

Unisys Adaptive Endpoint Computing / AVD / VDI / Lightweight Devices

DWS Solutions



Solution Overview

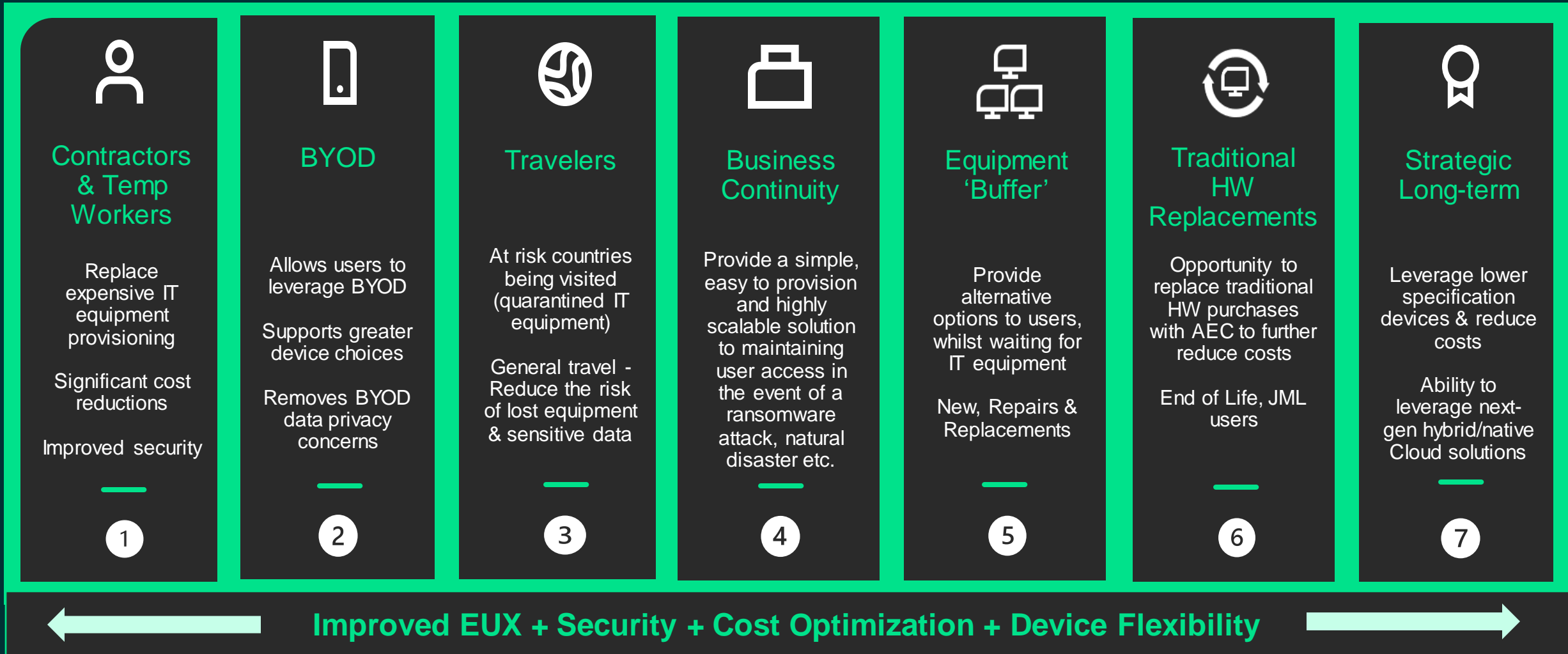
Adaptive Endpoint Computing is the unique Unisys approach to ensuring that our clients end user environments delivers the most secure, high performance, flexible and cost-effective solution possible.

A deep understanding of your business and its challenges, in combination with our persona driven approach to solution selection, allows us to ensure that only the most appropriate solution is always delivered to users.

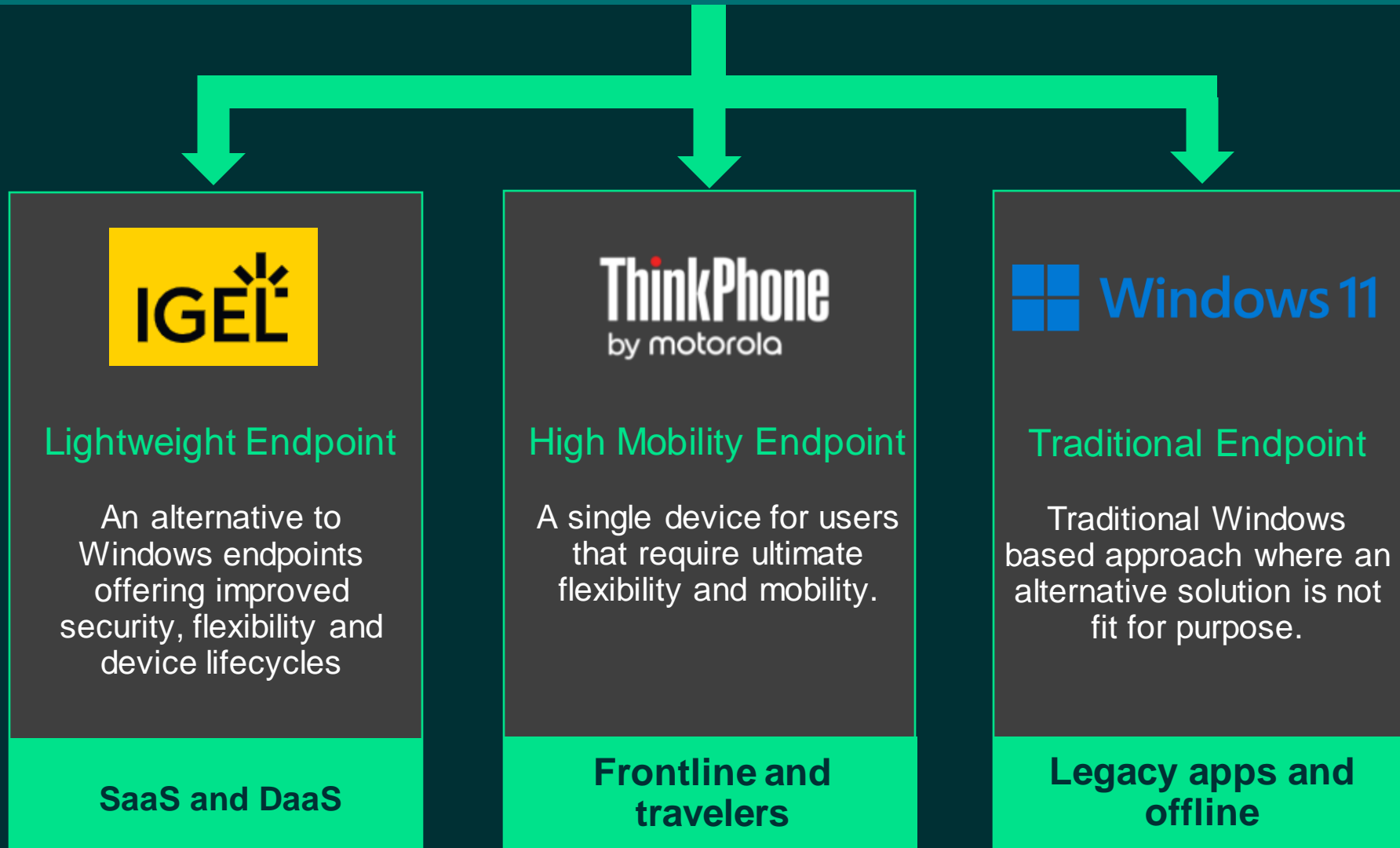
Unlike traditional approaches to end user computing that rely on a single solution and complex configuration in order to apply to multiple use cases with variable success, **Adaptive Endpoint Computing** offers a suite of fully integrated, next generation technologies that deliver an optimized solution for every scenario.



Potential Use Cases



Adaptive Endpoint Computing – Physical Endpoints



Adaptive Endpoint Computing – Optional DaaS Endpoints

Windows 365

Dedicated, always on, easy to provision DaaS solution

Advantages

- Fast setup
 - 24/7 availability
- Consistent monthly cost
- Frontline option for shift workers

Disadvantages

- High cost per instance
 - Limited scalability
- Per instance management required

Use Cases – VIP Users, 24/7 shift workers

Azure Virtual Desktop

Pooled or dedicated, highly configurable DaaS solution

Advantages

- Highly flexible and scalable
- Reduced management overhead with pooled instances
 - Only pay for active usage

Disadvantages

- More complex initial setup
- Requires additional tools to manage (resources and cost)
 - Variable monthly cost

Use Cases – Knowledge workers, Third Parties



U Adaptive Endpoint Computing – Key Benefits

Security

- Read only, known state endpoints
- No local data storage
- Reduces the endpoint attack surface and ransomware risk.
- Reduces the need for complex conditional access policies



User Experience

- Rapid onboarding process
- Real time performance scaling
- Consistent experience across devices
- BYOD without privacy concerns



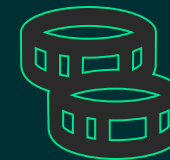
Sustainability

- Extend existing device lifecycle
- Utilize lower powered devices
- Move intensive compute tasks to the cloud
- Reduce IT waste



Cost

- OPEX SaaS consumption-based model
- Reduce device costs
- Right sized and easily scalable
- Eradicate resource wastage





Adaptive Endpoint Computing – Lightweight Endpoint Third Party Device Strategy

BYOD

Provide third party access without the cost of a device.

Advantages

- Zero device cost
- Minimal management overhead
- Flexible licensing
- More secure than traditional BYOD
- Managed endpoint without enrollment or privacy concerns

Disadvantages

- Requires ability to boot third party device from USB

Re-purposed Device

Provide third party access without providing a new device

Advantages

- Zero device cost
- Run IGEL OS locally
- Minimal management overhead
 - ESG positive
- Simple provisioning and onboarding compared to Windows

Disadvantages

- Availability of useable hardware

Lower powered device

Provide third party access with a lower cost new device

Advantages

- Significantly lower cost than Windows 11 capable laptop
 - Run IGEL OS locally
 - Minimal management overhead
- Simple provisioning and onboarding compared to Windows

Disadvantages

- Doesn't remove all device costs or return risk





Adaptive Endpoint Computing – Third Party/Temp User Access Comparison

Windows Laptop

Traditional approach that requires the provisioning and management of a high-end Windows device.

Advantages

- Known process

Disadvantages

- High device and licensing cost
- Complex provisioning process
- User on-boarding timescales
 - Management overhead
 - Device is domain joined
 - Risk of no-return of asset

DaaS Only

DaaS approach that requires the provisioning and management of a dedicated VDI session per user

Advantages

- Reduced solution cost
- Reduced management
- Reduced licensing cost

Disadvantages

- Security risk of non managed device connecting to VDI
- High consumption cost of dedicated VDI
- Per VDI instance management required

Unisys AEC

Flexible SaaS/DaaS approach

Advantages

- Managed read-only endpoint
 - Non domain joined
- Provide O365 and SaaS access without requiring a VDI
- Use BYOD, repurposed or lower cost devices
 - Simple onboarding
 - Reduced management
 - Reduced licensing cost

Disadvantages

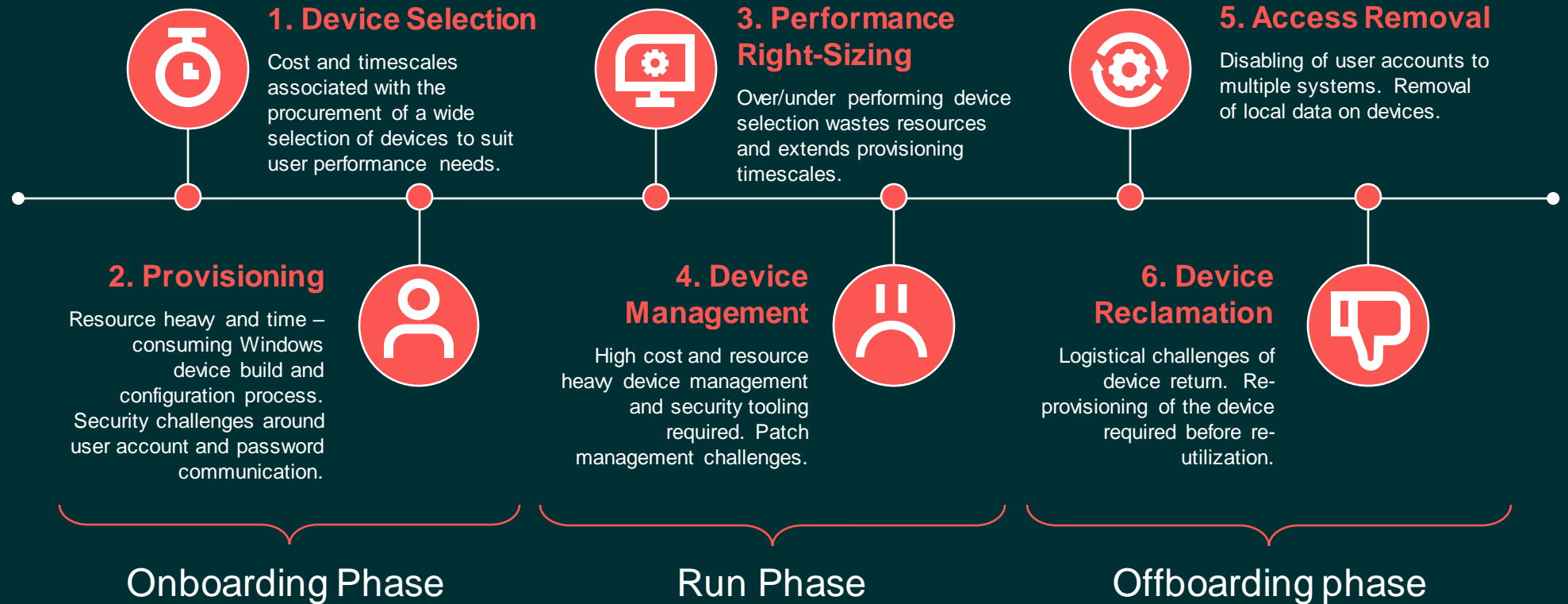
- Additional infrastructure required



Contractors and Temp Workers Lifecycle (Before/Pain)

Cost to business:

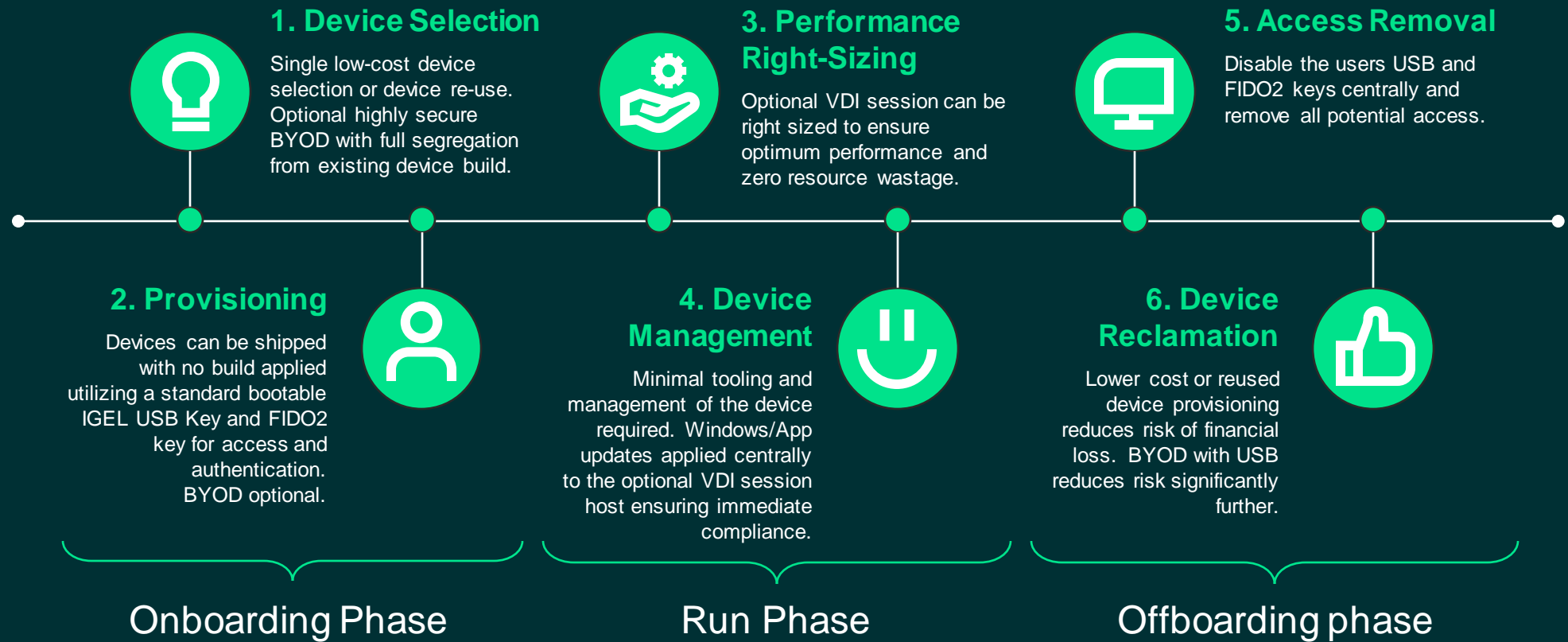
1. Lost user productivity
2. Lost tech resource productivity.
3. Device cost and resource wastage. Poor user experience and reduced productivity.
4. High maintenance overhead
5. Security challenges.
6. Risk of device loss.



Contractor and Temp Workers Lifecycle (After/Gain)

Cost to business:

1. Minor user productivity loss.
2. Minor tech user productivity loss.
3. Reduced resource wastage and improved user experience and productivity.
4. Reduced tooling cost and management effort.
5. Immediate removal of access.
6. Reduced financial risk from device loss.



Adaptive Endpoint Computing

DaaS Usage Scenarios (**Dedicated W365 Desktop**, MS F3)

Modelled against 7000 user base client, 1000 device & endpoint costs

Intel i5 16GB – MS E3
+ Teams

 Device

£1000

 Licensing

£1500

 Support

£430

3YR TCO - £2930

Intel i3 8GB

 Device

£500

 Licensing

£1850

 Support

£500

3YR TCO - £2850

Re-Manufactured

 Device

£400

 Licensing


£1850

 Support

£500

3YR TCO - £2750


Chromebook

 Device

£250

 Licensing

£1850

 Support

£500

3YR TCO - £2600

BYOD/Re-Use

 Licensing

£1850

 Support

£500

3YR TCO - £2350





Adaptive Endpoint Computing

DaaS Usage Scenarios (Multi session AVD Desktop, Microsoft F3)

Modelled against 7000 user base client, 1000 device & endpoint costs

Intel i5 16GB – MS E3
+ Teams

Device
£1000

Licensing
£1500

Support
£430

3YR TCO - £2930

Intel i3 8GB

Device
£500

Licensing
£800

Support
£500

3YR TCO - £1800

Re-Manufactured

Device
£400

Licensing
£800

Support
£500

3YR TCO - £1700

Chromebook

Device
£250

Licensing
£800

Support
£500

3YR TCO - £1550

BYOD/Re-Use

Licensing
£800

Support
£500

3YR TCO - £1300



Adaptive Endpoint Computing

SaaS Usage Scenarios (Web Apps, Microsoft F3)

Modelled against 7000 user base client, 1000 device & endpoint costs

Intel i5 16GB – MS E3
+ Teams

 Device

£1000

 Licensing

£1500

 Support

£430

3YR TCO - £2930

Intel i3 8GB

 Device

£500

 Licensing

£500

 Support

£300

3YR TCO - £1300

Re-Manufactured

 Device

£400

 Licensing


£500

 Support


£300

3YR TCO - £1200


Chromebook

 Device

£250

 Licensing


£500

 Support


£300

3YR TCO - £1050

BYOD/Re-Use

 Licensing

£500

 Support

£300

3YR TCO - £800



Thank You





IIGEL COSMOS

- Read only encrypted OS, secure by design
- Minimal system requirements ensure wide device compatibility
- Rapid onboarding process (<10 mins)
- Local Teams/Zoom client for best performing collaboration experience
- No need for complex/expensive additional security tools or frequent patching
- Boot from USB offers flexibility of use on existing corporate & BYOD devices
- Available installed direct from factory on new Lenovo/HP/LG devices.
- Supports connectivity to all on-premise and cloud based VDI solutions



Unisys Adaptive Endpoint Computing

Security Ensured

“Key components make the solution the most secure available for third party access”



THE IGEL CHAIN OF TRUST

- Ensures all components of your VDI/cloud workspace scenario are secure and trustworthy
- As each component starts it checks the cryptographic signature of the next, only starting it if it is signed by a trusted party (e.g. IGEL, UEFI Forum)

The Process

- 1 Chain starts at UEFI
- 2 UEFI checks the bootloader for a UEFI Secure Boot signature
- 3 Bootloader then checks the IGEL OS Linux kernel
- 4 If the OS partitions' signatures are correct (starting with IGEL OS 11.03), IGEL OS is started and the partitions are mounted
- 5 For users connecting to a VDI or cloud environment, access software such as Citrix Workspace App or VMware Horizon checks the certificate of the connected server



YubiKey 5 FIPS Series

The YubiKey 5 FIPS certified security keys meet the highest level of assurance (AAL3) of the new NIST SP800-63B guidelines.

- Suitable for government and regulated industries
- Multi-protocol support; smart card, OTP, OpenPGP, FIDO U2F, FIDO2/WebAuthn
- USB-A, USB-C, Lightning, NFC

IGEL Technology Partner



Scott Manchester • 2nd

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I have my head in the clouds and feet on the grou...
1w • Edited • 🌐

I am excited to announce that Microsoft is honored to be recognized as a Leader in the inaugural 2023 Gartner® Magic Quadrant™ for Desktop as a Service (DaaS). Read the blog and full report below. #W365 #AVD

I want to thank our partners who extend the value of our virtualization services:

Vadim Vladimirskiy, Joseph Landes, Jed Ayres, David Bieneman, Kamal Srinivasan, Samit Halvadia, Klaus Oestermann, Stratodesk, NComputing, 10ZiG Technology, Lakeside Software, Bharath Rangarajan, Sridhar Mullapudi, Jason E. Smith, Calvin Hsu, IGEL Technology, Tricerat

Figure 1: Magic Quadrant for Desktop as a Service



Source: Gartner



Unisys Adaptive Endpoint Computing Industry Alignment

Aligns with tech vendor strategy
and key industry analysts

Gartner Future of EUC 2024 and DaaS Magic Quadrant
reports

Three Key Cloud Technologies — A New Phase for EUC

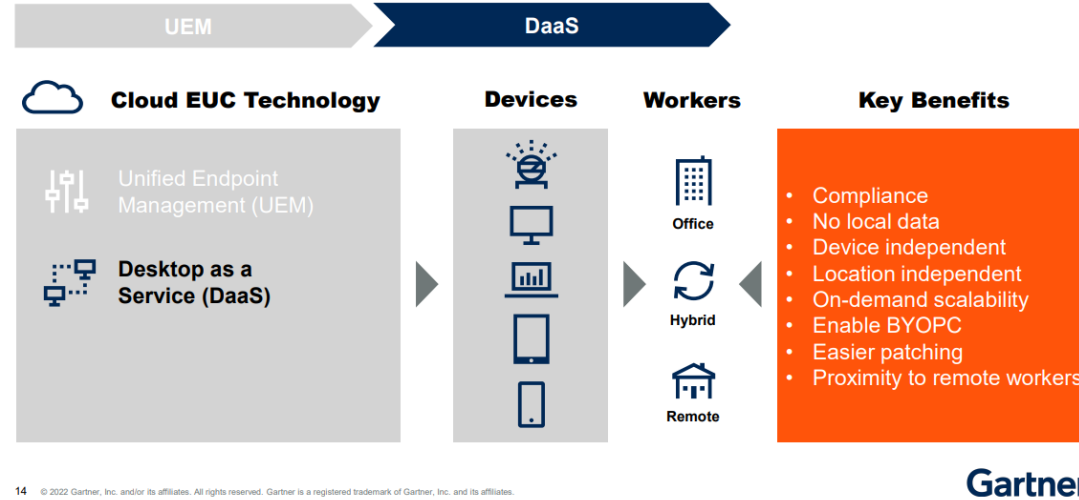
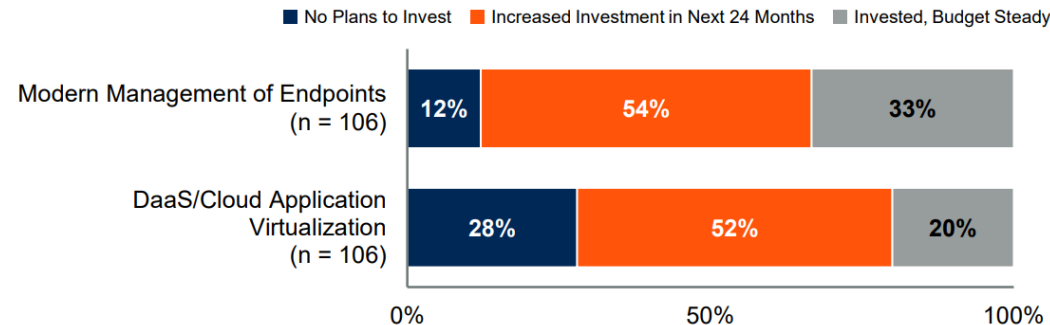


Figure 1: Magic Quadrant for Desktop as a Service



IT Leaders Are Increasing Cloud-Powered EUC Investment

Workplace Infrastructure Investment Plans



n = Bases vary; Excluding 'Unsure'
Q2. Thinking about your organization's current and future investments to support workplace infrastructure, what are your organization's plans for investing in?
Source: 2021 Gartner's The Employee Impacts of Anywhere Survey
*Note values 2% and below not shown

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Accelerate to Cloud

- Overcome inertia to UEM
- Build a case for DaaS

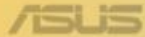
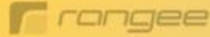
When?
Today

Partner Tested. Partner Supported.

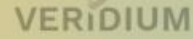
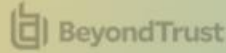
ALTOS
an Acer Group Company



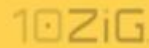
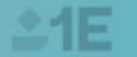
ENDPOINTS



SECURITY & ANALYTICS



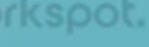
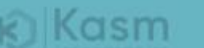
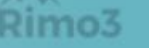
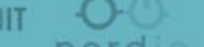
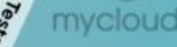
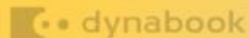
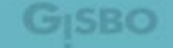
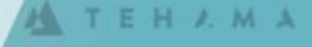
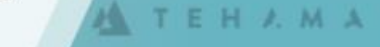
IGEL Tested. IGEL Supported.



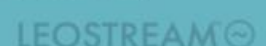
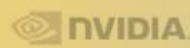
IGEL Tested. IGEL Supported.



IGEL Tested. IGEL Supported.



IGEL Tested. IGEL Supported.



PERIPHERALS & PRINTING

CLOUD/SOFTWARE/APPS



Partner Tested. Partner Supported.

Partner Tested. Partner Supported.

Partner Tested. Partner Supported.



EXTRA SLIDES





Adaptive Endpoint Computing

Cost comparison for SaaS Usage Scenarios

Use Case Scenario - Access for a user that can utilize browser-based app/portal functionality and doesn't require a VDI session.

	Windows 11	Lightweight OS - Reutilize or BYOD	Lightweight OS - Lower Spec Laptop	Highly Mobile
Device	HP Elitebook X360 i7	N/A	HP ProBook 650 G8 i3	Lenovo Thinkphone
Device Cost	£1,100.00	£0.00	£600.00	£700.00
MS License	M365 E3	M365 F3	M365 F3	M365 F3
MS License Cost	£33.10	£8.00	£8.00	£8.00
Third Party Tools	AVD/VPN/RA etc.	N/A	N/A	N/A
Third Party Tools Cost	£15.00	£0.00	£0.00	£0.00
Support Cost	£12.00	£8.00	£8.00	£8.00
VDI Cost	£0.00	£0.00	£0.00	£0.00
IGEL Cost	£0.00	£6.00	£6.00	£0.00
3 year TCO	£3,263.60	£792.00	£1,392.00	£1,276.00





Adaptive Endpoint Computing

Cost comparison for DaaS Usage Scenarios

Use Case Scenario - Access for a user that requires Windows 11 based applications.

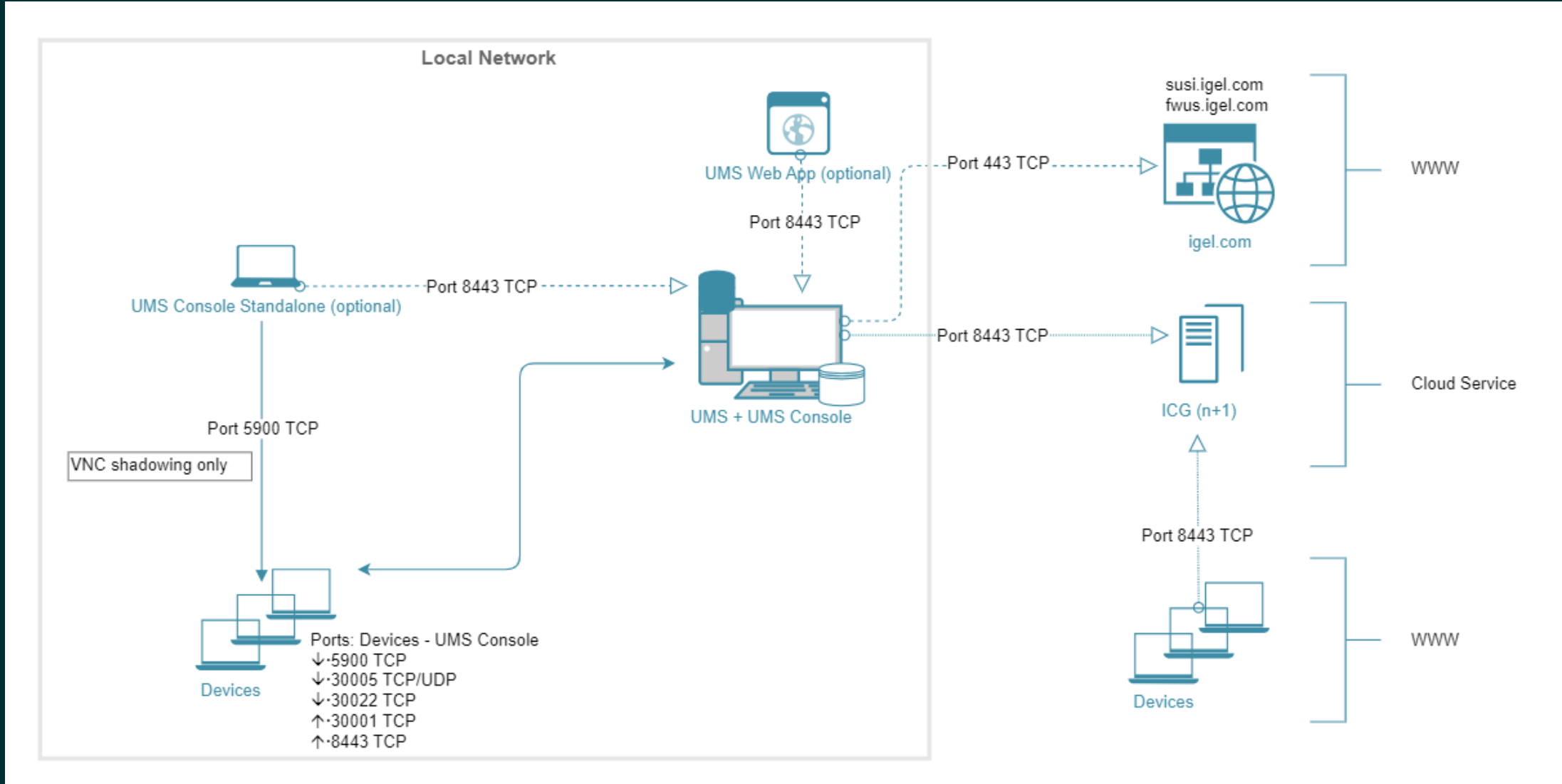
	Windows 11	Lightweight OS - Reutilize or BYOD	Lightweight OS - Lower Spec Laptop	Highly Mobile
Device	HP Elitebook X360 i5	N/A	HP ProBook 650 G8 i3	Lenovo Thinkphone
Device Cost	£950.00	£0.00	£600.00	£700.00
MS License	M365 E3	M365 E3	M365 E3	M365 E3
MS License Cost	£33.10	£33.10	£33.10	£33.10
Third Party Tools	AV/VPN/RA/DEX	AV/DEX	AV/DEX	AV/DEX
Third Party Tools Cost	£25.00	£10.00	£10.00	£10.00
Support Cost	£18.00	£10.00	£10.00	£10.00
VDI Cost	£10.00	£10.00	£10.00	£10.00
IGEL Cost	£0.00	£6.00	£6.00	£0.00
3 year TCO	£4,049.60	£2,487.60	£3,087.60	£2,971.60





Adaptive Endpoint Computing

Architectural Overview



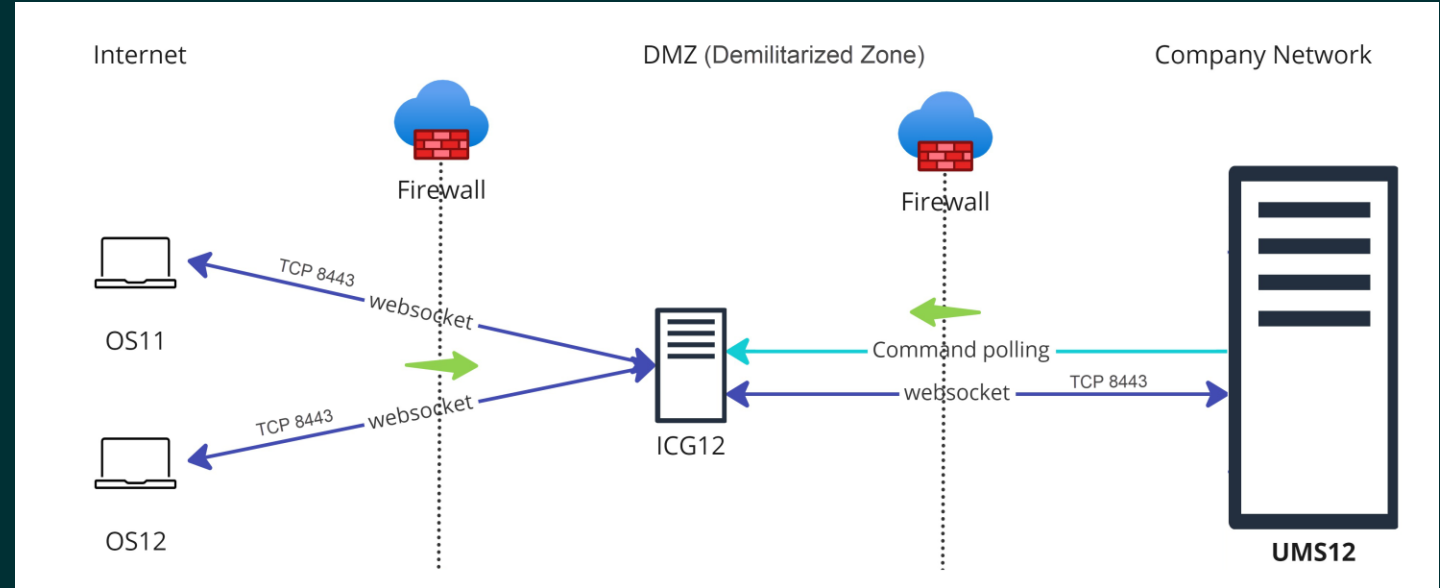


Adaptive Endpoint Computing

Potential Architecture – On Premise UMS

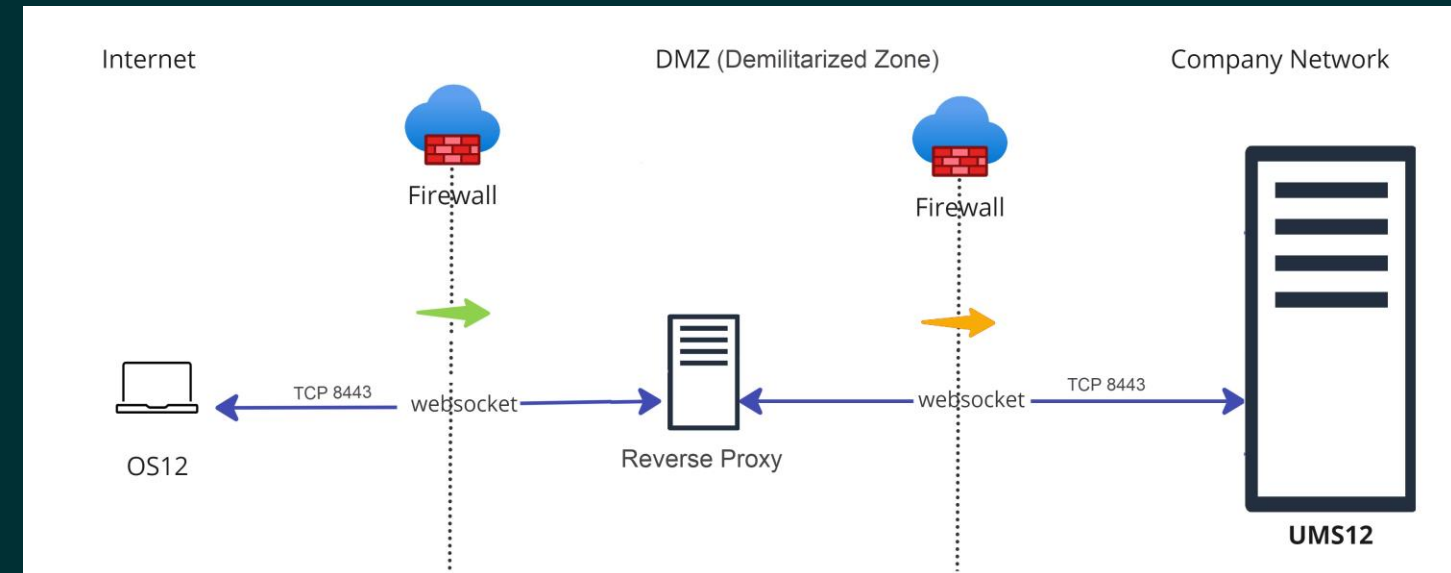
IGEL ICG

- + No inbound connection from the device to the UMS
- + Only the ICG is exposed to the Internet. Simple and lightweight, which minimizes the attack surface
- UMS as an Update Proxy feature cannot currently be used, so devices can download apps from the App Portal only.
- Higher latency and longer command execution in comparison to the reverse proxy.



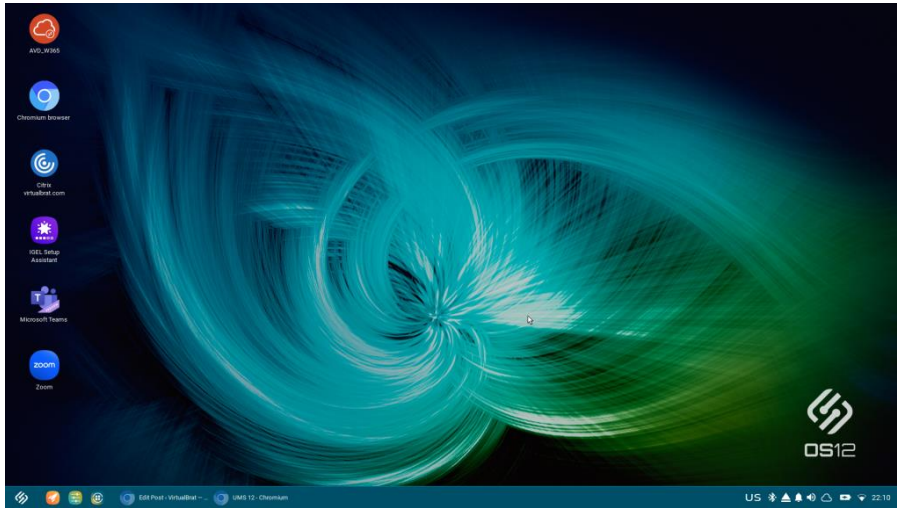
Reverse Proxy

- + Load balancing
- + UMS as an Update Proxy feature can be used
- + Lower latency when compared to ICG
- Proper configuration and maintenance of the reverse proxy is required to ensure security.



Solution Summary

- A highly secure & lightweight endpoint OS
- Ease of use with a seamless End User Experience
- Can be highly encrypted – USB or filesystem partition
- Freedom of choice including BYOD – devices & peripherals
- Solution flexibility, works with: Citrix VDI, MS AVD / W365, MS Azure Stack HCI, VMware, AWS, Standalone PC etc.
- Certified compatibility & support for a large array of DWS – applications, hardware, vendors & solutions



Device & Peripheral Flexibility

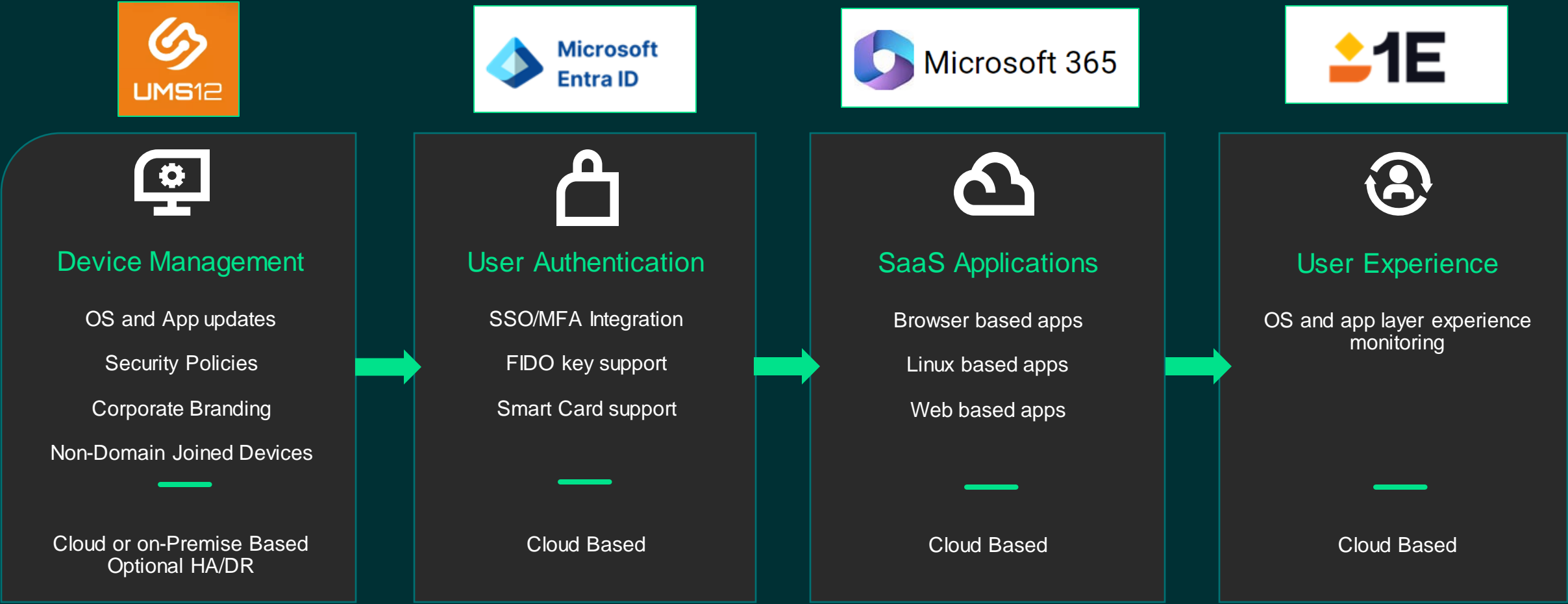


Additional Key Features:

- Read only OS, secure by design – IGEL Technology
- Minimal system requirements
- Rapid onboarding process (<5 mins)
- Quarterly firmware updates
- Local Teams/Zoom client for best performance collaboration experience without VDI
- Integrated secure remote control client
- Available installed direct from factory on new Lenovo/HP/LG devices.
- Recognised as a key partner in Microsoft's Windows 365/AVD strategy.

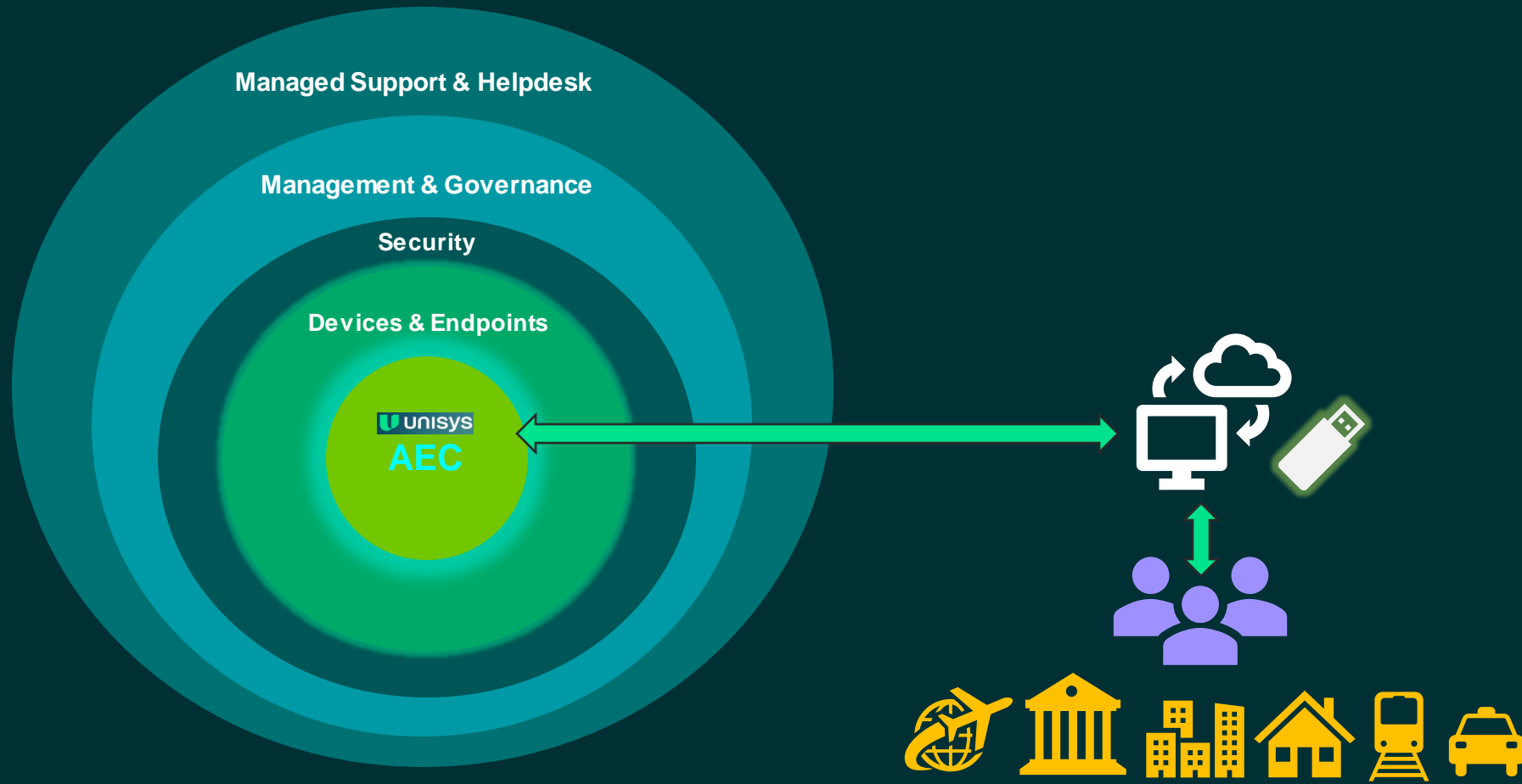


Key Solution Components – SaaS Scenario

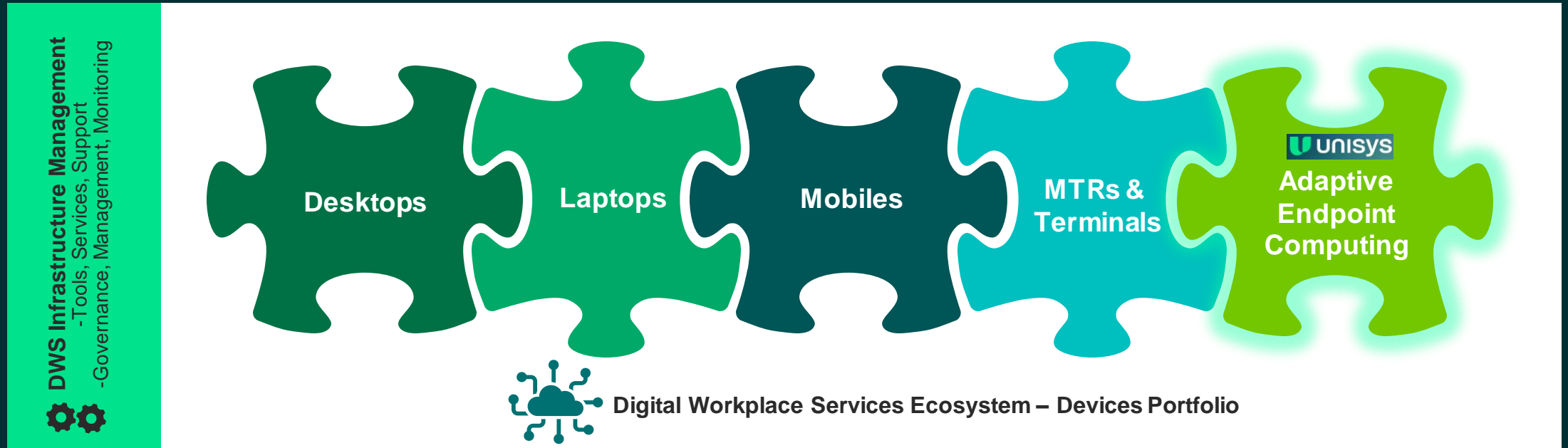


DWS Ecosystem Overview

This is how the Unisys solution integrates into a complex Digital Workplace Services environment



Placement Within The Digital Workplace Ecosystem



The Unisys innovative 'Adaptive Endpoint Computing' (AEC) solution is a perfect compliment to existing DWS ecosystems, key benefits include:

- Native integration with existing endpoint management & governance systems – such as SCCM, Active Directory, Intune
- No requirement for separate new toolsets for management & control of the AEC services
- Ability to leverage native / hybrid cloud or on-premises hosted virtual desktop environments, or operate as an individual localized corporate desktop endpoint
- Provides a secure endpoint option for the organisation, providing additional flexibility & freedom of choice for users



4 GB *(BoE 8GB Recommended, for best EUX with Apps)*

Memory

8 GB *(BoE 16GB+ Recommended, for best EUX with Apps)*

Any x86 64-Bit compatible

Processor

**8th Generation Intel
2nd Generation AMD
Ryzen**

N/A (read only OS)

TPM

TPM 2.0

2GB (USB or HDD)

Storage

64GB (HDD only)



Secure, high performance, highly flexible endpoint OS



AVD/W365/Citrix/VMWare Cloud VDI



Azure Stack HCI/Citrix/VMWare hybrid VDI infrastructure

Key Platform Integrations

Device Management



IGEL TECHNOLOGY
Microsoft Intune

User Authentication



Okta
Microsoft Entra ID
Yubico

Daas + Hybrid VDI



Windows 365
amazon WorkSpaces
Citrix™

User Experience



1E
ControlUp

