

Purpose

This document is for Microsoft Certified Trainers teaching the AZ-100 and AZ-101 Azure Administrator courses. Information about specific courses is included in the student content and the instructor PowerPoint Notes.

Azure Administrator Role

A Job Task Analysis (JTA) was conducted for the Azure Administrator role in March 2018. The results of that JTA identified the main tasks for an Azure Administrator. These tasks are based on the definition of the Azure Administrator role.

The role is interesting for what it includes and for what it does not include. For example, it does not include database tasks which were part of the previous certification exams. When students ask why some areas are being covered and other areas are not, refer them to this role definition. Remember there are other roles, such as DevOps and Solutions Architect.

Azure Administrators manage the cloud services that span storage, networking, and compute cloud capabilities, with a deep understanding of each service across the full IT lifecycle.

They take end-user requests for new cloud applications and make recommendations on services to use for optimal performance and scale, as well as provision, capacity, monitor and adjust as appropriate. This role requires communicating and coordinating with vendors.

Cloud Administrators use the Azure Portal and as they become more proficient, they use PowerShell and the Command Line Interface.

Successful Cloud Administrators start this role with experience on operating systems, virtualization, cloud infrastructure, storage structures, and networking.

Certification Exams

Certification exams measure your ability to accomplish certain technical tasks for a job role. The study areas are based on the JTA that was conducted for the role.

Each study area has a percentage indicating the relative weight of the area on the exam. The higher the percentage, the more questions you are likely to see in that area.

There are two Azure Administrator certification exams with the following study areas and percentage weighting.

[AZ-100 Microsoft Azure Infrastructure and Deployment](#)

Study Area	Percentage
Manage Azure subscriptions and resources	15-20%
Implement and manage storage	20-25%
Deploy and manage virtual machines	20-25%
Configure and manage virtual networks	20-25%
Manage identities	15-20%

[AZ-101 Microsoft Azure Integration and Security](#)

Study Area	Percentage
Evaluate and perform server migration to Azure	15-20%
Implement and manage application services	20-25%
Implement advanced virtual networking	30-35%
Secure identities	20-25%

Notice these exams do not really build on each other. In other words, the exams could be taken in any order. Each exam covers a different set of tasks.

Azure Administrator Courses

The Azure Administrator courses are aligned with the certification exams and the areas of study. For example, AZ-100 has five areas of study and there are five Azure Administrator courses.

- AZ-100T01: Managing Azure Subscriptions and Resources
- AZ-100T02: Implementing and Managing Storage
- AZ-100T03: Deploying and Managing Virtual Machines
- AZ-100T04: Configure and Manage Virtual Networks
- AZ-100T05: Manage Identities

AZ-101 has four areas of study and there are four Azure Administrator courses that cover that information.

- AZ-101T01: Migrate Servers to Azure
- AZ-101T02: Implement and Manage Application Services
- AZ-101T03: Implement Advanced Virtual Networking
- AZ-101T04: Secure Identities

Program Offerings

The Azure Administrator courses can be offered in a variety of ways.

- **Individually.** The courses can be taught standalone; however, a certain amount of foundational information about Azure is required. This information can be found in the *Managing Azure Subscriptions and Resources* course.
- **Certification preparation.** The courses can be bundled to support preparing for the certification exams.
- **Deep dive.** The courses can be combined to provide a more complete deep dive into an area. For example, you could combine *Configure and Manage Virtual Networks* with *Implement Advanced Virtual Networking*. Another example is combining *Manage Identities* with *Secure Identities*.
- **Custom.** The course modules can be grouped to create an entirely new course or workshop. For example, you could create a Troubleshooting course from the Azure Monitor module in *Manage Azure Subscription and Resources* and the troubleshooting content in the other courses.

Course Design

These courses are designed to support the certification study areas, but other content is provided to give context and job skills. For example, unstructured storage like tables and queues are included even though they are not in the testing domain. This is because Azure Administrators should know about these features.

To reinforce where exam study areas are covered, you will find a mapping table in the student Welcome section. It will help you review with the students the testing areas and where the information is in the course. Here is an example, from the *Implementing and Managing Storage* course.

Import and export data to Azure.

Testing May Include	Course Content
Create Export from Azure job	Module 4 - Storing and Accessing Data
Create Import into Azure job	Module 4 - Storing and Accessing Data
Use Azure Data Box	Module 4 – Azure Data Box
Configure and Use Azure blob Storage	Module 2 - Storage Services
Configure Azure Content Delivery Network (CDN) Endpoints	Module 4 - Storing and Accessing Data

Preparing to Teach

In the next sections we will cover the main course components and how they can be used in class. This includes PowerPoint slides, videos, module review questions, reference links, and practice exercises. There is a lot of flexibility in how you use this content to create the best learning experience for your students.

Content

The content for your courses has been chunked into small topics. Each topic/slide focuses on a single concept. For example, action groups, resource locks, and log query language. Use the topic and reference links to fully cover the concept. If you simply read the slide you will not have enough content to fill the scheduled time.

PowerPoint Slides

PowerPoint slides are provided to help you teach the course.

- There is a Module 00 PowerPoint file. This includes an agenda, listing modules and lessons for the course. It also includes the mapping from the certification study areas to the modules in the course. We recommend you customize this file for your specific situation. For example, you could add an introduction slide and an overview of the classroom facilities.
- Additionally, each module within the course has a separate file. These slides were designed to supplement the student materials. You should review how the topics are presented to the student versus how the slides are organized. You can customize the slides to make your presentation more interesting.

Videos

Your PPT deck includes links to videos which provide conceptual information about a topic area. Some videos are marked as Demonstrations. These videos walk through how to do something. This video content is optional. In other words, you must decide how to use the videos. There are many ways to use this media in your course.

- You can play the videos and demonstrations during the course or use them as review or homework. We recommend a short review or discussion after each video. Many video and demonstration slides include a screenshot or graphic to help you with the review.

- The videos are inserted in line with the content topics. You may wish to rearrange the videos. For example, you could play the videos first to introduce the content. Or, you could play the videos last as a review.
- You can create your own demonstrations from the walk throughs and do that instead of playing the video.
- Depending on the student's subscription, some things can only be shown through the video demonstrations. For example, in the *Secure Identities* course, MFA requires a Premium account. In the *Managing Azure Subscriptions and Resources* course, the students may not be able to create an administrator account.
- We have curated the videos in the course to align with the content, but there are many other videos to choose from. [Channel 9](#) is a great source for videos. We recommend [Azure Friday](#) with Scott Hanselman. Also, the [Tuesdays with Corey Sanders](#) series.

Module Review Questions

Module review questions are provided at the end of the module. Note these questions are not at the level of the certification exam. You may wish to supplement with questions of your own choosing. These are open ended questions designed to spark some discussion and review of the most important points in the content.

You can use these review questions in several ways:

- Have the student's pre-test before the course starts and then at the end to see what they have learned.
- As a group, go through the questions before moving on to another section.
- Sprinkle the questions into the content as you cover the appropriate material.

Reference Links

The course content includes many reference links. The main reason for this is the Azure documentation is constantly being updated.

- Before you teach the course, use the reference links to validate the content is still current. Pay attention to capabilities and limits. For example, preview features and virtual machine sizes.
- The reference links have been added to your PowerPoint slides/notes to make it easy for you to access more detailed information. Use these links to walk through specific details that are not covered in the content. For example, licensing and

pricing options. Also, lengthy steps that have only been summarized in the content.

- Let students know they can use the reference links after the course to review and confirm what they learned.

You will need to decide how to use the documentation and the reference links. Teaching from the documentation is a new concept in this series of courses. When you leave the slide deck, how will you get students focused back on the course?

Azure Subscriptions

To complete the labs and any additional practice exercises in this course, students need an Azure Subscription. The recommended way to give students access to Azure is by requesting Microsoft Learning Azure Passes.

You can [request Microsoft Learning Azure Passes](#) for yourself and your students. Ensure that you request these passes at least two weeks before the class starts. After receiving the passes each student will need to activate their pass.

✓ It is very important you ensure students activate their passes before class. You don't want to lose time configuring the passes.

✓ It is also important you ensure the Azure pass can be used for the practice exercises. The pass effectively functions in the same way as the [publicly available Microsoft Azure Trial Subscription](#). This means there are limitations on what you can do with the pass.

Labs

Labs are provided for each course. The lab guides are in a PDF format and available in the MCT Download Center and in the [Microsoft Learning GitHub](#) repository. In addition to the lab guide any supplemental files, like scripts and templates, are also provided. In GitHub there are two repositories, AZ-100 and AZ-101. Within each repository, materials are organized by class.

To complete the labs, you will need:

- An internet connection to the Azure portal.
- An Azure subscription. To complete certain labs, as noted in the lab guides, you must use a Microsoft account that has the Owner role in the Azure subscription you intend to use in this lab and is a Global Administrator of the Azure AD tenant associated with that subscription.

If you prefer a hosted environment, any machine that meets the above requirements can be used.

The Module 0 PowerPoint file for each course has a lab slide that lists the labs and lab exercises for that course. For each course, you need to decide where to offer the lab during the course. You can have students do the lab at the end of the course or wherever you determine it makes the most sense to do the individual exercises.

The lab content has been placed at the end of each course for consistency and convenience. However, as the instructor, you are the best judge of your individual classes, and we wanted to provide you with that flexibility.

Portal, Cloud Shell, PowerShell, and the CLI

The lab instructions are written to use the Cloud Shell. The Cloud Shell automatically connects to Azure and provides access to PowerShell and the CLI.

If you would rather have students use PowerShell or the CLI locally, be sure to take time at the start of the class to ensure they have installed the correct components.

- [Install Azure PowerShell on Windows with PowerShellGet](#) (preferred)
- [Install Azure PowerShell on Windows with MSI](#)
- [Install Azure CLI 2.0 on Windows](#)

Other things to think about:

- Ask the students which command line tool they prefer, so you can offer the appropriate exercises.
- If you are helping students prepare for the certification exam they should always do the PowerShell examples. The certification exam will only have a minimal number of CLI questions.
- You may want to ensure your instructor machine has PowerShell installed locally. This way you can use the PowerShell ISE to view any scripts and show students how to construct the commands.

✓ The *Managing Azure Subscriptions and Resource* course has an excellent overview of common Azure Administrator tools. This includes the Azure portal, Azure PowerShell, Cloud Shell, Azure CLI, and ARM templates.

Additional Practice Exercises

This course has numerous additional practice exercises from the Azure documentation tutorials and QuickStarts. The Azure documentation steps are well written and very comprehensive. Read the prerequisites closely and personally try each lab. here are a variety of ways to use the practice exercises:

- You could walk through the practice as a class demonstration.
- You could schedule time for the students to go through the practices.
- You could invite students to demonstrate different parts of the practice and go through as a group.

Also, note:

- There may be several practices to choose from in a lesson. Do them all, select the ones most appropriate to your audience, or find/write some of your own.
- The practices show all the manual steps to accomplish and learn something. However, in their day-to-day job, administrators will often use the Azure QuickStart templates. Be sure to round out your instruction with some of these templates.

Group Discussions

Included throughout the content are questions designed to help students reflect on what they have learned or emphasize some important point. When you see a checkmark, you have a chance to interact with your students and engage them in discussion. This information is included in the student materials and the PowerPoint notes area. For example,

- ✓ Has your organization implemented MFA? Which authentication methods are they using?

Course Content Overlap

Because the courses can be taught individually there is some overlap in content. It is important to take this into account, so you can properly estimate how long it will take to teach the courses.

For example, RBAC concepts initially appear in the *Managing Azure Subscriptions and Resources* course. This is so a student can understand administrator accounts. However, RBAC is also discussed in the *Secure Identities* course. This is the more comprehensive coverage of the content.

Here are some other examples:

Study Area	Courses
CDN	Equally covered in <i>Configure and Manage Virtual Networks</i> and <i>Implementing and Managing Storage</i> .
Resource Manager templates	<i>Implementing and Managing Virtual Networks</i> (primary) and <i>Managing Azure Subscriptions and Resources</i> (introduced)
Azure Monitor	<i>Managing Azure Subscriptions and Resources</i> (primary) and other courses specific to that area.
Self-Service Password Reset	<i>Manage Identities</i> (primary) and <i>Secure Identities</i> (as a comparison to MFA).

Course Timing

The course content is designed to take a day to complete. This will depend on how you teach the course. For example, do the students complete all the practical exercises in both the portal and PowerShell? Do you play every video during the day or are the videos supplemental to the instruction? You have flexibility in presenting the content and determining the balance of instruction and hands-on activities. Try to spend at least half your time doing practical exercises.

AZ-100 Microsoft Azure Infrastructure and Deployment

Courses	Duration
AZ-100T01: Managing Azure Subscriptions and Resources	1-Day
AZ-100T02: Implementing and Managing Storage	1-Day
AZ-100T03: Deploying and Managing Virtual Machines	1-Day
AZ-100T04: Configure and Manage Virtual Networks	1-Day
AZ-100T05: Manage Identities	1-Day

AZ-101 Microsoft Azure Integration and Security

Courses	Duration
AZ-101T01: Migrate Servers to Azure	1-Day
AZ-101T02: Implement and Manage Application Services	1-Day
AZ-101T03: Implement Advanced Virtual Networking	1-Day
AZ-101T04: Secure Identities	1-Day

Resources

There are a lot of resources to help you and the student learn about Azure. We recommend you bookmark these pages and offer the list to your students.

- [Azure forums](#). The Azure forums are very active. You can search the threads for a specific area of interest. You can also browse categories like Azure Storage, Pricing and Billing, Azure Virtual Machines, and Azure Migrate.
- [Mindhub certification practice tests](#). Take a Microsoft Official Practice Test for exam AZ-100 or exam AZ-101.
- [Microsoft Learning Community Blog](#). Get the latest information about the certification tests and exam study groups.
- [Channel 9](#). Channel 9 provides a wealth of informational videos, shows, and events.
- [Azure Tuesdays with Corey](#). Corey Sanders answers your questions about Microsoft Azure - Virtual Machines, Web Sites, Mobile Services, Dev/Test etc.
- [Azure Fridays](#). Join Scott Hanselman as he engages one-on-one with the engineers who build the services that power Microsoft Azure, as they demo capabilities, answer Scott's questions, and share their insights.
- [Microsoft Azure Blog](#). Keep current on what's happening in Azure, including what's now in preview, generally available, news & updates, and more.

- [Azure Newsletter](#). Stay informed on the latest Azure features, events, and community activities. Browse through past newsletters or subscribe and get the latest Azure news delivered to your inbox.

Connect with others

[MCT Central](#) – Your one stop for all things MCT. Stay up to date with the latest MCT news, learn about upcoming events, find job opportunities, or connect with other MCTs around the world. You can also ask questions and discuss a variety of topics including courseware and certification with Microsoft and other MCTs through the MCT Central Forums.

[MOC Courseware Support](#) – If there are problems with a course or you need to log a support ticket, contact the Official Support channel for MOC courses. This channel is monitored by support agents and is the quickest way to log your course support issue.

Feedback

These courses are different from the traditional MOC courses that have been provided in the past. We have provided a framework for you to work with. Take time to prepare and think about the value that only an instructor can bring to training. We hope to partner with you to provide an exceptional student experience and we welcome your feedback.

Happy learning!
Azure Administrator Courseware Development Team