

# Certificate resources and citations

## Course 1 resources and citations

## Module 1: Introduction to cloud computing

#### Resources

Helpful resources and tips

- Google Docs Editors Help: Google Docs Help Center
- Google Docs Editors Help: Google Sheets Help Center
- Google Docs Editors Help: How to use Google Slides
- QWIKlabs Help: Common problems with labs/lab troubleshooting

#### Google's trusted infrastructure

Google Cloud: Google Infrastructure Security Design Overview

#### Cloud benefits and limitations

Google Cloud: Advantages and Disadvantages of Cloud Computing

#### Serverless computing

- Google Cloud: Serverless
- Journal of Cloud Computing: Serverless computing: a security perspective



#### **Citations**

#### Composition of the cloud

- Cloud Flare. (n.d.) What is latency? How to fix latency.
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- Google Cloud. (2023, September 1) <u>Building blocks of reliability in Google Cloud.</u>
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#### Google's trusted infrastructure

• Google Cloud. (2022, September). <u>Default encryption at rest</u>.

#### Cloud benefits and considerations

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#### Cloud benefits and limitations

• Google Cloud. (n.d.). What is cloud computing?



#### Ephemerality and cloud resources

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- Google Cloud. (n.d.) <u>Best practices for operating containers.</u>
- IBM. (n.d.) What is cloud computing?

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- Docker. (n.d.) What is a container?
- Google Cloud. (n.d.) What are containers?
- Intel. (n.d.) Containers in the Cloud: An easier way to deploy workloads.



#### Cloud storage benefits

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- IBM. (n.d.) What is cloud storage?
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## Module 2: Security in the cloud

#### Resources

Controls that contribute to security depth

Google Cloud: NIST Cybersecurity Framework & Google Cloud

#### Platform as a service

Google Cloud: What is Platform as a Service (PaaS)?

Firewalls for network security

• Google Cloud: Network controls in GCP vs. on-premises: Not so different after all

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#### Cloud defense in depth

- Envid, I., & Kiner, E. (2019, June 20). <u>Google Cloud networking in depth: Three</u> <u>defense-in-depth principles for securing your environment</u>. <u>Google Cloud Blog</u>.
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#### Controls that contribute to security depth

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#### The shared responsibility model

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- National Cyber Security Centre. (n.d.) <u>Cloud security guidance</u>.
- Oracle. (n.d.). What is cloud security?

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#### Shared responsibility and cloud migration

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#### The shared fate model

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- Google Cloud. (2023, August 21). Share responsibility and shared fate on Google Cloud.
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- National Cyber Security Centre. (n.d.). <u>Cloud security shared responsibility model</u>.

#### Infrastructure as a service

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- Google Cloud. (2023, October 9). Migrate to Google Cloud.
- National Cyber Security Centre. (n.d.). <u>Cloud security shared responsibility model</u>.

#### Platform as a service

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#### Software as a service

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- Google Cloud. (2024, January 17). <u>Cloud Load Balancing overview</u>.
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#### Firewalls for network security

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- Palo Alto Networks. (n.d.) What is a firewall as a service?
- Palo Alto Networks. (n.d.) What is firewall as a service? What is a public cloud firewall?

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- IBM. (n.d.). What is a virtual private cloud (VPC)?.
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## Module 3: The security lifecycle

#### Resources

Terraform as an IaC tool

• HashiCorp: Resource Blocks

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- Lucidchart. (2017, November 2). The pros and cons of waterfall methodology.
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- Synopsys Editorial Team. (2017, March 27). <u>Top 4 software development methodologies</u>.
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- Amazon Web Services. (n.d.). <u>What is continuous delivery?</u>
- Gitlab. (n.d.) What is CI/CD?
- Google Cloud. (n.d.). <u>DevOps capabilities</u>.
- Palo Alto Networks. (n.d.) What is the CI/CD pipeline?
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#### Software pipelines and Google's Cloud Build

Google Cloud. (2024, January 17). <u>Overview of Cloud Build</u>.

#### Introduction to the software supply chain

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- Schmitt, J. (2023, June 26). <u>Software supply chain: What it is and how to keep it secure</u>.
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- Temple-Raston, D. (2021, April 16). <u>A "worst nightmare" cyberattack: The untold story of the solarwinds hack</u>. NPR.
- Williams, J. (2020, December 15). What you need to know about the solarwinds supply-chain attack. SANS Institute Blog.

#### Levels of the software supply chain

- Google Cloud. (2024, January 17) Artifact Registry overview.
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#### Strengthen the supply chain with Software Delivery Shield

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- McGrath, M. (2022, October 11). <u>Software Delivery Shield protects the software supply</u> <u>chain</u>. Google Cloud Blog.

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- Kumara, I., Garriga, M., Romeu, A. U., Di Nucci, D., Palomba, F., Tamburri, D. A., & Van Den Heuvel, W. (2021). <u>The do's and don'ts of infrastructure code: A systematic gray</u> <u>literature review</u>. Information & Software Technology.
- Palo Alto. (n.d.) What is IaC security?



#### An overview of policy as code

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- Palo Alto. (n.d.) What is Policy as Code?
- Synopsys. (n.d.). <u>Policy-as-code</u>.
- Zhang, X. (2023, April 7). <u>Realize policy-as-code with Pulumi through CrossGuard on Google Cloud</u>. Google Cloud Blog.

#### Terraform as an IaC tool

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- Hashicorp. (n.d.). What Is Infrastructure as Code with Terraform?

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- Red Hat. (2023, March 10). What is GitOps?
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## Module 4: Cloud security analyst roles and responsibilities

#### Resources

Useful Google Cloud tools

- Google Cloud: Cloud Functions documentation
- Google Cloud: Cloud Identity
- Google Cloud: Cloud Shell documentation
- Google Cloud: Compute Engine documentation
- Google Workspace: How teams of all sizes connect, create, and collaborate

Introduction to artificial intelligence

- Google Cloud: Generative AI examples
- Google Cloud: Introduction to Generative Al

Guide to Virtual Private Cloud (VPC)

Google Cloud: gcloud compute networks

#### Citations

Introduction to the cloud security analyst's role

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- Cyber Threat Intelligence team. (n.d.). What is cyber threat intelligence? CIS.
- National Institute of Standards and Technology. (2023, November 7). <u>NIST Risk</u>
   <u>Management Framework</u>.

Cloud security analyst job responsibilities

• Google Cloud. (2024, January 18). <u>Security Command Center overview</u>.



#### Core cloud security analyst responsibilities

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- Palo Alto Networks. (n.d.). Cloud security is a shared responsibility.
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 Cybersecurity Guide Contributors. (2023, October 23). <u>Become a security analyst: Skills</u> and steps. Cybersecurity guide.

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- CompTIA. (n.d.). What is Wireshark and how is it used?
- Google. (n.d.). reCaptcha: Tough on bots easy on humans.
- Hashicorp (n.d.). *Terraform*.
- Lucidchart. (2018, July 17). Improving your organization's web security testing.



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- Google Cloud. (2023, December 6). gcloud compute networks subnets create.
- Google Cloud. (2024, January 17). <u>Cloud code for cloud shell limitations and restrictions</u>.
- Google Cloud. (2024, January 18). gcloud CLI overview.

#### Guide to Virtual Private Cloud (VPC)

- Google Cloud. (2023, October). <u>Global, regional, and zonal resources</u>.
- Google Cloud. (2023, November). <u>Virtual Private Cloud (VPC) overview</u>.



# Course 2 resources and citations

## Module 1: Introduction to frameworks within security domains

#### Resources

Helpful resources and tips

- Google Docs Editors Help: Google Docs Help Center
- Google Docs Editors Help: Google Sheets Help Center
- Google Docs Editors Help: How to use Google Slides
- QWIKlabs Help: Common problems with labs/lab troubleshooting

Learn more about security and compliance with Google whitepapers

- Google Cloud: Cloud Security Podcast
- Google Cloud: Google security overview
- Google Cloud: Security whitepapers
- Google Security Blog: MiraclePtr: protecting users from use-after-free vulnerabilities
   on more platforms

Learn more about security controls

- NIST: Control Catalog spreadsheet
- NIST: Control Map spreadsheet
- NIST: SP 800-53 controls and SP 800-53B control baselines: Resources for implementers

Use existing frameworks to demonstrate compliance

• AICPA: 2017 Trust Services Criteria: See what's changed



- Department of Health and Human Services: Security Standards: Technical Safeguards
- Google Cloud: SOC 2 Compliance
- HITRUST for HIPAA

#### Control mapping for risk management

• NIST: Control Map spreadsheet

#### Security control implementation

- Carnegie Mellon University: Threat modeling: 12 available methods
- Google Cloud: Enforce uniform MFA to company-owned resources

#### **Citations**

#### Introduction to cloud security domains

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- OpenStack. (2023, September 26). Security boundaries and threats.
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- Skoutaris, E.(2020, October 16). What is the cloud controls matrix (CCM)? Cloud Security Alliance blog.

#### Explore compliance and security

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- Cyber Risk Management. (2023, November). <u>Security vs. compliance: What's the</u> <u>difference?</u> Trava Security blog.
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#### Learn more about security and compliance with Google whitepapers

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#### Security controls and compliance

- Exabeam. (n.d.). <u>Cloud security controls: Key elements and 4 control frameworks</u>.
- National Institute of Standards and Technology. (n.d.). <u>Security control</u>. Computer Security Resource Center.
- Walkowski, D. (2019, August 22). What are security controls? F5 Labs.

#### Learn more about security controls

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- Peacock, J. (n.d.). <u>NIST SP 800-53 control families explained</u>. Cybersaint.

#### Risk and compliance

- Cyber Risk Management. (2023, November). <u>Security vs. compliance: What's the</u> <u>difference?</u> Trava Security blog.
- javaTpoint. (n.d.). What are the security risks of cloud computing.
- SecurityScorecard. (2021, August 25). <u>Compliance vs risk management: What you need</u> to know.



#### The three areas of compliance: People, process, and technology

- Computer Science Research Education Group. (n.d.). <u>Computer security 10.3:</u>
   <u>Technology, people, process and compliance</u>. University of Canterbury, NZ.
- Manage Engine Academy. (n.d.). <u>The three Ps of compliance</u>.
- Plutora. (2020, September 8). <u>People. process, technology: The PPT framework.</u> <u>explained</u>.

#### Use existing frameworks to demonstrate compliance

- HIPAA Journal. (2023, July 31). <u>HIPAA compliance guidelines.</u>
- PCI DSS "©2006-2023 PCI Security Standards Council, LLC. All Rights Reserved."
- Yawn, A.J. (2022, January 24). <u>SOC 2 Trust Services Categories</u>. SANS Institute.

#### Overview of the Google Cloud Security Command Center

- Google Cloud. (n.d.). <u>Security command center</u>.
- Google Cloud. (2024, January 17). <u>Configuring security command center.</u>

#### Cloud security controls

- Swanagan, M. (2020, December 7). Types of security controls explained. PurpleSec.
- Exabeam. (n.d.). Cloud security controls: Key elements and 4 control frameworks.

#### Explore steps to implement security controls

- Buchanan Technologies. (n.d.). 5 key steps to performing a cloud security assessment.
- Google Cloud. (2020, February 5). <u>Enforce uniform MFA to company-owned resources</u>.
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# Module 2: Risk management and security frameworks, regulations, and standards

#### Resources

Risk management and security frameworks

- Google Cloud: Security and resilience framework
- Cloud Security Alliance: What is the Cloud Controls Matrix (CCM)?

Compare and contrast risk management frameworks

- NIST: Control Map spreadsheet
- AICPA: Mapping of SOC 2 Trust Services to HITRUST

#### Google's Secure Al Framework

- Google: Introducing Google's Secure Al Framework
- Google: Secure Al Framework Approach

Learn more about data protection and privacy regulations

- PIPEDA Fair Information Principle 1 Accountability
- PIPEDA Fair Information Principle 2 Identifying Purposes
- PIPEDA Fair Information Principle 3 Consent



- PIPEDA Fair Information Principle 4 Limiting Collection
- PIPEDA Fair Information Principle 5 Limiting Use, Disclosure, and Retention
- PIPEDA Fair Information Principle 6 Accuracy
- PIPEDA Fair Information Principle 7 Safeguards
- PIPEDA Fair Information Principle 8 Openness
- PIPEDA Fair Information Principle 9 Individual Access
- PIPEDA Fair Information Principle 10 Challenging Compliance
- PIPEDA in brief
- What is GDPR, the EU's new data protection law?

#### Security frameworks, regulations, laws, and standards

- NIST: Control Map spreadsheet
- General Data Protection Regulation (GDPR)
- Department of Health and Human Services: HIPAA Administrative Simplification
- HIPAA Journal: HIPAA Compliance Guidelines
- ISO standards
- NIST: Cybersecurity framework
- Official PCI Security Standards Council site
- PIPEDA legislation and related regulations
- Department of Health and Human Services: Security Standards: Technical Safeguards
- Google Cloud: SOC 2 Compliance
- The California Privacy Rights Act of 2020



Department of Health and Human Services: The HIPAA Privacy Rule

#### What is Google Cloud Risk Manager?

- Google Cloud: Access control with IAM
- Google Cloud: Automatically generating reports
- Google Cloud: Cloud Asset Inventory
- Center for Internet Security: New CIS Benchmark for Google Cloud Computing Platform
- Google Cloud: Remediating findings
- Google Cloud: Security Command Center
- Google Cloud: Vulnerability findings

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#### Introduction to risk management frameworks

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- National Institute of Standards and Technology. (n.d.). Cybersecurity framework.
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- Stevenson, R. (2022, August 26). <u>Risk Management Framework (RMF): Overview + Best</u>
   Practices. Drata.

#### Risk management and security frameworks

 National Institute of Standards and Technology. (2021, May 14). <u>Examples of framework</u> <u>profiles</u>. NIST Cybersecurity Framework.



StandardFusion. (2023, May 23). <u>Guide to ISO 27001 Compliance - Part 3</u>.

#### Google's Secure Al Framework

Hansen, R. & Venables, P. (2023, June 8). <u>Introducing Google's secure AI framework</u>.
 Google blog.

#### Data protection and privacy

- Intersoft Consulting. (n.d.). <u>General data protection regulation (GDPR)</u>.
- TutorialsPoint. (2022, March 22). <u>Distinguish between data privacy and data protection</u>.

#### Learn more about data protection and privacy regulations

Klosowski, T. (2021, September 6). <u>The State of Consumer Data Privacy Laws in the US</u>
 (And Why It Matters). Wirecutter.

#### Data protection and privacy scenarios

- National Institute of Standards and Technology. (2019, April 30). <u>NIST Privacy</u>
   Framework: An enterprise risk management tool (Discussion Draft).
- National Institute of Standards and Technology. (2019). <u>Hypothetical NIST privacy</u> framework use case profiles.

#### Industry-specific regulations and standards

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   <u>portability and accountability act of 1996 (HIPAA)</u>. Public Health Professionals Gateway.
- Gorman, J., & Redding, J. (2023, February 21). <u>FedRAMP is law! So what?</u> Infusion Points.
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- Nadeau, M. (2020, June 12). <u>General Data Protection Regulation (GDPR): What you need</u> to know to stay compliant. CSO Online.



The Office of the National Coordinator for Health Information Technology. (n.d.). <u>Guide</u>
 <u>to privacy and security of health information</u>. HealthIT.

#### Apply industry-specific requirements

- Centers for Disease Control and Prevention. (2022, June 27). <u>Health insurance</u>
   portability and accountability act of 1996 (HIPAA). Public Health Professionals Gateway.
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- Google Cloud: Customer-managed encryption keys (CMEK)
- Google Cloud: Enterprise foundations blueprint
- Google Cloud: Harden your cluster's security
- Google Cloud: Hardening MySQL overview
- Google Cloud: Introduction to data governance in BigQuery
- Google Cloud: Overview of access control
- Google Cloud: Three security and scalability improvements for Cloud SQL for SQL Server

#### Audits and security assessments

- AICPA & CIMA: System and Organization Controls: SOC Suite of Services
- HITRUST Alliance: External Assessors



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- Google Cloud: Organize resources using labels
- Google Cloud security best practices center
- Google Cloud: Understanding allow policies

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# Module 4: Cloud tools for risk management and compliance Resources

#### Vulnerability management

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- NIST: National vulnerability database Homepage
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- VulDB: Vulnerability database Homepage



#### Cloud security management (CSPM) resources

- Netskope: Cloud security posture management (CSPM)
- Gartner Peer Insights: Cloud security posture management tools reviews and ratings
- Check Point: CloudGuard for cloud native security
- Palo Alto Networks: DevSecTalks
- Palo Alto Networks: Prisma Cloud
- UC Berkeley: Prisma Cloud Security
- <u>CrowdStrike: Cloud Workload Protection</u>
- CSO: Review: CrowdStrike Falcon breaks the EDR mold
- Orca Security: Demo

#### Cloud tools for risk management

- Google Cloud: IAM overview
- Google Cloud: Policy Analyzer for IAM policies

Guide to Guide to risk assessment and compliance management with Security Command Center

Google Cloud: Manage and monitor for compliance

#### Use reports to remediate findings

- Google Cloud: Firewall
- Google Cloud: Policy Analyzer for IAM policies
- Google Cloud: Managing reports
- Google Cloud: Risk Manager conceptual overview



#### Digital sovereignty and sovereign clouds

Google Cloud: T-Systems Sovereign Cloud Powered by Google Cloud

#### Organizational policy constraints, inheritance and violation

- Google Cloud: Access control for folders with IAM
- Google Cloud: Access control for organization resources with IAM
- Google Cloud: Access control for projects with IAM
- Google Cloud: Resource hierarchy
- Google Cloud: Resource hierarchy: IAM Inheritance
- Google Cloud: Understanding constraints
- Google Cloud: Understanding hierarchy evaluation

#### Interview tip: Provide examples

• Interview Warmup

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# Course 3 resources and citations

## Module 1: Access control and identity management

#### Resources

Helpful resources and tips

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- Google Docs Editors Help: Google Sheets Help Center
- Google Docs Editors Help: How to use Google Slides
- QWIKlabs Help: Common problems with labs/lab troubleshooting



#### Guide to firewall rules

- VPC firewall rules
- View logs by using the Logs Explorer

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#### Resources

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- QWIKlabs Help: Common problems with labs/lab troubleshooting

# Essential SecOps skills

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- Google Cloud: Welcome to the Google Cloud Security Community
- YouTube: Google Cloud SecOps

#### Al in SecOps: Red teams

Google: Why red teams play a central role in helping organizations secure Al systems



### Log types: A breakdown

- Google Cloud: Sample audit log entry
- Google Cloud: Samples for Google Workspace Login Audit

# Alert and log optimization

- Google Cloud: Alerting overview
- Google Cloud Whitepaper: Google Cloud security foundations guide

# Guide to event threat detection

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- Google Cloud: Query findings in the Google Cloud console

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# **Module 2: Detection in practice**

#### Resources

Lockheed Martin's Cyber Kill Chain® in practice

• Lockheed Martin: Cyber Kill Chain

Guide to false positive analysis

• Google Cloud: Best practices for using service accounts

Explore false positives through incident detection

Google Cloud: Findings – Security

#### loCs for threat detection

 Google Cloud: How to hunt the cloud: Lessons and experiences from years of threat hunting



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# Module 3: Incident response management and attack mitigation

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- Google Cloud: Welcome to BigQuery studio!
- Google Cloud: Stream findings to BigQuery for analysis
- Google Cloud: Quotas and limits

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• Google Cloud: T-Systems Sovereign Cloud Powered by Google Cloud

#### Incident response partners

- Google Cloud Chronicle: Welcome to Chronicle
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# **Module 4: Incident recovery**

#### Resources

System recovery steps and scenarios

- <u>Dark reading: Homepage</u>
- <u>Infosecurity magazine: Homepage</u>
- National Institute of Standards and Technology (NIST): Computer Security Resource
   Center
- <u>SecurityWeek: Homepage</u>
- SysAdmin, Audit, Network and Security (SANS) Institute: Homepage

Guide to backups and VM recovery

Google Cloud: Backup and DR Service overview

Recover VMs with Google Backup and DR Service

- Google Cloud: Backup and DR Service overview
- Google Cloud: Backup/recovery appliance types



- Google Cloud: Create a production to snapshot policy
- Google Cloud: Supported regions

Disaster recovery planning in Google Cloud: Build a DRP

- DevOps: Cloud disaster recovery best practices
- Google Cloud: Backup and DR Service documentation
- Google Cloud: Disaster recovery planning guide
- Medium: Disaster recovery on Google Cloud for data (Part 1)
- <u>TechTarget: Cloud disaster recovery (cloud DR)</u>

Disaster recovery planning in Google Cloud: Implement a DRP

- <u>DevOps: Cloud disaster recovery best practices</u>
- Google Cloud: Backup and DR Service documentation
- Google Cloud: Disaster recovery planning guide
- Medium: Disaster recovery on Google Cloud for data (Part 1)
- <u>TechTarget: Cloud disaster recovery (cloud DR)</u>

Create and manage effective BCDR plans

- Google Cloud: Cloud Architecture Center
- Google Cloud: Disaster recovery planning guide
- Google Cloud: Site reliability engineering (Sre)

Interview tip: End responses with positive takeaways

Interview Warmup



#### **Citations**

#### Recovery plans in action

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- Elephant Drive. (n.d.). <u>Ultimate guide for beginners: Data backup and recovery explained</u>.
- Google Cloud. (n.d.). <u>Backup and disaster recovery</u>.
- Swanson, M. (2010). <u>Contingency planning guide for federal information systems</u>
  (Special Publication 800-34, Revision 1) [PowerPoint Slides]. National Institute of
  Standards and Technology.
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- Moore, J., Bigelow, S.J., & Crocetti, P. (n.d.). <u>What is BCDR? Business continuity and disaster recovery guide</u>. Techtarget.
- Rao, S. (2020, April, 23). <u>Disaster recovery and business continuity plan on Google</u>
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- Google Cloud. (2024, January 22). Backup plans.
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#### Guide to backups and VM recovery

- Google Cloud. (2024, January 22). Backup plans.
- Google Cloud. (2024, January 22). <u>Define backup policies</u>.

#### Recovery options and measures of success

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- Google Cloud. (2023, January 16). <u>Architecting disaster recovery for cloud infrastructure outages</u>.
- IBM. (2023, September 18). <u>Business continuity and disaster recovery overview</u>. IBM
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- Google Cloud. (2023, November 22). Disaster recovery planning guide.
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# Course 5 resources and citations

# Module 1: Cloud-security focused career resources

#### **Resources**

Tips for resume preparation

- Coursera: How to make a resume: 2024 resume writing guide
- Google Docs
- Purdue University: Résumé Workshop

# Update your resume

- Glassdoor: Home page
- Indeed: Home page
- Linkedin: Job search



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- Makhija, V., & Fender, S. (2023, April 24). <u>Introducing Al-powered risk summaries in Security Command Center</u>. Google Cloud Blog.

#### Portfolios to share project work with employers

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- Izuakor, C (Dr.). (2023, October 19) <u>Break in: How to get into cybersecurity and build a rewarding career</u>. Cybersecurity Guide.
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#### Tips for resume preparation

• Purdue University Writing Lab. (n.d.). <u>Résumé Workshop</u>. [Purdue OWL®]

### Prepare for interviews

- Columbia University Center for Career Education. (n.d.). <u>Prepare for a software or technical interview</u>.
- Marquette University. (n.d.) <u>Interviewing guide</u>. Career Services Center.
- Petersen, R., Santos, D., Smith, M.C., Wetzel, K.A., & Witte, G. (2020, November).
   <u>Workforce framework for cybersecurity (NICE framework)</u> (Special Publication 800-181). National Institute of Standards and Technology.

#### Prepare for a cloud security job interview

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- Oliver, V. (2021, November 11). 10 Common job interview questions and how to answer them. Harvard Business Review.
- Petersen, R., Santos, D., Smith, M.C., Wetzel, K.A., & Witte, G. (2020, November).
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# Module 2: The capstone project

#### Resources

Incorporate your project into a portfolio

- <u>GitHub: Creating an account on GitHub</u>
- GitLab: Sign up
- Google Drive: Access your Google Drive
- Google Sites Help: How to use Google Sites

# Module 3: Put your Google Cybersecurity Certificate to work

#### Resources

Showcase your work

- Applied Digital Skills: Create a resume in Google Docs
- Applied Digital Skills: Create a resume in Google Docs
- Big Interview: Grow with Google user guide
- Enhancy: Search resume examples
- Linkedin: Add and remove skills on your profile
- Linkedin: Edit the About section on your profile
- Linkedin: Manage licenses & certifications

#### Prepare for your job search

- Glassdoor: Home page
- Indeed: Home page

# Google Cloud

- Interview Warmup
- Linkedin: Job search