SOFTWARE:

- ClearPath MCP Release 13.1 (or later)
- Workload Management for ClearPath MCP interim correction (IC) version MCP-WORKLOADMGR-013.0A.36 (or later)
- ClearPath ePortal for MCP Release 13.1 (or later)

Mobile Device

HARDWARE (one of the following):

- Apple iPhone
- Apple iPad
- Apple iPod Touch

SOFTWARE:

- Apple iOS 4.1 mobile operating system (or later)

Storage Corner: New Unified Storage Keeps You from "Seeing Double"

For years, many data centers have had an invisible "storage solution" line between Microsoft and Linux systems and ClearPath mainframes. Traditionally, there have been several reasons for this division. For example, because these systems often served different internal organizations, or provided different enterprise capabilities, one would use Network Attached Storage (NAS) while the other employed high-performance Fibre Channel SAN.

Unfortunately, this resulted in separate NAS and SAN storage environments – doubling the acquisition, training, and environmental costs, as well as the maintenance and administrative burden. And ClearPath users were left seeing double!

To help you get rid of your "double vision," Unisys and EMC® have erased the dividing line with VNX™ Unified Storage. These new storage arrays offer the traditional enterprise storage features, and provide a mix-and-match set of front-end interfaces for both SAN and NAS environments. As such, you'll finally be able to install a single, eco-friendly unified storage solution that requires one acquisition cost, one maintenance bill, one training program, and one administration interface.

How a ClearPath Dorado Client Beat the Double-Vision Divide

A ClearPath Dorado user in the Midwest was facing a typical problem: The storage dedicated to its Microsoft and Linux systems was aging and had run low on capacity. After reviewing the suggestions from a host of vendors – all of whom proposed traditional replacement NAS solutions – the company was approached by Unisys. Rather than suggest the status quo, Unisys instead offered a VNX Unified Storage solution that replaced the company's NAS storage – and refreshed its ClearPath Dorado storage at the same time. And best of all, the company is no longer seeing double!

QR Codes Enable Cutting-Edge Output Capabilities

You've seen them on food packaging, concert tickets, promotional flyers, product labels, and seemingly everywhere else you turn today: Those little, square barcodes that you scan with a smartphone app to receive important news and offers. They're called Quick Response Codes, or QR codes, and they're a fresh, modern means of delivering important information to your customers, prospects, and partners.

So, we are excited to announce that Unisys Enterprise Output Manager Release 9.1, the latest update to our comprehensive output management solution, will include support for QR codes. Based on numerous requests from ClearPath users – not to mention the increased adoption we're seeing in the market – the ability to create and print these small, versatile barcodes will be included as standard functionality.

By using QR codes, your organization will be able to capitalize on the growing mobility trend by adopting an emerging communications medium that is optimized for today's fast-paced, consumer-centric IT landscape. In addition to the ability to create QR codes, Enterprise Output Manager 9.1 will also feature advanced 2D barcoding capabilities that allow you to print barcodes on items and places that were once considered too small.

Together, these new features will enable Enterprise Output Manager users in various industries to do some new, innovative things.

For example:

- Airlines and rail carriers are using QR codes and 2D barcodes to provide passengers with efficient, mobile check in
- Banks and financial institutions can generate QR codes for invoices, statements, and marketing collateral
- Hospitals and healthcare providers can print QR codes and small 2D barcodes on patients' wrist bands to ensure important information is readily available at the point of care
- Retail companies can print 2D barcodes to put information such as weight and expiration date on small items like pharmaceuticals and cosmetics – and use QR codes in advertisements on buses, billboards, newspapers, and business cards

These are just a few examples of the wealth of ways QR codes and 2D barcodes can be used to help you capitalize on the trends of consumerization of IT and application modernization.

To learn more about Enterprise Output Manager, just scan the QR code generated using the functionality discussed in this article.

Support Account Manager Helps Optimize ClearPath Value

Designed to help optimize the availability and performance of your mission-critical ClearPath environment, the Support Account Manager (SAM) service provides you with a dedicated Unisys enterprise software expert to serve as a trusted, go-to advocate and single point of accountability for all Unisys product support needs.

The SAM possesses a thorough knowledge of your specific hardware and software configuration, product usage, and operating environment. Plus, a SAM expedites escalations, facilitates resolutions, supplements your internal support team – and proactively identifies, documents, and addresses potential problems before they occur.

All SAMs are backed by a worldwide team of hardware and software support experts, as well as the Unisys engineering team that designs and architects ClearPath hardware and software.

Check Out What Our Customers Have to Say About the Value of Their SAMs:

- **One of the largest financial services providers in the United States** continues to renew its SAM contract because the SAM proactively assists the company with system migrations, software upgrades, and implementations. And through regular performance "snapshots" and trend analysis, the SAM recommends such preventive measures as capacity and resource planning, and establishing a mirrored, off-site ClearPath machine to back up the production system. According to the company's data center manager: "Over more than 20 years, Unisys has become a trusted, strategic business partner. Unisys understands our business and helps us meet our operational and technologies requirements. We particularly value Unisys technology leadership and quality of service. Our Unisys team is very knowledgeable and responsive."

- The SAM for **a consumers' cooperative in Europe** has specialized ClearPath Dorado skills that enable internal support resources to be redirected to strategic business initiatives. In addition to executing many routine duties, such as ensuring that the operating and environmental software are compatible and up to date, this SAM created a customized scheduler that automates the back up of data, eliminating the need for daily, manual intervention. According to a representative from the cooperative, their SAM "frees internal support resources to focus on our business applications. In the end, this improves processing time."

- A ClearPath software support expert in Brazil has served as the SAM for multiple **large Unisys customers in Latin America**. He's routinely regarded as a trusted advisor who provides useful insights about the ways new software releases can maximize the security, stability, and performance of their ClearPath environments.

- With the help of its SAM, a **large financial services firm in Europe** has improved service levels, while reducing operating costs. Through regular meetings and calls with the firm, the SAM is able to leverage his deep knowledge of the customer's applications and configurations, and proactively suggest corrections for installations, migrations, and upgrades before critical problems occur. >>

- The SAM for a **large government agency in Europe** is highly valued for his ability to offer trusted guidance during software migrations. The SAM even provides advice about non-Unisys equipment, helping the agency proactively optimize its entire data center environment.

These are just a few examples of how the SAM service proactively helps organizations protect and maximize the return on their ClearPath investments and drive business success well into the future. And if you desire the regular presence of a Unisys hardware engineer, the SAM can be integrated with Unisys Onsite Support Specialist (OSS) service offering.

For more information about SAM, OSS, and our other world-class Technology Support Services, please contact your local Unisys representative, or Eric Taylor in the Asia-Pacific region, Onni Fagerstrom in Europe/UK/EMEA, Alberto Violland in Latin America, or Joe Defranza in North America.

Resources

The list below contains resources that will help you stay up to date on all the latest news and announcements in the ClearPath world.

- ClearPath Libra homepage
- ClearPath Dorado homepage
- ClearPath OS 2200 homepage
- ClearPath MCP homepage
- Agile Business Suite homepage
- Business Information Server (BIS) homepage
- ClearPath & Innovation blog
- ClearPath How-To Videos on YouTube
- ClearPath Libra/MCP Webinars
- ClearPath Dorado/OS 2200 Webinars
- FastForward Newsletter for Logistics Service Providers
- Locum RealTime Monitor White Paper