
Achieving workplace simplicity and agility with secure, high-performance alternative clients

How Intel-powered Chrome OS Devices are enabling simplicity and choice for “anywhere work” through Atos Digital Workplace services



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One way that flexibility has enabled tomorrow's workplace experience is through the increasing use of cloud services to deliver employee productivity and collaboration solutions.

These services have borne a new demand to work, not only from anywhere, but from any device. This began as a move toward flexibility when accessing work tools and data from personal Windows and macOS PCs, and proliferated when Android and iOS mobile devices put communications, collaboration and even company applications in the palm of your hand.

Around that same time (2011 to be specific), Google released something completely new. Inspired by the simplicity of the mobile device experience, leveraging the underpinnings of the Linux kernel, and banking on the ubiquity and extensibility of their Chrome web browser, Google introduced Chrome OS.

At first, Chrome OS wasn't viewed as a serious contender for enterprise use, but Google found a market in organizations that leverage a heavy complement of web-based applications, and for personal use. That market grew largely because Chrome OS requires far fewer system resources than Windows, and can deliver a great user experience on hardware at lower price points. OEMs such as HP, Acer and Dell quickly produced devices for the consumer market and the Chromebook and Chromebox were born. Google also maintained Chrome OS as an open-source project under the same moniker as its browser derivative: Chromium OS. This allowed for community input on the project of hobbyists, enthusiasts and developers sprang up, and it allowed for technology partner integration at the development team level.

Even from the early days, Google took steps to create a new kind of governance around the approved devices that would work with Chrome OS. Since the new operating system was based on open-source Linux in the form of the Chromium OS project, compatibility existed for a wide range of x86, x64, and ARM device platforms. This diversity would come to be a strength for the platform, allowing it to flourish on many form factors and device types. However, Google had the foresight to recognize that it could also be a point of risk, both from a security and experience perspective. A certification program was developed to counter this risk, ensuring that every Chrome OS device created, developed and released would be based on an approved, certified design with Google controlling not only the Chrome OS experience, but the software feature set and update lifecycle.

Every OEM interested in creating a Chrome OS device would need to certify the device with Google to receive Chrome OS-specific EFI flashes and Chrome OS factory installation ability. This ensured that the Linux underpinnings of Chrome OS have the right compiled drivers for a given hardware design, including the appropriate Wi-Fi, mobile broadband and chipset-specific features. It also guarantees that the design can be maintained with updates for the given period of guaranteed updates to Chrome OS on a device.

This "closed" approach ensures that devices running Chrome OS are certified and trustworthy and that no third-party components or drivers are ever present on Chrome OS devices. This certification process creates an unprecedented level of trust in the platform. One of the benefits of this approach is that third-party drivers are nonexistent in the Chrome OS ecosystem, and updates are only administered as part of the operating system update cycle, which is based on an incremental build process. This provides a non-disruptive method for device updates, in which the user is only impacted during the first restart of the device after an update. Most incremental updates take only a few minutes to execute, which stands in stark contrast to the competing capabilities in some other platforms.

Over the course of the next eight years, Google continued to iterate and innovate on the platform, always striking a balance between simplicity with the advent of new capabilities, while maintaining the core tenet of trust and security of the base OS and browser. Today, Chrome OS offers a highly stable and simple browser-based experience that can be extended by applications from the Google Play Store. They have the ability to harness the operating system's Linux subsystem, allowing for containerized Linux sessions to be created to run Linux apps or develop Linux-specific applications or micro-services. This lends the platform to a new audience: the developers and enthusiasts that once derided the platform for its lack of customization and extensibility.

Enhancements to the back end of the platform also took place. Google developed a mobile device management-like framework known as Google Admin Console for applying policy, configuration and standard applications and ensuring corporate/institutional ownership of the devices. With the Chrome Enterprise Upgrade and the Google Admin Console, organizations can deploy Chrome OS devices with the same levels of manageability and control that other enterprise-level platforms provide, while still delivering a simple, consistent user experience on many different form factors and device types (as well as price points) to meet user needs.



Mike Harm
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Many enterprises are revisiting their workplace platform strategies in light of the revolution triggered by the pandemic response of 2020.

While some organizations are still looking to grow their remote capabilities as part of their business continuity plan, others are embracing the remote work scenario as a new high-value element of their employee engagement strategy. It's safe to say that many organizations will come out of this pandemic response looking very different from a real estate and work style point-of-view.

Atos recognizes this shift in work styles as part of a new normal. While employers look at ways to keep productivity high and employees safe, remote options are critical. What many companies realized during this forced transition is that there are roles that flourish in this mode, and capabilities that are more fully realized from both an IT value and an efficiency perspective versus traditional in-office use cases. Atos has helped hundreds of workplace clients realize

the necessary platform transformations and embrace new security paradigms to achieve remote work capability that often exceeds the employee experience of the traditional approach.

As clients move to a distributed, cloud-first way of working, new work styles emerge where employees can virtually work from anywhere and on many new platforms (and new devices), enabling users to take advantage of the unique capabilities of those platforms. We call this **anywhere work** and it has been part of the Atos transformation vision for years.

The Atos Digital Workplace is a set of capabilities that enable choice, flexibility, security and maximum productivity, while still acting as a vehicle for efficiency in both spending and sustainability.

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We also thank the Chrome Enterprise Marketing Team from Google for their valuable support and contributions.

Solving the IT needs of large enterprises

As the Chrome Enterprise platform makes its way into larger enterprises, new requirements emerge.

While end users have been disrupting the workplace with personal, consumer-grade devices for years, in order to ensure serviceability and maintenance costs, IT organizations in medium to large enterprises need a solution that offers both high performance and high serviceability. In the past year, devices that meet durability standards and have high repairability have appeared on the market from most major hardware manufacturers. These new enterprise-grade devices are largely based on the Intel Core platform and are derivative of their existing Windows-based counterparts. There are several reasons why this commonality should exist:

Peripheral commonality

The ability to share existing investments in adapters, power cords, docking station, and other device-specific accessories with the existing estate.

Repairability

The modular nature of enterprise desktops and laptops allows for in-field repair and refurbishment as part of a device's standard duty cycle, without costly or non-sustainable practices like shipping and exchange services.

The performance of these new Core platform-based Chromebooks is unprecedented. With the growing capabilities of Chrome OS, additional demands can be put on a device if a user wishes to run Chrome browser-based applications, Android apps from the Play Store and Linux containers using the built-in Linux app integration. These new capabilities change the demands on an operating system designed to run on even the simplest of hardware, but the Intel-based enterprise devices more than meet the challenge. They deliver the simplicity of the Chrome OS user experience, but on premium hardware with premium displays, improved graphics and compute performance and offer compatibility with the rest of the fleet.

Proven partnership

Intel has been a large contributor to the Chrome Enterprise and Chromium projects, working closely with hardware OEMs on the certification process and working with Google to ensure that trusted device designs are certified and standardized where possible.

Proven performance

The Intel Core platform and the existing stable of OEM hardware on the market is proven from a stability and performance point-of-view. Intel continues to lead in the enterprise desktop and portables market, and with each generation, the Core platform continues to improve compute and media performance, battery life and security.

New products helping meet new demand

As mentioned above, enterprises are seeing constant demand from business teams seeking new ways of working, and IT organizations are investigating alternative platforms to meet this demand.

Atos is helping clients move their workplace experience almost entirely to the cloud, through Software-as-a-Service (SaaS) tools for productivity, communication, real-time collaboration and even business applications.

As companies make this move to next-generation productivity platforms, many have chosen to try a more progressive approach with Google Workspace (formerly G Suite). Centered around simplicity and always-connected design, Google Workspace provides the tools necessary for medium and large enterprises to create a culture of collaboration. With the web-centric design of Google Workspace and the integrations between Google Workspace and Chrome Enterprise, Chrome OS devices are a natural fit for these organizations to investigate as part of their device strategy.

Chrome OS has mastered productivity use cases with Google Workspace, but also supports creative and developer workflows when bundled with either local or streaming application and desktop virtualization. As of November 2020, Chrome OS supports full integration with Parallels Desktop for local application, and full on-device desktop virtualization for Windows 10 or Linux. Intel's VT-X and VT-D extensions built into the Core platform are prepared for this new capability, and Chromebooks based on 8th or 10th-generation Core platforms have the performance and feature set to securely deliver an excellent experience with this new capability.

Microsoft has pushed for a similar always-connected, cloud-first productivity approach with Microsoft 365 (formerly Office 365) and offers both web-based and full client versions of most of its products for Windows

and macOS. Client software for Chrome OS is limited to the web versions of these applications and services as well as Android versions of certain Office applications, but Microsoft continues to focus on their browser-based M365 experience and the ability to be productive in browser or mobile app-only scenarios.

Some Atos clients are taking the Microsoft 365 journey, but are interested in the simplicity of Chrome OS as a managed platform for certain use cases, including:

- Kiosks and shared devices for front-line workers or B2C customers
- Non-PC users that need access to basic productivity apps throughout the day from shared devices
- VDI users that primarily access a remote desktop for their daily work, but need a local device for consuming the virtual desktop
- Alternatives for thin client devices which require separate management and licensing and significant configuration
- Secondary devices for desktop-based users for use as a productivity console or a remote terminal for their in-office desktop

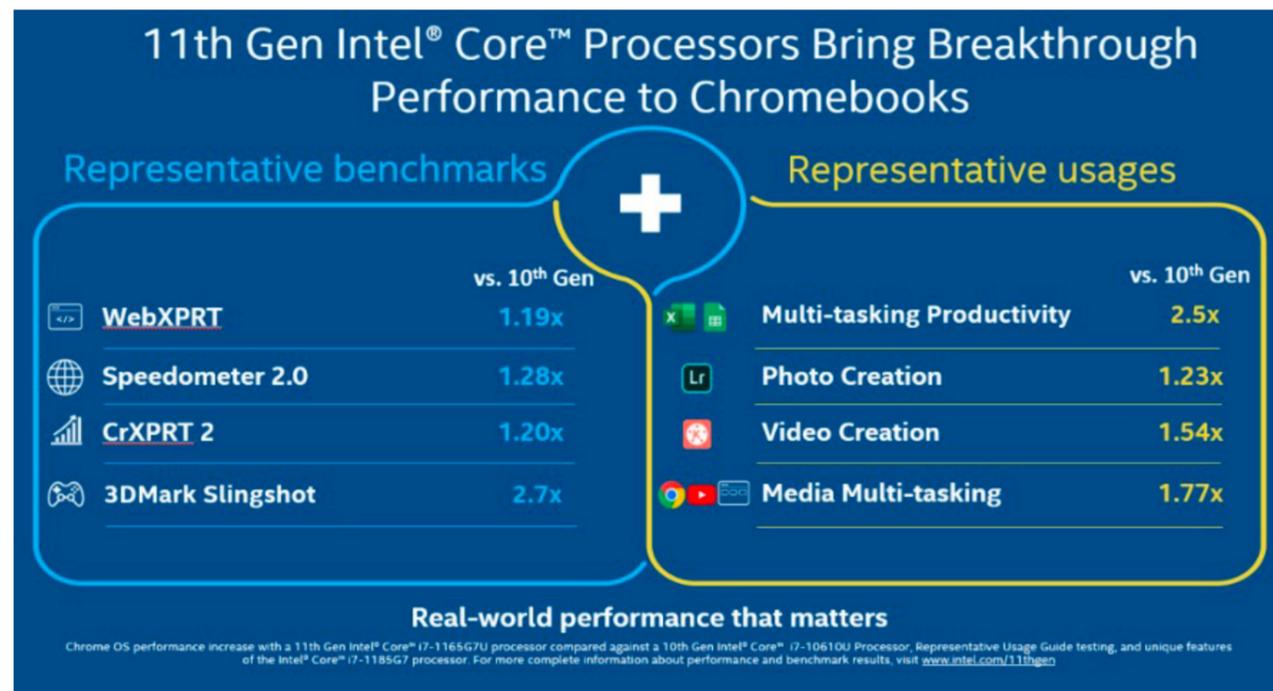
These are just a few examples of how even non-Google workspace clients are looking to take advantage of the high-security, low maintenance design of Chrome OS to create great end-user experiences.

Where do we go from here?

Atos and Maven Wave are dedicated to integrating technology that transforms the employee experience for your organization. We offer specialized solutions that leverage our capabilities based on your organizational, security and user persona requirements. We can work with your stakeholders to develop an integration strategy that includes:

- The right devices for your users based on persona
- The right productivity platform and the means to move your organization to new ways of working
- Support services that transform employee engagement with IT
- Ongoing maintenance of platforms and their supporting tools
- Advanced analytics to enhance how you measure and report on employee engagement to ensure productivity across your organization

Find more information about Atos [here](#).





About Atos

Atos is a global leader in digital transformation with 110,000 employees in 73 countries and annual revenue of € 12 billion. European number one in Cloud, Cybersecurity and High-Performance Computing, the Group provides end-to-end Orchestrated Hybrid Cloud, Big Data, Business Applications and Digital Workplace solutions. The Group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and operates under the brands Atos, Atos|Syntel, and Unify. Atos is a SE (Societas Europaea), listed on the CAC40 Paris stock index.

The purpose of Atos is to help design the future of the information space. Its expertise and services support the development of knowledge, education and research in a multicultural approach and contribute to the development of scientific and technological excellence. Across the world, the Group enables its customers and employees, and members of societies at large to live, work and develop sustainably, in a safe and secure information space.

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Let's start a discussion together



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