Business White Paper

Edge Connected Operating System

Just enough operating system for a virtualized environment.

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Executive Summary

One of the key megatrends impacting the overall industry is virtualization and the cloud. To some degree cloud is becoming an enabler for accelerated innovation (just one of the megatrends). End users are demanding the consumerization of IT, less dependence on IT for local applications, and more flexibility for device choice (CYOD/BYOD).

From an IT perspective, the number of decision points required to migrate to the cloud is daunting. Hence, naming conventions are becoming more descriptive. The *Edge* is the new term for "cloud". The advancement in cloud technologies, network performance and overall access to the internet has driven more corporations to drive their data access to the cloud.

Edge computing isn't a new term, but the definition is evolving into many things. It can be defined as a VPN hosted infrastructure in which devices are permitted to connect though authorization. One could also define edge computing as a host of data applications that can be accessed via a web browser on any operating system (OS).

This White Paper takes a much different look at the term *Edge* in the context of a device operating system or access OS running on any x86 platform.

Edge implies more than a naming convention but a leading technology, and a business, not solely a technology focus.

Background

The IT world is designed around a Microsoft Centric ecosystem. From office-based applications to x86 hardware, designed to support certain versions of Microsoft Windows® operating system (OS). These solutions drive rapid lifecycle changes on hardware to ensure they can support their user base as well as receive support from their hardware vendors of choice.

What Cloud computing brings to the table is a challenge to any end point device centric operating system, whether Microsoft®, Android™, Linux® or other new (and perhaps as yet unknown operating system).

The real question is – *Is a traditional operating system needed on x86 platforms with cloud-based productivity applications, cloud solutions for desktop virtualization?*

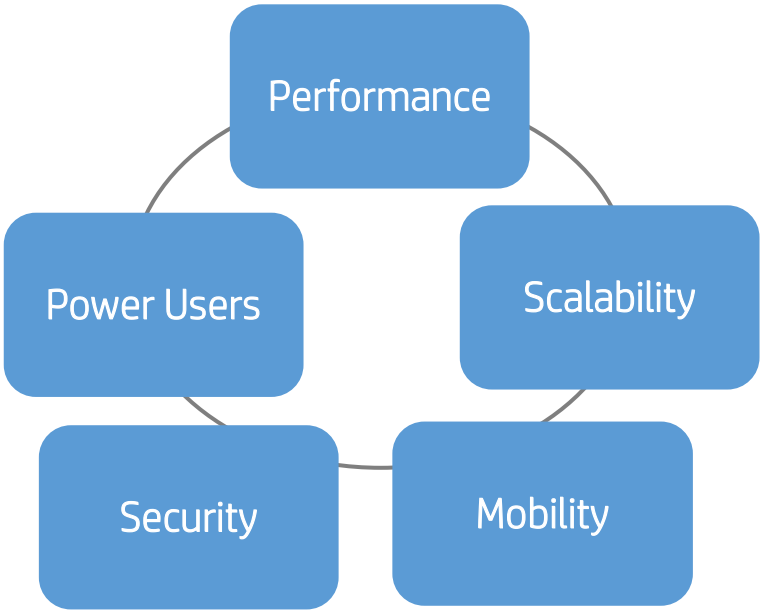
The *Edge* defined OS concept delivers the access capabilities of any full OS, but simplifies the need of configurations, security, and manageability with all the same tools to access any given environment in which data is hosted and represents the future of next gen operating systems.

Drivers

Solutions for the End User Computer (EUC) must be designed to the 5 pillars of user compute. These pillars represent the focus on the balance between the requirements of IT, the requirements of the end user, and the trends in client computing

- Performance
  - The solution must deliver solid performance and provide access to needed applications
- Scalability
  - Each solution must scale and be turnkey
- Mobile
  - Each solution must be agile to the always moving worker
    - Physically support the mobile peripherals like docking stations
    - Mobile in the ability to work on most devices
- Secure
  - The solution must protect the data and the user consuming said data

- Power User
    - Flexibility to meet all users' needs in the enterprise without compromise



PC lifecycle is another core driving factor for an *Edge* based operating system (OS). IT budgets today are more focused on infrastructure consolidation, management, and security practices. Saving dollars on desktop hardware replacement or simply prolonging the replacement allows for more capital investment in new technologies such as virtualization, cloud and edge computing.

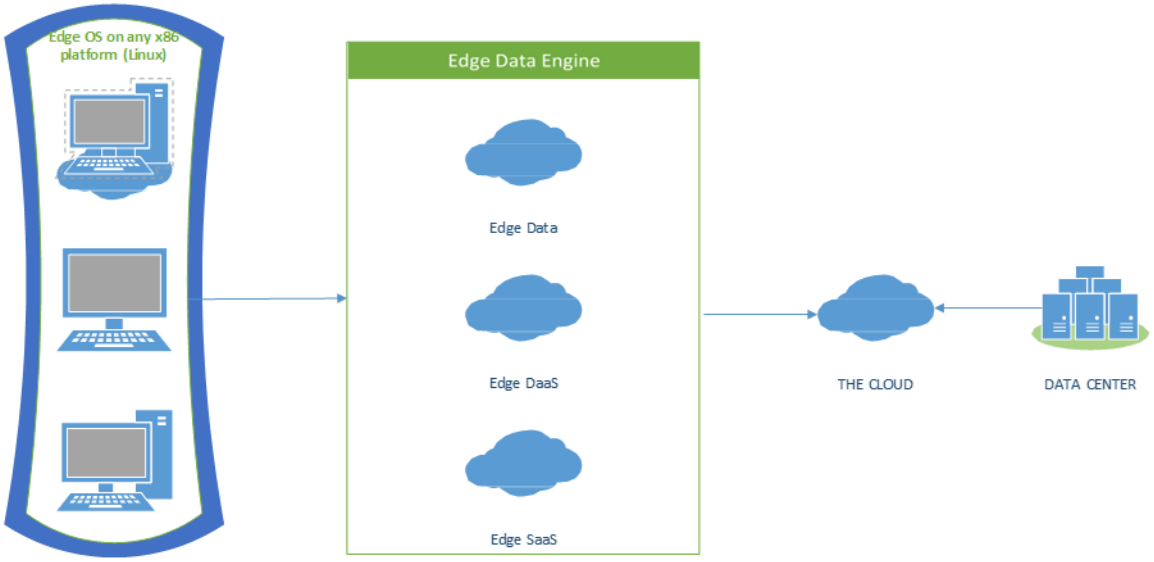
Every year, companies either upgrade their existing desktop computer environments due to application performance, constrained workloads and the need to upgrade to the next version of operating systems. There is a cost associated in maintaining a traditional compute environment with overhead of management.

The *Edge* OS

The *Edge* OS concept isn't new, but it has evolved.

It is the ability to connect to cloud-based solutions with a lightweight managed platform that delivers a seamless experience across devices. *Edge* operating systems, sometimes called "PC Repurposing Software" deliver a game changing solution that is not only cost effective for customers seeking a longer lifecycle on existing install base hardware but allows for easier adoption for thin based solutions. *Edge* operating systems also deliver a lesser of an attack footprint which brings a stronger security baseline.

Another way to think of an *Edge* operating environment is "just enough OS."



Experiences

Experience is the forefront of a successful EUC solution design. Closed Loop Lifecycle Planning© methodology defines user segmentation as the optimal alignment of device(s), cost, service level, risk, and applications. Segments are at the top of the hierarchy, and the hundreds of roles aggregate to the user segment. In this way, enterprises can manage larger groups of end users and provide entitlements and support based upon end user requirements.

Each user segment: Task Worker, Knowledge Worker, Power User and Executive User, all have defined attributes that must be met.

User Segment	Technology Use Case	Job Role	Technology
Task Worker	Remote Work, Productivity Applications, VOIP	Customer Services, Admins	Office 365, VMware®, Citrix®, VOIP
Knowledge Worker	Remote Work / Office Worker	Business User	Productivity Applications, VDI, Desktop Access
Power User	Office Worker / Traveler	Hybrid	Wireless, Mobile Endpoint, Applications
Executive User	Traveler	Mobile	Productivity Applications

Each user segment has a defined performance matrix and set of applications needed for job duties. Based on each user profile, the experience must be "PC" like, or an entitlement matrix.

Outcomes

Providing an option for a software (such as Linux® OS) delivered thin client solution not only allows us to lead with HP ThinPro as a differentiator (along with HP Device Manager support), it also drives extended revenue and margin relief for the business, by reducing the requirements for new incremental software, operating systems and devices.

This technology will provide migration opportunities to physical HP Thin Client hardware over time. It also reduces customers cost over time such as; end user licenses, simplified system management, extending useful life of current device and allow HP to partner with them as a true solution provider. Software provides flexibility and opportunity as it's a pure investment to the ecosystem of hardware.

This would also grow our HP Device Manager (HPDM) footprint to provide customers a true end-to-end solution stack for Client Virtualization. HP Device Manager (HPDM) is an enterprise level management tool that allows administrators to streamline, maintain, deploy, and update their client infrastructure wisely and efficiently.

The customer will also benefit from financial growth in a segment we currently do not play in today. We believe we could sell tens of thousands of seats of a Linux® based PC repurposing tool, which over time will grow hardware sales.

A Linux® based solution could be used to complement our existing HP Thin Client Conversion Suite software, but doesn't always solve the problems a customer is looking to solve with a repurposing solution; i.e. lower maintenance and usage simplification.

Summary

The *Edge* OS is the new defined platform for connectivity for customers looking to deploy Desktop as a Service (DaaS), Software as a Service (SaaS), and Cloud access in a single platform across multiple hardware platforms.

The single OS solution on any x86 platform brings a consumer experience utilizing a vendor agnostic-based architecture that every user can adapt to quickly.

Management would still be required but would be less frequent. In summary, the *Edge* OS will change the way we connect, access and secure our access devices in the future. The *Edge* OS again, is just enough operating system that doesn't require the level of management that a fully loaded endpoint operating system requires.

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