White Listing (version 1.0)

**Cloud Service Label: IaaS, PaaS**

Description

Both Azure and AWS employ security services that enable the inclusion of IP addresses that should be permitted through firewalls or should be ignored by services such as AWS Guard Duty. An adversary can add a simple IP address rule that likely will be missed by security personnel and will effectively negate the effectiveness of future security controls.

Examples

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| **Name** | **Description** |
| guardduty\_whitelist\_ip (Pacu Module) | Publicly available Pacu module that inserts trusted IP addresses within the Guard Duty service effectively causing Guard Duty to ignore all traffic involving these IPs. |

Mitigations

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| **Mitigation** | | **Description** |
| Audit | | Frequently check permissions on cloud storage to ensure proper permissions are set to deny open or unprivileged access to resources. Consider using automated resource checkers such as CloudSploit or Divvycloud. Frequently check changes to the configurations of cloud detection services, firewalls and security groups. |
|  | AWS | To perform an audit via AWS it is suggested to review information such as account details (credentials, users, groups, roles, etc), mobile applications, EC2 configurations, policies, and account activity. How to audit these different factors can be found in detail at: **https://docs.aws.amazon.com/general/latest/gr/aws-security-audit-guide.html.** |
|  | Azure | To perform an audit via Azure an administrator can review the audit logs that are recorded under Azure’s monitoring for active directory. The audit logs allow for filtering, as well as looking at users, groups, and enterprise specific information. Full details on how to access this information can be found at: **https://docs.microsoft.com/en-us/azure/active-directory/reports-monitoring/concept-audit-logs.** |
|  | GCP | To perform an audit via GCP the logs can be reviewed. GCP breaks this down into three categories; admin activity, data access, and system events. The audit logs can be viewed a few different ways- the console, API, or gcloud. Full details on how to view these logs, how to export, and for how to configure the retention period can be found here: **https://cloud.google.com/logging/docs/audit.** |

Detection

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| **Detection** | **Description** |
| Create Log Metric Filters and Alarms for AWS | To create a metric filter and alarm:   1. Create a metric filter that checks for IAM policy changes and the *<cloudtrail\_log\_group\_name>* 2. Create an SNS topic 3. Create an SNS subscription to the above topic 4. Create an alarm associated with the filter and SNS topic created in steps 1 and 2 respectively |
| Monitor Activity in AWS Account | Various services in AWS offer logging features that allow for detection capabilities. These include CloudFront, CloudTrail, CloudWatch, Config, and S3. |
| Monitor for Suspicious Activity in Azure | Azure AD can generate anomaly reports than can be run on a daily basis. Azure AD Identity Protection show current risks in its dashboard and provides daily email summary notifications. Policies can also be configured to alert to specific issues. |
| Create Log Metric Filters and Alarms for CloudTrail | To create a metric filter and alarm:   1. Create a filter that checks for CloudTrail changes and the specific *<cloudtrail\_log\_group\_name>* 2. Create an SNS topic that the alarm will notify 3. Create an SNS subscription to the above topic 4. Create an alarm associated with the filter from step 1 and SNS topic in step 2 |
| Create Activity Log Alerts in Azure | To create log activity alerts for deletion in the Azure Console:   1. Navigate to *Monitor’ / ‘Alerts* 2. Select *Manage alert rules* 3. Click on the Alert *Name* where Condition contains *operationName equals Microsoft.Network/networkSecurityGroups/securityRules/delete* 4. Hover a mouse over *Condition* to ensure it is set to *Whenever the Administrative Activity Log “Delete Security Rule (networkSecurityGroups/securityRules)” has “any” level with “any” status and event is initiated by “any*” |
| Create, View, and Manage Activity Alerts in Azure Monitor | To create a log alert in the Azure portal:   1. Select **Monitor -> Alerts** 2. Select **New alert rule** of the **Alerts** window 3. Provide information in **Define alert condition** 4. Provide details in **Define alert details** 5. Specify action group for new alert rule under **Action group**, or create a new action group with + **New group** 6. Select **Yes** for the **Enable rule upon creation** option 7. Select **Create alert rule**   To view and manage alerts:   1. Select **Monitor -> Alerts -> Manage alert rules** 2. Select the rule you want to modify and double-click to edit the rule options 3. Click **Save** |
| Azure Resource Manager Templates | Azure Resource Manager templates in the format of JSON files that can be used to configure metric alerts in Azure Monitor. These templates can be used for simple static and dynamic threshold metric alerts, availability tests, and monitoring multiple resources. |
| Enable CloudTrail across all regions in AWS | To enable CloudTrail across all regions:   1. Sign into the AWS Management Console and open the CloudTrail console 2. Click on *Trails* 3. Set necessary Trails to All option in the I column 4. Click on a trail via the link *Name* column 5. Set *Logging* to *ON* 6. Set *Apply trail to all regions* to *Yes* |
| Configure log profile to capture activity logs for all regions in Azure | To set up activity logs for all regions:   1. Navigate to Azure console 2. Go to *Activity log* 3. Select *Export* 4. Select *Subscription* 5. Check *Select all* in *Regions* 6. Select *Save* |

References

1. https://github.com/RhinoSecurityLabs/pacu/wiki/Module-Details. Accessed Feb 12, 2020.