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2023 NYS Cybersecurity Conference

“Cloud Security on the Cheap” Resource Reference Guide

To the attendees of the 2023 NYS Cybersecurity Conference, welcome and thank you for attending our presentation. We hope that it was informative and that you gained new insights into free and low-cost resources that may be leveraged to help secure your cloud environment.

It should be noted that NYSTEC is vendor neutral. Any reference to specific products or cloud service providers are used for illustrative purposes only. Implementation of any of these resources, tools, or services, is at the sole discretion of your organization based on its needs and should be reviewed with your legal counsel. We hope that the materials presented and referenced can be leveraged to increase your cloud security and build your cyber defense.

Resource References

All references have been sorted by business need as illustrated below:

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Educational

NIST SP 500-292 Cloud Computing Reference Architecture

<https://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication500-292.pdf>

NIST 800-144 Guidelines on Security and Privacy in Public Cloud Computing

<https://csrc.nist.gov/publications/detail/sp/800-144/final>

Cybersecurity and Infrastructure Security Agency (CISA) offers cloud security publications, videos, technical and assessment guidance.

[CISA Cloud Security Resources](#)

CSA Research Site: Whitepapers, Reports, and Other Resources. Easy to search filtering (e.g., Transitioning to the Cloud). Example article you will find "State of Cloud Security Concerns, Challenges, and Incidents" and "Security Guidelines for Providing and Consuming APIs".

[Cloud Security Alliance Resources](#)

Cloud Security Alliance (CSA) FAQ Sheet

[Cloud Security Alliance Artifacts FAQ](#)

Interesting Blog article on the Cloud Security Alliance (CSA) website.

[Cloud Security Alliance API Security](#)

Cyber Readiness Institute Guides and Tips

[Cyber Readiness Institute Cloud Security Guides and Tips](#)

Federal Trade Commission (FTC) provides tips for your business about making your use of cloud services safer.

[FTC Steps Towards More Secure Cloud Computing](#)

Planning

Migration to Cloud Checklists for AWS, Azure, and Google Cloud

Azure Migration Checklist –

[Azure Cloud Migration Checklist](#)

AWS Migration Checklist & Process –

[AWS How to Migrate to Cloud](#)

Google Cloud Migrate Workloads to the Public Cloud

[Google Cloud Work Load Migration Checklist and Essential Guide](#)

NYS Office of Information Technology Services (ITS)

[NYSITS Cybersecurity Standards and Policies](#)

Well Architected Guidance for AWS, Azure, and Google Cloud

Azure offers guidance on conducting a well architected review.

[Azure Well Architected Review and Assessments](#)

Amazon offers guidance on building a well-architected solution including security best practice for AWS cloud environments.

[AWS Well Architected Whitepaper](#)

Google offers recommendations and best practices with the Google Cloud Architecture Framework.
[Google Cloud Architecture Framework](#)

Free Tier offerings for AWS, Azure, and Google Cloud

AWS Free Tier offers hands-on experience with the AWS platform, products and services.

[AWS Free Tools](#)

Azure offers free services such as virtual machines, database, functions and more.

[Azure Free Services](#)

Google Cloud offers Free Tier products and services such compute compute, storage, and application engine(s).

[Google Cloud Free Tier Products](#)

The cloud.gov team conducts ongoing security monitoring and assessment of cloud.gov, based on the continuous monitoring process described in *NIST SP 800-137 Information Security Continuous Monitoring for Federal Information Systems and Organizations*. This is part of ensuring compliance with FedRAMP requirements which can apply to any organization.

[Cloud.Gov Continuous Monitoring Strategy](#)

Training & Certifications

Various training and certification offerings for free or low-cost.

Amazon Web Services (AWS) Training

[AWS Training and Certification Blog \(amazon.com\)](#)

[Cloud Computing Training & Classes - Training and Certification - AWS \(amazon.com\)](#)

[Welcome to AWS Documentation \(amazon.com\)](#)

Microsoft Azure

[Microsoft Learn: Build skills that open doors in your career](#)

Google Cloud Training

<https://www.cloudskillsboost.google/journeys>

Security Baselines & Benchmarks

Cloud Security Alliance (CSA) Cloud Controls Matrix

<https://cloudsecurityalliance.org/research/cloud-controls-matrix/>

Centers for Internet Security (CIS) Benchmarks as checklists for securing cloud. They are free to download for non-commercial use. There are benchmarks specific to AWS, Azure, Google, OCI and others cloud offerings.

<https://www.cisecurity.org/cis-benchmarks>

Cybersecurity and Infrastructure Security Agency (CISA) Cloud Security Technical Reference Architecture (CSTRA) - The focus of the CSTRA is to provide guidance to Federal agencies and their suppliers on how to avoid preventable cloud breaches that could impact communities and citizens with consideration for key focus areas including: shared services, strategic adoption, cloud migration, modernizing cloud

security, service level agreements, APIs and tools, and cloud security posture management.
<https://www.cisa.gov/sites/default/files/publications/Cloud%20Security%20Technical%20Reference%20Architecture.pdf> and other resource [https://www.cisa.gov/resources-tools/all-resources-tools?search=cloud&sort by=date](https://www.cisa.gov/resources-tools/all-resources-tools?search=cloud&sort%20by=date).

Tools & Service Offerings

Continuous Monitoring

Zabbix is a free and open source monitoring tool capable of real-time monitoring of large-scale enterprises as well as small companies. Its multi-system, small footprint agents allow you to gather key performance indicators from servers, virtual machines, network or IoT devices, and other resources, and use them as a source for dashboards and alerts. Using the template-based setup and auto-discovery allows for quick configuration and implementation.

<https://www.zabbix.com/>

Vendor Risk Management

Today the [Cloud Security Alliance \(CSA\)](#) and [OneTrust](#) launched a free Vendor Risk Management (VRM) tool to automate the vendor risk lifecycle for compliance with the GDPR, CCPA and other global privacy and security frameworks. The CSA selected OneTrust, the largest and most widely used dedicated privacy management technology platform, to power vendor risk assessment and compliance automation for its more than 90,000 members. CSA members can access the tool today and automate vendor risk management at no cost.

[Cloud Security and OneTrust Launch Free VRM Tool | News | OneTrust](#)

Vulnerability Testing

A sampling of vulnerability testing tools

[Intelligent Threat Detection - Amazon GuardDuty - AWS](#)

[Microsoft Sentinel - Cloud-native SIEM Solution | Microsoft Azure](#)

[Automated Software Vulnerability Management - Amazon Inspector - AWS](#)

[Microsoft Defender for Cloud - CSPM & CWPP | Microsoft Azure](#)

[Online Port Scanner Powered by Nmap | HackerTarget.com](#)

[Check Open Ports on any IP or website - Geekflare APIs](#)

[IP Tools for Security and Network Testing | HackerTarget.com](#)

Cloud Resource Utilization Tracking

Helps organizations track resource utilization in the cloud.

AWS - tools are free however there are extra charges for advanced services/features

<https://aws.amazon.com/aws-cost-management/aws-cost-optimization/monitor-track-and-analyze/>

- Amazon CloudWatch - <https://aws.amazon.com/cloudwatch/>
- AWS Trusted Advisor - <https://aws.amazon.com/premiumsupport/technology/trusted-advisor/>
- AWS Cost Explorer - <https://aws.amazon.com/aws-cost-management/aws-cost-explorer/>

MS Azure – Free Monitoring Services

[Azure Free Monitoring Services.](#)

- Azure Monitor

- Azure Advisor
- Azure Automation
- Microsoft Cost Management & Billing
- Azure Service Health
- Azure Network Watcher
- Azure Resource Health

Google Cloud – Cost Management tools (Free trial period offered)

<https://cloud.google.com/cost-management#section-2>

Miscellaneous Links

FedRAMP Resources

<https://www.fedramp.gov/documents-templates/>

Top 10 Cloud Application Security Vulnerabilities

<https://owasp.org/www-project-cloud-native-application-security-top-10/>

Free Open-Source Cloud Security Posture Management Software

[Magpie.pdf \(owasp.org\)](#)

AWS Security Hub

<https://aws.amazon.com/security-hub/?p=ft&c=sc&z=3>