The Evolution of Microsoft and its Servers

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Throughout its history, Microsoft has always dominated the technological field with new creations, adaptations, and even groundbreaking ideas that took the world by storm since its founding on April 4th, 1975. Microsoft was founded by Bill Gates and Paul Allen in Albuquerque, New Mexico, and according to Macrotrends Microsoft's net worth as of now is estimated to be around $2149.77 billion (Microsoft Net Worth). However, it was not always so glamorous for Microsoft, and it was not until 1990 that Gates would unveil the topic this paper is discussing, the Windows Servers. There are many different versions of Microsoft Servers, over 40 different renditions, and in this paper, we will be discussing some of the most popular and successful servers that Windows has released to date, as well as delve into what made these servers as popular as they were and are today.

The first version of Windows that Microsoft released that really took the world by storm was the Windows NT Advanced Server, or simply Windows 3.1 (Cooper). This server, which was released on April 6th, 1992, is considered the server that paved the way for the successful company that we know today. According to Time Magazines, in its first three months of operation, the Windows 3.1 server sold over three million copies (McCracken). This server was considered revolutionary for multiple reasons, the first being that it could access the max memory of around 256 megabytes, compared to the maximum of the server before it, the Windows 3.0, which was a whopping 16 megabytes (Windows 3.1). This was Microsoft’s first big attempt at moving beyond from the operating system of DOS, or Disk Operating System, which was what introduced the many different features that we can recognize in the Windows Servers today. This Server, which also introduced many different innovations such as the Program Manager, File Manager, TrueType Fonts, Built-In Screensavers, etc. which were only

the tip of the iceberg for the many features that Microsoft unveiled (Windows 3.1). However, Windows 3.1 was not technically a “true” operating system such as the next server we will be talking about due to the installation. To even attempt to install this server, a customer would have to first install the compatible version of the MS-DOS, and then begin the whole setup by using the command line. Even booting into the Windows 3.1 server required the command of “/win” (Costa). However, the hype for this server would not last long, with the release of the next major version of its server, Windows 95.

Windows 95, often referred to as Windows 4.0, was the next major release in the Windows line of systems. Within the first year of release, this server itself reached up to an estimated forty million in sales (McCracken). This server, which was released on July 14th, 1995, was recognized as the successor to the Windows 3.1 Server and merged together the MS-DOS and the Microsoft Windows line of products (Cooper). Compared to the Windows 3.1 server, Windows 95 was actually considered a complete operating system due to it not having to run off of the MS-DOS environment after it completed its booting process. Just like its predecessor, it also introduced quite a few new features and was popular amongst its consumers. By eliminating the need for the MS-DOS, it overcame two huge limitations according to Techopedia, which was the eight character file names, and other such memory related problems that older Microsoft servers faced (Margaret). Other major features that were installed were features such as the desktop, shortcuts, and the recycle bin. The desktop introduced with the Windows 95 system was not like the system we are currently familiar with, but it was more like a file folder that contained other files (Margaret). However, one of the most important additions that came with the release of Windows 95 was the Microsoft Internet Information Services, or more commonly referred to as IIS, this addition is most likely known as one of the most popular

software that has ever been released, and it was not until 2018 that Microsoft passed Apache for the title of most popular (Contributor). Sadly, the release of Windows 95 marked the end of the "NT" brand of Microsoft servers, as Microsoft moved on to a different naming pattern with the release of the Windows 2000 Server.

Considering the change of the naming system, it is quite appropriate to delve into the next server that contributed further to the success of Microsoft as a company, which was the creation of the Windows Server 2000. Windows Server 2000 released and compared to the other servers, racked up an estimated one million sales in the first month alone (McCracken). As previously mentioned, Microsoft decided after its release to change the naming scheme to basically name their new servers after the year that these servers were released (Cooper). This release, like the other releases that we have discussed, also added features that were widely popular upon release. Some of these changes and features include options such as XML support, Active Server Pages creation, and finally the Active Directory, which was created and used for the purpose of user authentication (Contributor). With this release, Microsoft Windows also released the new concept of different tailored versions, such as the Advanced Server and the Datacenter Server (Cooper). The Active Directory is quite literally an improved version of the directory service, which made it easier to store and ultimately manage things like important data, files, and information on the network. The Active Directory also made it much easier for system administrators to set up features such as data encryption, file sharing, and VPN (Virtual Private Network) configurations. Windows Server 2000 was eventually replaced by the creation of Windows Server 2003, and with it came a plethora of new features and even a somewhat significant rewrite to Microsoft's server software (Contributor).

Not only did Microsoft unveil the release of Windows Server 2003, but it also released Windows Server 2003 R2. Before discussing 2003 R2, we must discuss the significant features that came about with the release of Windows 2003. With this release, Microsoft rewrote the server software which ultimately held the goal of reducing the need of rebooting the system by introducing the ability of installing different updates without having to restart the whole system entirely (Contributor). More features introduced with the release were Microsoft's updates to its security features, as it included the new .NET framework. The .NET framework, as described by Microsoft itself, is a software development framework that was made for building and running different applications on the Windows server. The framework included a variety of technologies for Linux, Windows, iOS, and even Android (Microsoft). While IIS was introduced in the Windows Server 2000, it was improved upon in the 2003 Server by disabling some of the features it was originally released with, to avoid the probability and opportunity to exploit characteristics of the IIS system (Windows Server). Referring back to the beginning of this paragraph, it was pointed out that not only was Windows Server 2003 released, but shortly thereafter another version was released, similarly named as Windows Server 2003 R2, or Release Two. While this may seem like a huge deal, this release was more or less and update to the original version, which added even more new features such as the Active Directory Federation Services, which was a way for system administrators to allow for users to use single sign on for applications that were outside of corporate network firewalls (Windows Server). It also gave the system administrators many different options in flexibility when they are managing different server permissions, such as the ability to include external devices for single sign ons, and the ability to disable by default the themes service (Cooper).

While Windows Server 2003 and 2003 R2 might have been replaced by Windows Server 2008, the next server that will be discussed is the Windows Server 2012 which marked a major transition in the technological field, with the addition of the cloud. The release by Microsoft was marketed with the Cloud OS, which ultimately ended with the inclusion of a feature that was released in Microsoft Server 2008, which was the Hyper-V. The importance of this addition is that it helped to shape the Cloud and its resources which also helped to update the storage system which was mediated by the newly added Hyper-V (Cooper). Windows Server 2012 came out in four different versions, Windows Server 2012 Essentials, Foundation, Standard, and Datacenter. As with other previous editions, Standard and Datacenter have most of the same features, but the difference as outlined in Plesk, is that the Standard version allows an organization to run more than one virtual machine, whereas if a consumer buys the license, under Datacenter the company can choose to run unlimited virtual machines (Windows Server). An important thing to note is that unlike the other versions, the Essentials edition was more targeted, or tailored, to help small businesses (Cooper). In the previous paragraph we discussed how Microsoft Server 2003 had a second update release, which was the 2003 R2, Windows Server 2012 also had a second release, also similarly named Windows Server 2012 R2. This update was released a year later, whereas the 2003 R2 version was released around two years later. The 2012 R2 version added changes and improvements to not only the functionality needed to help integrate the cloud services that was released with the original, but also rewrites that helped the security protocols and network services (Contributor).

Before we get into the more recent Microsoft Windows Servers that were released, Microsoft Server 2016 must be discussed. This server was released in a bundle with another different type of server, which was referred to as the Nano Server. The Nano Server was

described as a lightweight minimal server that had fewer interfaces, which made the server much harder to attack, and it also included the Server Core (Cooper). According to Plesk, this Nano Server was released around ninety-three percent smaller than other full server releases, this also helped the encryption to make sure that the whole system could not be compromised. Like with previous versions, the Virtual Machine systems, or VM systems, were added to aid with the Hyper-V encryption system (Cooper).

The last Microsoft Windows Server that will be discussed in this paper is the Windows Server 2019. This server was released in October of 2018, and was the latest version of Microsoft that added features such as Windows Admin Center, the Hyperconverged Infrastructure or HCI, and Windows Defender Advanced Threat Protection (Cooper). The Windows Admin Center is a server management utility that was not only designed for Windows 2019, but it was also created with backward compatibility to the Windows 2012 R2 server, and the Windows 2016 server. This added the ability to cover multiple servers and does not require the full version of the system, but also supports versions of the Nano and Server core versions (Cooper). The HCI has been something that Microsoft had been working on for a while, ever since the release of 2008 server, it included all of the VM improvements that have been discussed since the release. These features give the network administrators even more capabilities, such as the ability to manage services without taking down the network system, which would lead to delayed projects and maybe even anger by the consumers (Contributor). Finally, the last feature that will be discussed for the Windows 2019 server is the Microsoft Defender ATP. With the ever increasing need for cybersecurity, businesses and organizations become even more concerned for their servers against hackers and other malicious threats. With this addition of the Defender ATP, it works as a sort of way to help calm the nerves of these

businesses. The Microsoft ATP not only monitors accounts for suspicious activity, but it tracks user activity, prevents changes to files by unauthorized access, and most impressively, it automatically investigates attacks and provides options for remediation (Contributor). This is by far one of the most important additions to the Microsoft Windows Servers that have been discussed yet, and hopefully is something that Microsoft continues to improve upon in the future releases.

In conclusion, while Microsoft has not always been the Corporate Giant that the public perceives it as now, with the release of these and other Microsoft products and servers, it climbed its way to the top with the advanced features, systems, and options that Microsoft has released throughout the years. These Microsoft servers paved the way for other companies to make their own mark on the technological world, and with the way that the implementation of security and updates that Microsoft has worked on, it will continue to be one of the most popular companies on the market.

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