Microsoft Azure

Six Best Practices For Cloud Security

Cloud security is a fundamentally new landscape for many companies. While many security principles remain the same as on-premises, the implementation is often very different. This overview provides a snapshot of five best practices for cloud security: identity and access management, security posture management, apps and data security, threat protection, and network security.

Strengthen access control

Improve security posture

Secure apps and data

Mitigate threats

Protect the network

Ensure Azure Governance

1

Strengthen access control

Traditional security measures are not enough to defend against modern security attacks. Today's best practice is to "assume breach" and protect as though the attacker has breached the network perimeter. A Zero Trust approach that verifies and secures every identity, validates device health, enforces least-privilege access, and captures and analyzes telemetry is therefore a new security mandate.

Institute multi-factor authentication

Provide another layer of security by requiring two or more of the following authentication methods:

- Something you know (typically a password)
- Something you have (a trusted device that is not easily duplicated, like a phone)
- Something you are (biometrics)

Azure AD Multi-factor Authentication

Enforce Conditional Access policies

Master the balance between security and productivity by factoring how a resource is accessed into access control decisions. Implement automated access control decisions for accessing your cloud apps that are based on conditions.

Azure AD Conditional Access documentation

Ensure least privilege access

Simplify access management in multi-cloud environments with unified cross-cloud visibility into all permissions and identities and automate least privilege policy enforcement consistently to protect your most sensitive cloud resources.

Establish a process to conduct frequent Identity Access reviews and Implement identity management controls to mitigate the risks of excessive, unnecessary or misused access to critical resources (Privileged Identity Management)

Privileged Identity Management documentation

1

Strengthen access control (continued)

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Protect Identity and Passwords

Automate detection and remediation of identity base risks and block known weak passwords and their variants

- Identity Protection
- Password Protection
- Defender for Identity

Secure Management Workstation

Use a hardened workstation for administering cloud services can help you avoid numerous risks and threats that can come from remotely managing critical infrastructure.

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Emergency Access

Mitigate the impact of accidental lack of administrative access by creating emergency access accounts in your organization.

Emergency access accounts are highly privileged, and they are not assigned to specific individuals.

Emergency access accounts are limited to emergency or "break glass"' scenarios where normal administrative accounts can't be used.

2

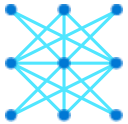
Improve your security posture

With the dynamic nature of the cloud and ever-growing landscape of workloads and other resources, it can be difficult to understand your company's security state in the cloud. Make sure you have the tools you need to assess your current environments, identify risks, and mitigate them.

Assess and strengthen your current posture

Secure score in Microsoft Defender for Cloud offers hundreds of out-of-the-box recommendations mapped to industry best practices and regulatory standards.

Consider implementing Continuous security posture management



Educate stakeholders

Track your secure score progress over time and create rich, interactive reports that you can share with key stakeholders to demonstrate how your security team is continually improving the organization's cloud security posture.

Collaborate with your DevOps team on policies

Involve your DevOps teams in your security strategy. Help them understand and implement key policies and deploy application security at the beginning of the development lifecycle.

3 Secure apps and data

Protect data, apps, and infrastructure through a layered, defense-in-depth strategy across identity, data, hosts, and networks.

Share the responsibility

When a company operates primarily on premises, it owns the whole stack and is responsible for its own security. Depending on how you use the cloud, your responsibilities change, with some responsibilities moving to your cloud provider.

Redundancy and Recovery

Protect your workloads by planning for redundancy. Implement a backup strategy that would help recover the entire Environment configuration and data in case of a disaster. Ensure backups are kept secure and are restorable when needed and inline with your established RTPs and RPOs.

Encryption

Encrypt data at rest and in transit, and consider also encrypting data at use with confidential computing technologies.

Follow security best practices

Ensure your open-source dependencies do not have vulnerabilities. Additionally, train your developers in security best practices such as Security Development Lifecycle (SDL).

4

Defend against threats

Operational security posture—protect, detect, and respond—should be informed by security intelligence to identify rapidly evolving threats early so you can respond quickly.

Enable detection for all resource types

Ensure threat detection is enabled for virtual machines, containers, databases, storage, IoT, and your other resources. Microsoft Defender for Cloud has built-in threat detection that supports all major Azure and AWS resource types.

Integrate threat intelligence

Use a cloud provider that integrates threat intelligence and provides the necessary context, relevance, and prioritization for you to make faster, better, and more proactive decisions.

Modernize your security information and event management (SIEM)

Consider a cloud-native SIEM that scales with your needs, uses AI to reduce noise, and requires no infrastructure.
Follow security operations for privileged accounts guidelines

5

Protect the network

The network security landscape is rapidly transforming. To keep pace with the changes, your security solutions must meet the challenges of the evolving threat landscape and make it more difficult for attackers to exploit networks.

Keep strong firewall protection

Setting up your firewall is still important, even with identity and access management. You need controls in place to protect the perimeter, detect hostile activity, and build your response. A web application firewall (WAF) protects web apps from common exploits like SQL injection and cross-site scripting.

Enable distributed denial-of-service (DDoS) protection

Protect web assets and networks from malicious traffic targeting application and network layers to maintain availability and performance while containing operating costs.

Create a micro-segmented network

A flat network makes it easier for attackers to move laterally. Familiarize yourself with concepts like virtual networking, subnet provisioning, and IP addressing. Use micro-segmentation and embrace the concept of micro-perimeters to support zero-trust networking.

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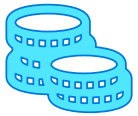
Ensure Azure Governance

There are ways to get alerted if there's an unexpected consumption happening at the subscription. Take proactive action to get notified by enabling budget alerts, Fraud detection and Service Heath event.



Create and Manage Azure Budgets at subscriptions

Budgets in Cost Management help you plan for and drive organizational accountability. They help you inform others about their spending to proactively manage costs, and to monitor how spending progresses over time

Create and manage Azure budgets

Configure Azure Fraud detection and notification

Awareness enables you to take immediate action to determine whether the behavior is legitimate or fraudulent and, if necessary, suspend the affected Azure resources or Azure subscription to mitigate the issue.

Azure fraud detection and notification

Follow through Service Health events covering Security advisories

Provides you with a customizable dashboard which tracks the health of your Azure services in the regions where you use them, including Azure advisories

Service Health overview - Azure Service Health