

# Managing Enterprise Cybersecurity



## MIS 4596

Class 5

# Agenda

- Vanessa Marin – ITA for our course section
- Milestone Teams
- Short history of computers, Unix and Linux
- Introduction to the Google Cloud Platform
- Next step... Linux tutorial
- Remember: Lab 2 & Milestone 1 project!

# Vanessa Marin





**Vanessa (Zambrano) Marin** · 1st  
Program (IT) Manager - IT Risk Management Lead at Alexion Pharmaceuticals, Inc.  
Philadelphia, Pennsylvania, United States · [Contact info](#)

[500+ connections](#)

61 mutual connections: David Schuff, Michael Kala'i, and 59 others

[Message](#) [More](#)

 Alexion Pharmaceuticals, Inc.  
 Fox School of Business at Temple University

- [vanessa.marin@temple.edu](mailto:vanessa.marin@temple.edu)
- text at: 215.622.0224

## Experience



### Program (IT) Manager - IT Risk Management Lead

Alexion Pharmaceuticals, Inc. · Contract

Apr 2021 – Present · 6 mos

New Haven, Connecticut, United States

Responsible for building the foundation and framework to raise the overall security and compliance posture while working with cross functional teams responsible for IT general controls and cybersecurity controls. Lead IT SOX audit and continuously improve processes and participate in key initiatives as the subject matter expert to ensure alignment with IT and Information Security programs and initiatives. Partner with stakeholders to develop and implement risk responses to ensure that risk factors and events are addressed in compliance with applicable laws, regulations, policies and standards.



### Information Technology Assistant

Fox School of Business at Temple University · Part-time

Aug 2020 – Present · 1 yr 2 mos

Philadelphia, Pennsylvania, United States

ITA for Management Information Systems - Managing Enterprise Cybersecurity (MIS 4596) undergrad capstone course.

• Assist undergraduate cybersecurity students learn cybersecurity, Kali Linux, and penetration testing.

[...see more](#)



### DecisivEdge, LLC

3 yrs 4 mos

#### Senior Business Analyst

Full-time

Feb 2021 – Apr 2021 · 3 mos

Newark, Delaware, United States

#### Business Analyst III

Full-time

Nov 2019 – Feb 2021 · 1 yr 4 mos

Newark, Delaware

[Show 1 more role](#) ▾

# Milestone Teams

Name	Email Address	Team
Ajlani, Zane	tug91318@temple.edu	1
Leinheiser, Edward C	tuh29416@temple.edu	1
Pelna, Matthew A	tug42990@temple.edu	1
Wu, Duke	tuj76216@temple.edu	1
Albertini, Alexander John	tuj64717@temple.edu	2
Lung, Tomson	tug73395@temple.edu	2
Peralta, Loymi	tug26945@temple.edu	2
Yeremian, Paze	tul49918@temple.edu	2
Beasley, Pierre J	tuj05033@temple.edu	3
McGoldrick, Michael James	tug65827@temple.edu	3
Pester, Ben Dov	tuk43388@temple.edu	3
Gentile, Nicholas Jacob	tuj62245@temple.edu	4
McGowan, Brad	tuj66655@temple.edu	4
Phan, James	tug65082@temple.edu	4
Iverson, John	tug80260@temple.edu	5
Morita, Dan	tul43873@temple.edu	5
Pobirsky, Tyler	tug98822@temple.edu	5
Kennedy, Patrick	tui12065@temple.edu	6
Nguyen, Lan	tuj52949@temple.edu	6
Shockley, Jeremy C	tuh38512@temple.edu	6

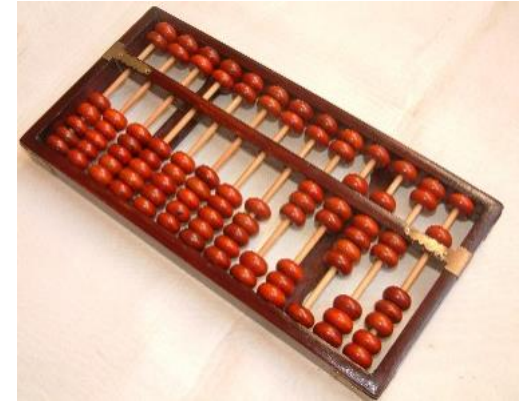
**Tuesday, 9/7/2021** Introduction to Linux |  
Google Cloud Platform  
(GCP)

**Thursday, 9/9/2021** **Lab 2: Web Privacy and Anonymity Lab due**  
Introduction to Cryptography Anderson, Chapter 5

**Saturday, 9/11/2021** **Milestone 1: Risk Assessment Report Draft due**

# Information Systems Development – a brief history

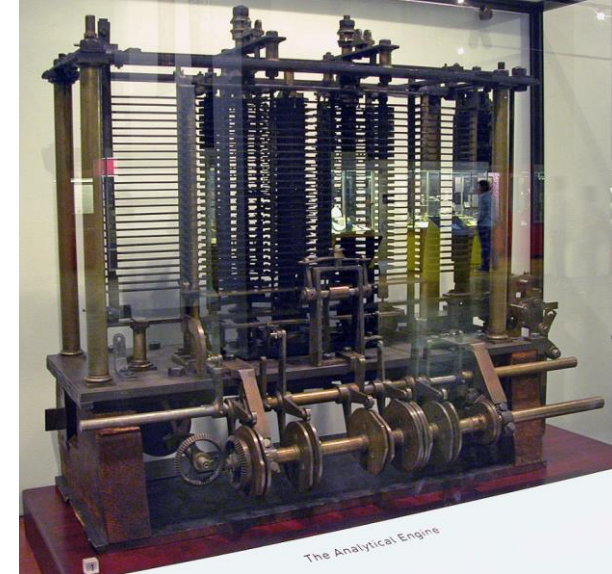
- **Prior 1946** - Before “stored-program” digital computers
  - Devices were pure hardware and had no software - their computing powers were directly tied to their specific form and engineering
- Computing as a concept goes back to ancient times
  - Beginning with devices such as the **abacus**
    - Calculating tool used in China, Europe, and Russia centuries before adoption of written Hindu-Arabic numeral system we use today
  - Continuing on through early examples of computing such as the **Antikythera** mechanism
    - Ancient Greek analog computer used as a calendar to predict eclipses and astronomical positions decades in advance



*Wikipedia – History of Software*

# Information Systems Development – a brief history

- **Prior 1946** - Before “stored-program” digital computers
  - **1837 – The Analytical Engine**
    - First design for a general-purpose computer
    - Designed by English mathematician Charles Babbage
    - Incorporated:
      - Integrated memory
      - Arithmetic logic unit
      - Control flow in the form of conditional branching and loops
    - Logical structure essentially the same as the computer design that dominates in today’s electronic era
    - First known computer program was written by Ada Lovelace to implement Luigi Menabrea’s equations for generating a Bernoulli number sequence of rational numbers
      - The Analytical Engine predated the techniques of electrical engineering needed to run it

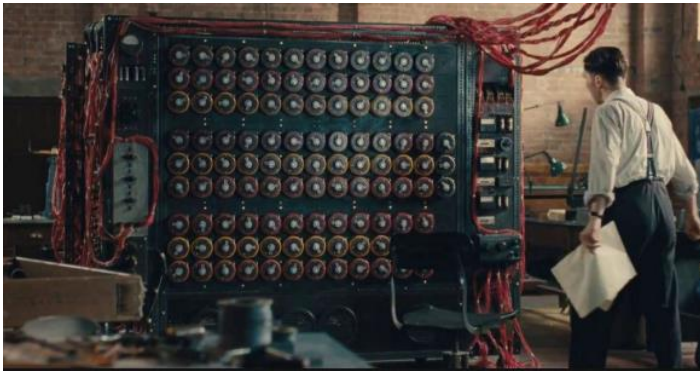


*Wikipedia – History of Software*

# Information Systems Development – a brief history

## Prior 1946 - Before “stored-program” digital computers

- **1935** – Alan Turing proposed the first modern theory of **software**
  - Software requires
    - A **general-purpose processor** - described as a Turing machine
    - **Computer memory**
      - In which reusable sets of routines and mathematical functions comprising programs can be stored, started, and stopped individually
- This concept is recent in human history, led to the creation of the twin academic fields of **computer science** and **software engineering**



# Information Systems Development – a brief history

- **1948 – 1979** Early days of computer software

- 1948 - Claud Shannon “Father of Information Theory” wrote *A Mathematical theory of Communication* and provided an outline for how **binary logic** could be **implemented to program a computer**
  - Subsequently, the first computer programmers used binary code to instruct computers to perform various tasks
- 1948 – ***Birth of Software*** Tim Kilburn at the University of Manchester UK wrote the first program code stored in an electronic memory to calculate the highest factor of an integer
- 1950’s – 1960’s ***Development of high-level computer languages*** Fortran, LISP, COBOL and BASIC allowed programs to be specified in an abstract way, independent of the precise details of the hardware architecture of the computer



*Grace Hopper developed the “self-documenting” COBOL (COmmon Business Oriented Language)*



*Margaret Hamilton led development of the onboard flight software for NASA’s Apollo spacecraft coined the term “software engineering”*

*Wikipedia – History of Software*



# Information Systems Development – a brief history

- **1948 – 1979** Early days of computer software and operating systems

- 1960's – Massachusetts Institute of Technology, AT&T Bell Labs, and General Electric jointly developed an experimental **time sharing operating system** called Multics

- Allowing multiple users to access a **mainframe computer** simultaneously

- 1970's – Bell Lab's researchers left the team and implemented a **self-hosting operating system that became UNIX** on a **minicomputer**

- Included concepts of computer processes, device files, hierarchical file system, command-line interpreter, editor, programming shell, and assembler

- Text editor and first text formatting and publishing program written in assembly language

- 1971 – *UNIX Programmer's Manual* written

- 1973 – Unix Version 3 rewritten in higher-level C language

- Most popular variants of Unix today are

- macOS Mac OS X

- Linux

Wikipedia – History of Software



# Information Systems Development – a brief history

**Linux**, computer operating system created in the early 1990s by Finnish software engineer Linus Torvalds and the Free Software Foundation (FSF)

- While still a student at the University of Helsinki, Torvalds started developing **Linux** to create a system similar to MINIX, a UNIX operating system

# Computer Operating Systems

An **operating system (OS)** manages computer hardware, software resources, and provides common services for computer programs

Operating systems are found on many devices that contain a computer – cellular phones, video game consoles, web servers and supercomputers

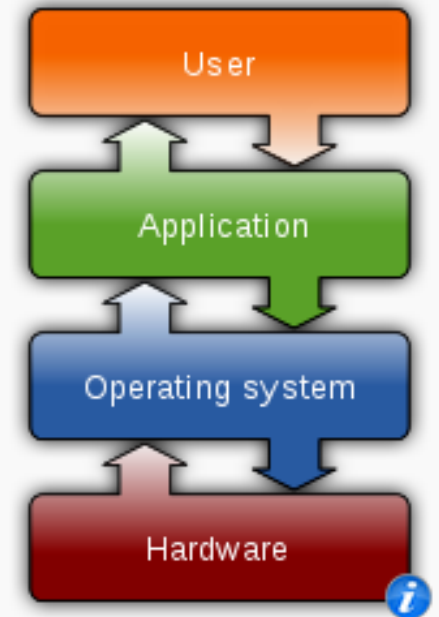
- Operating system acts as an **intermediary between programs and the computer hardware**
- **Desktop operating systems:**
  - Microsoft Windows with a market share of around 76.13%
  - macOS (OS X) by Apple Inc. is in second place (16.5%)
  - Varieties of Linux are collectively in third place (2.4%)
- **Mobile operating Systems** (including smartphones and tablets):
  - Google Android's share was 72.73%
  - Apple's iOS with 26.42%
  - Samsung 0.42%

<https://gs.statcounter.com/os-market-share/mobile/worldwide>

- **Internet Server operating systems** (including web, application, database, & e-mail servers)
  - Unix and Linux 39.8%
  - Microsoft Windows 22.7%
- **Super-Computer operating systems**
  - Linux is the operating system

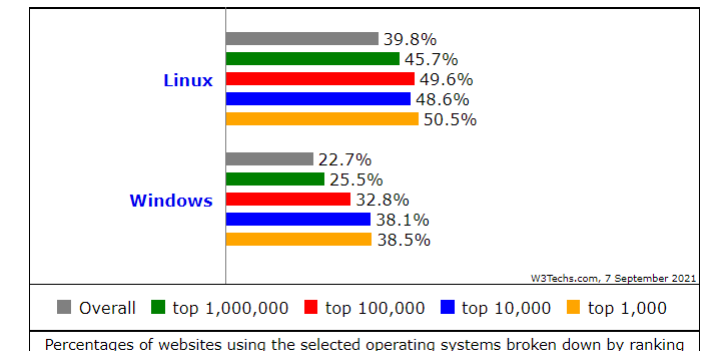
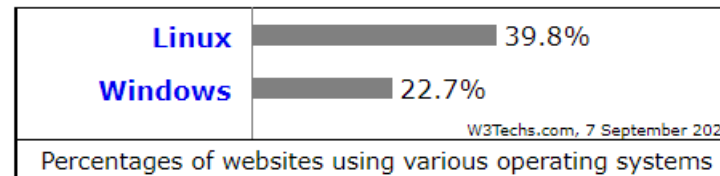
<https://w3techs.com/technologies/comparison/os-linux,os-windows>

## Operating systems



### Common features

Process management · Interrupts ·  
Memory management · File system ·  
Device drivers · Networking · Security · I/O



# Google Cloud Platform

<https://community.mis.temple.edu/mis4596sec002fall2021/labs/>



**MIS**  
MANAGEMENT INFORMATION SYSTEMS

**Managing Enterprise Cybersecurity**  
MIS 4596.002 ■ Fall 2021 ■ David Lanter

SCHEDULE ABOUT **LABS** LECTURE MATERIALS

## Labs

- Lab1: Threat Modeling with Attack Trees
- Lab2: Web Privacy and Anonymity
- Lab 3: See Tutorials – Introduction to Google Cloud Platform & Introduction to Linux
- Lab4: Symmetric Encryption and Hashing
- Lab5: Asymmetric Encryption
- Lab6: Digital Certificates
- Lab7: Password Cracking
- Lab8: Vulnerability Scanning
- Lab9: Exploitation
- Lab10: Physical Security Scavenger Hunt
- Lab11: Social Engineering
- Lab12: Network Security Monitoring and Security Onion
- Lab13: Malware Analysis

## Tutorials

- Tutorial: Introduction to Google Cloud Platform
- Tutorial: Introduction to Linux
- Tutorial: Introduction to Networking

# Introduction to Google Cloud Platform

By Drs. [Dave Eargle](#) and [Anthony Vance](#)

## Part 0: Choose a Google account

In this tutorial, you will use a Google account to sign up for Google Cloud Platform (GCP). You will also join a Google Group with this account, which will give you access to certain GCP resources.

Choose a Google account you will use. You have several options:

- You can use a personal Google account that you already have
- You can create a new personal Google account by signing up for one [here](#)
- If you have a non-[@gmail.com](#) google account (perhaps through your university), it won't work for GCP unless the domain admin has enabled creation of GCP resources by your account. For example, [@temple.edu](#) GCP accounts will not be able to create projects on GCP. If this is the case, use a personal Google account.

Regardless, whenever you use GCP, be sure that you are accessing the platform while signed in to the correct Google account. Otherwise, you may be confused to not see expected projects or to get "access denied" messages.

## Part 1: Sign up for Google Cloud Platform (GCP)

- Visit <https://cloud.google.com> and click "Get started for free."
- Make sure you are signed in to Google with the account you want to use with GCP.
- Step 1 of 2: Agree to the terms of service.
- Step 2 of 2: Choose "Account type" > "Individual". Complete the sign-up form. Provide a credit card.

**Why a credit card?** Google still requires a credit card to make sure you are not a robot. Google will not autocharge your account unless you manually upgrade to a paid plan.

- Click "Start my free trial".

Part 0: Choose a Google account

Part 1: Sign up for Google Cloud Platform (GCP)

Part 2: Join the infosec-management Google Group

Part 3: Create a new project and launch a new Kali Linux instance

Part 4: Connect to your Kali Linux VM using Chrome Remote Desktop

Part 5: Set up budget alerts

Part 6: Install a GCP Console app on a mobile device

Part 7: Complete the Introduction to Linux Tutorial

Deliverable

## Part 2: Join the infosec-management

<https://security-assignments.com/tutorials/intro-to-gcp.html>

- Click "Start my free trial".

## Part 2: Join the infosec Google Group

To get access to the Google Cloud Platform virtual machines created in the lab, follow the instructions there to purchase access to the "lab virtual machine access package". This package provides access to certain Kali GCP images used for this class.

Heads up! It may take up to 24 business hours before your request is processed.

## Part 3: Create a new project and a new Kali Linux instance

Once you have purchased access and your gcp email address has been verified, you will need to do the following:

- First, create a new "project" which will house all of the material for this class.

## Store

This page is the storefront for Security-Assignments.com.

### Lab virtual machine access package -- \$40 for Academic year 21/22

To gain access to the lab virtual machines, do the following:

1. Sign up for an account on GCP using an @gmail.com address.\*
2. Enter your GCP @gmail.com address on this page, and click "Continue."
3. Submit payment for the **lab virtual machine access package**.
4. Within 24 business hours, you should receive notification to your gcp email address that it has been added to the [infosec-management google group](#), giving you access to the lab virtual machines.

If you later want to change your GCP email associated with your purchase, [support@security-assignments.com](mailto:support@security-assignments.com). Non-transferrable to different persons -- just transferrable within google accounts that belong to you.

\* If you have a non-@gmail.com email address that you are certain will work on GCP, contact [access-request@security-assignments.com](mailto:access-request@security-assignments.com).

If you need support, contact [support@security-assignments.com](mailto:support@security-assignments.com)

GCP Email address

The @gmail.com email address that you will use with GCP.

Continue



google cloud platform



All News Videos Images Books More Tools

About 1,330,000,000 results (0.91 seconds)

Ad · <https://cloud.google.com/>

### [Google Cloud - Google Cloud Platform](https://cloud.google.com/)

Future-proof infrastructure. Powerful data & analytics. No ops, just code. Use **Google's** core infrastructure, data analytics and machine learning. No up-front costs. Try it free.



Why Google Solutions Products Pricing Getting Started Contact Us

Search Docs

New customers get \$300 in free credits to spend on Google Cloud. All customers get free usage of 20+ products. [See offer details.](#)

# Accelerate your transformation with Google Cloud

Build apps faster, make smarter business decisions, and connect people anywhere.

[Get started for free](#)

Google Cloud Next '21

## Join our global digital experience

Streaming live • October 12-14

[Register now](#)

Choose from [100+ free sessions, demos, and moments to learn](#) from Google experts.





## Sign in

to continue to Google Cloud Platform

Email or phone  
dgeographi@gmail.com

[Forgot email?](#)

Not your computer? Use Guest mode to sign in privately.  
[Learn more](#)

[Create account](#)

Next




Hi Diego

dgeographi@gmail.com

Enter your password

|

 Try Google Cloud for free

## Step 1 of 3 Account Information



Diego Geographi  
dgeographi@gmail.com

[SWITCH ACCOUNT](#)

### Country

United States

### What best describes your organization or needs?

Please select  
Class project / assignment

### Terms of Service

I have read and agree to the [Google Cloud Platform Terms of Service](#), [Supplemental Free Trial Terms of Service](#), and the terms of service of [any applicable services and APIs](#).

Required to continue

CONTINUE

## Access to all Cloud Platform Products

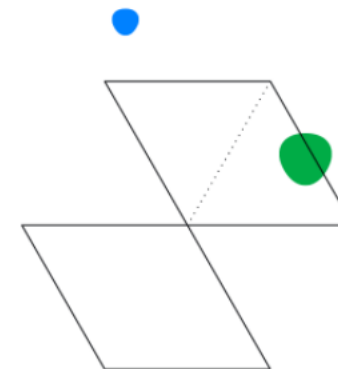
Get everything you need to build and run your apps, websites and services, including Firebase and the Google Maps API.

## \$300 credit for free

Put Google Cloud to work with \$300 in credit to spend over the next 90 days.

## No autocharge after free trial ends

We ask you for your credit card to make sure you are not a robot. You won't be charged unless you manually upgrade to a paid account.





- Home
- Dashboard
- Activity
- Recommendations
- Access the products and services most. We've pinned a few to get you started.
- Billing
- IAM & Admin
- APIs & Services
- Marketplace
- Compute Engine
- Cloud Storage
- VPC network
- Cloud Run
- SQL
- Kubernetes Engine
- BigQuery
- ALL PRODUCTS

### Begin with the basics

Get up and running quickly by checking off common tasks

[GO TO CHECKLIST](#)

Setting up Google Cloud for scalable, production-ready enterprise workloads? Use the [Google Cloud setup checklist](#) designed for administrators.

What's covered

- Reviewing billing, credits, and projects
- Finding products and APIs
- Adding resources to a project
- Understanding and calculating pricing

### Top products [VIEW ALL](#)

#### Compute products



#### Compute Engine

Made by Google

Scalable, high-performance virtual machines

[GO TO COMPUTE ENGINE](#)

#### Other popular compute options

##### [Kubernetes Engine](#)

One-click Kubernetes clusters, managed by Google

##### [App Engine](#)

A platform to build web and mobile apps that scale automatically

##### [Cloud Run](#)

Fully managed compute platform for deploying and scaling containerized applications quickly and securely

##### [Functions](#)

Event-driven serverless functions

[COMPARE](#) [VIEW ALL](#)


#### Storage and database products



#### Other popular storage and database options

## Step 2 of 3 Identity Verification and Contact Information



Confirm where we can reach you about solutions to support your Cloud experience. Continue with the number associated with your Google account or choose a different one. [?](#)

 (836) 255-1122

**CONTINUE** [USE A DIFFERENT NUMBER](#)

## Step 3 of 3 Payment Information Verification

Your payment information helps us reduce fraud and abuse. You won't be charged unless you turn on automatic billing.

 Account type 

Individual

Only Business accounts can have multiple users. You cannot change the account type after signing up. In some countries, this selection affects your tax options. [Learn more](#)

### Payment method

 Add credit or debit card 

# Amex ... 

Address line 1

 100 ... Lane

Address line 2

City

Mountain Top, PA

State

New Jersey

ZIP code

08053



You'll be charged automatically on the 1st of each month. If your balance reaches your payment threshold before then, you'll be charged immediately. [Learn more](#)

**START MY FREE TRIAL**

## Welcome Diego!

Your free trial includes \$300 in credit to spend over the next 90 days. To help us serve you better, please answer 4 questions.

What best describes your organization or needs?

What brought you to Google Cloud?

Please select \*  
Learn more / explore

**NEXT**

What are you interested in doing with Google Cloud?

What best describes your role?

CLOSE

**DONE**

### Welcome Diego!

Your free trial includes \$300 in credit to spend over the next 90 days. To help us serve you better, please answer 4 questions.

✓ What best describes your organization or needs?

2 What brought you to Google Cloud?

Please select \*  
Learn more / explore

NEXT

3 What are you interested in doing with Google Cloud?

4 What best describes your role?

CLOSE

DONE

### Welcome Diego!

Your free trial includes \$300 in credit to spend over the next 90 days. To help us serve you better, please answer 4 questions.

✓ What best describes your organization or needs?

✓ What brought you to Google Cloud?

3 What are you interested in doing with Google Cloud?

- Websites
- Mobile apps
- Storage / backup
- Data analytics
- Artificial intelligence / machine learning
- Game development
- Containerization
- Data management
- Virtual machines (VMs)
- Google Maps
- Other APIs (e.g., Text-to-Speech, Speech-to-Text, Vision)
- Google Photos or Google Workspace
- ✓ Other
- I'm not sure yet

Please specify (optional)  
Learning cybersecurity

NEXT

4 What best describes your role?

CLOSE

DONE

### Welcome Diego!

Your free trial includes \$300 in credit to spend over the next 90 days. To help us serve you better, please answer 4 questions.

✓ What best describes your organization or needs?

✓ What brought you to Google Cloud?

✓ What are you interested in doing with Google Cloud?

4 What best describes your role?

Please select \*  
Academic / Educator

CLOSE

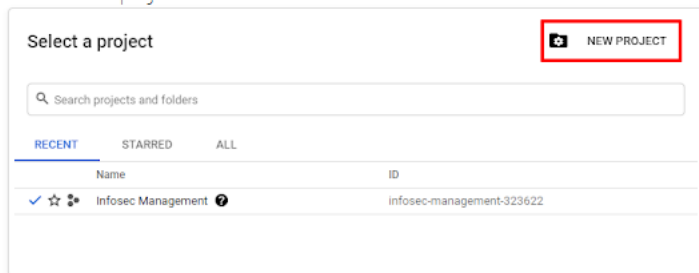
DONE

# Part 3: Create a new project and launch a new Kali Linux instance

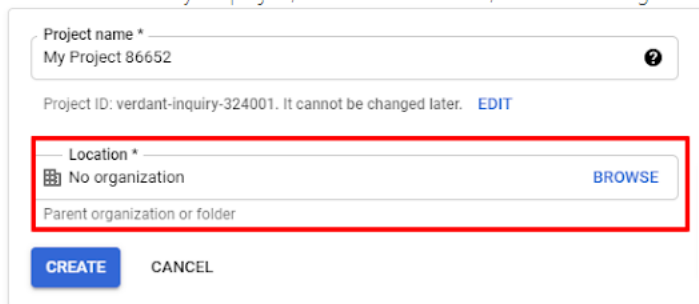
Once you have purchased access and your gcp email address has been added to the infosec-management google group, do the following:

- First, create a new "project" which will house all of the material for this class.

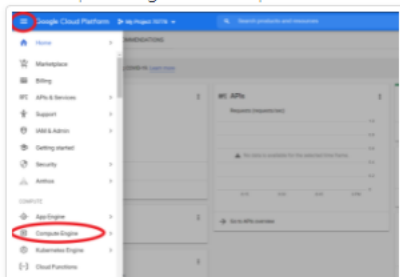
1. Click "create project"



2. Choose a name for your project, and for the "Location," choose "No Organization".



- Then, expand the hamburger menu and navigate to the "Compute Engine" area. Click to enable. Wait a few minutes for Compute Engine to set up.



Part 0: Choose a Google account

Part 1: Sign up for Google Cloud Platform (GCP)

Part 2: Join the infosec-management Google Group

**Part 3: Create a new project and launch a new Kali Linux instance**

Part 4: Connect to your Kali Linux VM using Chrome Remote Desktop

Part 5: Set up budget alerts

Part 6: Install a GCP Console app on a mobile device

Part 7: Complete the Introduction to Linux Tutorial

Deliverable

- Compute Engine
  - Machine images
  - TPUs
  - Committed use discounts
  - Migrate for Compute Engi...
- Storage
  - Disks
  - Snapshots
  - Images
- Instance groups
  - Instance groups
  - Health checks
- VM Manager
  - OS patch management
  - OS configuration manage...
- Settings
  - Metadata
  - Zones
  - Network endpoint groups
  - Operations
  - Security scans
  - Settings

### Select a project

NEW PROJECT

Search projects and folders

RECENT STARRED ALL

Name	ID
✓ ☆ My First Project ?	natural-engine-325315

CANCEL OPEN



← Create an instance

To create a VM instance, select one of the options:

**+ New VM instance** >

Create a single VM instance from scratch

**+ New VM instance from template**

Create a single VM instance from an existing template

**+ New VM instance from machine image**

Create a single VM instance from an existing machine image

**Marketplace**

Deploy a ready-to-go solution onto a VM instance

Name <sup>?</sup>  
Name is permanent

Labels <sup>?</sup> (Optional)

Region <sup>?</sup> Region is permanent      Zone <sup>?</sup> Zone is permanent

us-central1 (Iowa)      us-central1-a

**Machine configuration**

**Machine family**

General-purpose    Compute-optimized    Memory-optimized    GPU

Machine types for common workloads, optimized for cost and flexibility


**Series**

N1

Powered by Intel Skylake CPU platform or one of its predecessors

**Machine type**

n1-standard-4 (4 vCPU, 15 GB memory)

	vCPU	Memory	GPUs
	4	15 GB	-

**CPU platform** <sup>?</sup>  
CPU platform configuration is permanent

Intel Haswell or later

**GPUs**

**Display device**  
Turn on a display device if you want to use screen capturing and recording tools.

Turn on display device

```
Linux kali 5.10.0-kali7-amd64 #1 SMP Debian 5.10.28-1kali1 (2021-04-12) x86_64
```

```
The programs included with the Kali GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.
```

```
Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.
```

```
(Message from Kali developers)
```

```
We have kept /usr/bin/python pointing to Python 2 for backwards  
compatibility. Learn how to change this and avoid this message:  
⇒ https://www.kali.org/docs/general-use/python3-transition/
```

```
(Run: "touch ~/.hushlogin" to hide this message)
```

```
dgeographi@kali:~$
```

```
$
```

Instance groups

Health checks

VM Manager

OS patch management

OS configuration manage...

Settings

STOP || SUSPEND ⏻ RESET ⋮ OPERATIONS ▾ HELP ASSISTANT HIDE INFO PA

Select an instance

PERMISSIONS

LABELS

MONITORING

Please select at least one resource.

External IP Connect

34.122.240.21

SSH

DISMISS

up firewall rules  
traffic to and from a  
ance

Patch management  
Schedule patch updates and  
view patch compliance on  
VM instances

# Part 4: Connect to your Kali Linux VM using Chrome Remote Desktop

Setting up Chrome Remote Desktop (CRD) will enable you to graphically connect to your Kali instance, from your browser, using a Google account to sign in. You should be able to log in as long as your Kali instance is running on GCP.

- Open another browser window, and visit `https://remotedesktop.google.com/headless`.
- Click the "Begin" button.
- Click the "Next" button. (Chrome Remote Desktop is already installed on Kali).
- Click the "Authorize" button.
- Select your personal Google account and click the "Allow" button.
- Click the icon to the right of the Debian Linux command to copy the command:

## Debian Linux

```
DISPLAY= /opt/google/chrome-remote-desktop/start-host --  
code="4/vQHaws_yS3Da7MmgbbuuCS4seoGM5dwa-sHX1gL9_GSwXa6uQFlvqXzni51jwno9vx_-  
xdf10mpfyTqQoFgIbYU" --redirect-
```



- Switch to your browser window with the ssh connection to Kali, paste in the command you copied into the Kali Linux command line. Press `enter`.
  - [This document describes how to copy-paste into the GCP browser ssh window.](#)

Part 0: Choose a Google account

Part 1: Sign up for Google Cloud Platform (GCP)

Part 2: Join the infosec-management Google Group

**Part 3: Create a new project and launch a new Kali Linux instance**

Part 4: Connect to your Kali Linux VM using Chrome Remote Desktop

Part 5: Set up budget alerts

Part 6: Install a GCP Console app on a mobile device

Part 7: Complete the Introduction to Linux Tutorial

Deliverable



Google Cloud Platform My First Project Search products and resources

Compute Engine VM instances CREATE INSTANCE IMPORT VM REFRESH MANAGE ACCESS SHOW INFO PANEL

Virtual machines VM instances Instance templates Sole-tenant nodes Machine images TPUs Migrate for Compute Engi... Committed use discounts Disks

Filter VM instances Columns

Name	Zone	Recommendation	In use by	Internal IP	External IP	Connect
<input type="checkbox"/> kali-linux-vm	us-central1-a			10.128.0.2 (nic0)	34.121.200.9	SSH

Related Actions

- View Billing Report: View and manage your Compute Engine billing
- Monitor VMs: View outlier VMs across metrics like CPU and Network
- Explore VM Logs: View, search, analyze, and download VM instance logs
- Setup Firewall Rules: Control traffic to and from a VM instance
- Patch Management: Schedule patch updates and view patch compliance on VM instances

Open in browser window  
Open in browser window on custom port  
Open in browser window using provided private SSH key  
View gcloud command  
Use another SSH client

```
Linux kali 5.7.0-kali1-amd64 #1 SMP Debian 5.7.6-1kali2 (2020-07-01) x86_64

The programs included with the Kali GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
phillipnontenure@kali:~$
```

```
Linux kali 5.7.0-kali1-amd64 #1 SMP Debian 5.7.6-1kali2 (2020-07-01) x86_64
```

```
The programs included with the Kali GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.
```

```
Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.
```

```
phillipnontenure@kali:~$
```

Chrome Remote Desktop

remotedesktop.google.com/headless?pli=1

Google Chrome Remote Desktop

Remote Access Remote Support

## Set up another computer

If you have remote access to a computer, for example via Secure Shell (SSH), you can use this page to set it up for graphical remote access using Chrome Remote Desktop.

[BEGIN](#)

Help Send Feedback Privacy Terms

Cloud Computing Services | Google Cloud Platform | Introduction to Google Cloud

console.cloud.google.com/compute/instances?project=eng-cogency-303...

Google Cloud Platform

## Compute Engine

### VM instances

Virtual machines

- VM instances
- Marketplace

Name	Zone	Recommendati
<input type="checkbox"/> kali-	us-central1-	

Start your project

Now that you've created a VM instance, learn how to put it to work for you.

[Connect to your instance](#)

[Transfer files](#)

Find existing VM solutions

[Explore Marketplace](#)

Chrome Remote Desktop

remotedesktop.google.com/headless?pli=1

Google Chrome Remote Desktop

Remote Access Remote Support

## Set up another computer

Download and install Chrome Remote Desktop on the remote computer:

- Windows: <https://dl.google.com/edgedl/chrome-remote-desktop/chromeremotedesktophost.msi>
- Debian Linux: [https://dl.google.com/linux/direct/chrome-remote-desktop\\_current\\_amd64.deb](https://dl.google.com/linux/direct/chrome-remote-desktop_current_amd64.deb)

NEXT

*Chrome Remote Desktop is already installed on Kali*



## Set up another computer

Authorize Chrome Remote Desktop to set up a new computer. A separate window will open and you may be prompted to choose an account, enter your password, or give permission for Chrome Remote Desktop to access your account.

[AUTHORIZE](#)



## Set up another computer

You're nearly finished! Run the following command on the remote computer to complete the setup process. Please note that this command can only be used to set up one computer; click Start over if you have more computers to set up.

### Windows (Cmd)

```
"%PROGRAMFILES(X86)%\Google\Chrome Remote Desktop\CurrentVersion\remoting_start_host.exe" --code="4/0AY0e-g776BhtI3AMe8soEQQFEmBxqgVIBWlr3iQ3N1KwNj4yMwioQ35EjqM8vvxoeajmsA" --
```

### Windows (PowerShell)

```
& "${Env:PROGRAMFILES(X86)}\Google\Chrome Remote Desktop\CurrentVersion\remoting_start_host.exe" --code="4/0AY0e-g776BhtI3AMe8soEQQFEmBxqgVIBWlr3iQ3N1KwNj4yMwioQ35EjqM8vvxoeajmsA" --
```

### Debian Linux

```
DISPLAY= /opt/google/chrome-remote-desktop/start-host --code="4/0AY0e-g776BhtI3AMe8soEQQFEmBxqgVIBWlr3iQ3N1KwNj4yMwioQ35EjqM8vvxoeajmsA" -- redirect-url="https://remotedesktop.google.com/_/oauthredirect" --
```



Copy to clipboard.

START OVER

• Copy

```
Linux kali 5.7.0-kali1-amd64 #1 SMP Debian 5.7.6-1kali2 (2020-07-01) x86_64
```

```
The programs included with the Kali GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.
```

```
Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.
```

```
phillipnontenure@kali:~$ DISPLAY= /opt/google/chrome-remote-desktop/start-host --code="4/0AY0e-g776BhtI3AMe8soEQQFEm  
BxqgVIBWahr3iQ3N1KwNj4yMwioQ35EjqM8vvxoeajmsA" --redirect-url="https://remotedesktop.google.com/_/oauthredirect" --na  
me=$(hostname)
```

```
phillipnontenure@kali:~$ DISPLAY= /opt/google/chrome-remote-desktop/start-host --code="4/0AY0e-g776BhtI3AMe8soEQQFEm  
BxqgVIBWahr3iQ3N1KwNj4yMwioQ35EjqM8vvxoeajmsA" --redirect-url="https://remotedesktop.google.com/_/oauthredirect" --na  
me=$(hostname) Kali
```

```
phillipnontenure@kali:~$ DISPLAY= /opt/google/chrome-remote-desktop/start-host --code="4/0AY0e-g776BhtI3AMe8soEQQFEm  
BxqgVIBWahr3iQ3N1KwNj4yMwioQ35EjqM8vvxoeajmsA" --redirect-url="https://remotedesktop.google.com/_/oauthredirect" --na  
me=$(hostname) Kali  
Enter a PIN of at least six digits:  
Enter the same PIN again:
```

- Paste = Ctrl v

- Type "Kali" then return

- Type a 6 digit pin (twice),  
remember to write it down and  
save it for later



## Set up another computer

You're nearly finished! Run the following command on the remote computer to complete the setup process. Please note that this command can only be used to set up one computer; click Start over if you have more computers to set up.

### Windows (Cmd)

```
"%PROGRAMFILES(X86)%\Google\Chrome Remote Desktop\CurrentVersion\remoting_start_host.exe" --code="4/0AY0e-g776BhtI3AMe8soEQQFEmBxqgVIBWhr3iQ3N1KwNj4yMwioQ35EjqM8vvxoeajmsA" --
```



### Windows (PowerShell)

```
& "${Env:PROGRAMFILES(X86)}\Google\Chrome Remote Desktop\CurrentVersion\remoting_start_host.exe" --code="4/0AY0e-g776BhtI3AMe8soEQQFEmBxqgVIBWhr3iQ3N1KwNj4yMwioQ35EjqM8vvxoeajmsA" --
```



### Debian Linux

```
DISPLAY= /opt/google/chrome-remote-desktop/start-host --code="4/0AY0e-g776BhtI3AMe8soEQQFEmBxqgVIBWhr3iQ3N1KwNj4yMwioQ35EjqM8vvxoeajmsA" --redirect-url="https://remotedesktop.google.com/_oauthredirect" --
```



Chrome Remote Desktop

remotedesktop.google.com/access

Google Chrome Remote Desktop

Remote Access Remote Support

Remote devices

kaliKali  
Online

This device

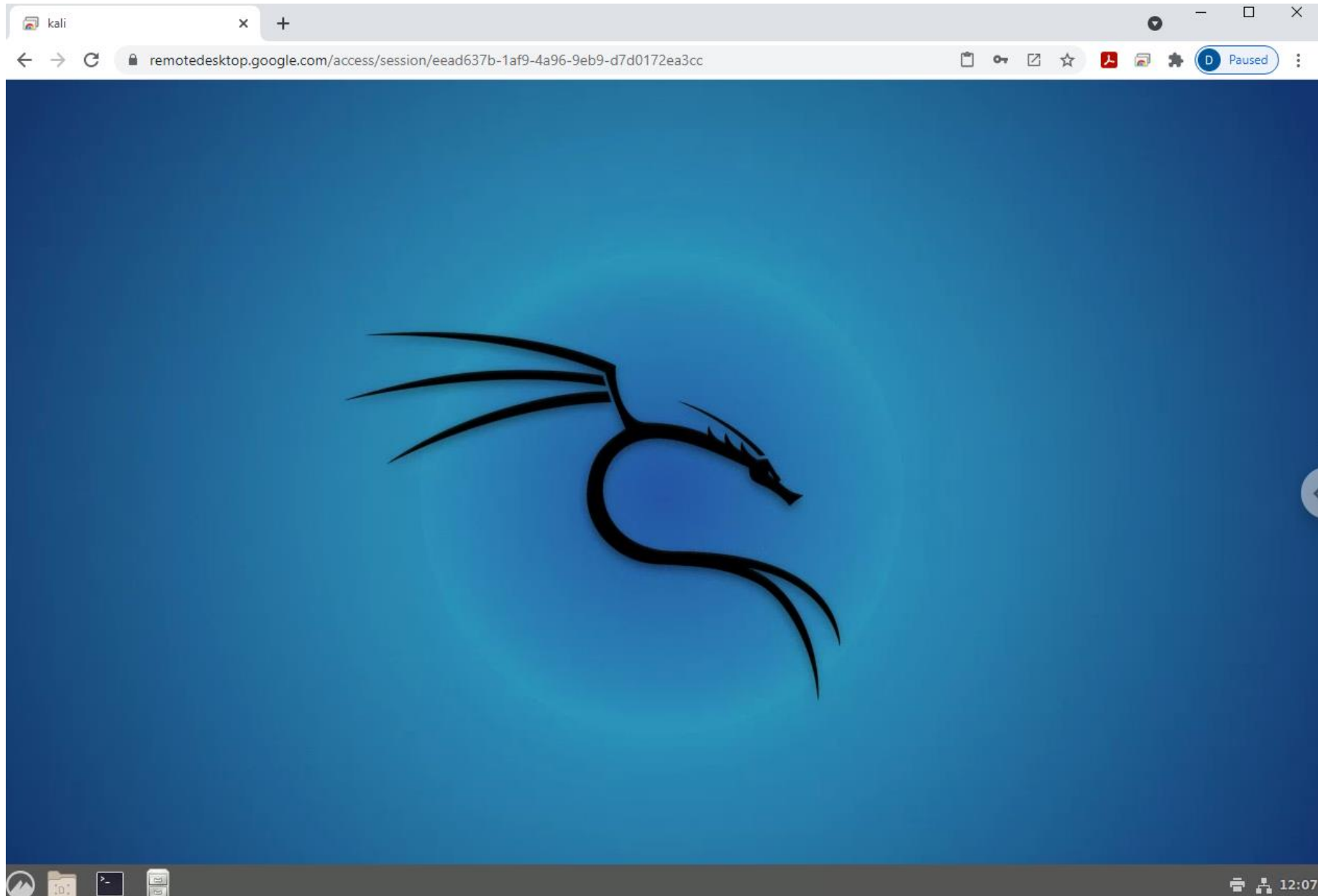
Set up remote access

kaliKali

Enter PIN

Remember my PIN on this device.





# Setup Budget Alerts

- Be sure to following instructions to setup budget alerts

- Virtual machines
  - VM instances
  - Instance templates
  - Sole-tenant nodes
  - Machine images
  - TPUs
  - Migrate for Compute Engi...
  - Committed use discounts
- Storage
  - Disks
  - Snapshots
  - Images
- Instance groups
  - Instance groups
  - Health checks
- VM Manager
  - OS patch management

Filter VM instances Columns

Name	Zone	Recommendation	In use by	Internal IP	External IP	Connect
kali-linux-vm	us-central1-a			10.128.0.2 (nic0)	None	SSH

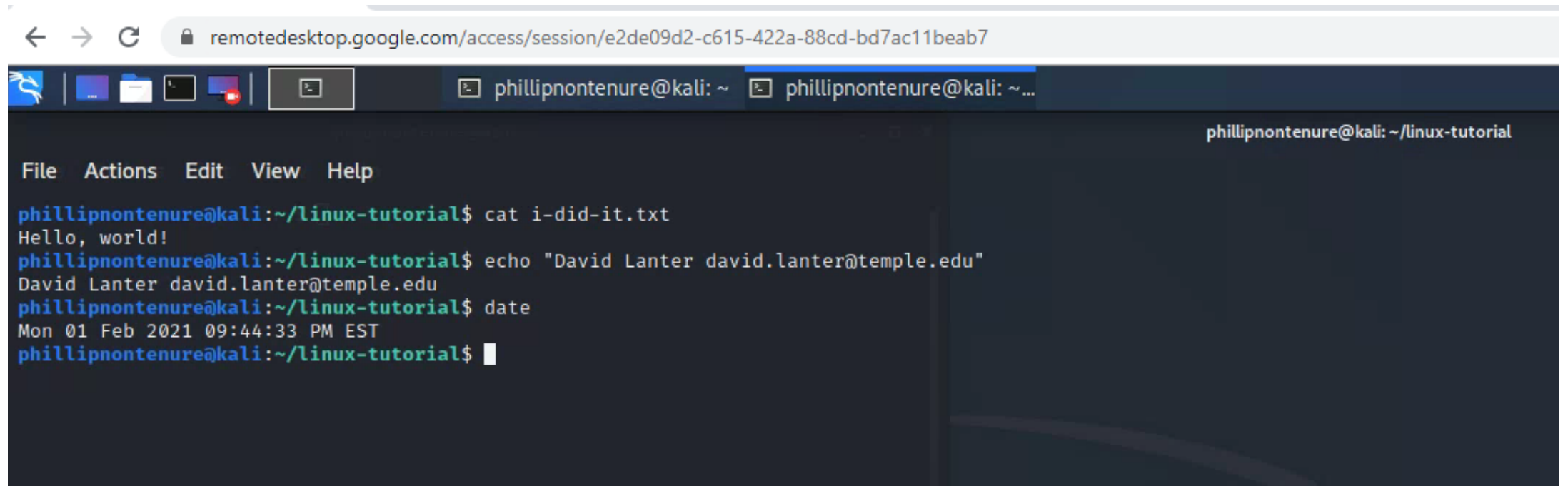
Related Actions

- View Billing Report**  
View and manage your Compute Engine billing
- Monitor VMs**  
View outlier VMs across metrics like CPU and Network
- Explore VM Logs**  
View, search, analyze, and download VM instance logs
- Setup Firewall Rules**  
Control traffic to and from VM instance

- Start / Resume
- Stop
- Suspend
- Reset
- Delete
- View network details
- New machine image
- View logs
- View monitoring

Stopping VM instance "kali-linux-vm" succeeded. X

# Complete introduction to Linux tutorial



The screenshot shows a remote desktop session in a web browser. The address bar displays the URL: `remotedesktop.google.com/access/session/e2de09d2-c615-422a-88cd-bd7ac11beab7`. The desktop environment includes a taskbar with icons for a terminal, file manager, and other applications. Two terminal windows are open, both showing the user `phillipnontenure@kali` in the `~/linux-tutorial` directory. The active terminal window displays the following commands and outputs:

```
File Actions Edit View Help
phillipnontenure@kali:~/linux-tutorial$ cat i-did-it.txt
Hello, world!
phillipnontenure@kali:~/linux-tutorial$ echo "David Lanter david.lanter@temple.edu"
David Lanter david.lanter@temple.edu
phillipnontenure@kali:~/linux-tutorial$ date
Mon 01 Feb 2021 09:44:33 PM EST
phillipnontenure@kali:~/linux-tutorial$
```

# Remember: Lab 2 & Milestone 1...

Name	Email Address	Team
Ajlani, Zane	tug91318@temple.edu	1
Leinheiser, Edward C	tuh29416@temple.edu	1
Pelna, Matthew A	tug42990@temple.edu	1
Wu, Duke	tuj76216@temple.edu	1
Albertini, Alexander John	tuj64717@temple.edu	2
Lung, Tomson	tug73395@temple.edu	2
Peralta, Loymi	tug26945@temple.edu	2
Yeremian, Paze	tul49918@temple.edu	2
Beasley, Pierre J	tuj05033@temple.edu	3
McGoldrick, Michael James	tug65827@temple.edu	3
Pester, Ben Dov	tuk43388@temple.edu	3
Gentile, Nicholas Jacob	tuj62245@temple.edu	4
McGowan, Brad	tuj66655@temple.edu	4
Phan, James	tug65082@temple.edu	4
Iverson, John	tug80260@temple.edu	5
Morita, Dan	tul43873@temple.edu	5
Pobirsky, Tyler	tug98822@temple.edu	5
Kennedy, Patrick	tui12065@temple.edu	6
Nguyen, Lan	tuj52949@temple.edu	6
Shockley, Jeremy C	tuh38512@temple.edu	6

<b>Tuesday, 9/7/2021</b>	Introduction to Linux   Google Cloud Platform (GCP)	
<b>Thursday, 9/9/2021</b>	<b>Lab 2: Web Privacy and Anonymity Lab due</b>	Anderson, Chapter 5
<b>Saturday, 9/11/2021</b>	<b>Milestone 1: Risk Assessment Report Draft due</b>	

# Agenda

- ✓ Vanessa Marin – ITA for our course section
- ✓ Milestone Teams
- ✓ Short history of computers, Unix and Linux
- ✓ Introduction to the Google Cloud Platform
- ✓ Next step... Linux tutorial
- ✓ Remember: Milestone 1 project!