



SOLUTION BRIEF

WHAT CHIP SHORTAGE?

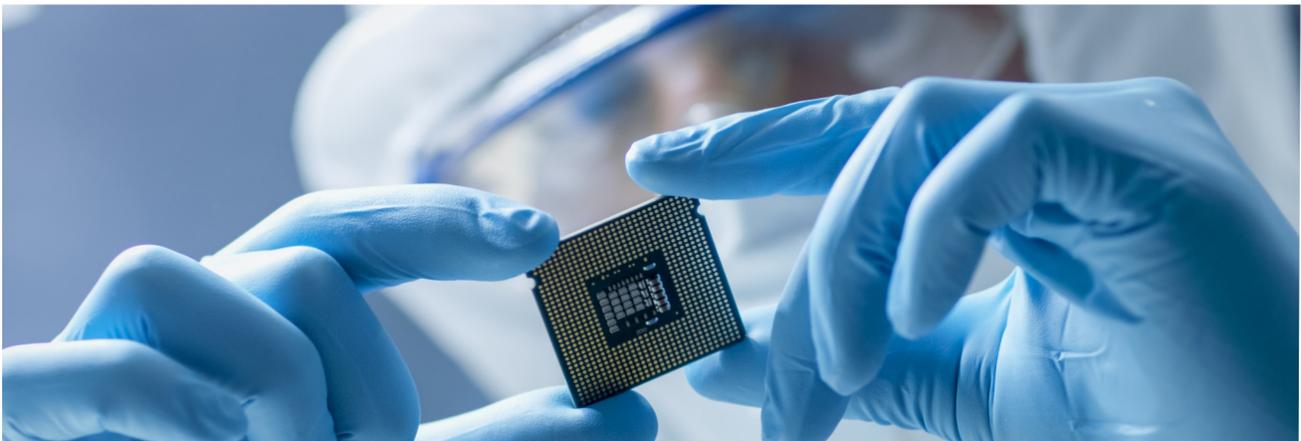
WHY ORGANIZATIONS USING IGEL OS DON'T HAVE TO BE CONCERNED ABOUT CHIP SHORTAGES

The last half-year has seen continuous news and reports on the global chip shortage crisis, with no end in sight. Coupled with pervasive supply chain challenges, leading chip manufacturers such as Intel, AMD and TSMC (Taiwan Semiconductor Manufacturing Co.) have stated they don't expect the situation to improve until sometime in 2023, at best.



We're in the worst of it now; every quarter next year, we'll get incrementally better, but they're not going to have supply-demand balance until 2023."

Pat Gelsinger, CEO AT INTEL¹



Why is this pervasive chip shortage happening now?

A six-decade-old invention, the lowly chip, has evolved from little-understood workhorse in powerful computers to the most crucial and expensive component under the hood of modern gadgets, from hand-held smart phones to home appliances to every new automobile to all the servers powering the Internet.

¹ <https://www.cnbc.com/2021/10/21/intel-intc-earnings-q3-2021.html>

Chips, also known as semiconductors or microchips, are built into every conceivable electronic device. First and foremost, the automotive industry, the IT sector with PCs, laptops, and servers come to mind. But even game consoles, cell phones, refrigerators and washing machines no longer run without chips these days. Frequently forgotten in this list are payment cards, passports, even e-cigarettes! Almost everything now being built in today's world that consumes power includes chips as the critical "engine".

So why the sudden shortage?

While capacity in the industry has always had its ups and downs, the scale of the 2021 shortage was exceptional.

The current Corona virus pandemic has thrown chip production into considerable disarray. Production lines were suddenly at a standstill due to various lockdowns. Automotive manufacturers in particular have therefore reduced their forecast and ordered fewer chips. However, interest in cars rose again much more quickly than had been assumed. At the same time, manufacturers of communications and consumer electronics demanded more chips, which were in greater demand than ever during the crisis. The pandemic caused an explosion in demand for devices. People were using more tablets, phones, and other streaming devices at home than ever before, and the demand far exceeded manufacturers' capabilities. And more time at home also meant more spending on home entertainment, such as TVs and game consoles.

Work-from-home and homeschooling also raised demand for additional or new PCs, laptops, tablets, or smartphones, especially with the sharp rise of unified communications tools like Zoom and Teams, and the change to the new 5G transmission standard.

“**The pandemic has just taken demand to a new level.**”

Lisa Su, CEO AT AMD²

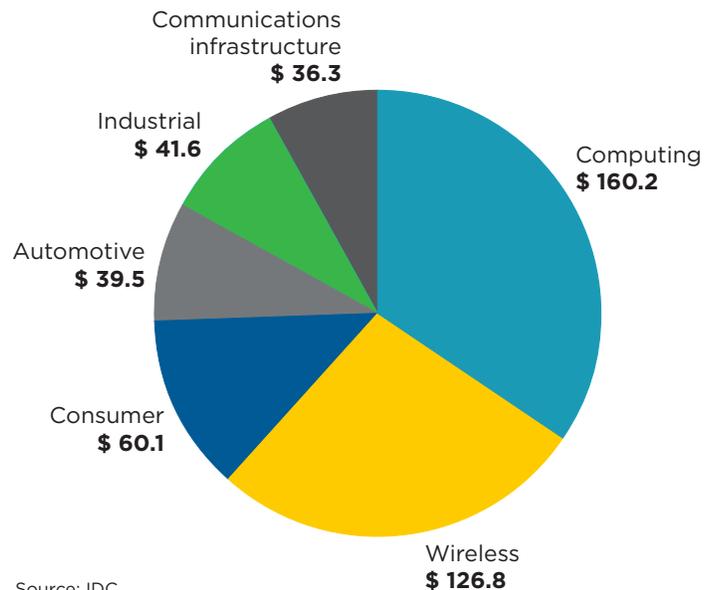
Other events have held back supply, such as fires in factories (e.g., at Renesas, a chip-supplier for the car industry), worker shortages, and the transportation blockage at the Suez Canal.

Impacts on nearly all business around the world

Many enterprises are currently facing the situation of having to replace old endpoint hardware with new: their existing PCs and laptops have reached the end of their life, with performance that is becoming far from sufficient, and a resulting decline in end-user experience.

CHIP DEMAND BY REVENUE IN 2020

(U.S. \$ billions)



Source: IDC

² <https://www.cnn.com/2021/09/27/amd-ceo-lisa-su-says-chip-shortage-likely-to-end-next-year.html>



Looming on the horizon is the eventual move to Windows 11. Unfortunately, Microsoft's latest operating system only runs on endpoints equipped with a Trusted Platform Module (TPM) chip, along with some other hardware-related restrictions. This presents a dilemma for many companies with older-generation endpoint hardware planning to upgrade to Windows 11.

The fast and simple endpoint solution to the global chip shortage: IGEL OS

Many IT organizations are facing tight budgets which can constrain their ability to equip all of their end-users with new hardware. The current chip shortage makes the challenge even more daunting. But there is an easy solution.

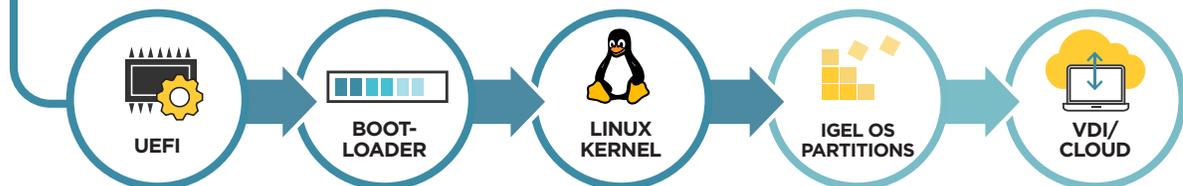
Don't worry about replacing your existing, potentially obsolete endpoint devices. Revive and rejuvenate them with IGEL OS instead!

IGEL OS, the next-gen edge operating system for digital workspaces, turns any compatible x86-64 device, regardless of manufacturer or form factor, into a secure, more powerful, and more efficient endpoint. It allows access to cloud solutions, DaaS, or other VDI solutions in a secure, cost-effective, and user-friendly way for both end-users and IT staff.

By moving Windows into the cloud or a data center with technologies from the likes of Citrix, VMware, Microsoft and AWS and replacing with IGEL OS, the CPU power and RAM of the endpoint device immediately become more than sufficient.

Compelling reasons for a move to IGEL OS:

- The combined benefits of IGEL OS and digital workspaces yield substantial cost savings on an ongoing basis. Fast and error-free updates, simpler technical support with a sharp decline in trouble tickets, elimination of remote Windows updating and patching, and lower overall endpoint software licensing costs cut recurring endpoint management costs by more than 50%.
- When you combine hardware refresh avoidance or deferment with lower deployment and ongoing management costs, overall endpoint TCO is reduced by 66 percent.
- The reuse of existing Windows PCs and laptops as IGEL OS-powered endpoints rather than purchasing new, reduces carbon footprint by 60%. Energy efficiency is improved by between 22-49%, depending on solution and approach .
- Running Windows in the data center or cloud rather than on PCs greatly reduces deployment and management complexity while improving endpoint security.
- IGEL OS is easily installed in minutes and the endpoint management platform can scale to manage up to 300,000 IGEL OS-powered endpoints, all managed from the world's leading virtual endpoint device management system - the IGEL Universal Management Suite (UMS).
- IGEL OS is based on Linux, read-only, modular, and includes a complete "chain of trust" system integrity verification process from the processor or UEFI all the way to the host server or cloud. It is thus extremely resistant to manipulation, as well as viruses and other malware.



THE IGEL CHAIN OF TRUST

- Ensures all components of a 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).
- If a failure condition at any step is detected, the end-user is alerted, and IT can take appropriate action.

THE PROCESS

- 1 The software-related IGEL Chain of Trust 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, IGEL OS* is started, and the partitions are mounted.
- 5 For users connecting to a VDI or cloud environment, access software checks the certificate of the connected server.

* IGEL OS 11.03 or later

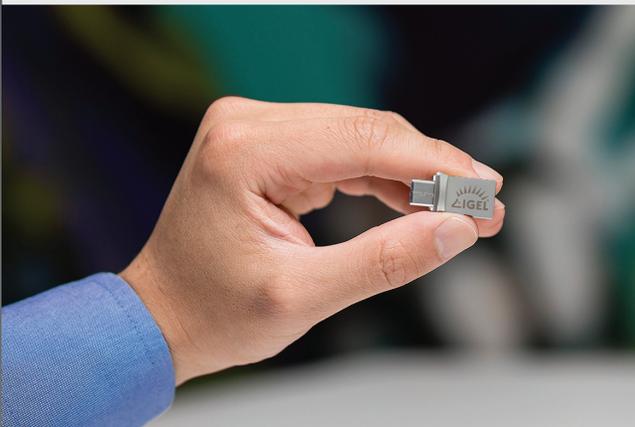
IGEL offers all essential components needed to enable enterprises to defy chip shortages while saving money.

IGEL OS

The platform-independent Linux-based next-gen endpoint operating system designed for simple, smart, and secure access to digital workspaces, IGEL OS allows access to cloud services, server-based computing applications, or virtual desktops, runs on any compatible x86-64 endpoint, and can extend its productive life by multiple years. In some cases, by many years.

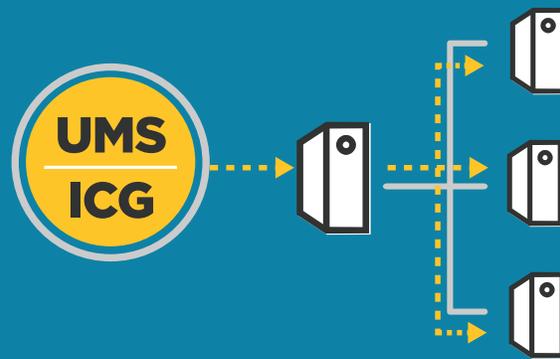
IGEL UD Pocket

A portable and powerful USB pluggable endpoint solution that is no larger than a paper clip, the UD Pocket and UD Pocket2 are essentially “IGEL OS on a stick” and offer secure high performance for remote and mobile workers. With the UD Pocket, IGEL OS boots from an available USB port on a PC, laptop, or any compatible x86-64 CPU-based endpoint device.



Universal Management Suite (UMS)

A single management and control solution for just a few to up to 300,000 distributed IGEL OS-powered endpoint devices. Extremely easy to use and purpose-built to simplify complex enterprise environments, UMS supports diverse operating systems, databases, and directories. The UMS server can be located on the corporate network or in the cloud.



IGEL Cloud Gateway (ICG)

Enables full UMS management and control of IGEL OS-powered endpoints located “off-network” in remote locations including home offices, remote campuses, or for mobile “road warrior” workers. It extends the reach of UMS without requiring a separate VPN connection to ensure strong management and control of all your IGEL OS-powered endpoints, regardless of their location.

IGEL OS keeps end-users productive and happy by delivering a great user experience. It offers improved performance given its lightweight architecture and lack of “overhead”. IGEL OS stays current with the latest releases of VDI client software from Citrix, VMware, AVD, AWS, and others. It also supports the latest available Linux clients for all the primary unified communications software including MS Teams, Zoom, WebEx, and others. Being extremely efficient per device CPU and memory resources, IGEL OS offers a performance boost compared to Windows for a variety of demanding workloads.

IGEL has emerged as an ideal endpoint OS partner over the last challenging two years. IGEL customers benefit from a unified, coordinated end-user computing solution that enables secure and productive work with a wide range of media and performance requirements from anywhere - quickly and easily. With an emphasis on security, performance, and efficiency, IGEL delivers a great user experience for end-users while giving both IT administrators and the CFO peace of mind!

Download IGEL Workspace Edition to Get Started Today

Are you ready to enjoy all the benefits of cloud services and DaaS reached by your own lean and green endpoints? [Download IGEL Workspace Edition for free](#) to experience the simplest, most cost-effective, and most secure way to deliver Windows desktops to your users.

Your IGEL Workspace Edition download will include 3 IGEL OS licenses and complete access to IGEL Universal Management Suite for management, all of which are free to use for up to 90 days.