SOLUTION BRIEF

IGEL IN U.K.'S LOCAL GOVERNMENT

MODERNISE PUBLIC SECTOR IT WITH A SIMPLE, SMART, AND SECURE END USER COMPUTING APPROACH

Technology plays a central role in the completion of the tasks of many government departments in the United Kingdom, and the challenges that public sector IT teams face in delivering secure and cost-effective desktop computing infrastructure have never been greater.

Authorities face constant budgetary pressure to do more with less. Meanwhile, the challenges of balancing legacy technologies with new computing requirements are always growing. Adding to this challenge is the fact that security must be a central consideration at every level of public sector administration IT stack.

Virtual Desktop Infrastructure and Desktop-as-a-Service in Government

Virtual desktops and applications are widely used within the local government. Regional councils and local government departments were among the first organisations to recognise the operational efficiency and security advantages of executing desktops delivered from highly controlled data center environments using technology from vendors like Citrix, VMware, Amazon, and Microsoft.

Centralised desktop execution gives authorities' personnel access to the IT resources they need while avoiding storage of sensitive data on endpoint devices that are much more challenging to secure. However, virtual desktop infrastructure (VDI) requires a substantial investment in on-premises data center equipment that must also be maintained and upgraded over time. This is leading many IT teams in government institutions to explore new cloud-based desktop-as-a-service (DaaS) approaches like Amazon WorkSpaces, or Windows Virtual Desktop, which can be run in the Government Cloud, also referred to as G-Cloud, a U.K. government program to promote government-wide adoption of cloud computing.

VDI and DaaS Benefits and Challenges

In addition to limiting the distribution and storage of sensitive information, adopting VDI or DaaS can also significantly reduce governement departments endpoint device management complexity, cost, and risk.

Replacing Microsoft Windows on the endpoint with a lightweight and secure edge operating system can greatly reduce operational costs and security risk. It can also vastly reduce endpoint hardware costs by delaying endpoint device "refresh" cycles.

However, many efforts to deploy non-Windows endpoints encounter obstacles in demanding govenment IT environments, including:

- Insufficient security controls
- Incompatibility with specialized government peripherals
- Lack of support for required authentication workflows
- Incompatibility with G-Cloud
- Non-compliance with U.K. data storage and privacy requirements

Simplify and Secure VDI and DaaS with IGEL

IGEL combines a lightweight, software-defined endpoint operating system called IGEL OS with powerful, centralized management to enable secure, high-performance VDI or DaaS. IGEL helps public institutions using VDI and/or DaaS to fully realize the promise of simpler and more secure access to cloud workspaces with software-defined endpoints that are:

- Simple to manage and highly scalable
- Enabled with a wide range of remote desktop protocols, including Citrix, VMware, Microsoft RDP and WVD, and Amazon WorkSpaces (PCoIP)
- Secured to U.K. government standards
- Capable of supporting a vast range of peripherals, including specialized peripherals and authentication workflows (SIPR Tokens/CAC/PIV/RSA)
- Compatible with a broad range of PC, laptop, and thin client hardware

Efficient and Reliable Management

IGEL OS was purpose-built for remote management and has a much smaller footprint than a traditional operating system. Any required firmware updates are delivered in a fast and ultra-reliable manner using an efficient "buddy update" approach that reduces the impact of bandwidth bottlenecks. This includes devices in controlled government environments, as well as remotely deployed devices, which are seamlessly provisioned and updated through the IGEL Cloud Gateway (ICG). In fact, even off-network remote endpoint devices can be securely shadowed for support and help desk purposes using the ICG technology.

IGEL Universal Management Suite (UMS) makes it simple and efficient for IT to manage up to tens of thousands of endpoints from a single console. UMS works in concert with IGEL OS to give IT teams precise, centralized control over how endpoints are configured and which features and customizations are available to government personnel, by policy.

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Extensive VDI and DaaS Vendor Interoperability

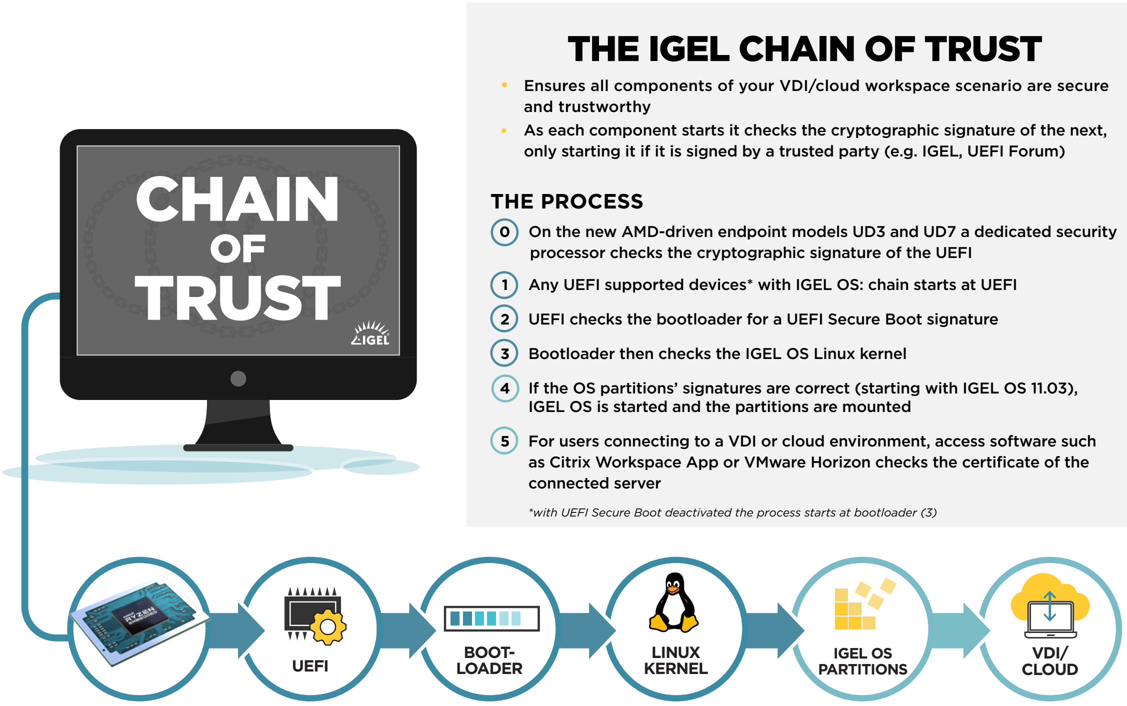
IGEL OS features over 100 integrations with desktop computing technology partners. This includes support for all major remote desktop clients, including Citrix, VMware, and Microsoft RDP/ RemoteFX. IGEL OS also supports traffic offloading to the endpoint for unified communication tools like Zoom, Microsoft Teams, Cisco WebEx Meeting & Teams, Jabra, and Avaya.

IGEL also partners with leading desktop performance and user experience testing and optimization technology providers, including Lakeside Software, Liquidware, and LoginVSI.

Secured to U.K Government Standards

Security is central to IGEL's software design and development. This gives IT teams in U.K. governemnt institutions the flexibility to enable required functionality while keeping the device attack surface as small as possible.

IGEL is also unique among end user computing hardware and software providers by offering a "complete chain of trust" from the endpoint processor or UEFI process to the destination server/ cloud. The complete chain of trust involves each process in sequence to check the validity of the ensuing process before it allows that next process in the chain to proceed. Consider the following diagram:



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

0. On the new AMD-driven endpoint models UD3 and UD7 a dedicated security processor checks the cryptographic signature of the UEFI
1. Any UEFI supported devices* with IGEL OS: 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

**with UEFI Secure Boot deactivated the process starts at bootloader (3)*

IGEL OS features integrated encryption to ensure that any information that must remain persistent across device reboots is protected. IGEL also uses the Center for Internet Security (CIS) Workbench framework to benchmark and grade IGEL OS's security.

Compatible with Specialized Peripherals and Workflows

IGEL OS supports many specialized peripherals and end-user workflows required by government agencies. This includes Common Access Cards (CAC) with Personal Identity Verification, SIPR tokens, as well as tokens from a wide range of commercial vendors. Smart card support can be delivered through direct integration with licensed HID ActivClient middleware or using open source alternatives like OpenSC.

In addition to standard authentication, IGEL supports more advanced workflows that include multiple smart cards for access to a range of environments or segmentation of administrative privileges.

IGEL OS also includes support for specialized, security-focused peripherals such as Cherry keyboard encryption, wherein the Cherry keyboard can authenticate itself with a certificate and the key transmission is encrypted. This renders hardware key loggers useless and because the standard keyboard channel is locked, BadUSB attacks cannot be carried out on it.

Designed to Minimize Procurement Costs

IGEL's endpoint management approach is designed to help IT teams in the public sector adopt new desktop technologies while extending the life of existing hardware. IGEL's Workspace Edition software and UD Pocket USB boot option make it easy to convert devices to IGEL OS and run IGEL OS on legacy hardware, deferring costly hardware upgrades.

IGEL's Workspace Edition software license is perpetual and hence portable, providing the flexibility to leverage past license investments on new hardware by simply reassigning them through an easy-to-use web-based portal.

IGEL's flexible and secure approach supports specialized use cases that span both classified and unclassified networks and include a broad range of specialized hardware, peripherals, and security requirements. Custom partitions enable new specialized government interfaces and protocols to be rapidly supported by IGEL OS without necessarily waiting for the next release of the software.

U.K.s public administration installations must adhere to a variety of stringent, targeted security and data protection requirements, while still giving government workers the freedom and flexibility to work where and as they wish. This classic "push-pull" of end user freedom vs. IT control creates a dilemma for many government installations. As a software defined, platform-independent endpoint OS, IGEL OS has emerged as the endpoint OS of choice, given its extremely small attack surface and the ease at which it can be deployed, scaled, managed, and maintained.

For government installations, the next-gen edge OS for cloud workspaces from IGEL is the best way to quickly and adaptively satisfy the needs of end users and IT staff.

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IGEL
next-gen EDGE OS
for cloud workspaces