Welcome

Architecting with GCP Fundamentals: Infrastructure

Last modified 2017-11-27

Facilities

Parking

Facilities

Food

Course etiquette

Please silence your phone and take calls outside.

Recording this class is prohibited.

Ask questions interactively or via chat (online).

Course Objectives

- Learn methods to develop, implement, and deploy solutions on Google Cloud Platform (GCP).
- Consider the broad range of GCP technologies in your plans.
- Develop essential skills for managing and administering solutions.
- Learn technologies that are used to implement security, scalability, and high availability.

Google Cloud

This three-day instructor-led class introduces participants to the comprehensive and flexible infrastructure and platform services provided by Google Cloud Platform. Through a combination of presentations, demos, and hands-on labs, participants explore and deploy solution elements, including infrastructure components such as networks, systems, and application services. This course also covers deploying practical solutions, including securely interconnecting networks, customer-supplied encryption keys, security and access management, quotas and billing, and resource monitoring.

Cloud Infrastructure track

Cloud Infrastructure

This track is designed for IT professionals who are responsible for implementing, deploying, migrating and maintaining applications in the cloud.

1. Google Cloud Platform Fundamentals: Core Infrastructure
2. Architecting Google Cloud Platform: Infrastructure
3. Architecting Google Cloud Platform: Design and Process

Audience and prerequisites

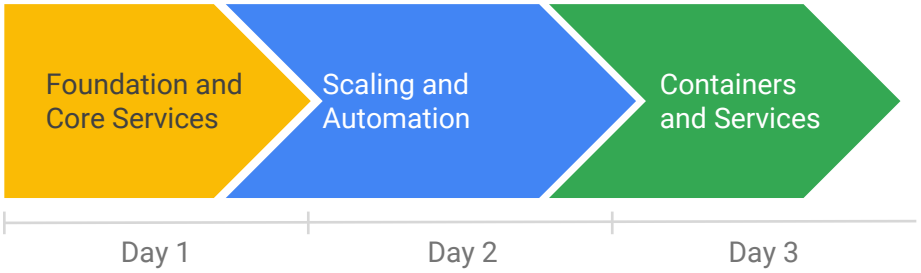
Target Audiences

- Cloud solutions architects, systems operations professionals, DevOps engineers, IT managers
- Individuals using Google Cloud Platform to create new solutions or to integrate existing systems, application environments, and infrastructure

Prerequisites

- Google Cloud Platform Fundamentals: Core Infrastructure or equivalent experience
- Basic proficiency with command-line tools and Linux operating system environments
- Systems operations experience, including deploying and managing applications

Agenda



Agenda: Essential cloud infrastructure – Foundation

Module		Labs
1	**Introduction to GCP**	• Console and Cloud Shell • Infrastructure Preview
2	**Virtual Networks**	• Virtual Networking • Bastion Host
3	**Virtual Machines**	• Virtual Machines

Agenda: Essential cloud infrastructure – Core services

Module		Labs
4	**Cloud Identity and Access Management (IAM)**	• Cloud Identity and Access Management (IAM)
5	**Data Storage Services**	• Cloud Storage • Cloud SQL
6	**Resource Management**	• Examining Billing Data with BigQuery
7	**Resource Monitoring**	• Resource Monitoring (Stackdriver) • Error Reporting and Debugging (Stackdriver)

Agenda: Essential cloud infrastructure – Scaling and automation

Module		Labs
8	**Interconnecting Networks**	• Virtual Private Networks • Cloud Router (using BGP)
9	**Load Balancing**	• Virtual Machine Automation and Load Balancing
10	**Autoscaling**	• Autoscaling
11	**Infrastructure Automation with Google Cloud Platform APIs**	• Google Cloud Platform API Infrastructure Automation
12	**Infrastructure Automation with Deployment Manager**	• Deployment Manager
13	**Managed Services**	

Agenda: Essential cloud infrastructure – Containers and services

Module	Labs
14 Application Infrastructure Services	
15 Application Development Services	
16 Autoscaling	• Kubernetes Load Balancing
11 Completion	

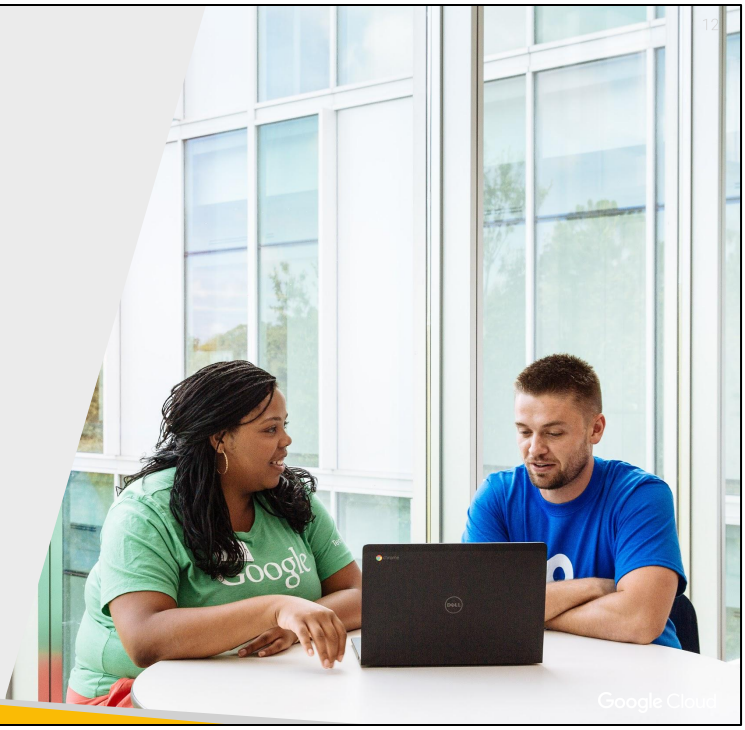
Introductions

Your instructor

- Organization
- Background
- Course goals

You

- Name
- Organization
- Job role
- Course goals



Welcome to your lab environment: Qwiklabs

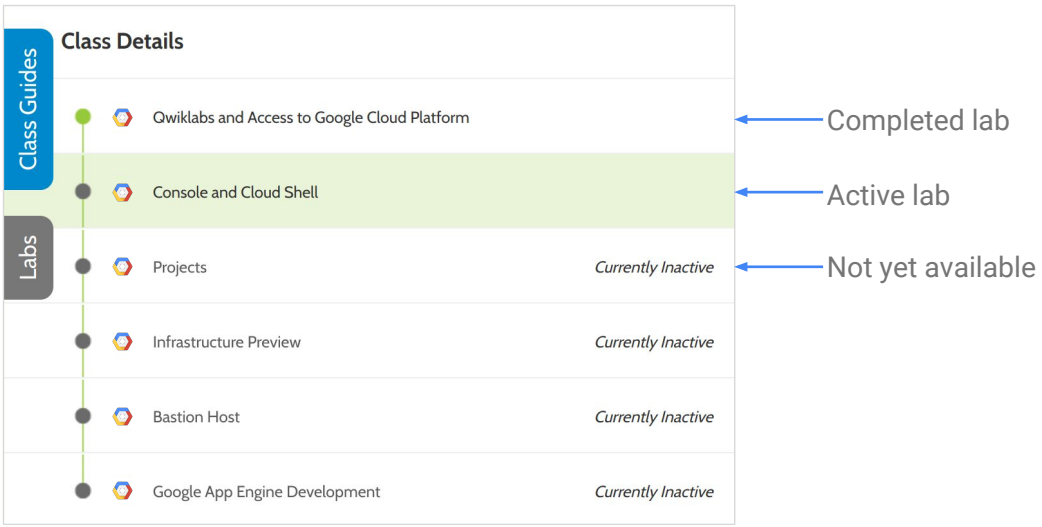
Google Cloud

What you get

For each lab, Qwiklabs offers:

- A free set of resources for a fixed amount of time
- A clean environment with permissions

View your labs

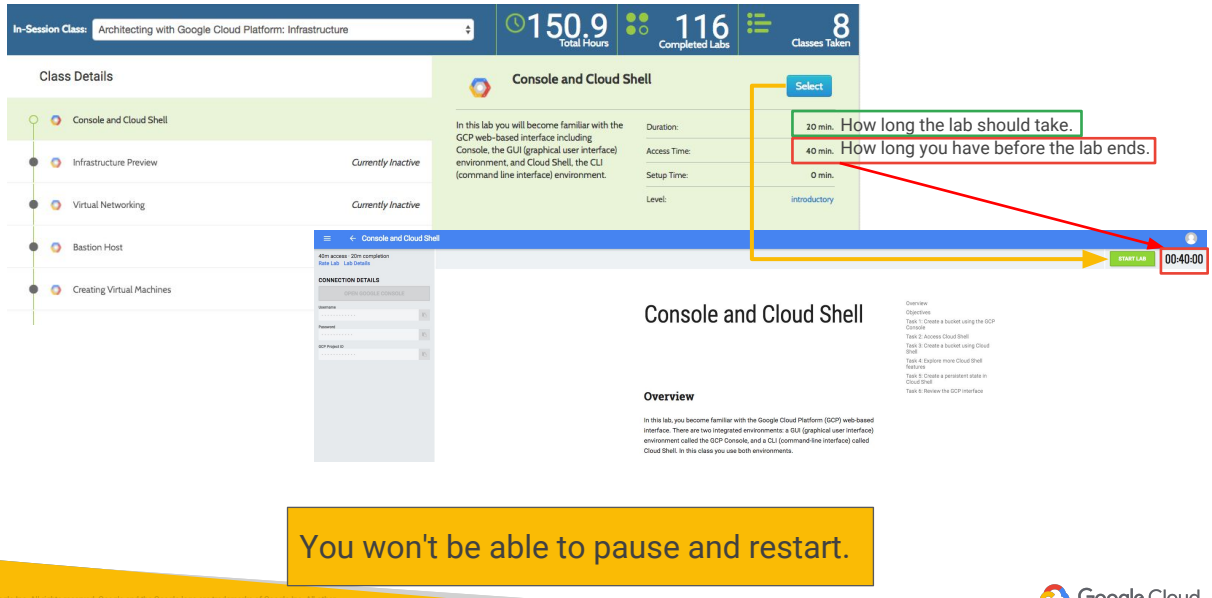


Google Cloud

When you click on the **Labs** tab you'll see class labs and their status.

In the example above, the first lab has been completed, as indicated by the solid green circle. The second lab has been made active by the instructor and is available for your use. The remaining labs are not yet available.

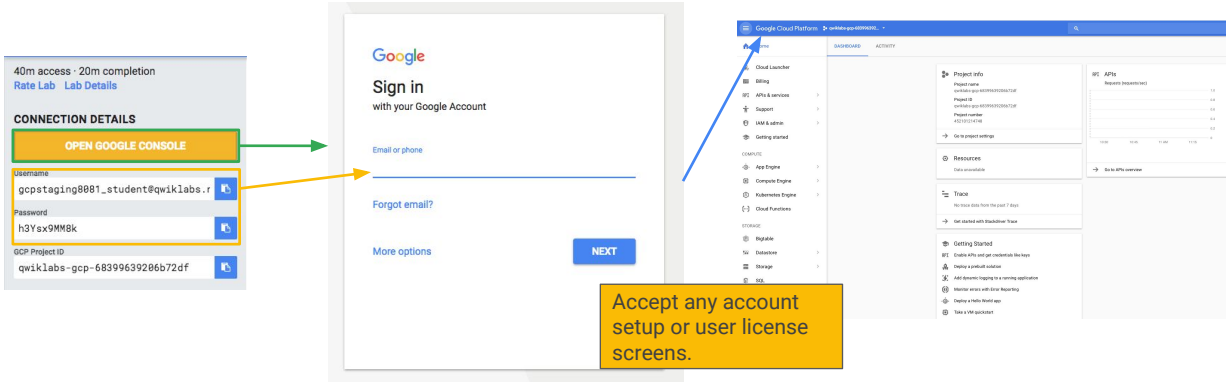
Start a lab



Note the lab's access time on the right and click **Select** to open the lab instructions.

The completion is how long the lab should take you, and the access time is the amount of time you have before the lab ends and your environment is recycled. After you start a lab, you won't be able to pause and restart it, so you'll need a continuous block of time to complete the work.

Sign in to the console



Google Cloud

Click **Open Google Console** and use the provided **Username** and **Password** to sign in to Google. Accept any account setup or user license screens, and the GCP Console will be displayed.

End a lab

When done, click 

to free your resources.

Some labs may require you to NOT end the lab; the instructor will inform you.

Google Cloud

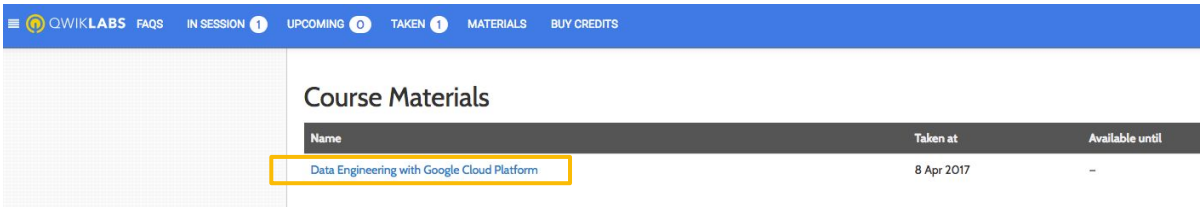
When done, click **End Lab**. The account will be wiped out and removed. You'll lose all work you have in the project. If you don't click End, the lab will automatically end after the access time has elapsed.

Most labs are designed to be standalone; that is, you need to end the lab when you finish each lab. Some labs may require you to NOT end the lab, and the instructor will inform you.

End of class; materials

1 Click ***Materials*** on the top navigation bar

2 Select the class from the Course Materials list



Google Cloud

- Available following the completion of a course.
- Labs currently available for reference. May not work outside of Qwiklabs environment. No support provided. Qwiklabs lab time not currently available for sale separate from the class.
- Class material will appear only at the end of class, provided the student has completed at least one lab in the course.