Introduction for

Boot Camp attendees

This presentation is designed to help you prepare for and get the most out of your upcoming Directions on Microsoft licensing boot camp. We have found some attendees are entering the licensing world for the first time and appreciate a primer. Others find a review helpful.

New to licensing

This is a high-level presentation to discuss one of the foundational building blocks to licensing Microsoft products and services.

This will help you get started if you are new to Microsoft licensing or just want to review Product Use Rights & Rules.

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About Directions on Microsoft (DOM)

- An **independent** IT planning and information and advisory service focused exclusively on Microsoft since 1992.
  - Impartial facts and insight to help you intelligently evaluate, plan for and purchase Microsoft technologies and cloud service, all in one place.
- DOM Member Portal and advisory services focus on helping you:
  - **Plan** Microsoft evaluations, purchases, deployments, updates and retirements
    - On-Premises Software Roadmap, Azure Roadmap, O365 & EMS Roadmap
    - Microsoft Road-mapping and EA Advisory Service
  - **Evaluate** new Microsoft technologies and cloud services
    - Reports and Evaluation Guides
  - **Optimize** Microsoft licensing agreements
    - Licensing Boot Camps, Licensing Reference Set
    - EA Negotiation Support, Audit Support
  - **Stay current** on important changes
    - Monthly Update Research Digest, monthly Webinar

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Before we dive into the material, let me tell you a few words about who we are, for those not familiar with Directions on Microsoft. We are an independent company focused exclusively on Microsoft for the past 26 years. We are not a part of Microsoft. Our main mission is to cut through Microsoft's marketing hype to make it easier for you to evaluate, plan and purchase Microsoft technologies. We focus on four essential customer needs with respect to Microsoft.

The first is the need to plan deployments, updates, retirements and software maintenance. To address these needs, we currently produce three different roadmaps: an On-Premises Software Roadmap, an Azure Roadmap and an Office 365 and Enterprise and Mobility and Security Suite Roadmap. We also offer custom advisory services.

Next is the need to evaluate Microsoft technologies and cloud services. We publish in-depth Reports to understand the technical underpinnings and the strategic significance of each of the technologies and how they impact your business.

The third category is of course licensing. Determining what you need to buy, how do I plan budgets, how do I stay compliant, how do I defend myself in an audit, how do I negotiate with Microsoft in my next contract renewal? To address this need, we have a constantly updated Licensing Reference Set, which is essentially a wiki containing clear explanations of Microsoft licensing rules. We also hold Licensing Boot Camps, which are multi-day in-depth seminars on the subject of licensing. We also offer clients help with negotiating their Enterprise Agreement renewal with Microsoft.

Finally, there is the need to stay current on relevant changes on planet Microsoft, because changes happen all the time and you need a quick and easy way to identify what has changed and how that might affect your organization. Our Update Research Digests and Webinars make it easy to keep up with the shifts in technologies, roadmaps and licensing policies.

That is what we do. What we don't do is aggregate market data or speak for Microsoft. We are a completely independent third-party.

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Why Care about Use Rights and Rules?

- **Rights / rules determine:**
  - What specific software (versions/editions, etc.) your organization has rights to use and for how long
  - What constitutes "use" that must be licensed, and whether each occurrence must be licensed separately or several can be covered by a common license (or set of licenses)
- **Helps answer:**
  - Past: What did we buy?
  - Present: Do the licenses we own adequately cover our use?
    - Audit reconciliation (reconciling what we own with what we "use")
  - Future: What purchases will be required to meet upcoming needs?

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This presentation is a discussion of product use rights and rules.

As you know, you do not **buy** Microsoft products, you **license** them. Why is this distinction important? Because when you buy something like a car, you own it and can use it anyway you want, within the confines of the law, of course. In contrast, when you license something, the vendor gets to set all sorts of rules governing how it is used, including prohibiting some types of use or charging extra for specific types of use.

What are some of the ways licensing rights and rules are important?

They determine what specific software you can use. For example, which versions and editions of a particular product.

The rules determine if one up-front fee gives you rights to use the software in perpetuity, or if use rights are contingent on paying recurring subscription fees.

The rules determine what constitutes "use" of a product, thus triggering a requirement to license the product.

The rules determine whether each "use" must be licensed separately, or if several can be covered by a common license, or a common set of licenses.

Collectively, the rules determine how a customer's use of Microsoft software translates to licenses required. And conversely, what types and extent of software use is allowed under the licenses you currently own.

If you want an answer to the question "what did we buy?", meaning what's allowed given the licenses you own, then you must understand product use rights and rules.

Do you need to make sure the licenses you own adequately cover your organization's current use? Do you need to confirm that the license reconciliation being done in an audit is accurate and fair? Then you must understand product use rights and rules.

Do you need to determine what licenses will be required to meet upcoming needs? *I know this is a shocker*… then you must understand product use rights and rules.

So, I think we've established the importance and relevance of product use rights and rules.

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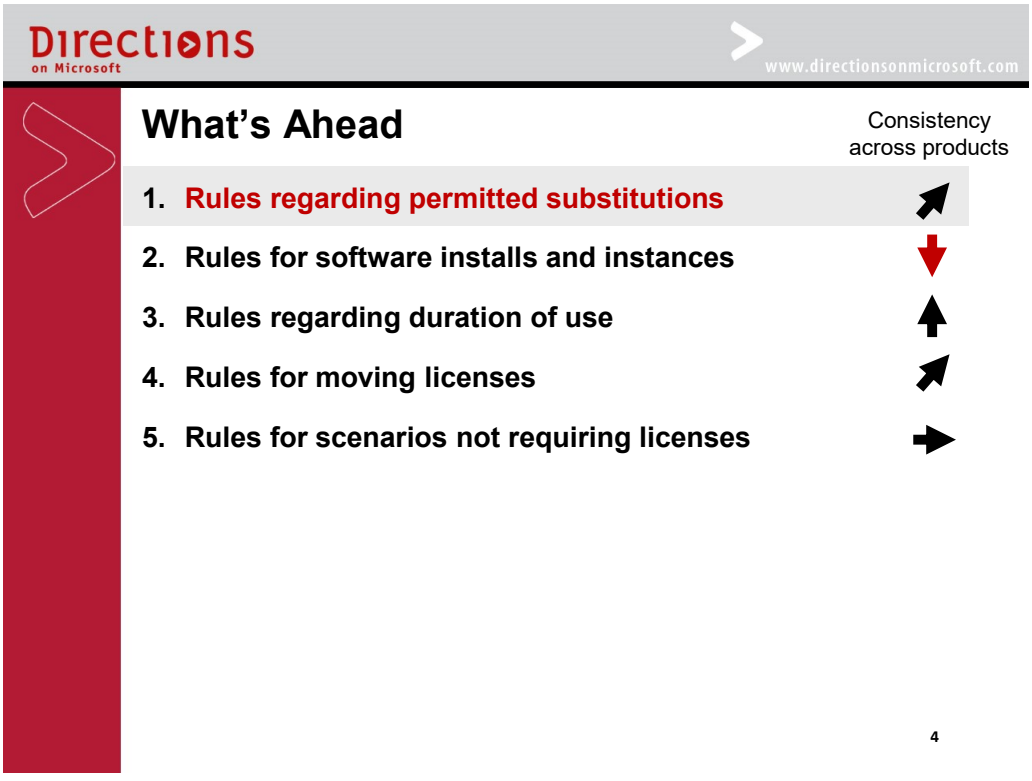

So what are product use rights and rules?

There are lots of them. We surveyed the collective body of rights & rules across Microsoft's product lines and bucketized them into five generic categories listed here.

You'll notice a column on the right side of the slide picturing a bunch of arrows. These denote how consistent the rights and rules within that category are across Microsoft products, with a 12 o'clock up arrow being totally consistent, a 6 o'clock down arrow meaning wildly inconsistent, and points in between denoting varying levels of consistency. *As you can see, with respect to product use rights and rules, Microsoft shows a strong inclination towards diversity.*

For each of the five categories we'll provide a bit of background and context, and then jump into the associated rights and rules. Since this is a high-level presentation, the intent is to give you an appreciation for the rights & rules and why they are relevant, and not to dive deeply into the rules for specific products. That said, we will use some products as examples, but these are in no way complete or exhaustive. At the boot camp we cover specifics in depth, some in mind numbing depth because they are so important.

Before we dive into the five categories, I want to clarify that these rules are applicable, albeit in varying degrees, to both on-premises products and online services. Let's take a few moments to define these two terms.

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On-Premises and Online Rules will vary

- **On-Premises Product**
  - Install and run on your own hardware
  - In-house assembly and maintenance required
  - License compliance – Trust model
    - Reviews
    - Audits
- **Online Service**
  - Microsoft installs, runs, updates and maintains
  - License compliance – a confused mixture of extremes and points in-between
    - Built-in – Will not work without proper license
    - Trust based – could use without the proper license, without any practical way of knowing you're non-compliant
    - Conclusion: Risky to assume Microsoft blocks you from doing things you are not licensed to do

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By on-premises product we mean software that Microsoft provides that you install and run, usually on your own hardware. It is like buying a bed and frame from IKEA. You bring a box with parts and instructions back to your house or apartment, and some assembly is required before you can use the bed to get a good night's sleep. Microsoft Word is on-premises software. Exchange Server is on-premises software. It wasn't that many years ago that most everything Microsoft sold was an on-premises product.

By online service we mean software that Microsoft installs, runs, updates, and maintains within its datacenters and allows you to use. Exchange Online and the bigger Office 365 suite that contains Exchange Online are prime examples of online services. Microsoft has clearly indicated that online services are the future. *Long term resistance is futile.*

One more point before we dive into the five categories of product use rights and rules. And that point is license compliance. When it comes to on-premises products, the rules we'll discuss are enforced via license compliance reviews, which Microsoft claims are voluntary but in many cases that's not really true, and audits, which are legal actions where things get hardcore. So you get to drive on the Microsoft on-premises product highway under a trust model, enforced by cops who periodically measure your speed with radar.

The story with online services is a hodgepodge, a confused mixture. In some cases compliance is built-in, in other words, you cannot use the online service unless you are properly licensed. At the other end of the spectrum, there are cases where it is a trust based model, where you can use online services without being properly licensed. And to make matters worse, you often don't have a practical way to tell that you are out of compliance. This extreme case is like driving down the highway in a car with no functioning speedometer, but still being held liable for infractions of speed limit laws. One very important take away: with online services, never assume that Microsoft blocks you from doing things that you are not properly licensed for. One area where this is a large potential concern is with Office 365, and the discussion about ways you can become non-compliant with Office 365 tends to be quite a lively discussion at each boot camp.

OK, now we are ready to dive into the five categories.

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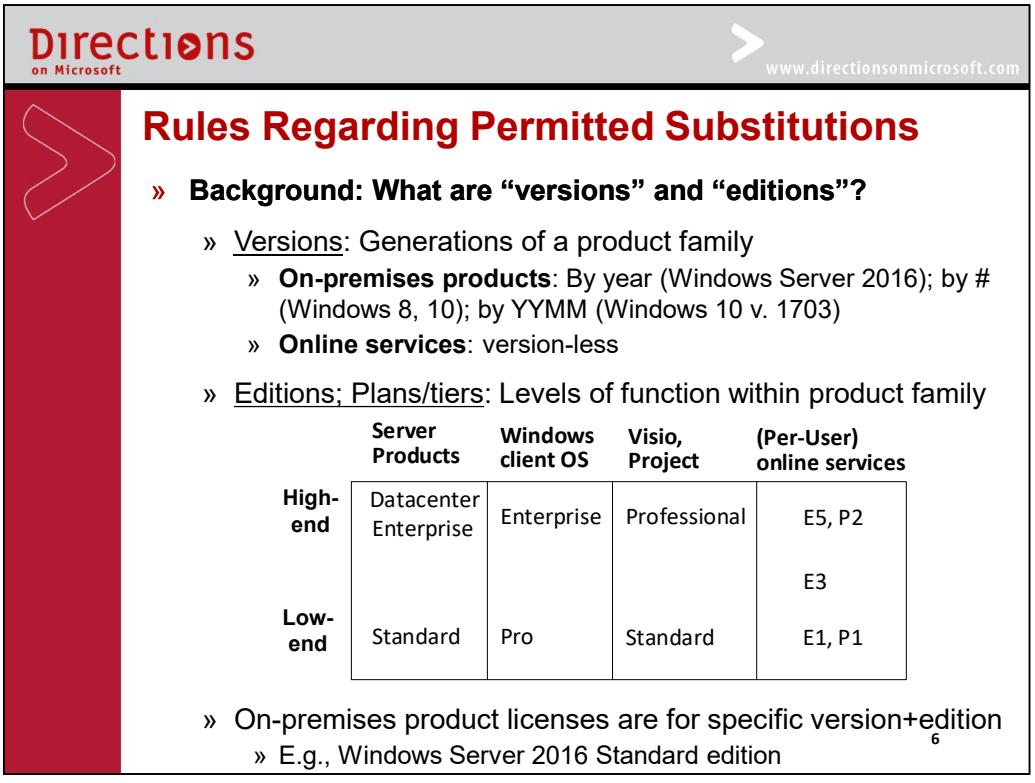

The first category of rights and rules regard substitutions, meaning sometimes you can buy licenses for one thing but use something a bit different instead. This discussion is mostly, but not exclusively, relevant to on-premises products.

Before diving into the types of substitutions that are sometimes allowed, we must first understand what it is that we're substituting for.

For on-premises products, there are two terms you need to understand. The first is **versions** and the second is **editions**.

So, what is a version? A version is a generation of a product family. If we were talking about cars, we'd talk about the model year. Sometimes Microsoft denotes products by model year; for example, Windows Server 2019 or SQL Server 2017. Products like Windows use somewhat different nomenclature, for example increasing numbers with Windows 7, 8, and Windows 10, or in some cases a four-digit version with the first two digits being year, and the rest month. So, Windows 10 version 1803 means the March 2018 release of Windows 10.

Online services don't have a version number associated with them. They are like non-vintage champagne, you get the most current grapes, whatever they are. *Sometimes they are sour, and sometimes they are sweet. But I digress.*

Editions denote varying levels of functionality within a product family. If we were talking about BMW cars, for example, the editions would be the 100 series, the 300 series, the 500 series. You get the picture.

The chart in the slide lists examples of edition naming within various Microsoft product families. You'll notice that the naming isn't very consistent, however, if something is labeled Enterprise or Datacenter, rest assured it is the high-end edition.

For historical reasons, online service suites have settled on something similar to the BMW model, going from E1 to E3 to E5 as you move up the edition hierarchy. The "E" stands for "Enterprise"*, because if it is labeled Enterprise, it must be powerful and robust, right?* For standalone licenses sold for individual suite components, such as Exchange Online, the word "plan" is used, with Plan 2 offering a superset of Plan 1 capabilities.

Back to on-premises products. The licenses you purchase for on-premises products are for a specific version and

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edition. For example, Windows Server 2019 Datacenter. So what? Why is this important? Because under some circumstances Microsoft will allow you to deploy a version or edition different from the license that you purchased. If you ever want to have a hope of reconciling licenses owned with actual use, it is imperative to understand this.

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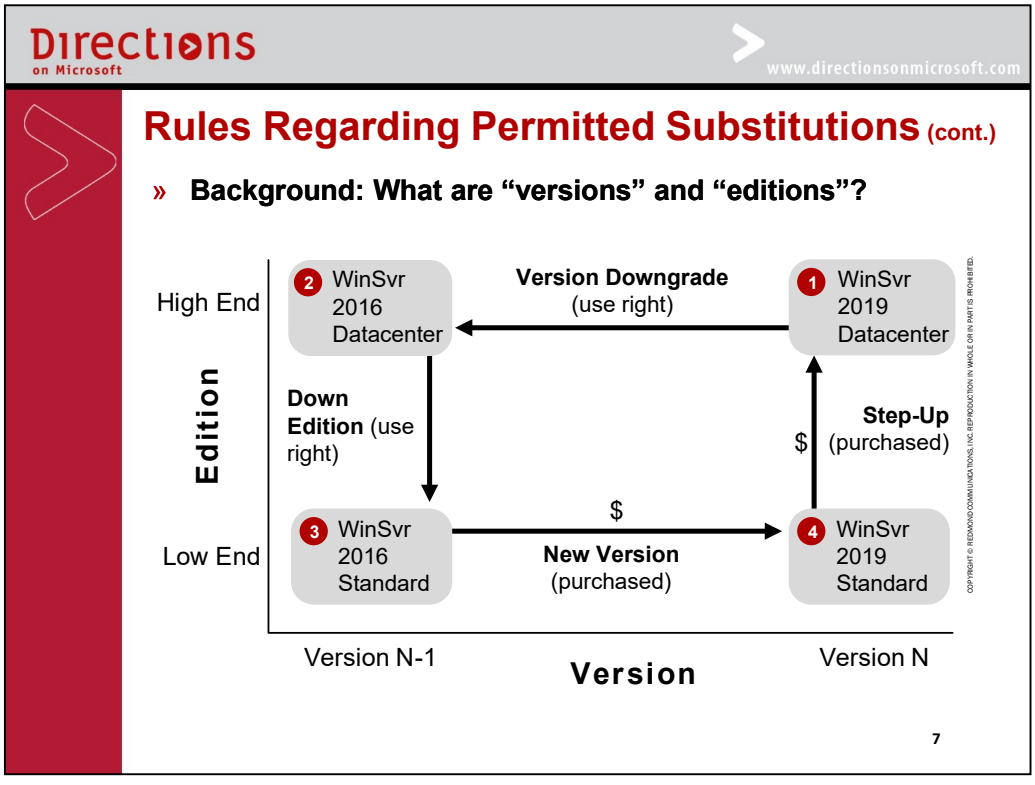

On this chart we picture versions along the horizontal axis. As we move right, we move forward in time.

The vertical axis is the edition, moving up the axis brings you to a higher-end edition.

Turning your attention to the upper right, you see a box labeled Windows Server 2019 Datacenter, the latest version of the highest-level edition. You see a circle with the number 1 inside. We'll start here and work our way counter clockwise.

Suppose you purchased Windows Server 2019 Datacenter licenses, but you need to use Windows Server 2016 Datacenter instead. For product licenses purchased through volume licensing programs, this type of substitution is almost always allowed. It is called a version of downgrade use right.

Now we are in the upper left corner where there is a circle with the number two next to the box labeled Windows Server 2016 Datacenter. Suppose, rather than using Windows Server 2016 Datacenter edition, we'd rather deploy Windows Server 2016 Standard edition. For some product licenses purchased through volume licensing, this is allowed. It is in the case of Windows Server. This form of substitution is called a down edition use right.

Now we are at the bottom left, where there is a circle with number three next to a box labeled Windows Server 2016 Standard edition. Suppose we'd rather use a more recent version of the same edition, Windows Server 2019 Standard edition, which is in the bottom right and marked with the number four. Rights to use a new version cost money, either in the form of a Software Assurance subscription attached to the originally purchased licenses, or outright purchase of a brand new license for the more recent product version.

And finally, let's discuss the transition from the bottom right, where there is a circle with the number four, and a box labeled Windows Server 2019 Standard edition, to the box above labeled Windows Server 2019 Datacenter edition. This is also allowed in some circumstances, and costs money as well. This transition is called a Step-Up.

Now let's look at each of these four potential substitution types in a bit more detail.

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Rules Regarding Permitted Substitutions (cont.)

- **Version downgrade rights** *
  - If I buy a license for version N, can I deploy version N-1, N-2, … in its place (inside a physical or virtual OS environment)?
    - *Relevance: Microsoft ceases sales of a on-premises product version soon after a newer version becomes available; pertinent to audit reconciliation (matching use with licenses)*
    - General rule, on-premises products: Yes, for most licenses purchased through volume licensing programs *(but Microsoft's Web portals generally provide media back to v. N-2)*
      - *-- Although you may have the right to use the old version, it may not be supported (patched, break/fix help, etc.)*
    - General rule, online services: N/A (Customer must use the "version" Microsoft runs in its datacenters)

* See *Product Terms*, "Rights to Use Other Versions and Lower Editions" entry in the "Universal License Terms" section

NOTE: There is also a Licensing Brief on the topic of version downgrade rights

Version downgrade rights. If I buy a license for a version, do I have the right to deploy older versions in its place? This is an important point in license reconciliation, matching licenses owned with use.

First, why would I ever want to version downgrade? Why would I ever buy a brand-new BMW but elect to drive an old model instead?

The answer is that Microsoft generally ceases the sale of an on-premises product version as soon as a newer version becomes available. If you have a big deployment of that earlier version, and wish to expand that deployment, you need to buy a license for the latest version and exercise your version downgrade use right. Most all licenses purchased through volume licensing programs come with version downgrade rights.

However, just because you have the right to use an old version doesn't mean Microsoft will maintain availability of the installation media. Generally, Microsoft's volume licensing site provides customers with the latest version, the prior version, and the version before that. But it is generally a good idea for customers who use old versions to archive the installation media on their own, so it is conveniently available when they need it. And second, just because you have the right to use an older version doesn't mean that Microsoft still patches that version or offers break/fix support.

Repeating what we said earlier, as a general rule, online services do not have a version label. You use whatever Microsoft has chosen to run within its datacenter.

Before we change slides, I'll point out the foot notes at the bottom of this page. Many pages in this presentation have such footnotes. The footnotes indicate the definitive source of the information we are discussing, whether it be the Product Terms or some other Microsoft legal document. People often ask us, "where does it say XYZ"? We provide the footnotes to make it easier for you to find on your own… because the answer is sometimes not so obvious.

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Rules Regarding Permitted Substitutions (cont.)

- **Down edition rights** *
  - If I buy a license for one edition of a product, can I deploy a different "lower" edition of the same product in its place?
    - (Also called "edition downgrade rights" or "cross-edition rights")
    - *Relevance: Audit reconciliation… for example, Office Pro Plus does NOT provide edition downgrade rights to Office Standard*
    - General rule, on-premises products: Yes for server products with multiple editions (Windows Server, SQL Server) and for Windows Enterprise edition Upgrade (client OS); otherwise No
      - *Note: Can combine down edition with version downgrade*
    - General rule, online services: N/A (A customer subscribing to a premium plan who does not exploit the plan's unique features is still considered to be "using" the premium plan)

* See the product's individual entry in the *Product Terms*—check the "Down Editions" cell in the product's Product Conditions table

Moving on to down edition rights, which is sometimes also referred to as "edition downgrade rights" or "cross edition rights" … This right is relevant once again, for license reconciliation.

If I buy a license for a high-end edition of a product, but would rather deploy a lower edition of the same product in its place, can I? The answer is yes for some products such as servers, no for others such as Office Professional Plus.

Edition downgrading is permitted for Windows Server and SQL Server, for example. Why would I ever want to down edition? Why would I buy the BMW 500 series, but elect to drive around in the 100 series? The answer makes sense only in the context of the next category of rules about installs and instances. In a nutshell, if you need to license a server to run a bunch of virtualized workloads built on Standard edition of Windows Server and SQL Server, it is actually cheaper to license the server for the higher-end edition and exercise your down edition rights. Have no fear, we will dive into this point in great detail in the Windows Server and SQL Server boot camp presentations.

For online services there isn't really a concept of edition downgrade. Since higher level suites almost always offer a superset of the capabilities in lower level suites. I suppose buying the higher-level suite and not using its unique features would be akin to an edition downgrade, sort of.

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Rules Regarding Permitted Substitutions (cont.)

- **New version rights** *
  - Can I swap a version N license for a version N+1 license?
    - General rule, on-premises products: Yes, if you have active SA coverage on the license at the point version N+1 ships
    - General rule, online services: Customer receives latest code updates automatically
- **Step-up rights** **
  - Can I swap (trade-in) a lower-level edition license for a higher-level edition license by paying the price delta?
    - General rule, on-premises products : Yes for licenses covered by SA if higher-level edition exists
    - General rule, online services: Available if higher-level plan exists

* See the product's individual entry in the *Product Terms*—check the "Migration Rights" cell in the product's Software Assurance table for a pointer to SA license grant information

** See *Product Terms*, "Step-Up License Availability" entry in the "Software Assurance" appendix

Next up are new version rights and Step Up rights.

Can I swap a version N license for version N + 1 license? The answer is yes, if you bought your original license along with a subscription called Software Assurance, and still maintained that coverage at the point version N+1 shipped. We have an entire presentation about Software Assurance in the boot camp.

For online services, you get the new code automatically as part of your online service subscription. In fact, you generally have no choice about that. *You eat what you are served*.

Step up rights have to do with the question, can I swap a lower level edition license for a higher-level edition, without rebuying a license from scratch? In other words, can I get credit for what I already paid for the lower level edition license? The answer is Yes for on-premises licenses if they are covered by active Software Assurance coverage. The answer is also yes for online services.

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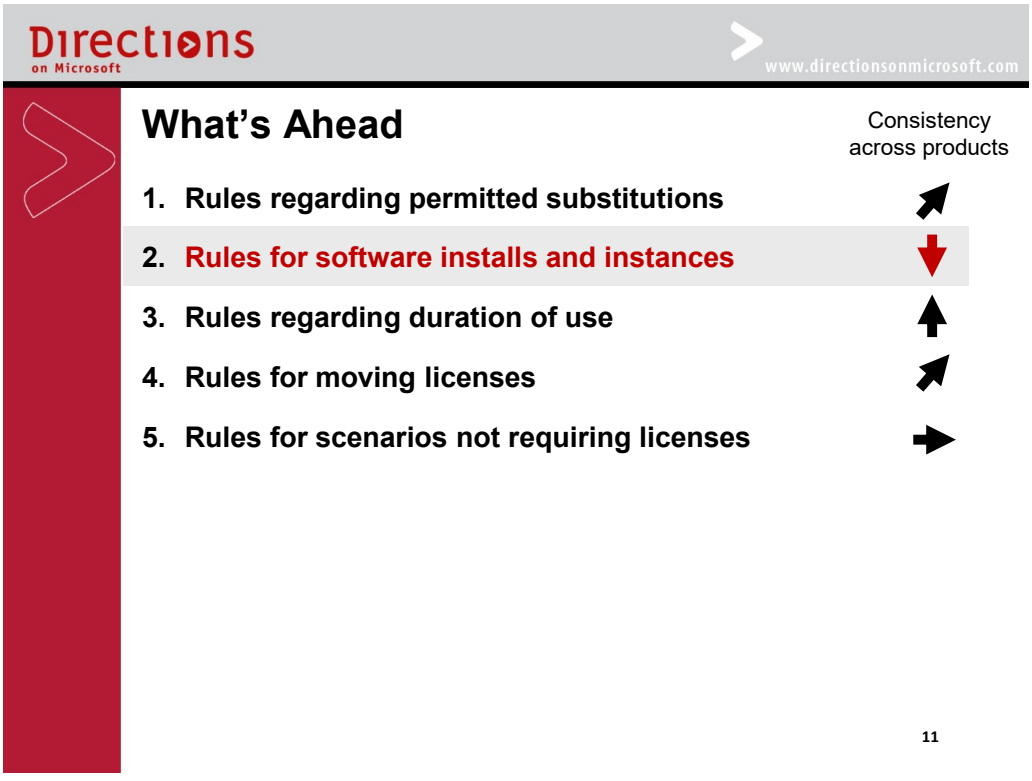

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Can I swap a version N license for version N + 1 license? The answer is yes, if you bought your original license along with a subscription called Software Assurance, and still maintained that coverage at the point version N+1 shipped. We have an entire presentation about Software Assurance in the boot camp.

For online services, you get the new code automatically as part of your online service subscription. In fact, you generally have no choice about that. We are now ready to move on the to the next category of rules, which have to do with installs and instances. Fasten your seatbelt. Because in this category, the only consistency there is across Microsoft products is that there is little consistency. Installs and instances are an important topic because they largely define what constitutes use of a product and which type of license or how many licenses you need to cover that use. That is why, especially in the boot camp presentations for Windows Server and SQL Server, we spend considerable time on this rights & rule category—because it is both very important and unique to each product.

You eat what you are served.

Step up rights have to do with the question, can I swap a lower level edition license for a higher-level edition, without rebuying a license from scratch? In other words, can I get credit for what I already paid for the lower level edition license? The answer is Yes for on-premises licenses if they are covered by active Software Assurance coverage. The answer is also yes for online services.

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Rules For Software Installs & Instances

- **Background**
  - Install (sometimes called a “stored Instance”)
    - An image of software that is created by executing the software’s setup or install procedure; can also be created by duplicating an existing stored instance
    - Evidence: On disk
    - Installation may or may not trigger a need for a license

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As with all use rights and rule categories we discuss, we’ll start out with some background and context. What is an install? What is an instance?

In general, you install a product by executing the software’s installation routine, or by making a copy of the result of such an install. An example of the latter is to install software into a virtual machine, and then make a copy of that virtual machine image.

The evidence of the install, sometimes called a “stored instance”, is bits on the disk, and likely entries in the Windows registry as well.

Whether or not installation of a product triggers the need to buy licenses depends on which specific product we’re talking about.

By the way, the act of downloading installation media from Microsoft’s volume licensing portals is not, on its own, considered to be “use” of the product, and therefore does not trigger a need for licenses. Again, downloading installation media is not a licensing event.

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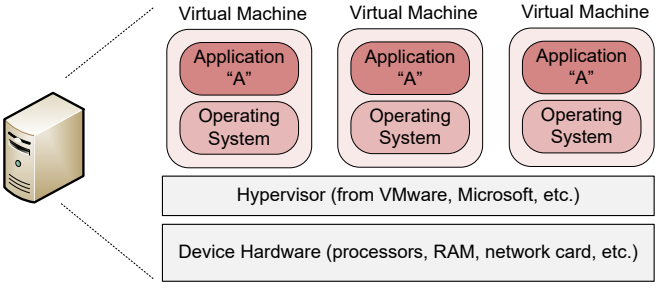
Rules For Software Installs & Instances

- **Background**
  - Instance (usually means running instance)
    - Program loaded into memory and executing
    - Evidence: Process listed in Task Manager
    - Running an instance(s) usually triggers the need for licensing
  - Running multiple instances on the same device often implies hardware "virtualization"



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Now on to the concept of instance, more specifically, running instance.

By running instance we mean a program that is loaded into memory and executing.

The more technically inclined among us can identify running instances by opening Windows' Task Manager interface and looking at the list of processes that are running in memory.

If installing the program didn't already trigger the need for licenses, then a running instance will.

One concept related to running instances that comes up frequently during the boot camp is hardware virtualization. Why? You guessed it, because it has significant licensing implications. For this reason, it is worth a minute to explain here.

It is possible to use one physical device to run multiple instances of the same product simultaneously. In most cases, this involves some form of hardware virtualization.

First, why would you ever want to run multiple instances of the same program on the same piece of hardware? Why, for example, would you want to run separate instances of Windows Server on the same physical server? Not shockingly, it is mostly about efficiency. Servers are so powerful today that they often have enough horsepower to run many workloads simultaneously. Why buy, maintain, and power a separate physical server for one workload if it uses just a tiny fraction of that server's horsepower? It is much more cost effective to share.

The next logical question is "why can't all the workloads share the same instance of the OS?", in our example, the Windows Server OS. Why does each workload need its own OS instance? The answer is both technical and political.

The technical answer is partially one of unfulfilled promises. OSs were supposed to be able to isolate programs from one another, so they couldn't muck each other up. Turned out to be not-so-true. Programs sharing the same OS instance can interfere with one another in certain circumstances. Also, programs can be dependent on specific versions of the operating systems, or an OS patch that fixes one program could conceivably break another. That's a big technical issue that is also political. I, the person responsible for some workload, want my own play pen so my workload can't be disturbed by others. I do not want to have to worry about others doing stuff that impacts me. I want my own protected playpen. And that playpen is a virtual machine.

The virtual machines are pictured at the top of the illustration. Each has its own operating system and application instance. They all share the same hardware, which is pictured as the lower horizontal rectangle. The magic is the layer that sits in-between. The generic industry term for this layer is the word "hypervisor", and multiple vendors

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sell hypervisor technology, including Microsoft and VMware. With Microsoft, it is called Hyper-V and bundled as part of Windows Server.

A hypervisor fools each virtual machine into thinking that it has complete control over the hardware, and as part of that effort, hides the existence of virtual machines from one another. From each virtual machine's perspective, they get to play in their own private playpen, free from the interference of others. If a virtual machine is updated with patches or a new version, no sweat. It doesn't affect the other virtual machine running on the server.

If you are not particularly technical, it might be helpful to think of hardware virtualization as the actor Jack Nicholson playing a character with multiple personality disorder. He does it so well. Multiple people occupy the same body, but one at a time, and unaware that the others exist. Now speed things up, because computers are so fast, and the personality switching happens so rapidly that it appears multiple personalities are alive at the same time. *So hardware virtualization is just a case of multiple personality disorder. You heard it hear first.*

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Rules Regarding Software Instances (cont.)

- **Install (stored instances)** *
  - Is license required for software installed on a client device, but not executing (running)?
    - For example: device not powered on; device powered on but software not launched & executing
    - General rule, on-premises products: Yes for client OS & client apps (Office/Project/Visio) licensed per device; No for server-based software

* See *Product Terms*, "Licensing Model Terms" portion of the "Licensing Terms" section

So now that we have some idea of the definitions of installs and running instances, what are the applicable rules?

For starters, is a license required if software is installed on a client device but not executing? Yes for the Windows client OS. Yes for traditional Office suites like Office Professional Plus. No for server-based software. In other words, it depends on the product.

Why is this important? As an example, let's consider the Office Professional Plus suite. Say you have a hundred unplugged PCs pre-provisioned with Office Professional Plus in storage. Do you need Office Professional Plus licenses for them? Yes you do. Stuff like this have been found and assessed in audits.

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Rules Regarding Software Instances (cont.)

- **Running instances** *
  - For each license, how many simultaneous instances are allowed on a device?
    - General rule, on-premises products: Widely variable… Could be anywhere between a fraction (i.e., multiple licenses needed for a single instance) to unlimited… depending on product family, product edition, licensing model choice, and presence of Software Assurance
    - *You need to license for the maximum number of instances that might ever run concurrently*
    - *Can combine with down edition and version downgrade rights*
    - General rule, online services licensed Per-User: no concept of "instances" for Exchange/SharePoint/Skype etc. online services
    - General rule, other online services: Charged for Azure VM instances that are running

* See *Product Terms*, "Licensing Model Terms" portion of the "Licensing Terms" section

As we said earlier, if software installation didn't trigger a need for licenses, then running an instance will. A good example is SQL Server. You don't need licenses to cover installation, but you do need licenses to cover running instances.

Which raises the question, for each license, how many simultaneously running instances are allowed on a device?

The answer to this question is widely variable and is dependent on product, particular edition of the product, and other factors. It could be that multiple licenses are required to cover one running instance, or that one license covers an unlimited number of running instances on that device.

This is why we dive deep into this area in the boot camp, especially in our presentations about Windows Server and SQL Server.

It should be noted that you can combine your right to run one or more instances with down edition rights and version downgrade rights. So, for example, if a collection of licenses allows you to run multiple instances, those instances could be different versions or editions of the product.

The concept of running instances can also have licensing implications for online services. For example, in Azure, separate fees are assessed for each Virtual Machine hosted on Azure, in other words, for each Azure VM.

With Office 365 services such as Exchange Online, how many instances of Exchange Microsoft has to devote to you is not your concern. You pay per-user for the service. What resources Microsoft must devote in its datacenter is not your problem, at least from a licensing perspective.

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What's Ahead

Consistency across products

1. Rules regarding permitted substitutions
2. Rules for software installs and instances
3. **Rules regarding duration of use**
4. Rules for moving licenses
5. Rules for scenarios not requiring licenses

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The next category of rights & rules relates to duration of use, addressing the question, "What is the time period that my licenses are applicable?" *Take a deep breath, relax. This category is simpler than the others.*

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Rules Regarding Duration of Use

- **Background**
  - Perpetual ("ownership")
    - Customer has the right to use a product "indefinitely"
    - License is still valid even if the product is no longer "supported"
    - Analogy: Outright purchase of a car
  - Non-perpetual ("lease")
    - Customer has the right to use a product or service during the subscription period only
    - Generally called "Subscription Licenses" (SLs)
    - Analogy: Leasing a car

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Licenses fall into two camps, perpetual and non-perpetual.

When I purchase a perpetual license, a one-time fee gives me the right to use the product "indefinitely". I put the word "indefinitely" in quotes because it is true legally, but not in the practical sense. Although you may have the legal right to use some very old version of a product, it may be impractical to do so because that product is no longer supported by Microsoft, for example, with security and other types of patches.

A good analogy for a perpetual license is the purchase of a car. The one-time fee entitles you to drive the car forever. But in reality, the car won't last forever. Eventually it becomes so cost prohibitive to find and buy parts to keep it running that continued use of the car becomes impractical.

With non-perpetual licenses, you have the right to use a product or service during the subscription period only. The term Microsoft uses for non-perpetual licenses is "subscription licenses". They are akin to a car lease. Once the lease expires, you can't drive the car anymore.

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Rules Regarding Duration of Use (cont.)

» **General rules**

	Offered as Perpetual Licenses?	Offered as Non-Perpetual Licenses? **
On-premises product	Yes, most on-premises products are available as perpetual licenses through an Enterprise Agreement, Select Plus, or MPSA	Yes, on-premises products are available as subscriptions through Enterprise Agreement Subscription or Open Value Subscription agreements
Online service	No, online services are never offered as perpetual licenses *	Yes, the only option for online services are subscription licenses, regardless of volume licensing program

* See *Online Services Terms,* General Terms section

** See *Product Terms*, "SL" (Subscription License) definition in the "Definitions" portion of the "Glossary" section, and the General Terms section in the *Online Services Terms*

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So how do the two types of license durations, perpetual versus non-perpetual, map across Microsoft's two classes of product offerings, on-premises products and online services?

That is what we attempt to convey in this chart.

On the left, you'll see the label for two rows, on-premises product in the top row and online services in the row below.

Across the top you'll see two columns, one labeled "offered as perpetual licenses" and the other labeled "offered as non-perpetual licenses."

Let's start at the upper left, on-premises products offered as perpetual licenses.

This is the most common scenario for on-premises products such as Office Professional Plus, Windows Server, and SQL Server. If you purchased licenses for these on-premises products through a standard Enterprise Agreement contract, or through a Select Plus or Microsoft Product and Services Agreement, known as an MPSA contract, you bought perpetual licenses. If you stop paying Microsoft money, for on-premises products this means letting the Software Assurance coverage on the licenses lapse, you can continue to use the products you have perpetual licenses for. Though to be totally truthful, there may be some new restrictions on how you can use the product. This is because for some products, certain use rights are contingent on having active Software Assurance. But we'll save that discussion for the boot camp.

Moving to the right brings us to on-premise products offered as non-perpetual licenses. It is possible to license on-premises products as subscriptions. In fact, there are special types of volume licensing program contracts dedicated to this purpose, where every on-premises license acquired under the contract is non-perpetual. The two major volume licensing programs in this realm are called an Enterprise Agreement Subscription contract and an Open Value Subscription contract.

Moving down a row brings us to online services offered as non-perpetual licenses. All licenses for online services are subscriptions. Which volume licensing program you purchase them through does not matter. As we move to the left, the intersection of the online service row and the perpetual license column, we see that online services are never offered as perpetual licenses.

That is the biggest "so what" for this slide. As Microsoft moves to online services, they also move to subscription-based licensing exclusively. Unless you are willing to kick the Microsoft habit, to go cold turkey and stop using Microsoft online services, you must continue to cut them recurring checks. Gone are the days

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where you could stop sending Microsoft checks and take what became known as a “Software Assurance Holiday”, or at least threaten to do so as part of your Enterprise Agreement negotiation strategy.

This is a fundamental change that puts customers in a weaker negotiating position than in years past. One of many discussions at the boot camp, a particularly important one, are methods and strategies for mitigating such concerns.

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What's Ahead

Consistency across products

1. **Rules regarding permitted substitutions**
2. **Rules for software installs and instances**
3. **Rules regarding duration of use**
4. **Rules for moving licenses**
5. **Rules for scenarios not requiring licenses**

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Now for the fourth category of use rights & rules. This category has to do with moving licenses.

Why is this important? Because your organization is not static.

Rules that limit your flexibility to move around licenses in response to your changing circumstances means extra cost. Any rule that prohibits you from recycling a license you already own, to move it from where it is no longer required to a place where it is now needed, increases your costs. Because, if you can't repurpose a license you already own, your only alternative is to purchase a new additional license.

From the customer's perspective, Microsoft's rules associated with moving licenses are all about increasing the number of licenses you'll require. From Microsoft's perspective, I suppose it is about implementing restrictions that prevent customers from "cheating" or "gaming the system".

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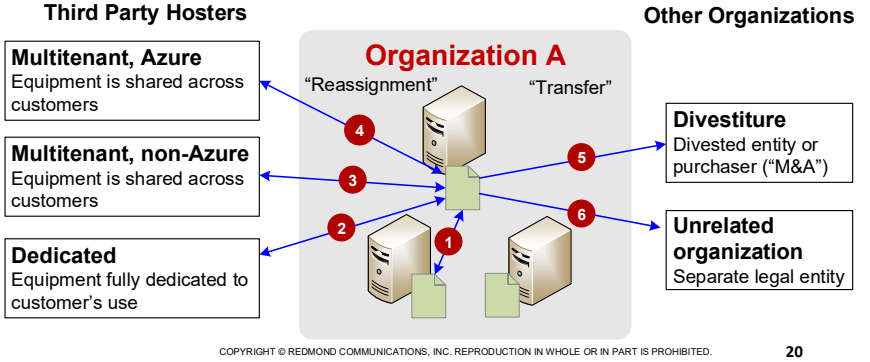
Rules for Moving Licenses

- **Background**
  - Licenses are "assigned" to (associated with) physical hardware (e.g., server, end-user device) or an individual user
  - Rules regarding movement of license is scenario dependent
    - Reassignment (you retain ownership of license) vs. Transfer



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As with the prior rule categories, we'll start out with some background.

Most all licenses that would ever make sense to move around are associated with either a physical device or a human being. In Microsoft-speak, licenses are "assigned" to either physical devices like servers or PCs, or they are assigned to individual users.

Rules governing the frequency with which you can move device-based licenses between different devices varies depending on scenario. The same is true for user-based licenses.

Believe it or not, when you parse through all of Microsoft's rules, the company distinguishes between six different license movement scenarios, as depicted in this illustration. Types one through four are called forms of "reassignment". We'll start at the six o'clock position, where you see the number one label, and proceed clockwise.

Scenario 1 is license reassignment within the confines of your organization.

Scenario 2 involves licenses reassigned to a service provider who is dedicating equipment to your exclusive use. In other words, machines you use at the service provider are not shared with any other company.

Scenario 3 involves licenses reassigned to a third-party multitenant service provider. Unlike scenario 2, in this scenario the equipment you use at the service provider is shared by others.

Scenario 4 involves licenses reassigned for use at Microsoft's Azure, where, as a general rule, equipment is not dedicated to your exclusive use, it is shared with others.

Scenarios 5 and 6 are labeled as forms of "transfers". Number 5 is a transfer of licenses to an entity being divested as part of merger and acquisition activity. And finally, number 6 is a transfer of licenses to a completely unrelated organization.

In the next two slides, we'll quickly review these six scenarios. At the boot camp, we dive into these rules at great depth, whenever they may have significant impact on your license spend or how audits are conducted.

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Rules for Moving Licenses (cont.)

1. **Reassignment within your organization** *
   - » General rule, on-premises & online services: 90+ days must elapse between license reassignments… with exceptions for:
     - » a) Permanent hardware failure or unavailability of a device
     - » b) Termination of employment or temporary user absence
   - » Less restrictive rule ("License Mobility Across Server Farms") for SA-covered server app licenses: no limit to reassign frequency
   - » More restrictive rules for Windows client OS Per-Device licenses
2. ***Reassignment to dedicate hoster's equipment***
   - » Same rules as above.. no distinction drawn between equipment in your datacenter & dedicated hoster's equipment

* See *Product Terms*, "License Assignment and Reassignment" entry in the "Universal License Terms" section. Also see "License Reassignment" entry in *Online Services Terms*.

Scenario 1, reassignment within your organization. One example of such a scenario is to reassign device-based licenses for client applications between PCs being junked to new replacement PCs, or to reassign device-based licenses for server applications between physical servers within your organization's datacenter, perhaps from servers being retired to new servers, or between servers during system maintenance or failovers. Another example is to reassign user-based licenses from employees who left the organization to new hires.

The general rule applicable to both on-premises products and online services is that at least 90 days must elapse between license reassignments. However, the general rule provides extra wiggle room for situations involving permanent hardware failure or unavailability of a device, or termination of employment or temporary user absence.

Besides the general rule, there are two exception categories, one less restrictive than the general rule, and one more restrictive.

The less restrictive rule, which waives any waiting period, is called "License Mobility Across Server Farms", and applies to server application licenses covered by active Software Assurance.

The more restrictive rule is a total prohibition against license reassignment, which is the rule for Per Device Windows licenses acquired from PC manufacturers, bundled with the PC hardware itself.

On to scenario 2, reassignment to dedicate hoster's equipment. This one is easy and typically relevant only in cases involving device-based licenses for server products. In Microsoft's eyes, a server dedicated to your exclusive use that's housed at a third-party's datacenter is treated exactly the same, from a licensing perspective, as a server sitting in your organization's datacenter. So the previously discussed rules apply.

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Rules for Moving Licenses (cont.)

3. **Multitenant hoster (not Azure) ***
   - » Can reassign server application licenses (once every 90 days) via "License Mobility Through Software Assurance"
4. **Multitenant Azure**
   - » *Azure Hybrid Benefit* allows SA customers to apply Windows Server and SQL Server licenses to Azure workloads
5. **Divestiture ****
   - » Seller can transfer licenses to divested entity / purchaser
6. **Unrelated organization ****
   - » Transfer prohibited by contract (in North America)

* See the product's individual entry in the *Product Terms*—check the "License Mobility" cell in the product's Software Assurance table; also see *Product Terms*, "License Mobility through Software Assurance" entry in the "Software Assurance" appendix

** See *volume licensing contracts,* "Transferring and reassigning Licenses" section

Scenario 3 is when you reassign licenses to a service provider who runs your workloads on equipment shared by multiple customers. There is a special use right for server application licenses covered by active Software Assurance called "License Mobility Through Software Assurance" which allows for such license reassignment, as long as 90 days has elapsed between assignments. Why would you reassign server licenses to cover workloads run at a third-party service provider? Because it can save you money. If you don't move the server licenses, then the service provider is going to have to charge you software license rental fees, which usually cost substantially more than ongoing Software Assurance fees. The service provider sends these rental fees where? You guessed it, back to Microsoft.

Scenario 4 is when you reassign licenses to Azure. There is a special use right called Azure Hybrid Benefit which allows Software Assurance customers to apply Windows Server and SQL Server licenses to Azure workloads. When you apply the server licenses in this way, Microsoft waives the Windows Server or SQL Server software rental fees that would normally be charged for Azure workloads. This is another potential opportunity to save money, one that we explore in depth at the boot camp during our Azure presentations.

With scenario 5 and 6, we are in license transfer territory rather than reassignment. With scenario 5, divestitures, Microsoft allows the seller to perform a one-time transfer of licenses to the purchaser of the divested entity. Scenario 6, transfer of licenses to an unrelated organization, is not permitted within North America. This prohibits you from selling your excess on-premises licenses to unrelated third parties. However, legal challenges in Europe have prevented Microsoft from disallowing such transfer within parts of the EU. But that said, Microsoft has ways to make this a painful process that reduces its appeal.

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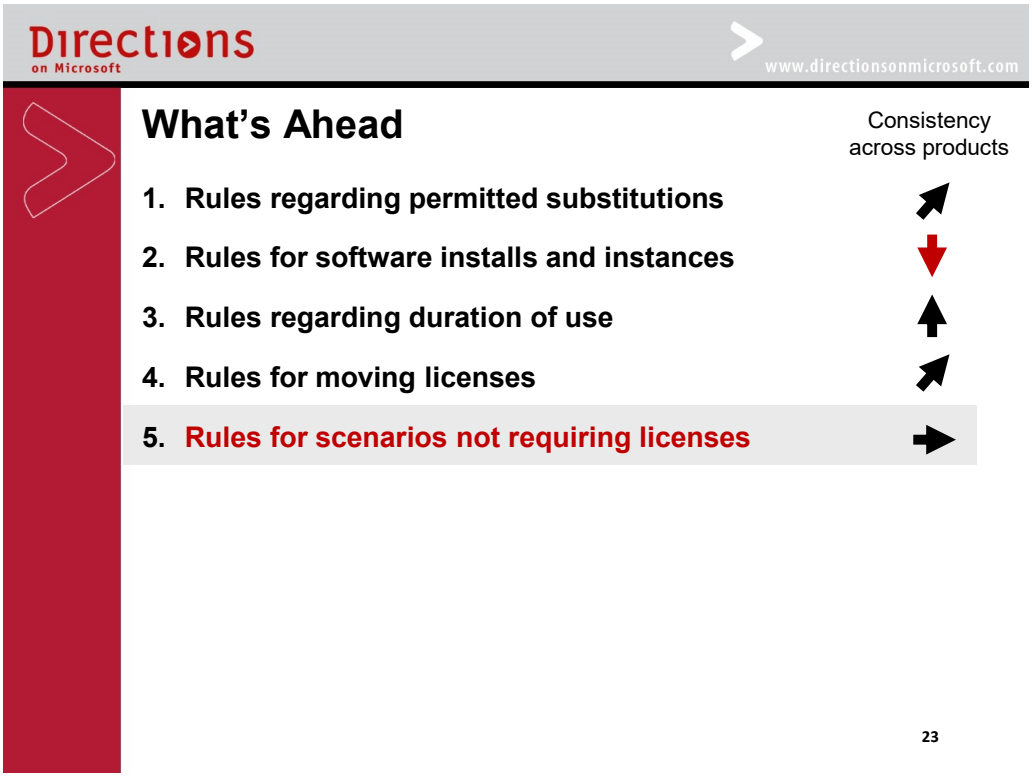

And last is a category of rules pertaining to circumstances where you use the product, but not in a way that Microsoft says obligates you to buy licenses. It is akin to the free coffee refill at most restaurants. You are consuming coffee that you are not charged for.

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Rules for Scenarios Not Requiring Licenses

- **Background**
  - Certain types of use show up in a deployment scan but don't require a license
- **Backup/disaster recovery and failover** *
  - If I'm running a copy of an on-premises product on one machine purely to protect against failure of a different machine running that same product, do I still need a license?
    - Examples: Replicating files on one server to another back-up server; configuring one machine as a standby failover machine to take over when primary server fails
    - General rule: Yes, server instances used purely as protections against failure do require licensing, with some exceptions made for SQL Server, Dynamics 365 for Operations

* See the product's individual entry in the *Product Terms*—check the "Fail-Over Rights" cell in the product's Software Assurance table

Why might this category of rights and rules be relevant? First is up-front cost savings. Why buy licenses to cover scenarios that do not require licensing? And second is audits. It is not wise to assume auditors will automatically apply these rules. They could assess you for licenses that you do not, in fact, need. There are circumstances where this can be very significant, as in the case listed on this slide: Backup/disaster recover, and failover.

Say I'm running a copy of an on-premises product on two separate physical servers. The purpose of one of the copies is purely to protect against failure of the other machine. Do both machines need to be licensed for the product?

While the general answer is yes, both server instances need to be licensed, there are exceptions. The most financially relevant exception pertains to SQL Server. There are scenarios where the SQL Server software running on a passive failover server does not have to be licensed. This can be a big deal, especially for SQL Server Enterprise edition. We could be talking six figure dollar savings for each passive failover server.

What, in general terms, is a passive failover server? It is akin to a spare tire in your car. It performs no useful work, until of course, the point at which you get a flat tire. Then it takes over the job of the regular tire. This licensing exemption is a topic we dive into during the boot camp SQL Server presentation.

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Rules for Scenarios Not Requiring Licenses (cont.)

- **"External" (non-employee) users**
  - Do non-employee users need to be licensed?
    - General rule, on-premises & online services: Yes, but there are exception cases (SharePoint)
- **Additional Software** *
  - Can parts of the product be run without requiring a license?
    - General rule, on-premises products: Yes, for ancillary components (called "Additional Software") such as management console and books online (documentation)
- **Training, evaluation, troubleshooting rights** **
  - Are any free licenses provided for these purposes?
    - General rule, on-premises products: Yes, a limited number of free licenses are provided in volume license agreements

* See the product's individual entry in the *Product Terms*—check the "Additional Software" cell in the product's Use Rights table as well as notes underneath

** See *volume licensing contracts*, "Making copies of Products and re-imaging rights" section

External users. This is Microsoft-speak for folks who use your IT systems but are not your employees or onsite contractors. Do they need to be licensed? Usually yes, but sometimes no. Different products provide various exceptions. For example, both SharePoint Server and SharePoint Online allow forms of external user access without requiring licenses. That said, SharePoint Server is much more generous in this regard than SharePoint Online, but I digress.

Next up is Additional Software. This is Microsoft-speak for specific product components that customers are allowed to use without triggering the need for licenses. One example is the SQL Server admin console. You can install and use it on a device without triggering the need to acquire SQL Server licenses.

And finally, there is training, evaluation, and troubleshooting. In your contracts there are a limited number of licenses provided for these purposes. Nothing big, but exploiting this small exception alone could pay for a boot camp seat multiple times over.

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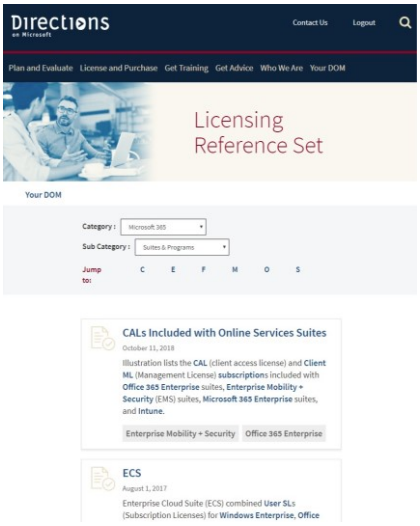
For more detail, or to review / refresh knowledge

DOM Licensing Reference Set explains meaning and relevance of:



- Additional Software
- Assign
- Down edition
- Edition
- External User
- Fail-over Rights
- Install
- Instance
- License Mobility Across Server Farms
- License Mobility through Software Assurance
- Multitenant
- New Version Rights
- Non-Perpetual
- Online Services Terms
- Passive Fail-over
- Product Terms
- Perpetual
- Plan
- Reassign
- Reimaging
- Step-Up
- Version
- Version downgrade

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We've covered a lot of ground in this presentation. Perhaps in the future you'll have a need to refresh your memory on the meaning and relevance of some of the terms we've discussed here. Or you'll have to look up the answer to some question related to product use rights and rules. We have a solution for that. It is called the Directions on Microsoft Licensing Reference Set. It is an online wiki with entries for zillions, give or take a few, of licensing related terms, updated regularly. If you are a Directions on Microsoft Member, you already have access to it.

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