

# UNISYS

## ClearPath Connection

A Quarterly Newsletter for Unisys ClearPath Customers



### Contents

#### 1 Engineering a Bright Future for the ClearPath Program

Between contemporary toolsets and an encouraging atmosphere that empowers innovation, we're making it possible for the new hires of today to become the IT leaders of tomorrow.

#### 3 How I Came to Know and Love OS 2200

Christopher Korzenowski, a ClearPath OS 2200 software engineer, details the tools, resources, and practices that helped him quickly come up to speed on the OS 2200 environment.

OS  
2200

#### 5 What Helped Me Build My MCP Skills

This article reveals the tools and techniques that helped Matthew McDonough learn the ins and outs of the ClearPath MCP world.

MCP

#### 7 Get to Know the ClearPath OS 2200 IDE for Eclipse

The ClearPath OS 2200 IDE for Eclipse™ makes it easy for new developers to create COBOL, FORTRAN, C, and Java programs for OS 2200 systems.

OS  
2200

#### 9 Helping ClearPath MCP DBAs Boost Productivity

The combination of Database Operations Center (DOC) and the products from dbaTOOLS can help DBAs be more productive, while making it easier to onboard new hires.

MCP

#### 11 Unisys Services Help You Understand IT Costs

We offer a number of services that can help you analyze the TCO of your ClearPath environment and compare the cost of one strategy with another.

#### 12 ClearPath Clients Shine the Light on Success

Thanks to the innovative ways they solved mission-critical business and IT issues, two ClearPath clients were included among the recipients of our annual Lighthouse Award.

#### 14 Resources

We provide a wide array of materials to help you stay up to date on everything that's happening in the ClearPath world.

## Engineering a Bright Future for the ClearPath Program

By Jim Thompson, Chief Engineer and Vice President, Engineering and Supply Chain, Unisys



Having the good fortune to be the newly appointed lead of the immensely talented, innovative ClearPath® engineering organization means I'll be able to witness firsthand as the ClearPath program wraps up an exciting period in its history: the final phase in the transition from proprietary technology to industry-standard hardware across the ClearPath Libra and Dorado families.

Completing this effort is critical in many ways. For instance, it's how we will prepare ClearPath systems to fully embrace the promise of the *Forward!* by Unisys™ platform and take the data center into exciting new territory.

Equally as vital is what this transition represents in terms of how we cater to the new generation of workers who have joined our team – and yours – in recent years. It's yet another step in our ongoing initiative to provide the contemporary, intuitive interfaces and designs that help to shorten the learning curve for new IT professionals and recent college grads.

### Creating a Community of Contemporaries

In addition to appealing to the way a younger generation prefers to work, we remain deeply focused on making sure every new member of our team receives the encouragement, guidance, and resources he or she needs to feel empowered to innovate and work toward an exciting new direction for the ClearPath program. >>

ClearPath Channel  
Over 120 Videos Online!





One of the ways we've brought this strategy to life is by building what I like to call a "community of contemporaries" – an ecosystem of individuals who are familiar with how one another like to work and push each other to achieve great things.

Several factors have gone into building this community.

Take mentoring, for example. We continue to invest significantly in identifying who among our team members has the mindset and motivation to guide new hires through their first months on the job. Our mentors are then connected with individuals who share similar interests and goals, ensuring that we deliver the support needed to accelerate employee development.

We also place a significant emphasis on the concept of learning by doing. To that end, we make sure our newest employees are integrated with teams very early in their tenures. The sooner they dive into projects, the faster they'll be able to make contributions to the organization.

This concept is extended to the interns we bring on board from local universities. Giving our interns real assignments – as well as mentors to guide them – helps them understand and feel invested

in what we do at Unisys. It's one of the reasons our interns so frequently become permanent members of the team.

And, we will make sure our interns and new hires are able to utilize a wide array of contemporary ClearPath toolsets – the same resources you have access to every day – so they can work in a manner that is immediately familiar and quickly become productive employees.

## Letting a New Generation Take the Lead

I feel a distinct sense of responsibility for the most recent additions to our team. That's why our ongoing emphasis on mentoring, an encouraging atmosphere, and contemporary tools and methodologies are so vitally important to me. Each plays an essential role in driving our newest team members to become critical thinkers, challenge the status quo, and adopt leadership roles.

After all, they are the future of the engineering organization and will play a significant role in shaping the direction of the ClearPath program for years to come. In fact, I'll know our efforts have succeeded if, at a time not too far from now, someone who is just starting out today ends up becoming a leader in the organization.

As you'll see, we're already heading in that direction. This issue of ClearPath Connection contains two articles by young members of the ClearPath team – one an [OS 2200 software engineer](#) and the other an [MCP developer](#) – detailing the resources and practices that helped them flourish in their new roles. These inspiring pieces not only show how our efforts are paying off in the real world – they're also great examples of the things you can utilize to help your new hires quickly come up to speed.

When you read these stories, I think you'll agree that the future of ClearPath is in good hands.



# How I Came to Know and Love OS 2200

By Christopher Korzenowski, Software Engineer, Unisys

We know that OS 2200 shops are looking for ways to quickly bring new hires up to speed. This article reveals the tools and techniques that helped one college grad learn the ins and outs of the ClearPath OS 2200 environment.



I didn't know what to expect when I started at Unisys four-and-a-half years ago. As my first job out of college, I was excited to apply what I'd learned in my electrical engineering and computer engineering courses at a company

that pioneered so much ground in the computer industry.

But, I also knew there would be a lot to learn. Thankfully, though, there were a number of tools available to fast-track my onboarding process.

One of the most important resources for me, especially in the earliest days on the job, was **CIFS for OS 2200**. Though CIFS is often employed as a remote file access and transfer mechanism, I primarily used it to learn the job control language of the OS 2200 environment, Executive Control Language (ECL). I used the CIFS UTILITY (CIFSUT) part of the product as an interface into the OS 2200 file system because CIFSUT exposed it in a way I recognized. This helped me associate the familiar features I knew from studying the Bash shell and Linux® terminal with those of the OS 2200 ECL – making it very easy to come up to speed on the new language.

I also spent a lot of time with **Programmer's Advanced Debugging System (PADS)**. PADS showed me the inner workings of the OS 2200 Universal Compiling System (UCS) COBOL Compiler (UCOB) – one of my primary areas of responsibility – and how to debug it. It provided a clear look at how code actually executes in the OS 2200

environment, which was very valuable to see, especially early in my tenure.

**TeamQuest IACull** was another tool that helped me get a feel for how things work behind the scenes. It provides a cross-reference listing of symbols, the elements in which they are found, and the lines in which they occur. So, I used it to research and understand applications, to drill into them a little deeper to explore where a command is used in files and uncover a where problem might be hiding.

The best thing about these tools? They're all available to Unisys customers, so they can help new hires in your organization just as much as they helped me.

## Making Sense of the Acronyms

We use a lot of acronyms within OS 2200 engineering. When you're just starting out, it's almost as if your peers are speaking in another language. But with the help of the ClearPath OS 2200 Master Glossary and Unisys CDLib Manager, I was able to become fluent in no time.

The **Master Glossary**, which is available to customers on the Unisys Support site, showed me not only what an acronym stands for, but illustrated how it's actually applied in the real world.

And, the **CDLib Manager** gave me a searchable collection of all of the documentation associated with a specific OS 2200 release. It's provided to customers with every new release, so you can rely on it, too. >>

In addition to the Master Glossary and CDLib Manager, I also routinely referenced our internal wiki to supplement my knowledge on a specific topic. Our wiki is a great repository of the expertise my colleagues – and even those who came before them – have accumulated throughout their tenures at Unisys. It includes general-purpose information, sections for specific teams, and key training materials.

Our wiki is an employee-only resource. However, I would recommend that you consider [building one for your team](#), if you haven't already. It's a great way to capture and transfer knowledge, and an indispensable resource for anyone who's just starting out.

## Mentoring Proves Invaluable

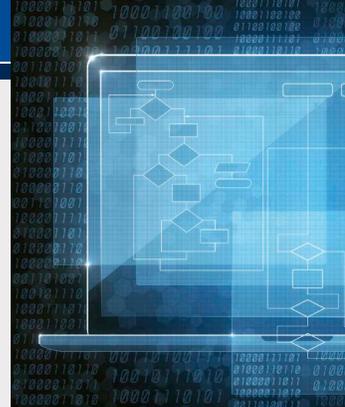
Aside from all of the tools, resources, documentation, and other materials I utilized during my early days at Unisys, I found our mentoring program to be an invaluable aspect of my onboarding. It's impossible to quantify just how important it was to learn all about our processes and practices from my knowledgeable and supportive colleagues. Leveraging their expertise made a huge difference in my development.

If you don't have a mentoring program in place, I strongly urge you to start building one today. There's really no substitute for the collective knowledge of your team.

Thanks to our mentoring program – not to mention the various resources available to me – I felt like I was able to make positive contributions to my team sooner than I expected. With a grasp on the nuances of a new language and a multitude of tools at my disposal, I found that I could comfortably address client problems pertaining to UCOB within a couple of months.

# What Helped Me Build My MCP Skills

By Matt McDonough, Software Engineer, Unisys



Changing demographics mean many MCP shops we talk to are searching for ways to accelerate the onboarding of their newest team members. In this article, a recent college grad talks about the resources and practices he used to learn all about the ClearPath MCP world.



It's been nearly three years since I started in the ClearPath MCP development department. I joined Unisys right out of college, armed with a computer engineering degree and some fundamental knowledge about the world I'd be

getting into.

That said, I also knew there'd be a lot to learn.

But the good thing about being a new hire at Unisys and working in the ClearPath environment is that there are a number of resources I was able to lean on to quickly and effectively build my proficiency.

Here's what helped me the most:

- **Programmer's Workbench:** Programmer's Workbench is an integrated development environment (IDE) that's included in all ClearPath MCP systems. It features all of the tools you need to write and debug a program. And, it presents everything in a look and feel similar to the Microsoft® Windows® environment, so it was easy for me to pick up. I first used it to port the workload driver component of Iometer – a Windows based I/O testing program – to the MCP environment, where I used it to develop and execute I/O tests.

- **ClearPath MCP IDE for Eclipse™:** In addition to Programmer's Workbench, I often found myself using the ClearPath MCP IDE for Eclipse. I periodically worked in this IDE to create small test programs and perform unit testing when I made changes to the MCP environment.
- **Microsoft Visual Studio® plug-in:** This tool, currently in beta and set to be released publicly with ClearPath MCP 17.0, will be of significant value to my team and Unisys customers alike. I'm excited to use it, since it will allow me to develop MCP system software in ALGOL and its relatives in the familiar confines of the Visual Studio environment.

In addition to these resources, I also utilized the extensive technical documentation we have on hand. Much of this information – the CDLib Manager and public documentation on the Unisys Support site in particular – is available to our customers. So it's there to help you as much as it helped me.

There are also two internal tools I found myself turning to often:

- **Knowledge Base:** Our internal Microsoft SharePoint® repository, Knowledge Base contains a wealth of informative presentations, design documents, and the like. Because it makes such an immense collection of resources readily available, the tool effectively removed one of the barriers – product knowledge – that so frequently holds back new hires. >>

- **CodeVault:** Along the lines of Knowledge Base, I frequently referred to CodeVault – our internally developed, searchable repository of sample code and tutorials – for supplemental information about a certain topic or process. CodeVault quickly became one of my favorite tools – and is still something I use daily. I even added a tutorial about how to compile the MCP environment. It’s crafted in the vein of [Stack Overflow](#) – a site I used constantly in college – so it was something I took to immediately.

Though access to these tools is limited to members of my team, they are two examples of things you could easily replicate in your organization. The wiki-like design of Knowledge Base and the searchable nature of CodeVault are really useful ways to exchange information and encourage a sense of community among colleagues.

## Mentors Make all the Difference

The tools I discussed above were an incredibly valuable part of my onboarding process. But, the IDEs, plug-ins, and knowledge repositories alone can only take you so far. And that’s where my colleagues come in.

When I joined Unisys, I was fortunate enough to be assigned a mentor on day one. My mentor was an incredible source of knowledge and support. He was always willing to answer questions, show me how things work, and point me in the direction of tools and resources that could accelerate my development.

In fact, I learned about Programmer’s Workbench from my mentor. Though he didn’t use it directly, my mentor recognized that it was something I would make great use of and connected me with someone who knew all about it.

This is just one example of the many ways the mentoring relationship played a vital role in my growth. I can’t speak to the value of mentoring enough. It’s something every team should do for their new hires.

In many ways, I would’ve been lost without it. Mentoring is one of the key reasons why I felt familiar enough with the MCP code to start making changes on my own a mere six months after my start date.



# Get to Know the ClearPath OS 2200 IDE for Eclipse

The ClearPath OS 2200 IDE for Eclipse™ is a modern, contemporary Integrated Development Environment (IDE) that allows developers, including those who just graduated college, to create COBOL, FORTRAN, C, and Java programs for OS 2200 systems.

It connects to the OS 2200 file system through CIFS for OS 2200 – which allows access to OS 2200 files through standard Internet protocols – and establishes a Telnet session to execute Executive Control Language (ECL) commands. And, elements are included in an OS 2200 project for development purposes.

In addition to these capabilities, the OS 2200 IDE for Eclipse can:

- Browse RDMS tables using the Eclipse SQL Explorer
- Generate prototype code that can perform transactions with Transaction Processing (TIP), Data Management System (DMS), or Business Information Server (BIS)

And, everything is simple for new hires right out of college to use. Since the Eclipse environment is similar to what recent grads used in their Java development courses, they'll find it quite easy to jump in and start building applications in the IDE.

## A Sharp Focus on Performance

ClearPath OS 2200 Release 15.0 added several new performance improvements to the Eclipse environment. For example, it has been re-architected to cache a project's elements, which eliminates network latency and allows users to work in an offline mode. Note, however, that compilation does require an active connection to the OS 2200 system.

The addition of caching also significantly improves the performance of many common actions, such as adding elements to a project, editing elements, searching for a string within the elements, and comparing elements.

## Powerful Capabilities for OS 2200 Users

Since Eclipse is an IDE, it is built with the aim of making it easier for your development team to perform their day-to-day activities. Some of the main features they can use are described in the following sections.

### **Color Coding and Content Assist**

All keywords are color-coded for COBOL, FORTRAN, C, and Java programs, making it easy for you to identify them.

And to further improve productivity, the IDE includes a content assist feature that makes developing programs quick and easy.

### **OS 2200 File Explorer**

The OS 2200 File Explorer (OFE) allows you to browse the OS 2200 file system using CIFS and edit and save the contents of a data file or element without leaving the Eclipse IDE.

In order to open an element or data file, simply enter a command in the form of Qualifier\*File.Element/version. If you have developers that are new to OS 2200 operating environment, they can enter the name in the Windows format as: Qualifier\File\Element.version. >>

If you don't enter the value until the Qualifier or the File, then it will list the TOC, which you can use to further browse the file system.

There is also a wild-card search capability in the OFE that lets you easily locate an element or data file using a few wild-card characters.

### **OS 2200 Search**

The OS 2200 Search feature makes it easy to locate a search string by giving you the freedom to define the scope of the search in several ways. The search can be performed on:

- The elements that are included in the project
- The elements or data files from a selected node in OFE
- Any of the opened editors

And to simplify the search, you have the option to select only a few of the elements from the project or OFE.

This feature extends the standard search functionality from Eclipse by:

- **Providing context to the search:** By default, the search displays a couple lines above and below the result.
- **Searching opened editors:** The scope can be narrowed to the open editors only.
- **Searching OFE:** The scope can be limited to one particular node.

And for added ease of use, you can search using regular Java expressions, except for asterisk and dot. These expressions are replaced by a tilde and question mark, respectively.

### **OS 2200 Compare**

The OS 2200 Compare feature allows you to compare two:

- Elements that are opened in an editor
- Elements from the same project
- Elements/data files from the OFE

Once again, this feature enhances the default compare feature available in Eclipse by allowing you to utilize external comparison tools, such as Kdiff or Windiff.

### **Telnet Session**

The Telnet session lets you log into an OS 2200 system to execute any ECL command. You can also change the mode to CIFS by executing CIFSUT, which allows you to use all standard Bash commands.

### **ECL Mapping**

To make it easier to use specific commands during a Telnet session, you can use ECL mapping to associate a given command with a hot key.

### **Field Size**

This feature enables you to calculate the size of a COBOL variable, or group of COBOL variables, as per COBOL coding standards. This helps developers quickly create a database column for the group.

### **Email**

The Email feature allows you to share the elements in the project, OFE, or opened editors without leaving the Eclipse IDE. It automatically composes an email and attaches the selected elements using the Microsoft email client agent.

### **PDP Copy Proc**

If an element contains copy procedures, then clicking the "PDP Copy Proc" toolbar icon will execute the @PDP command on the OS 2200 host.

*Please [visit our web site](#) to learn more about the ClearPath OS 2200 IDE for Eclipse. And if you'd like to download the IDE, you can do so [here](#).*

# Helping ClearPath MCP DBAs Boost Productivity

By Christian Davis, Software Engineer, Unisys



Enterprise Database Server for ClearPath MCP (DMSII) is a large, multi-faceted, mission-critical resource.



Because it's such a vitally important aspect of your operations, we remain dedicated to offering new and enhanced tools that can help DBAs be more productive, while making it easier to onboard new hires.

Database Operations Center (DOC) and the products from dbaTOOLS are two great examples of our efforts in these areas.

## Database Operations Center

What makes DOC particularly appealing to DBAs who are learning Enterprise Database Server is that it presents all database activity on the MCP system in a clear, graphical application. There's no need for them to become experts in the MCP environment's underlying command-line language – everything is shown in an intuitive, familiar way that is easy to use from day one.

Because DOC guides users through common database management tasks in a highly visual way, it minimizes the potential for errors while accelerating the onboarding process. Since all of your databases can be displayed in a single view, new hires can get started right away.

Once your DBAs begin using DOC, they will find it easy to:

- See a visual representation of schema changes
- Save and modify database configurations
- Simplify backups using wizard-like interfaces that step them through the process

- Make a duplicate of the environment using Remote Database Backup – and manage multiple hosts and configurations from one application
- Use the Job Monitor to create a WFL job file that can quickly repeat common tasks
- Manage logs to quickly show who accessed data, when, and what they did

## dbaTOOLS Products

Whereas DOC controls the database environment, the products from dbaTOOLS work in conjunction with DOC to help you monitor, tune, and maintain database performance. These products are licensed exclusively to Unisys by our long-time partner Stewart DataTech, and provide functionality that would typically need to be performed by a specialized technician.

dbaTOOLS is a suite of three products:

- **dbaTOOLS Analyzer:** The main focus of Analyzer is to automatically capture statistics any time the database is closed and create easy-to-understand, immediately actionable reports. In addition, Analyzer can predict LimitErrors before they occur by tracking and managing population growth, analyze and report on index sequential set levels and set loads, and track disk usage across multiple databases and hosts.
- **dbaTOOLS Monitor:** This product monitors the database environment in real time and uses Automatic Display Mode to track statistics, graph them, and provide alerts based on user-established conditions. Plus, it makes all VDBS commands available in a simple, menu-driven interface, enables memory tuning, and can help you plan the reorganization process. >>

- **dbaTOOLS AccessLog:** This product collects and organizes MCP logs of database access by pulling access entries from system sumlogs and exporting them into Microsoft SQL Server®. Once the log information is loaded into a database, AccessLog can run queries, analyze the access data, and produce reports.

*To learn more about Database Operations Center, read the tool's [Getting Started Guide](#). And for more information about dbaTOOLS, please visit the company's [web site](#).*

# Unisys Services Help You Understand IT Costs

By Peter Bye, Systems Architect, Unisys



Rational IT investment decisions are impossible without an understanding of the cost and benefits of a particular strategy. Otherwise, your organization is working in the dark.

There are two contexts in which the knowledge can be used.

First, knowing Total Cost of Ownership (TCO) enables you to understand how much IT contributes to the cost of your organization's products or services. And knowing how expenses are distributed, such as between hardware, software, and people, is a necessary facet of effective cost management.

The second comes into play when you're considering strategic alternatives, such as continuing with an existing operating system or moving applications to a different platform. Understanding the financial consequences must include the implementation cost of each strategy and the impact on the business.

Unisys has developed services that can help you analyze the TCO of your ClearPath environment and compare the cost of one strategy with another.

## TCO Analysis

Our TCO analysis comes in two forms. We offer a high-level analysis that focuses on major cost components – hardware, software, and people. It makes some assumptions and can be produced very quickly. A more detailed analysis, factoring in all components, is also available.

We'll work with you to gather the required information. Following our analysis, we'll provide a report detailing the results, a discussion of their significance, and recommendations for action. Results include:

- The total cost of the infrastructure and its distribution across the different components
- Comparison with business sector averages
- Comparison with IT industry averages

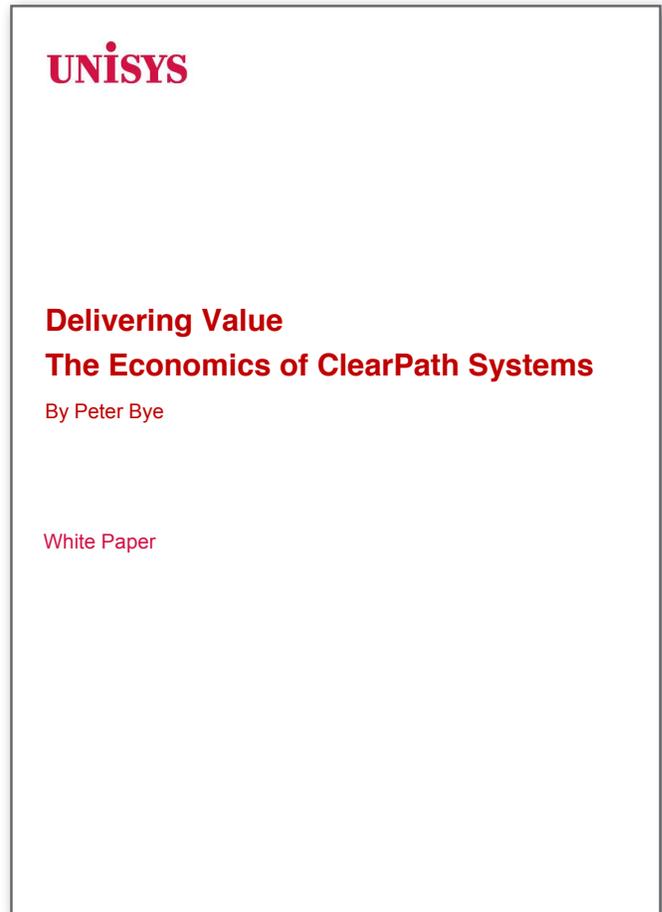
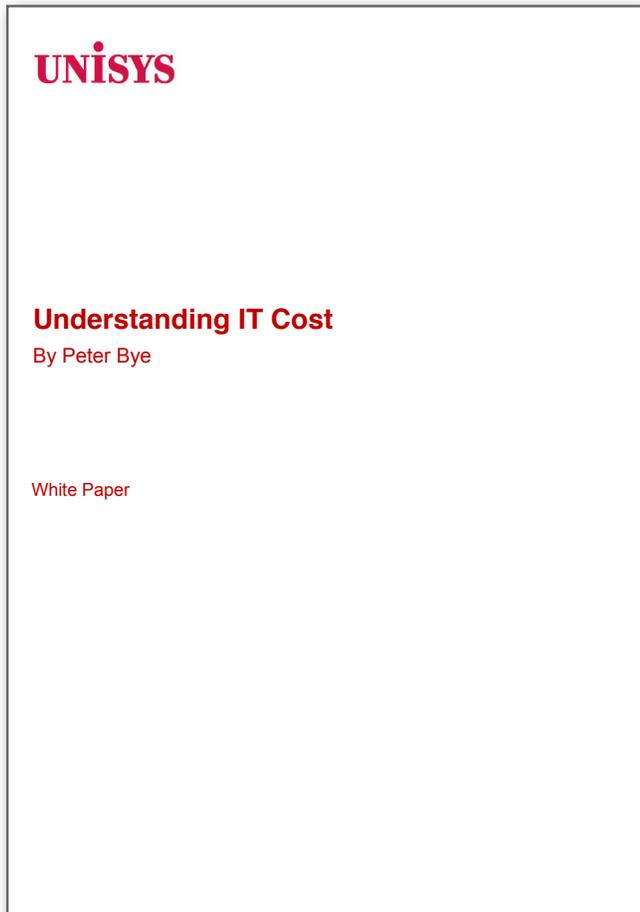
## Analyzing IT Strategies

Comparing strategic alternatives involves calculating the TCO of each option, the implementation cost, and any implementation-related business impact. If one alternative is to stay on the same platform, perhaps with an upgrade, the calculations are straightforward. Calculating the TCO of a new platform is more complicated, and the implementation cost and business impact are critical and often underestimated factors.

Once again, we'll work together to collect the pertinent details. Our analysis can include modelling alternatives, such as different assumptions about equipment and software. You'll then get a report containing the results of the analysis, including:

- Average annual costs and benefits
- The cost distribution per year over a selected period
- The total financial impact, including cost and business impact, per year over a selected period >>

To learn more about how we can help you get a firm handle on the costs of your environment, please read the following white papers: “[Understanding IT Cost](#)” and “[Delivering Value: The Economics of ClearPath Systems](#).”



*For further information about these services, please visit our [TCO Assessment Services homepage](#) and read “[Understanding the Economics of ClearPath Systems](#).”*

# ClearPath Clients Shine the Light on Success



Our Lighthouse Client Advocacy Program recognizes and celebrates the vision and leadership our clients – as well as our channel partners – have displayed when solving mission-critical business and IT challenges. We use the annual Lighthouse Awards to call special attention to the organizations that stand out as shining examples of innovation and creativity.

Ten organizations received the award, including two ClearPath clients:

**LIGHTHOUSE**  
UNISYS

**Marco Antonio Feijó Abreu**  
Director of Strategic Projects  
and Sustainability  
CEDAE

CEDAE is a utility company that supplies water to the 11 million people of Rio de Janeiro, Brazil. CEDAE has been a Unisys customer for the past 40 years, developing innovation based on the ClearPath and *Forward!* solutions. In one example, we reduced backup time, improved availability, and expanded storage capacity by 20X. This new environment incorporates legacy systems and open-architecture applications, bringing greater convenience to Windows and Linux users.

[Companhia Estadual de Águas e Esgotos \(CEDAE\)](#)

**LIGHTHOUSE**  
UNISYS

**Kevin Payne**  
Acting COO  
Federal Acquisition Service, GSA

"Our innovative solutions, providing real time web access using Unisys ClearPath has allowed us to deliver consistent secure transactions, best response times and reliable processing. ClearPath native solutions as well as the Specialty Engines have helped us achieve our goals and extend ClearPath applications seamlessly, enabling us to constantly surpass everyone's expectations."

[General Services Administration](#)

Congratulations, CEDAE and GSA! Your success is truly an inspiration.

*The Lighthouse Client Advocacy Program is one facet of a broader initiative launched by Unisys to create advocates among our clients and encourage innovation. Recognized as a best-practice model by ITSMA in its August 2014 report, "ITSMA Online Survey: Marketing to Existing Customers: Engagement, Expansion, and Advocacy," our client engagement approach focuses on listening to client feedback, continually driving for improved service, turning satisfied clients into references, and giving clients a platform to talk to others about their successes.*

# Resources



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

- [ClearPath homepage](#)
- [ClearPath Libra homepage](#)
- [ClearPath Dorado homepage](#)
- [ClearPath OS 2200 homepage](#)
- [ClearPath MCP homepage](#)
- [ClearPath Services 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](#)
- [eBook: Built for Today, Ready for Tomorrow: Unisys ClearPath Systems](#)
- [eBook: Understanding the Economics of ClearPath Systems](#)
- [eBook: How to Shift Your IT Focus from Administration to Innovation](#)
- [eBook: ClearPath MCP Case Studies – Success through Business Process Automation](#)
- [ClearPath Customer Education homepage](#)
- [Guide: ClearPath OS 2200 Course Catalog](#)
- [Guide: ClearPath MCP Course Catalog](#)
- [Guide: ClearPath OS 2200 and MCP Specialty Partitions Course Catalog](#)
- [Guide: Agile Business Suite Course Catalog](#)
- [Newsletter: Developing Agility September 2014](#)
- [Newsletter: ClearPath Connection October 2014](#)
- [White Paper: Understanding IT Cost \*\*\(NEW\)\*\*](#)
- [White Paper: Delivering Value: The Economics of ClearPath Systems \*\*\(UPDATED\)\*\*](#)
- [White Paper: Unisys ClearPath Systems: Integrated Hardware/Software Stacks \*\*\(UPDATED\)\*\*](#)

Specifications are subject to change without notice.

© 2014 Unisys Corporation.

All rights reserved.

Unisys, the Unisys logo, ClearPath, and Forward! by Unisys are registered trademarks or trademarks of Unisys Corporation. Eclipse is a trademark of the Eclipse Foundation. Linux is a registered trademark of Linus Torvalds. Microsoft, Windows, SharePoint, SQL Server, and Visual Studio are registered trademarks of Microsoft Corporation. All other brands and products referenced herein are acknowledged to be trademarks or registered trademarks of their respective holders.