



This course supports the assessments for Network Design and Management. The course covers 7 competencies and represents 6 competency units.

## Introduction

### Overview

Welcome to the Windows Server 2008 R2 Network Design and Management Course. Microsoft Windows Server 2008 is one of the most widely used Windows server operating systems in the industry today. This system provides robust functions of computing that no other Windows Server operating systems has previously provided. Successfully mastering Windows Server 2008 R2 is beneficial for a number of reasons, including:

- the opportunity to become an expert in the field of information technology;
- the ability to improve productivity through installation, configuration, and troubleshooting; and
- the chance to learn how to plan within, implement, troubleshoot, and maintain a Microsoft Windows Server 2008 R2 network environment.

If you have prior experiences with other Microsoft server operating systems, including Windows NT Server 4.0, Windows 2000 Servers/Advance Servers and/or Windows Server 2003, it should be relatively easy for you to command Windows Server 2008 R2, as it inherits many attributes from the earlier operating systems.

Watch the following video for an introduction to this course:

*Note: To download this video, right-click the following link and choose "Save as...":* [download video](#).

### Competencies

This course provides guidance to help you demonstrate the following 7 competencies:

- **Competency 429.1.1: Network Infrastructure and Associated Components**  
The graduate develops plans for building enterprise network infrastructures and includes appropriate components in these plans.
- **Competency 429.1.2: Network Addresses and Services**  
The graduate designs plans for implementing network communication protocols and services in a given network.
- **Competency 429.1.3: Domain Name Resolution**  
The graduate develops implementation plans for domain name resolution that include how to install and configure systems responsible for domain name resolution.
- **Competency 429.1.4: Logical and Physical Network Components**  
The graduate designs and implements the logical and physical components of networks.
- **Competency 429.1.5: Client Access and Authentication**  
The graduate designs plans for network client access and authentication.



- **Competency 429.1.6: File and Print Servers**  
The graduate installs and configures file and print servers.
- **Competency 429.1.7: Monitoring and Tuning Network Infrastructure**  
The graduate creates strategies for monitoring and tuning the performance of network infrastructures.

### **Course Instructor Assistance**

As you prepare to successfully demonstrate competency in this subject, remember that course instructors stand ready to help you reach your educational goals. As subject matter experts, mentors enjoy and take pride in helping students become reflective learners, problem solvers, and critical thinkers. Course instructors are excited to hear from you and eager to work with you.

Successful students report that working with a course instructor is the key to their success. Course instructors are able to share tips on approaches, tools, and skills that can help you apply the content you're studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency. Even if things don't work out on your first try, course instructors act as a support system to guide you through the revision process. You should expect to work with course instructors for the duration of your coursework, so you are welcome to contact them as soon as you begin. Course instructors are fully committed to your success!

## **Preparing for Success**

The information in this section is provided to detail the resources available for you to use as you complete this course.

### **Pacing Guide**

The pacing guide is formatted to cover 12 weeks at 20 hours per week, for a total of 240 hours of study time. Roughly 50-60% of your weekly preparation time should be applied to working in your own lab. This should afford time to improve your understanding of topics in which you are not confident, while working in your own lab environment.

Pacing Guide: [Network Design and Management](#)

*Note: This pacing guide does not replace the course. Please continue to refer to the course for a comprehensive list of the resources and activities.*

### **Learning Resources**

The assessment experience is different for each and every student but there is one constant: you must take advantage of multiple learning resources to complete this assessment successfully. Below are suggestions and best practices to help you use the provided learning resources effectively. Keep in mind these are general best practices and may not be applicable for every student or every study plan. Please contact a course instructor right away if you have any questions. The course instructor shared inbox is [cmMicrosoft@wgu.edu](mailto:cmMicrosoft@wgu.edu).



- Click [here](#) for a short article that provides step-by-step instructions on how to use DreamSpark to download and install an operating system. Included is an example of a Microsoft test lab on a Hyper-V machine (you may be asked to provide your WGU credentials).

#### CBT Nuggets (70-642)

- Go to "About this Course" and download the "NuggetLab Files." The CBT Nuggets trainer will refer to these resources throughout the videos. If you wish to download the lecture audio files, you can access the download link from the same page.
- It is recommended that you work with the MeasureUp lab technologies as the CBT Nuggets' instructor is speaking. Pause the videos when you need more time to set up your own environment.
- When you watch a video, take detailed notes. This video series provides demos, and a high-level understanding of the topics. However, this video series is not designed to provide all the content for the assessment. As the trainer completes a given topic (not an entire video in most cases), find a relevant lab and duplicate that lab the best you can in your home lab environment. Do not move on until you try working the material in your own environment and researching the material in detail via TechNet.
- Feel free to supplement CBT Nuggets with an optional textbook. If this is your preference, please let your course instructor know. We can provide suggestions on texts that can supplement your studies.

#### MeasureUp Labs

- It is recommended that you work with the MeasureUp lab technologies as the CBT Nuggets' instructor is speaking. Pause the videos when you need more time to set up your own environment.
- Click [here](#) to view the MeasureUp FAQ document for technical support and additional best practices on using MeasureUp Labs.



- Go through the labs multiple times. The repetition and redundancy will improve your recollection and familiarity with services and processes assessed on the exam.
- Venture outside the lab document. The MeasureUp Lab environment contains fully functional virtual machines, not simulations. So go further than what the instructions provide and take multiple angles at fulfilling the requirements of the lab document. Where the lab asks for steps to be completed in the GUI, try doing those steps in PowerShell.
- Although each lab environment differs with varying levels of hardware and resources, work these labs in your own environment as much as you can.
- *Note: The Measureup lab experience can be much like going to a computer lab; there are occasions when there is a line to be able to get access to a machine, and there can also be a wait time for the lab to load. Load times usually take around 30 seconds. A wait time for the specific lab you would like to enter may take about 10 minutes and you can be emailed a lab-availability notification should you request one.*

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Transcender Practice  
Exams (70-642)

- Take the Preset Exam Experience first to get an idea of what you are going to be studying, and to check your level of preparation before you start reviewing the material.
- As you complete each "week" in the pacing guide, take the Optimized Exam Experience in Transcender multiple times. Do not be concerned with your score at this point, and make sure you score each item individually so you can review the explanations and TechNet articles. This information is key and should also be worked in your own environment!
- There are features within the Transcender that allow you to set up your own preferences for flashcards and practice; this is a good tool to use throughout your studies in this course. It is customizable as your knowledge progresses, and might also serve as a good self-preassessment.
- Once confident in all the areas, return to Transcender's Preset Exam Experience to assess your exam readiness.

#### **OPTIONAL: Review additional material**

- [Pluralsight \(90-day free trial\)](#)

## **Configuring Addressing and Services**

The content and practice provided in this section represents **21%** of the total 70-642 exam.

### **Configuring Addressing and Services**

This section addresses the following competencies:



- **Competency 429.1.1: Network Infrastructure and Associated Components**  
The graduate develops plans for building enterprise network infrastructures and includes appropriate components in these plans.
- **Competency 429.1.2: Network Addresses and Services**  
The graduate designs plans for implementing network communication protocols and services in a given network.
- **Competency 429.1.4: Logical and Physical Network Components**  
The graduate designs and implements the logical and physical components of networks.

This topic highlights the following objectives:

- configuring IPv4 and IPv6 addressing
- configuring dynamic host configuration protocol (DHCP)
- configuring routing
- configuring Windows Firewall with advanced security

**Complete: CBT Nuggets Module**

The following [CBT Nuggets](#) module covers content for the matched exam objective items:

- IP Addressing Part 1: Understanding IP Addresses
- IP Addressing Part 2: Custom Subnetting (CIDR)
- IP Addressing Part 3: Variable Length Subnet Masking, Supernetting
- IPv6
- DHCP Part 1
- DHCP Part 2
- Configuring Routing
- What's New in R2: Networking and Virtualization
- Configure Firewall Settings
- IPSec
- What's New in R2: Biometrics, Smartcards, Dfs

**Complete: MeasureUp Lab**

Complete the following MeasureUp lab:

- [Configuring Addressing and Services](#)
- [Configuring Windows Firewall with Advanced Security](#)

**Complete: Transcender Optimized Test**

Click the following link and take the optimized test as noted.

- [Configuring IP Addresses and Services](#)

## **Configuring Names Resolution**

The content and practice provided in this section represents **22%** of the total 70-642 exam.

### **Configuring Names Resolution**



This section addresses the following competency:

- **Competency 429.1.3: Domain Name Resolution**

The graduate develops implementation plans for domain name resolution that include how to install and configure systems responsible for domain name resolution.

This topic highlights the following objectives:

- configuring a Domain Name System (DNS) server
- configuring DNS zones, configuring DNS records
- configuring DNS replication
- configuring name resolution for client computers

**Complete: CBT Nuggets Module**

The following [CBT Nuggets](#) module covers content for the matched exam objective items:

- Configure Name Resolution: DNS Part 1
- Configure Name Resolution: DNS Part 2
- Configure Name Resolution: DNS Part 3
- What's New in R2: DNS

**Complete: MeasureUp Lab**

Complete the following MeasureUp lab:

- [Configuring Name Resolution](#)

**Complete: Transcender Optimized Test**

Click the following link and take the optimized test as noted.

- [Configuring Name Resolution](#)

## **Configuring Network Access**

The content and practice provided in this section represents **18%** of the total 70-642 exam.

### **Configuring Network Access**

This section addresses the following competency:

- **Competency 429.1.5: Client Access and Authentication**

The graduate designs plans for network client access and authentication.

This topic highlights the following objectives:

- configuring remote access
- configuring Network Access Protection (NAT)
- configuring DirectAccess
- configuring Network Policy Server



## **Complete: CBT Nuggets Module**

The following [CBT Nuggets](#) module covers content for the matched exam objective items:

- Network Access Protection
- Routing and Remote Access Part 1
- Routing and Remote Access Part 2
- Routing and Remote Access Part 3
- Configure Wireless Access

## **Complete: MeasureUp Lab**

Complete the following MeasureUp lab:

- [Configuring Network Access Policies](#)
- [Configuring Network Access Server](#)

## **Complete: Transcender Optimized Test**

Click the following link and take the optimized test as noted.

- [Configuring Network Access](#)

## **Configuring File and Print Services**

The content and practice provided in this section represents **20%** of the total 70-642 exam.

### **Configuring File and Print Services**

This section addresses the following competency:

- **Competency 429.1.6: File and Print Servers**  
The graduate installs and configures file and print servers.

This topic highlights the following objectives:

- configuring a file service
- configuring Distributed File System (DFS)
- configuring backup and restore
- managing file resources and configuring
- monitoring print services

## **Complete: CBT Nuggets Module**

The following [CBT Nuggets](#) module covers content for the matched exam objective items:

- Configure and Monitor Print Services
- File Services Part 1
- File Services Part 2
- File Services Part 3
- File Services Part 4



- What's New in R2: File and Print Services

**Complete: MeasureUp Lab**

Complete the following MeasureUp lab:

- [Configuring File and Print Services](#)

**Complete: Transcender Optimized Test**

Click the following link and take the optimized test as noted.

- [Configuring File and Print Services](#)

## **Monitoring and Managing a Network Infrastructure**

The content and practice provided in this section represents **20%** of the total 70-642 exam.

### **Monitoring and Managing a Network Infrastructure**

This section addresses the following competency:

- **Competency 429.1.7: Monitoring and Tuning Network Infrastructure**  
The graduate creates strategies for monitoring and tuning the performance of network infrastructures.

This topic highlights the following objectives:

- configuring Windows Server Update Services (WSUS) server settings
- configuring performance monitoring
- configuring event logs
- managing file resources
- gathering network data

**Complete: CBT Nuggets Module**

The following [CBT Nuggets](#) module covers content for the matched exam objective items:

- Windows Server Update Services Part 1
- Windows Server Update Services Part 2
- Monitor Event Logs
- Performance Monitoring
- Gathering Network Data
- What's New in R2: Group Policy Objects
- What's New in R2: Windows Powershell

**Complete: MeasureUp Lab**

Complete the following MeasureUp lab:

- [Monitoring and Managing a Network Infrastructure](#)

**Complete: Transcender Optimized Test**





Click the following link and take the optimized test as noted.

- [Monitoring and Managing a Network Infrastructure](#)

## Final Steps

Congratulations on completing the activities in this course! This course has helped prepare you to complete the associated assessments. If you have not already been directed to complete the assessments, schedule and complete your assessments now.

### First Attempt Checklist

One of the many things that make WGU unique is its competency based education model. If you know the material, all you have to do is prove it by passing the exam. If you can do this, you can accelerate the receipt of your degree.

To make sure you have the best chance possible to pass the exam on your first attempt, **the following should be completed before you refer to take it:**

1. Read, review, and/or utilize all of the learning resources: CBT Nuggets, MeasureUp and Transcender Practice exams. These resources are some of the best in the industry at helping you prepare for this difficult assessment. Do not skip anything.
2. Take a Transcender randomized practice exam. Based on the score report of this practice exam, revisit the CBT Nuggets materials for those areas indicated as needing additional study. When you review the practice exam results, select "Sort by Objective" as an option to help you focus on the objectives needing additional study.
3. Use your own hands-on lab, in conjunction with CBT Nuggets and MeasureUp, to review the objectives indicated by Transcender as needing additional study. This will help you gain additional familiarity with the technologies. Repeat this process until you can score 90% or higher at least 5 times on the Transcender randomized practice exam.
4. Contact a course instructor at [cmMicrosoft@wgu.edu](mailto:cmMicrosoft@wgu.edu) for additional resources and valuable test-taking strategies. This is very important, as a course instructor can provide valuable advice and save you time when you focus on exam preparation.

If this has been done, and you feel comfortable with all of the concepts presented, you are most likely ready to refer for the first attempt of the exam.

If the first attempt is failed, you will be required to get in contact with the course instructor to see what went wrong and how you can prepare to make sure your second attempt is a success. Once the course instructor feels you are ready to refer for the second attempt of the exam, he or she will approve your second exam referral. However, why not contact a course instructor **before** you make your first assessment attempt?