INTRODUCTION: A CLIENT SERVER NETWORK

In a business environment, you would expect to find a “Client Server Network” where the users’ computers (the clients) are connected to a server (or servers) in order to allow for file sharing, sharing of resources (such as printers), email, and centralized management and security. The client machines need a client operating system (such as Microsoft® Windows 10), and then any required client applications (such as Microsoft® Outlook®). Similarly, each server needs a server operating system (Windows Server®) and then any required server applications (such as Microsoft® SQL Server®).

This reference card is not a complete list of all the Microsoft technologies, but just the more common ones, and unless otherwise stated, you can assume that each license is a separate purchase. More detailed licensing information is available in other reference documents in this series.

CLIENT OPERATING SYSTEMS

Windows 10 is the latest version of Microsoft’s client operating system, replacing Windows 8.1 and Windows 7. There are several editions of Windows 10. Businesses would normally use either Windows 10 Pro or Windows 10 Enterprise. Windows 10 Pro is licensed by device. This means that a license must be acquired for each device on or from which the software is used or accessed (locally or remotely over a network). Windows 10 Enterprise may be licensed by device or user. See the Windows 10 handout in this series for further details on user licensing.

Windows Server 2019

All server machines must have a server operating system installed on them. The latest version of Microsoft’s server operating system is Windows Server 2019. There are two principle editions of Windows Server 2019 for businesses: Standard and Datacenter. Windows Server 2019 Standard and Windows Server 2019 Datacenter are licensed through the Per Core and CAL licensing model (see right).

CLIENT APPLICATIONS

The most common client applications used in a business (such as Microsoft® Word and Outlook) are most likely to be licensed as a Microsoft Office suite rather than as individual applications. Several different Microsoft Office 2019 suites are available (containing different individual Office applications) but Office 2019 Professional Plus and Office 2019 Standard are the editions most likely to be found in a business environment since they are the only suites available through a Volume Licensing agreement.

Office 2019 is licensed by device. This means that a license must be acquired for each device on or from which the software is used or accessed (locally or remotely over a network).

Per Core and CAL Licensing

Purchase Core licenses for each physical core in the server with a minimum of 8 Core licenses per processor and 16 Core licenses per server, and then purchase Windows Server 2019 Client Access Licenses (CALs) for either users or devices. A Client Access License (CAL) allows the client to access the services of the server.

Server Operating System

Licensing Virtualized Server Solutions

IT professionals often like to virtualize server solutions to ease management and to reduce hardware costs. Windows Server 2019 Standard and Windows Server 2019 Datacenter include Hyper-V to allow server virtualization. Be aware that virtualizing is not a way of reducing licenses purchased, and different versions and different editions of different products may have different virtualization rights. For example:

When licensing a server completely with Windows Server 2019 Standard Core licenses, 2 virtual machines are allowed.

When licensing a server completely with Windows Server 2019 Datacenter Core licenses, unlimited virtual machines are allowed.
Exchange Server 2019 is licensed through the Server and CAL licensing model (see right). Standard and Enterprise CALs are available depending on the functionality required by the users.

MICROSOFT SHAREPOINT SERVER 2019
SharePoint Server 2019 facilitates business collaboration by providing an enterprise portal (or intranet) with the ability to search, manage content and processes, and deliver solutions involving business forms and reports.

SharePoint Server 2019 is licensed through the Server and CAL licensing model (see above right). Standard and Enterprise CALs are available depending on the functionality required by the users.

Exchange Server

MICROSOFT SKYPE FOR BUSINESS SERVER 2019
In conjunction with the client application Microsoft Skype for Business, Skype for Business Server provides: secure instant messaging; integrated presence; audio, video and web conferencing; and enterprise voice capabilities.

Skype for Business Server 2019 is licensed through the Server and CAL licensing model (see above right). Standard, Enterprise and Plus CALs are available depending on the functionality required by the users.

MICROSOFT SQL SERVER 2017
SQL Server 2017 is a relational database including services such as Microsoft SQL Server Analysis Services for analysis and Microsoft SQL Server Reporting Services for reporting.

SQL Server is at the heart of Microsoft’s Business Intelligence solution and is required in solutions containing Microsoft SharePoint Server, Microsoft Skype for Business Server and the Microsoft System Center products.

Some editions of SQL Server 2017 are licensed through the Server and CAL licensing model (see above right) and some editions are licensed through a model which counts processor cores.

MICROSOFT SYSTEM CENTER 2016
Microsoft System Center is a comprehensive management platform that enables IT Professionals to more easily and efficiently manage IT environments, including the server infrastructure and client devices.

System Center 2016 is licensed by purchasing a Management License (ML) for each endpoint being managed. Managed clients need Client MLs and managed servers need Server MLs. Server MLs are licensed with the Per Core model: assign one Core ML for each physical core, with a minimum of 8 Core MLs per processor and 16 Core MLs per server.

MICROSOFT AZURE
Azure is Microsoft's cloud computing platform which consists of a growing collection of integrated services. For example, these services allow customers to:

- Host virtual machines
- Use storage, backup and recovery facilities
- Develop and deploy web and mobile apps
- Use data analytics for analyzing big data

Most of the Azure services are licensed and purchased on a consumption basis.

Further Microsoft Licensing handouts and exams: GetLicensingReady.com

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