


Future Matters 2024

ClearPath® MCP Roadmap and Strategy Update

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Statements about future product releases are based on current plans that are subject to change and non-binding.

SAFE HARBOR STATEMENT



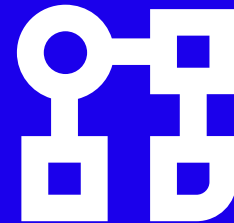
ClearPath Forward® Strategy and Direction



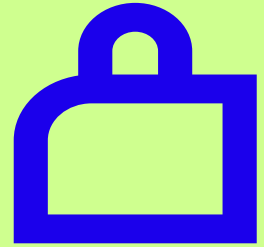
Hybrid/Diverse
Workload
Execution



Unlock Data
Value



Expand Application
Compatibility



Secure for the
Future



ClearPath Forward Platforms

Systems and Software

01

ClearPath Forward® Fits Your Current Needs



PRE-INTEGRATED SYSTEMS

on-premises, Unisys or co-
location hosted



PRIVATE CLOUD

deployment on VMware or bare-
metal on-premises, Unisys or co-
location hosted



PUBLIC CLOUD


deployment on
Microsoft Azure 2022-2023
AWS 2024-2025

Unisys ClearPath Managed Services Available



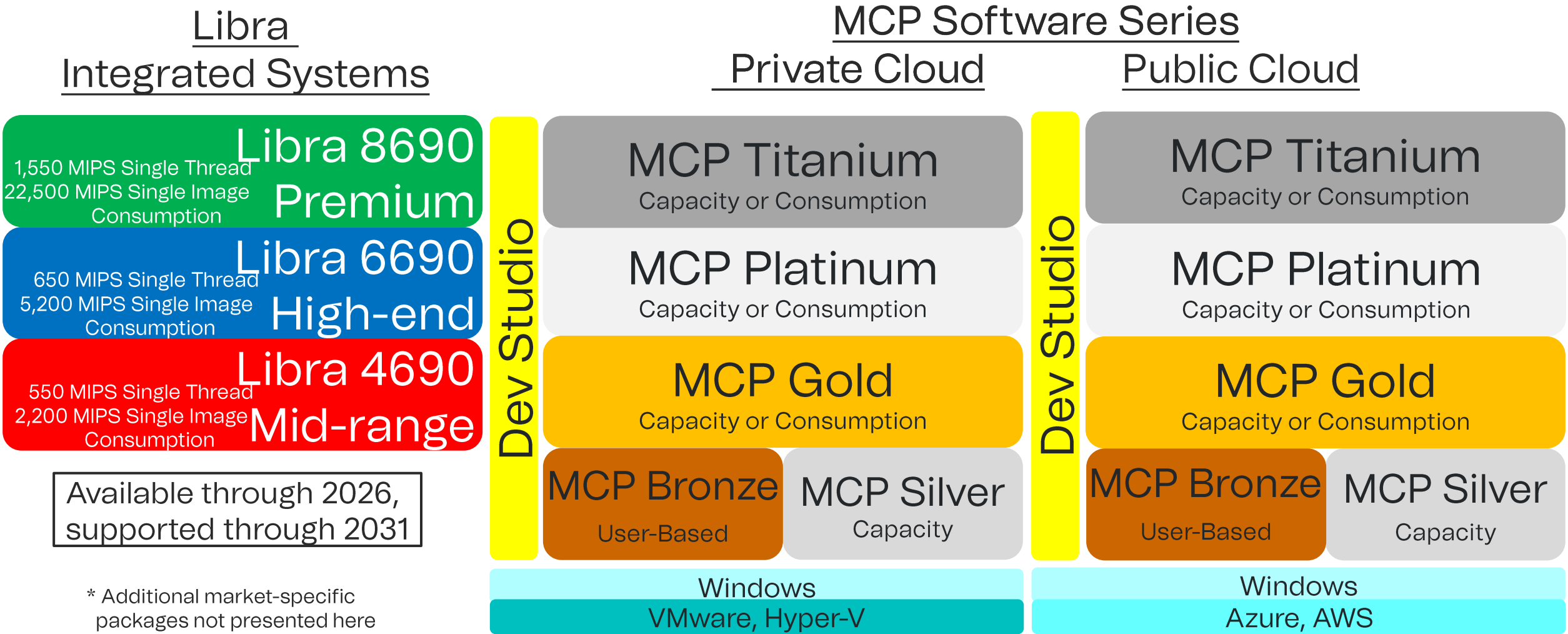
ClearPath MCP

Systems and Software



02

ClearPath Forward® MCP / Libra Current Portfolio/



Available through 2026,
supported through 2031

* Additional market-specific
packages not presented here



ClearPath Forward® – MCP Systems and Software

2024

✓ Libra 4690, 6690, 8690

- 4690 (550 / 2,200 MIPS)
- 6690 (650 / 5,200 MIPS)
- 8690 (1,550 / 22,000 MIPS)
- Server technology refresh
- Windows 2022 hosted

February 22, 2024

✓ MCP Software Series 5.0

- AWS (native) validated

July 26, 2024

2025

MCP Software Series 6.0

- Cloud Integration
- Azure Accelerated Network support
- Delete Protection for emulated disk
- PCD Automation
- Windows 2025 support
- Role-based access control

MCP Software Rel 22.0

- Post Quantum Crypto Agility
 - TLS 1.3
 - Disk encryption using MS crypto algorithms
 - Logging crypto usage
- Code Signing for Unisys MCP Products
- SMB Multiuser Support
- DBCertification Performance

July 2025

2026

MCP Software Series 6.0

MCP Software Rel 22.1

- (or ICs for previous rel)
- Post Quantum Crypto primary
 - TLS use of FIPS-203 crypto algorithm
 - Code signing CSNA 2.0
 - Block use of weak crypto algorithms

2027

Libra 4790, 6790, 8790

- Performance 8700 + 5-10% Single Thread + 5-10% System Capacity
- Technology refresh

1Q 2027

MCP Software Series 7.0

- Call Home support for SMTP
- Skip level migration support
- License Management Improvements
- Public Cloud DR for On-premise MCP system

MCP Software Rel 23.0

- Code signing for partners and clients
- MFA support for more external service providers
- Python data base access performance improvement

June 2027

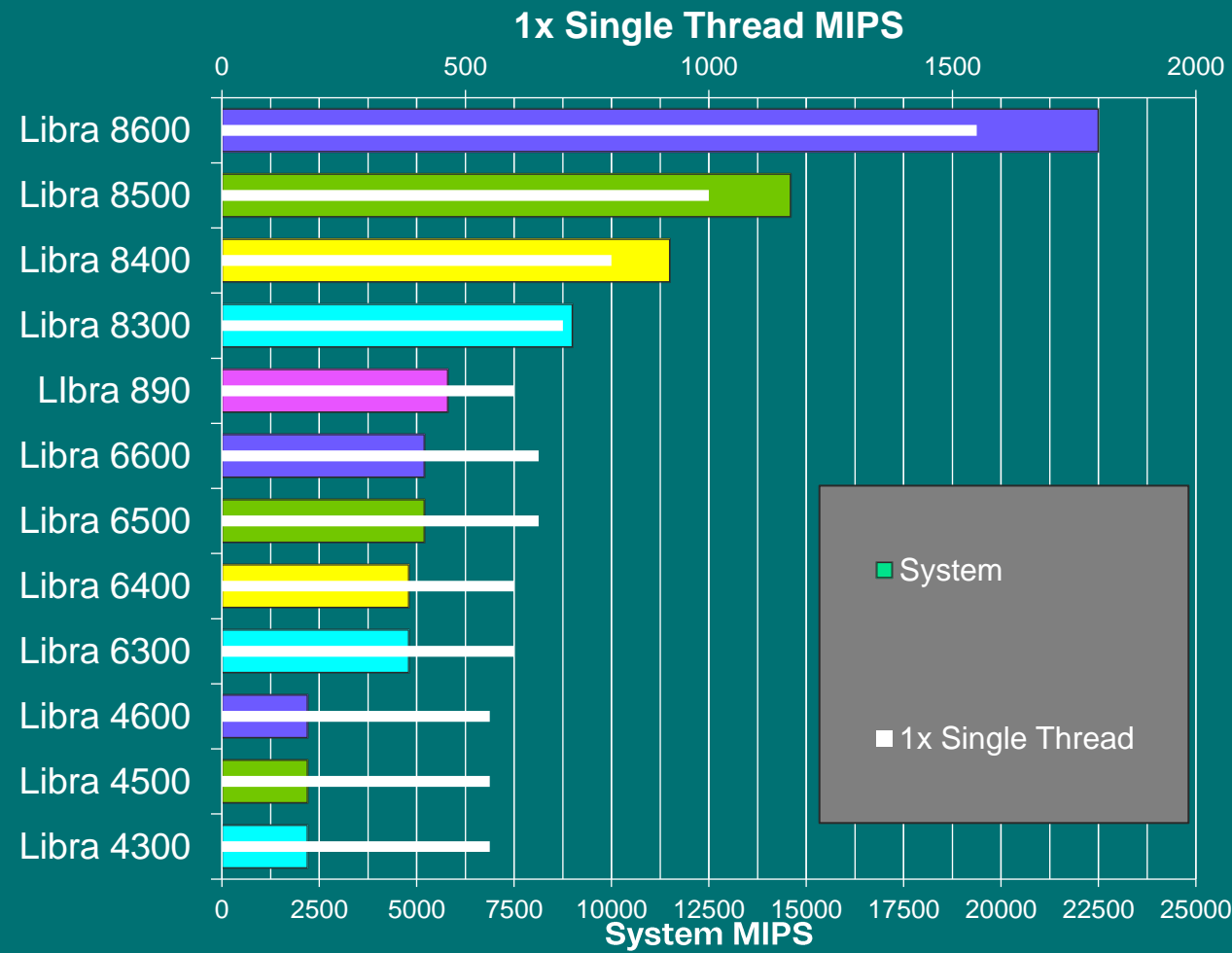
Requirement under review



CLEARPATH FORWARD LIBRA INTEGRATED SYSTEMS

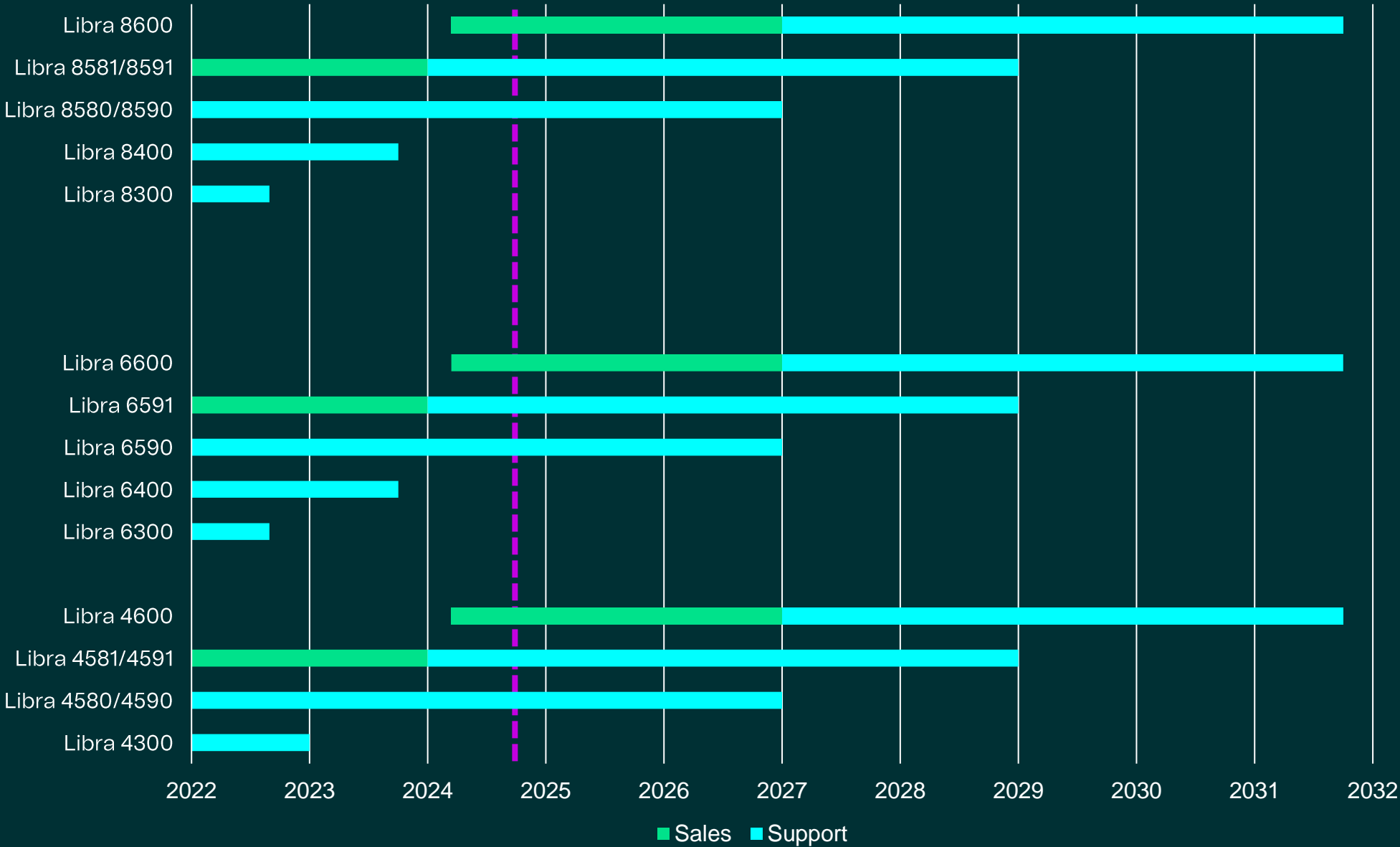
- Integrated systems remain a key element of our portfolio
- Tracking workload growth of large clients to ensure we introduce new systems before they are needed
- Targeted 50% capacity growth
- Smaller, 5-10% single thread improvement
- Final results:
 - 22,500 MIPS system capacity – 54% increase
 - 1,550 Single Thread MIPS – 55% increase

Libra Systems Performance



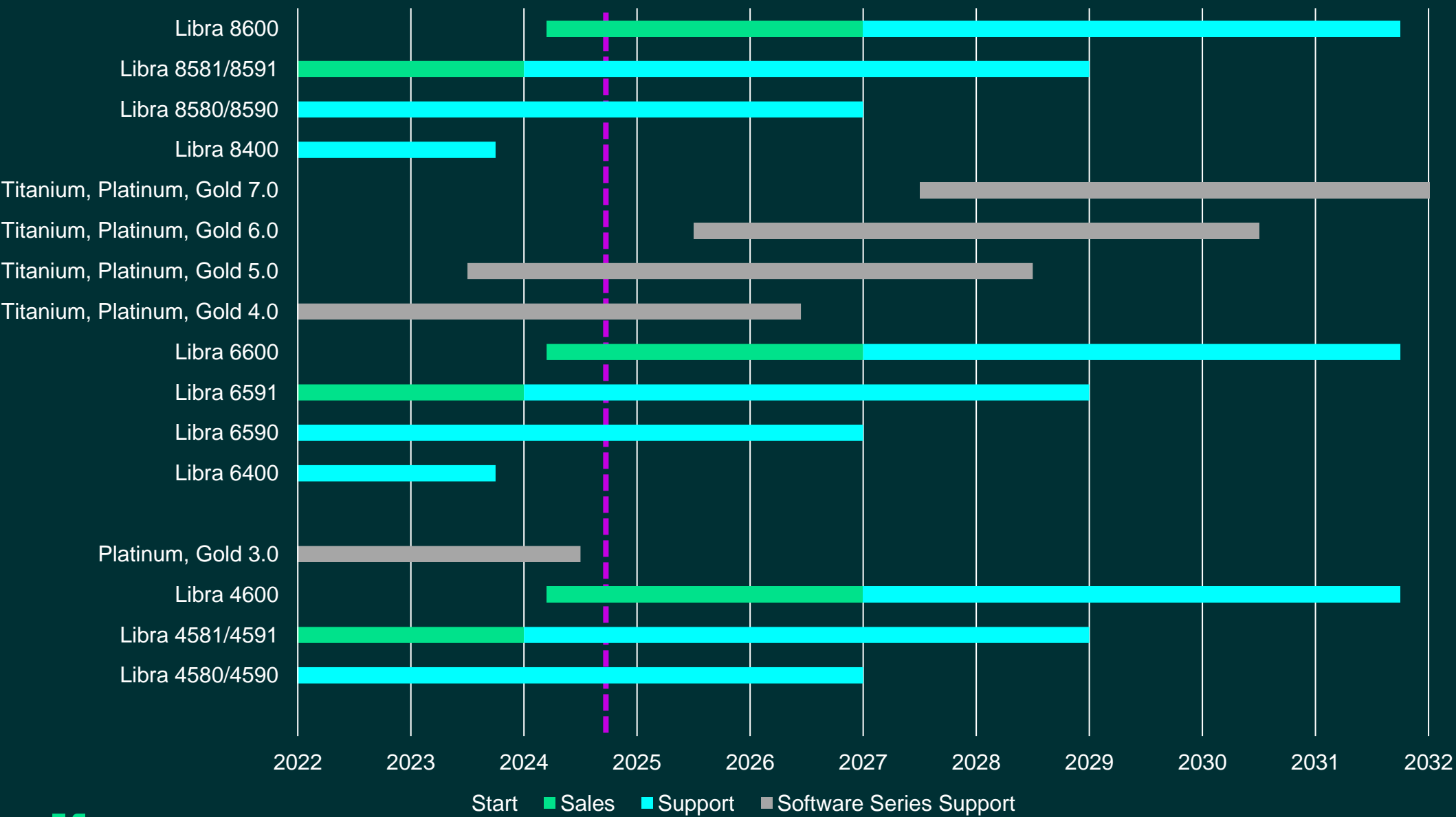
MCP Libra System Portfolio Sales and Support Life

Official end support dates documented here
[MCP Based Systems Support Plan](#)



MCP Software Series & Libra Portfolio Sales and Support

Official end support dates documented here:
[MCP Software Series Support Plan](#)

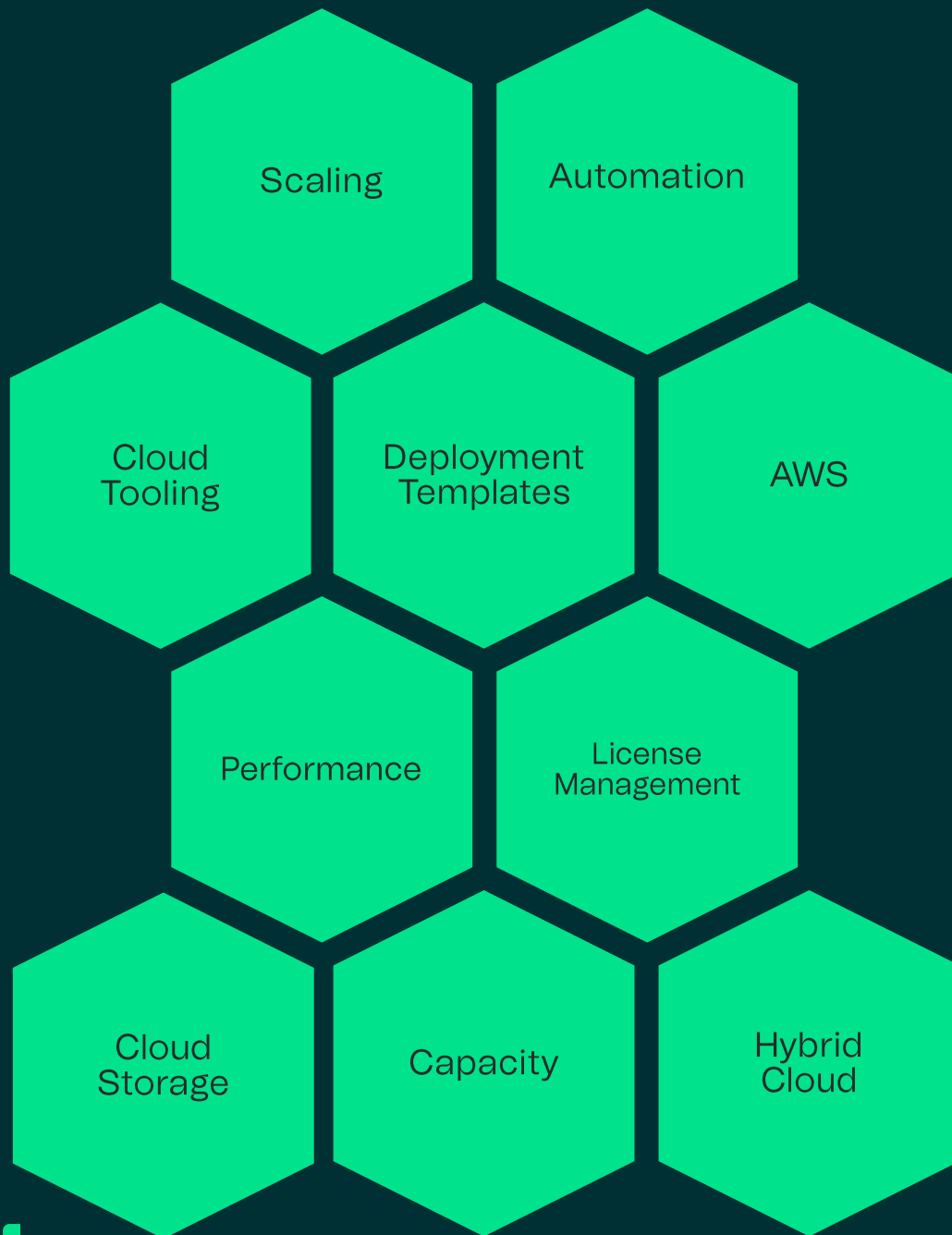


Growing Capabilities & Confidence

Public Cloud

Private Cloud





Transition from “on the cloud” to “in the cloud”



Safe and Predictable Cloud Transition with ClearPath Forward



No third-party provider worries about how to balance cloud migration risk, time, and costs.



No worries about application code changes, refactoring, and re-architecting apps.

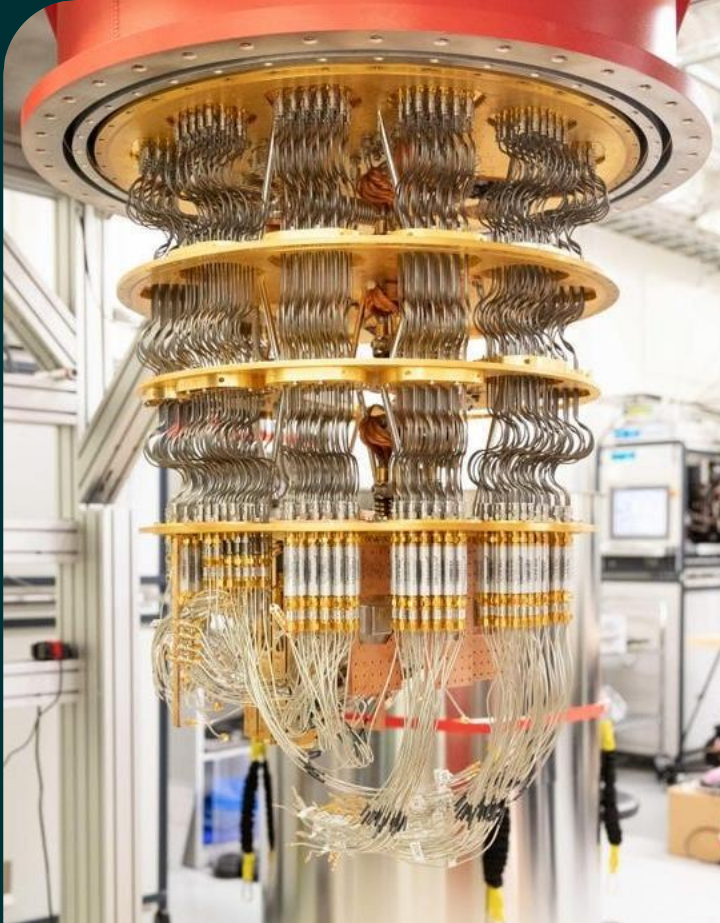


No worries about failed migrations and the effects it could have on business continuity and mission critical applications.

**NO
WORRIES**



Addressing the Quantum Threat



- Today's encryption relies on computers being unable to solve certain kinds of problems through brute force
- Quantum computers solve problems that standard computers can't, including some securing encryption
- **The Quantum Threat:** as quantum computers increase in power, current methods of encryption will be broken
- To protect clients, Unisys is integrating **Post Quantum Cryptography (PQC)**, encryption algorithms that are resistant to quantum attack, into ClearPath® platforms as early as feasible

Quantum Resistance and Beyond – Unisys Approach

Near Term: QRE Implementation

Phase 1: Crypto Discovery and Agility

- Achieve and maintain parity with **industry standards** and capabilities that maximize protection and compatibility
- Complete transition to **third party crypto APIs** to reduce support costs and to accelerate access to new crypto
- **Systemwide management of crypto policy** for ease of configuration, monitoring, and enforcement

Phase 2: Quantum Resistance

- **Adopt new NIST algorithms*** to provide quantum resistance. (Primarily for data in motion)
 - Module-Lattice-Based Key-Encapsulation Mechanism (ML-KEM) Standard (CRYSTALS-Kyber) ([FIPS 203](#))
 - Module-Lattice-Based Digital Signature (ML-DSA) Standard (CRYSTALS-Dilithium) ([FIPS 204](#))
 - Stateless Hash-Based Digital Signature (SLH-DSA) Standard (SPHINCS+) ([FIPS 205](#))
- **Update data at rest encryption** to use algorithms and key sizes that are quantum resistant

Long Term: Post QRE

Future Considerations

- Integrate with **quantum key distribution** services for keys that can't be intercepted or attacked. (Requires vendor proprietary infrastructure with limited availability)
- Increase overall strength of crypto by supporting **Quantum Random Number Generator (QRNG) devices**. (If required)

- *Three NIST algorithms achieved formal FIPS standardization August 13, 2024.
- *Current-generation QKD is shown to be impractical for common cryptographic use cases. This opinion is shared by security organizations like the NSA as well as eminent cryptographers.*



RELEASE AND SUPPORT

ClearPath Forward® MCP Software

Official end support dates documented here:
[MCP Software Support Plan](#)

TODAY

UPGRADES
MAY SKIP
ONE
RELEASE
LEVEL

LAST
RELEASE
THAT
SUPPORTS
PLATFORM

RELEASE 20.0

Libra x300, x400, x500, x501
CSS CSS MCP 4.0, 5.0

RELEASE 21.0

Libra x400, x500, x501, x600
CSS MCP 5.0

RELEASE 22.0

Libra x500, x501, x600,
CSS MCP 6.0

RELEASE 23.0

Libra x501, x600, x700
CSS MCP 7.0

RELEASE 24.0

Libra x600, x700
CSS MCP 8.0

2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033

ClearPath MCP Release 21.0 Features

Security

- TLS 1.2 Enhancements:
 - Support for CNSA elliptic curve certificates and elliptic curve keys
 - SHA384 and SHA512 certificates
 - Trust only certificates
 - Option to disable AESCBC cipher
- CCF support for mutual authenticated TLS connections
- Unisys Locum SafeSurvey Security Policy Report enhanced to show children of securecomm
- WebEnabler restricts modification of station names to administrators

Database

- Removed DMSII 300 structure limitations for OFFLINE reorganization and USEREORGDB
- DMSII improved buffer management
- MCPSQL now permits limiting the number of concurrent users

Networking

- IPSEC support for Internet Key Exchange (IKEv2)
- TCP-IP Fetch ACCESSCODE and CHARGECODE from SOCKLIB Identity
- TELNET improved scalability with increased MAX passive offer limit.

Detailed information on new features:

[ClearPath MCP 21.0 Software Release Announcement](#) (section 2)
[ClearPath MCP Technical Updates](#) (voice over PPTs)



ClearPath MCP Release 21.0 Features (Continued)

Operating Environment

- Codefile Verification utilizes stored checksums to check code files when they are opened for execution.
- PDIR command usability enhancements

Systems Management

- Workload Center reports Cloud Value Units (CVUs) consumption for ClearPath Software Series
- SAN DataMover clients running in VMs can use MCP Shared Disk Transfer Volumes

Compatibility

- MQMCP supports IBM Message Queue release 9.1 and 9.2
- All Windows client applications are qualified on Windows 11 and Windows Server 2022

Detailed information on new features:

[ClearPath MCP 21.0 Software Release Announcement](#) (section 2)
[ClearPath MCP Technical Updates](#) (voice over PPTs)



ClearPath MCP Software Series 5.0 Features

Ease of Use Enhancements

- Deployment of CSS instances from a VMware template
- Moving a CSS license from one CSS instance to another
- Releasing a CSS license from an inaccessible CSS instance
- Flexible External Device Number (EDN) renumbering

Azure Enhancements

- Use of Azure Site Recovery (ASR) for Disaster Recovery (DR)
- Option to control Azure Network connection timeouts

Infrastructure Enhancements

- Windows Server 2022 support
- Windows 11 support
- Best practices audit tool
- Intel CPUs having more than 64 cores
- System ID values unchanged for all capacity sets



ClearPath MCP Release 22.0 Features

Security

- Post quantum crypto (crypto agility)
- TLS 1.3
- Code signing for Unisys products
- IPSEC stronger encryption ciphers
- Multifactor authentication (MFA) support for ACCESSCODES
- Least privilege security model
- SSH enhancements
- Operations Sentinel secure communications

Database

- DBCertification performance improvements
- Remote Database Backup (RDB) and Online Garbage Collection (OLGC) compatibility with Database Encryption
- Database structure level encryption support for additional structure types

Operating Environment

- Server message block (SMB) 3.0 multiuser support

Compatibility

- MQMCP supports IBM Message Queue release 9.3



ClearPath MCP Software Series 6.0 Features

Ease of Use Enhancements

- Capability to perform PCD related operations through the REST API

Security Enhancements

- Role Based Access Control for MCP Console
- Digitally sign everything we release

Public Cloud

- Support for Azure virtual machines with accelerated networking

Infrastructure Enhancements

- Implement support for USB and Wi-Fi NICs for on-metal CSS deployments of Developer Studio Personal Edition
- Non-permanent Delete feature for emulated disks
- Windows 2025 Support



Operations Sentinel Business Advantages

Operations Sentinel goes **beyond server management** to simplify the operations complexity of your enterprise-wide IT infrastructure.

As a fully featured solution, it **automates, consolidates access, monitors, and manages multiple heterogeneous** systems.



Access a unified, high-level topological overview with just one click.



Manage both local and remote servers and systems effectively.



Comprehensive audit trail of messaging and events across multiple systems.



Receive alert notifications on cell phones, via email, and through wall panel displays.



Features integrated self-healing capabilities for service recovery.



Offers seamless integration across a broad spectrum of systems.



Operations Sentinel Roadmap

Operations Sentinel 20.0

- ✓ **Secure Communication:** All components now support TLS encryption for data in transit; optional self-signed certificates.
- ✓ **SNMP V3 Support:** Added support for SNMP V3 with TLS encryption; options for UDP and TCP protocols.
- ✓ **Enhanced User Authentication:** Access restricted to SPO Administrators/Users groups; supports Windows Autopilot without shadow accounts.
- ✓ **Enhanced Diagnostic Data Collection:** Improved trace configuration for better problem analysis and resolution.
- ✓ **Enhanced Error Handling:** Automatic restart of failed child processes; reset of restart count after seven days.
- ✓ **Dorado x600 Configuration:** New event IDs (1359, 10048) supported; Dorado Intel wizard updated for Dorado x600.
- ✓ **Third-Party Products Upgrades:** Updated to latest versions.
- ✓ **Unisys Branding Changes:** Product and documentation updated with new Unisys branding.

Operations Sentinel 21.0

- ✓ **TLS 1.3 Compatibility:** Enhance Operations Sentinel to support TLS 1.3, ensuring it is compatible with both Windows Server 2022 and Windows Server 2019, thereby bolstering security protocols and connectivity efficiency.
- ✓ **SHA224 Signature Algorithm:** Implement the SHA224 signature algorithm to facilitate Unix console automation, optimizing system interactions and operational flexibility.
- ✓ **Support for Quantum-Resistant Encryption (QRE) Algorithms:** Augment Operations Sentinel with Quantum-Resistant Encryption algorithms to significantly enhance data security measures against evolving cyber threats.
- ✓ **New Design Features:** Introduce new design enhancements such as a search filter in the Alert Window and robust improvements to alert management and load-handling capabilities, aiming for a more responsive and user-friendly interface.
- ✓ **IPv6 Support:** Implement full IPv6 compatibility within Operations Sentinel to ensure flawless and future-proof communication with MCP, aligning with modern network standards.
- ✓ **Post Quantum Encryption:** Expand cryptographic functionalities to include Discovery and Logging, alongside secure mechanisms for sensitive data writing to disk, preparing for the post-quantum era of cybersecurity.



Digital System Administrator for ClearPath - POC



- This Gen AI based solution is a Digital Assistant helping human system administrators involved in configuring, managing, administering, and problem solving in the ClearPath environment
- Unisys relevant product documentation, and Unisys administration knowledge preloaded
- Augmented by client specific documentation and knowledge
- Chat based interface providing guidance, inputs on ClearPath administrative tasks
- Help clients retain knowledge of ClearPath System Administration and client specific procedures for managing ClearPath systems
- Increase productivity of the System Administrator
- Help train new members by answering their questions related to ClearPath system administration

CPF MCP Storage Roadmap

- Maintaining our partnerships with Dell and DSI as storage suppliers
- Evaluating Dell PowerStore as likely replacement for Unity (RecoverPoint appliance end of life) as second Dell storage offering
 - 500 devices / packs / LUNs or less, consolidate to 125 devices (max for consistency groups for recovery on PowerStore)
 - 500+ devices / packs / LUNs consider PowerMax
- Partnering with DSI to qualify new DSI Restore and VTL, including Restore in AWS
- Validate new software updates for Dell PowerMax, Unity, Data Domain
- Continued enhancement of services supporting CPF Cyber Recovery solution



Unisys ClearPath MCP Cyber Resiliency

What are the Key Threats to ClearPath?

- Social Engineering Attack
- Surrounding ClearPath Servers
- Storage Arrays
- Backup Devices
- ClearPath Software Series on VMware/Hyper-V

What security actions should you take?

- Establish a Cyber Resiliency Plan (required by DORA in 2024)
 - [See the Unisys ClearPath Cyber Recovery White Paper](#)
- Implement your plan in 2025. Budget accordingly.
- Implement ClearPath Security Best Practices

What recovery actions should you take?

- Ensure you are backing up all the data required to do a ClearPath bare metal rebuild
- Ensure your team is trained to perform a bare metal rebuild
- Ensure your backup data is free from malware

Validate your ClearPath data is free from malware

- Move your ClearPath MCP disk format to VSS2
- Turn on ClearPath MCP host-based encryption
- Data is validated on every read of the data and therefore your backup data should be free from malware

Isolate a copy of your backup data off network

- Implement a ClearPath Cyber Recovery Vault.
- Ensures you have a gold copy of data to perform the recovery

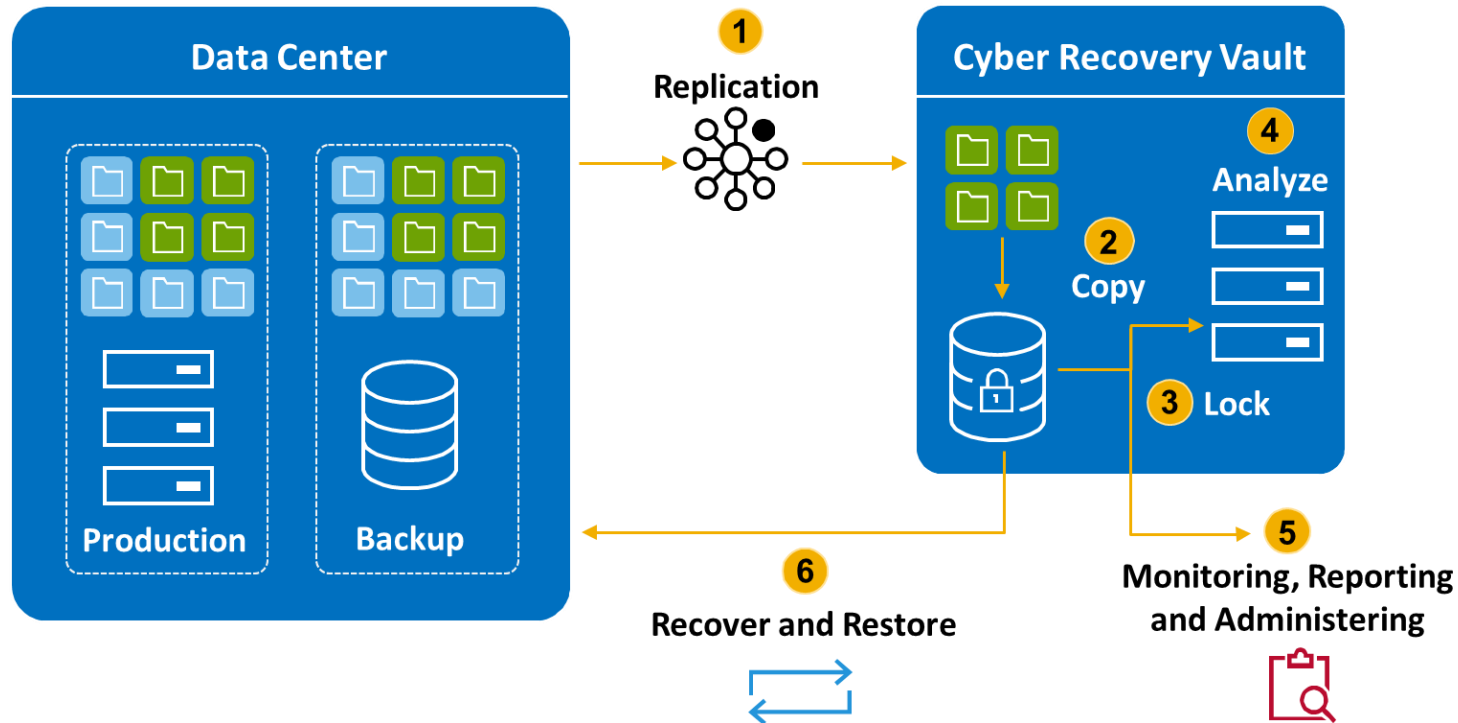
Digital Operational Resilience Act

Passed on 16 January 2023, legislation becomes effective 17 January 2025

[white paper](#)



What is Cyber Resiliency...an isolated copy example



Secure 'Air Gapped' Vault:

Automation and operations **to collect, store, analyze, rebuild, test, and export** gold copies, critical data, and applications for recovery after ransomware breaches

Critical Attributes

- Isolation:** Physical & logical separation of data
- Immutability:** Preserve original integrity of data
- Intelligence:** ClearPath analytics used to identify threats and determine the presence of malware
- Security:** Vault protected by technologies like air gaps and unidirectional gateways

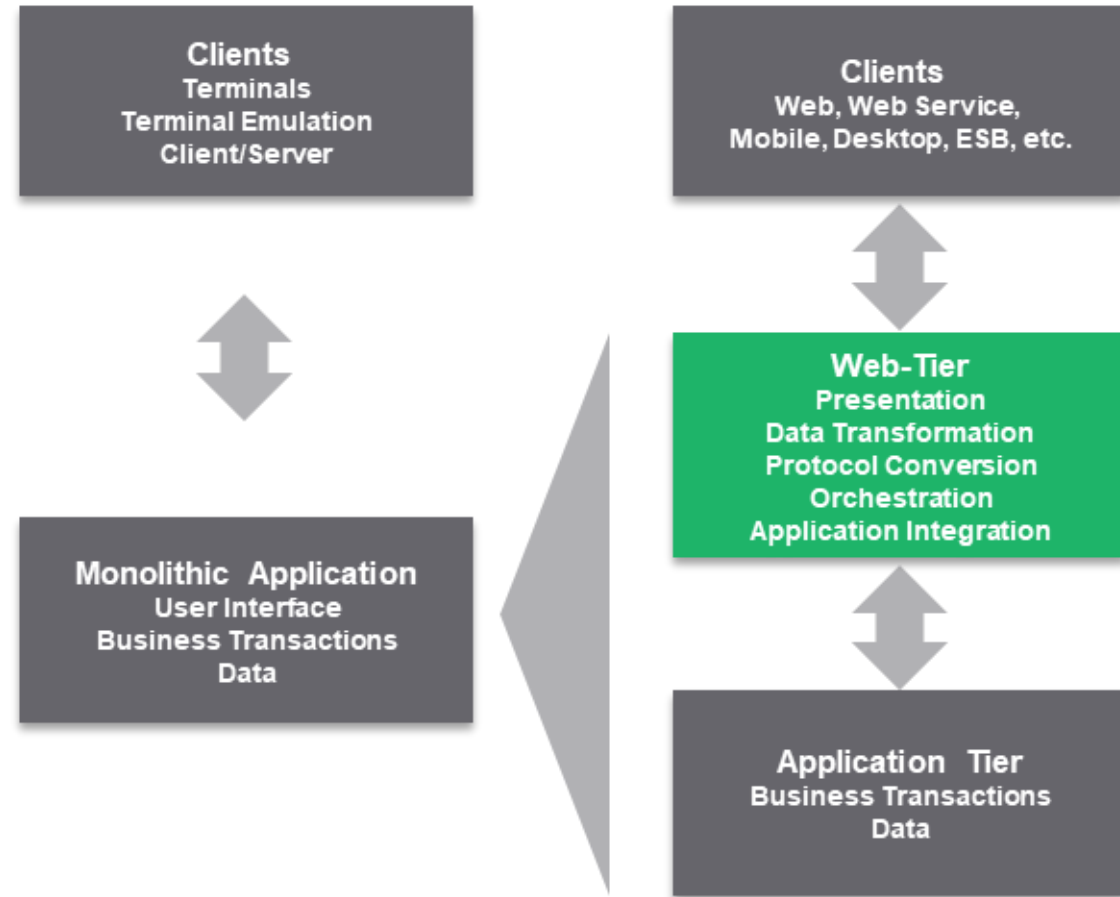
ClearPath Forward Integration Software

Enable digital transformation – transactions and data

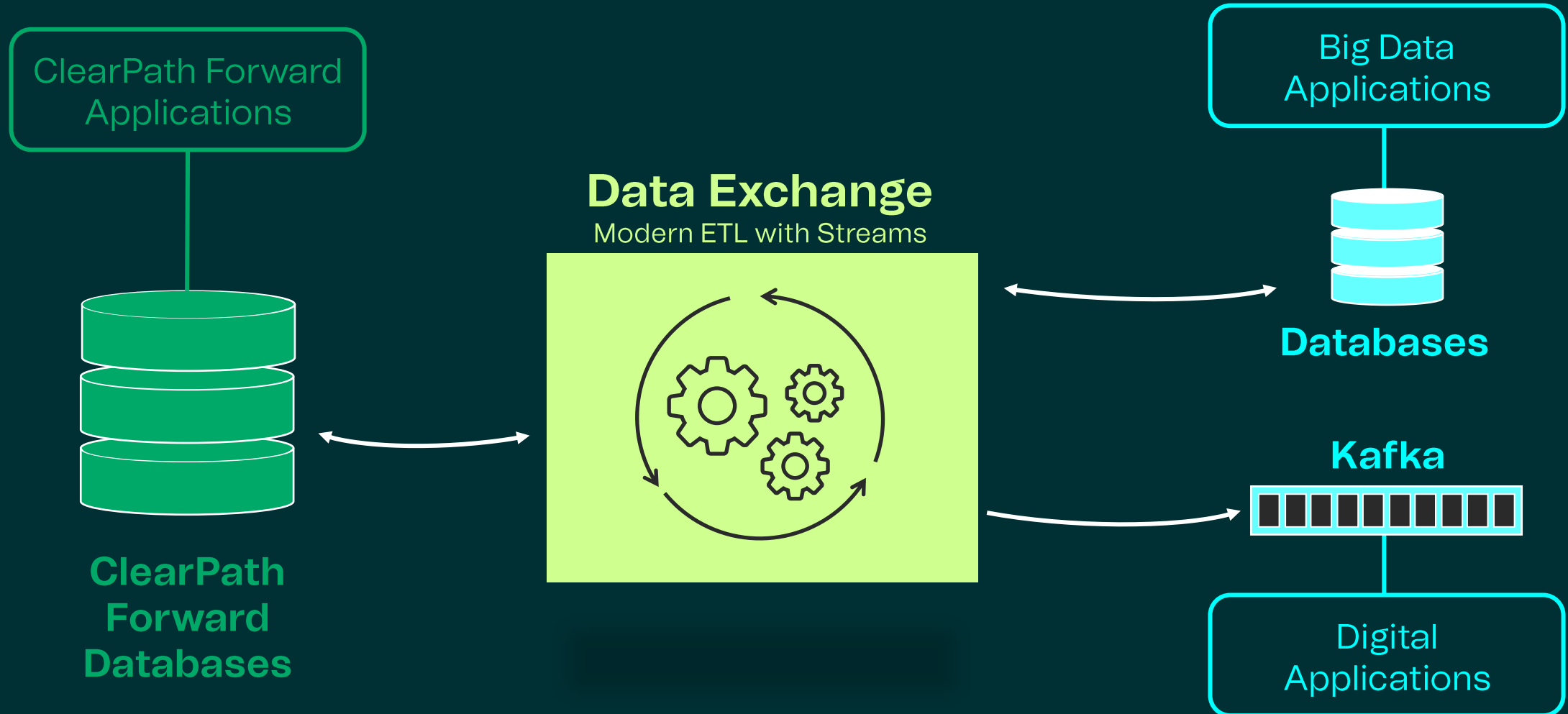
03

ClearPath ePortal

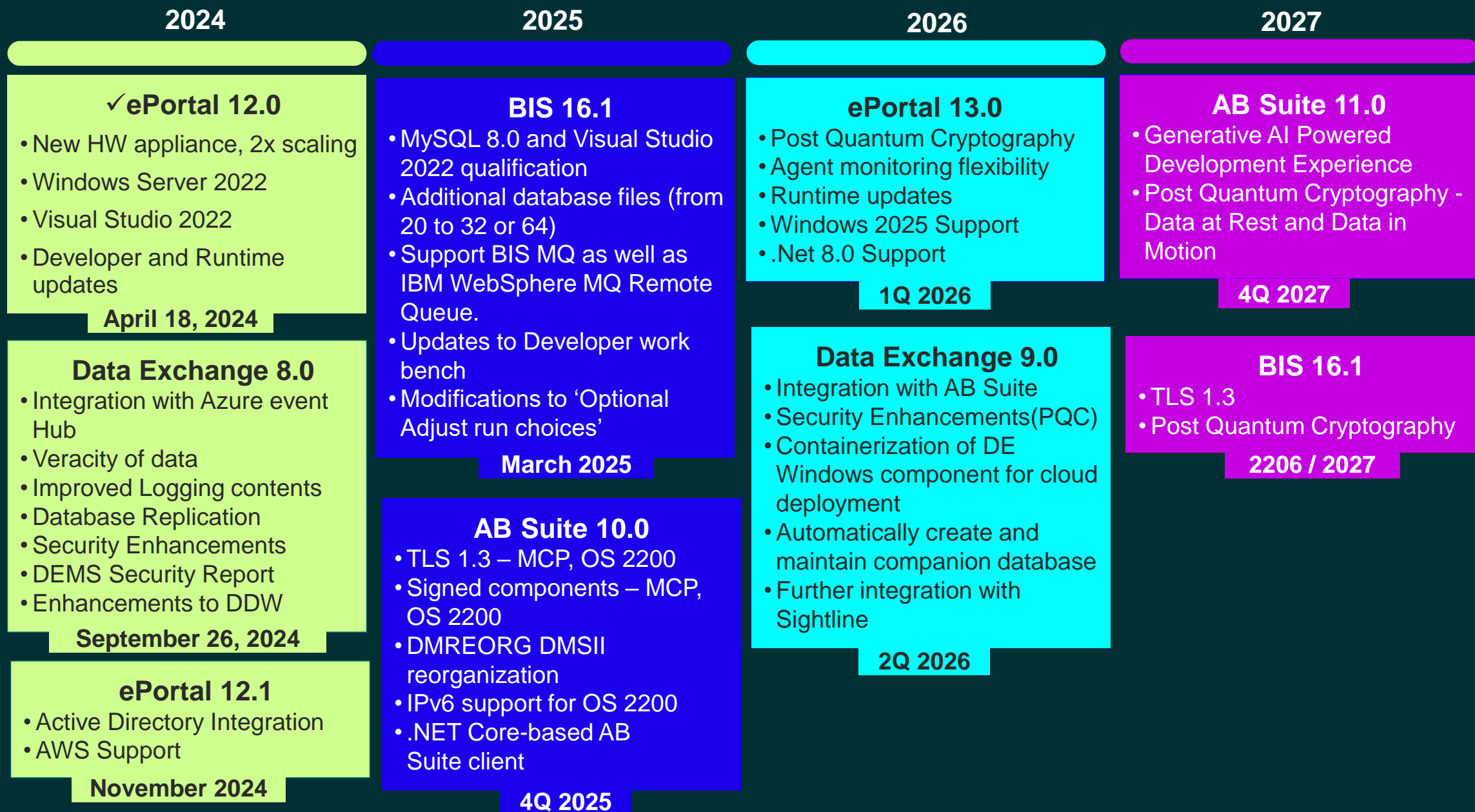
- ClearPath ePortal is an end-to-end solution that lets you to easily extend your existing applications to web, mobile devices and service-based clients
- “In-Place” application transformation
- Automatic application capture
- Web-Tier application generation
- Private PaaS deployment and provisioning



Unisys Data Exchange



ClearPath Forward® – Cross Platform Software



AB Suite 9.0 Release (for MCP and OS 2200)

Ease of Use

- Refactoring & Static Code Analysis
 - Detect and Report elements that need to be fixed
 - Correct and fix elements
 - Protect the application
- Debugger Performance Enhancements

Increased runtime availability and developer productivity

- Minimize downtime during Interim Correction (IC) Upgrade for AB Suite MCP
- MCP Group Arrays and Class Arrays
- Duplicate DB Record handling
- Extract file scaling

Security

- Secured Connection for AB Suite OS 2200
- Secured FTP for AB Suite OS 2200

Client Requests

- DevOps Enhancements – Merge Utility
- Modelling and Language Improvements - AB Suite OS 2200
- Support for OS 2200 CSS 3.0 on Azure



AB Suite 10.0 Release – Strategic Focus

Ease of Use

- .NET Core-based AB Suite client
- Latest version of Visual Studio Qualification

New Feature Suggestions

- DMS II Max Update Enhancement
- Increased AB Suite OS 2200 runtime availability
- DMS II support reorg scaling
- Improved Report Management during Reorganization with REORGDB

Enhanced Security

- Quantum Agility - TLS 1.3 Support for AB Suite
- Code signing of AB Suite Runtime binaries enables clients to validate that software is authentic

Generative AI Capabilities

- Create sample data through GenAI – XML/JSON (Windows)
- Other GenAI features being explored



ClearPath Forward ePortal 12.0

- New HW appliance (R660) and Dell Switches
 - Introduction of new powerful HW appliance (R660)
 - New Enterprise Class Dell switches
- Windows Server 2022
 - ePortal HW, ePortal Software Edition and ePortal Azure can operate as expected on WS2022
- Visual Studio 2022
 - ePortal developer tech-ups ; 64-bit Support for ePortal Developer
- Windows 11
 - ePortal Developer 12.0 can be used on Windows 11
- New Runtime Management CLI
 - Manage and automate aspects of ePortal Runtime environment
- Support .NET 6.0
 - ePortal Platform software 12.0 supports the installation of .NET 6.0 packages



Data Exchange 8.0 Features



Data Veracity



**Support Azure
Event Hub**



**Logging
Enhancements**



**Database
Replication**



**Security
Improvements
and Reporting**



**Upgraded
DDW**



ClearPath Forward Application Development

Extend MCP & OS 2200 applications with Python

04

Modern Languages

Significant need to bridge the old with the new



~100B
Lines of COBOL

Drive more than 70% of the
global transactions



58

Average age of a COBOL
programmer



8.2M

Python developers in the
world



Modern Languages

ClearPath Forward®

Server systems and operating system software and services that are secure, innovative, and reliable for mission-critical solutions

Disruptions and challenges our clients face

What we do to support ClearPath Forward® clients

Erosion of COBOL skills



Provide the ability to utilize Python as a peer to COBOL

Novice to Expert takes too long



Provide infrastructure to enable industry standard, open-source technology

Innovation is hindered by legacy solutions not being written in modern languages



Provide application modernization services utilizing most-modern programming languages (e.g. Python)

Available today for MCP Software Series,
Dorado and OS 2200 Software Series



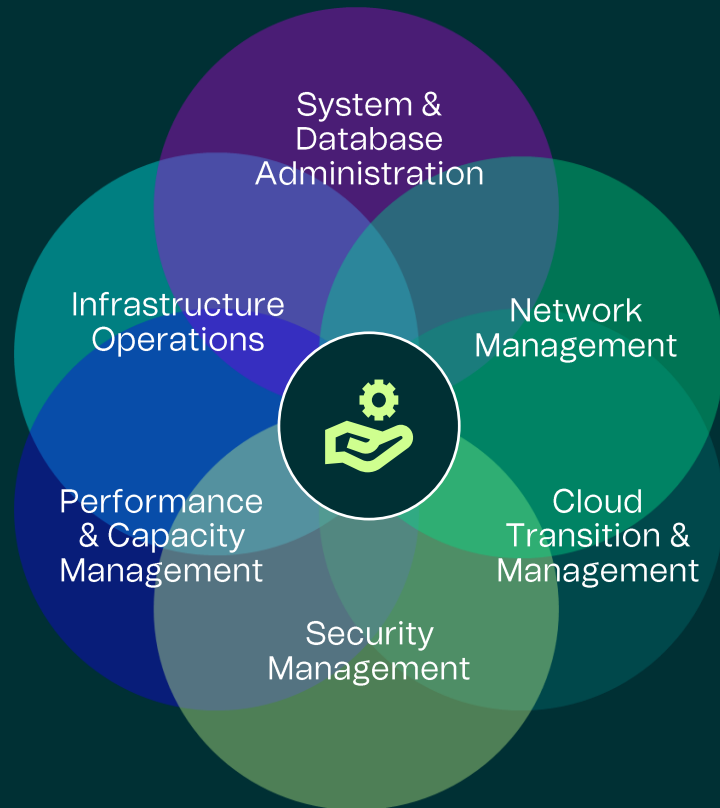
Unisys ClearPath Forward Services

05

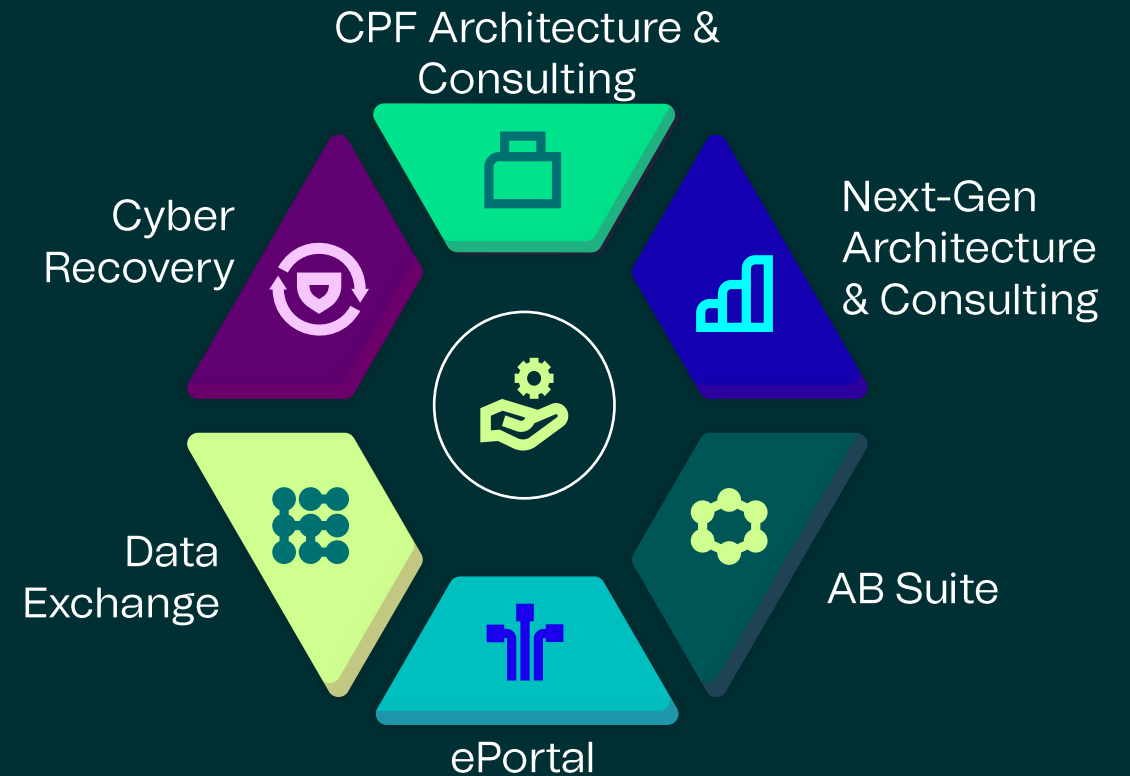


Unisys ClearPath Forward Product Services

Infrastructure Managed Services



Technology Consulting Services



Thank You

