Deploy a Function App without a headache – access control mechanisms and usage examples

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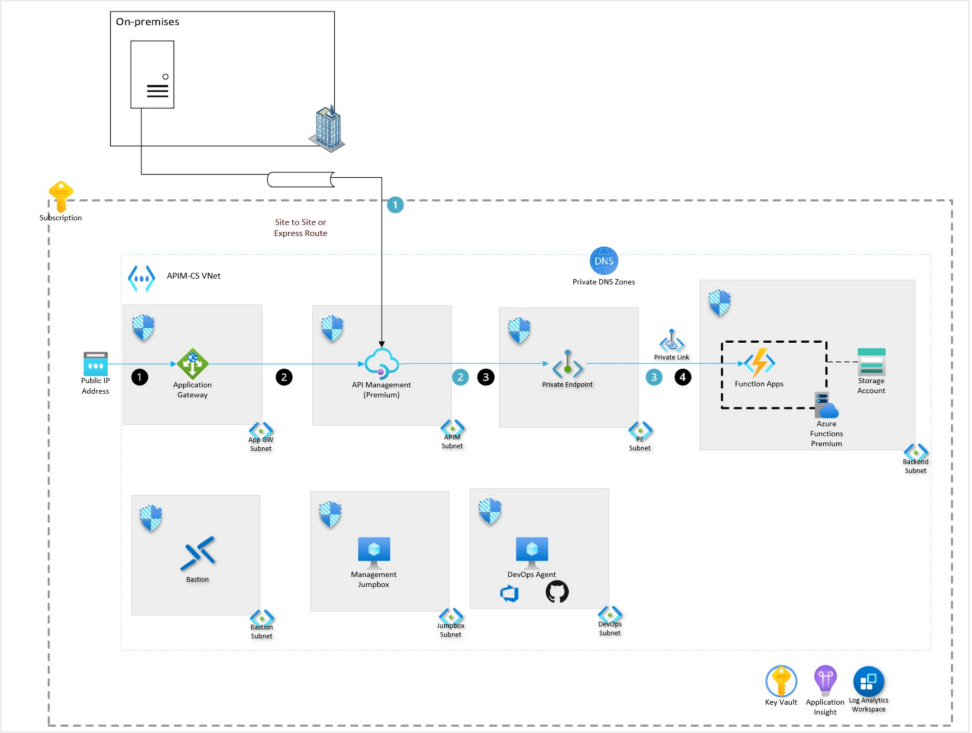
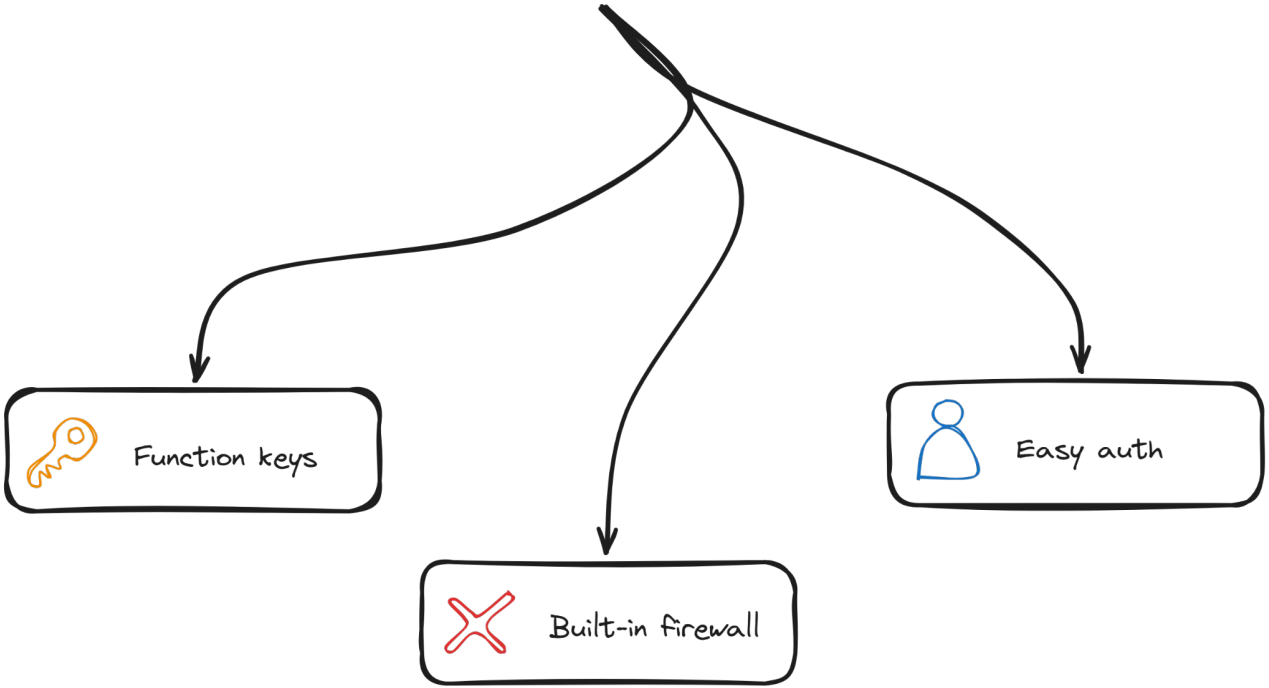
The challenge: securing Function Apps without complexity

- ↳ APIM
- ↳ App Gateway
- ↳ Private endpoint
- ↳ VNet integration
- ↳ ASE
- ↳ etc., etc...



Access control in Azure Functions: what are the options



Function keys: when and how to use them

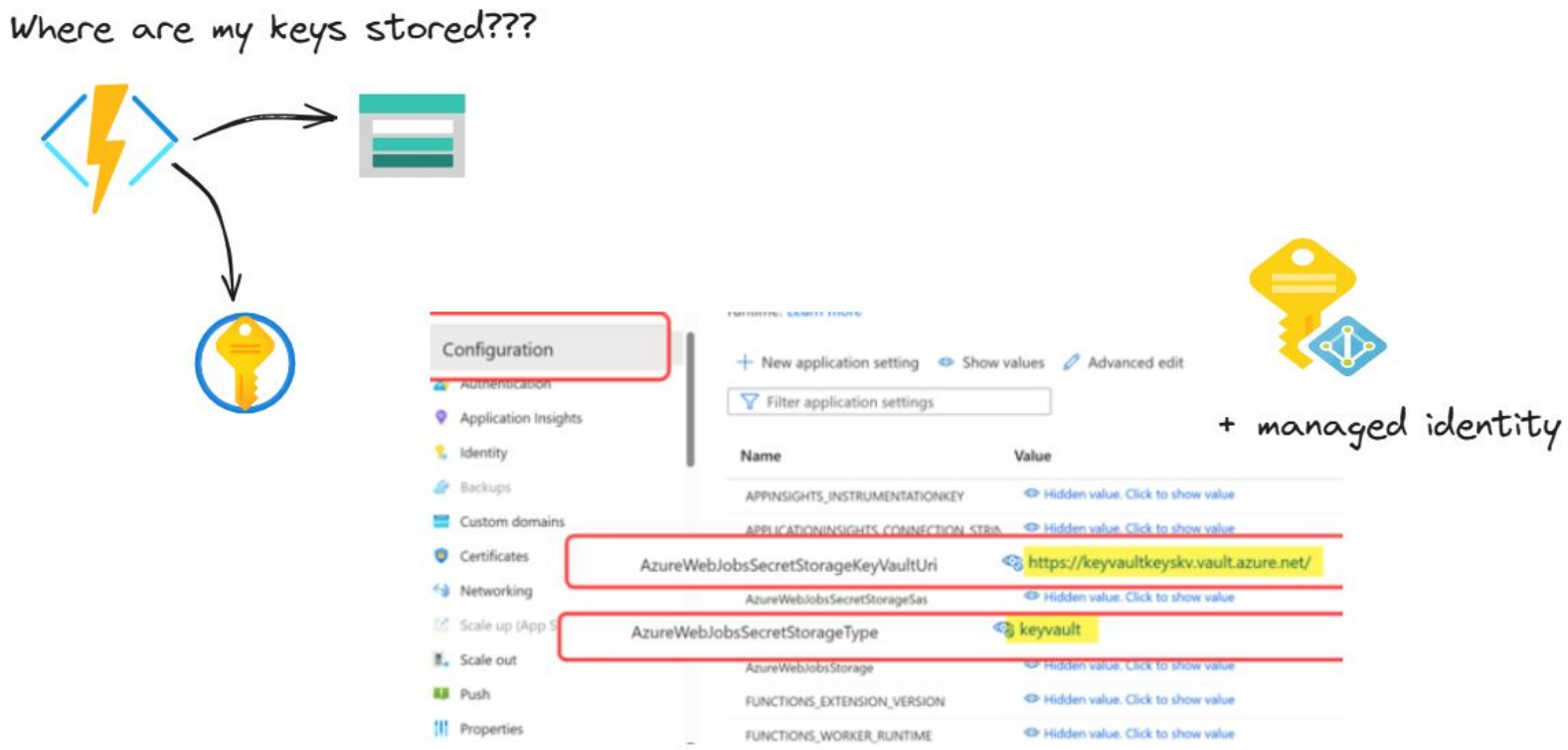
function.json file

```
{
  "bindings": [
    {
      "authLevel": "function",
      "type": "httpTrigger",
      "direction": "in",
      "name": "Request",
      "methods": [
        "post"
      ]
    },
    {
      "type": "http",
      "direction": "out",
      "name": "Response"
    }
  ]
}
```

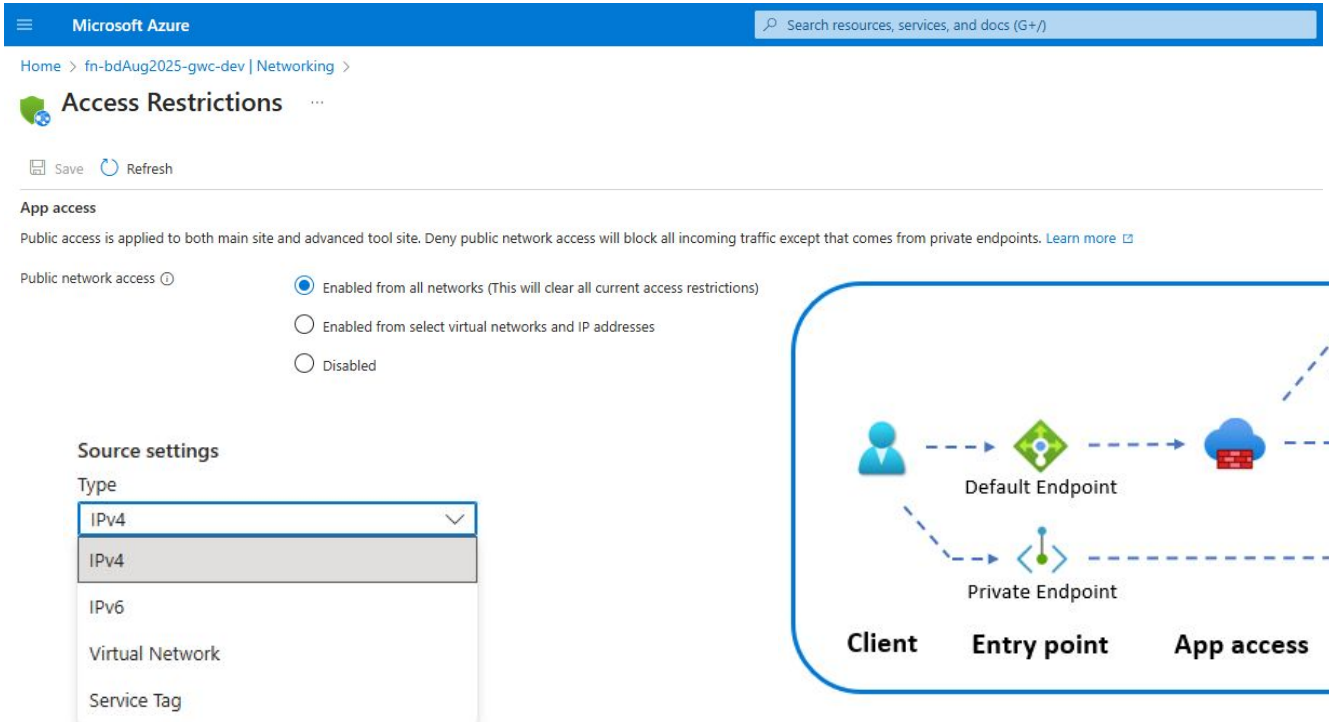
anonymous
function
admin
system
user

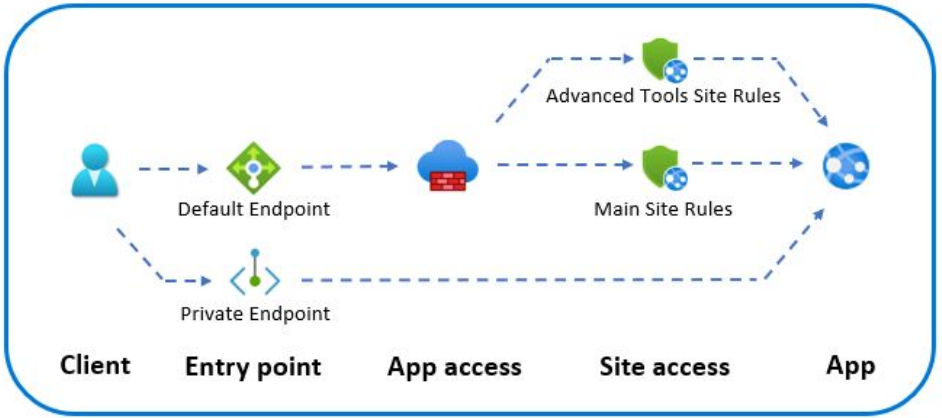
key type	key name
function	default (or user defined)
host	default (or user defined)
master	_master
system	depends on the extension

Function keys: when and how to use them

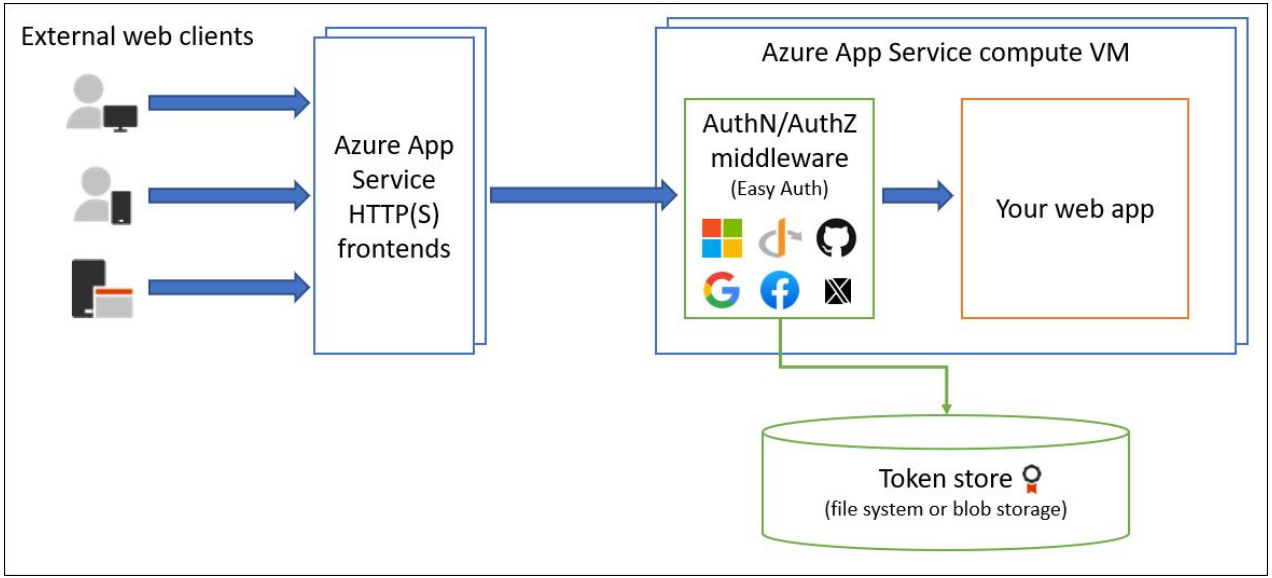


Firewall: restricting access with network rules

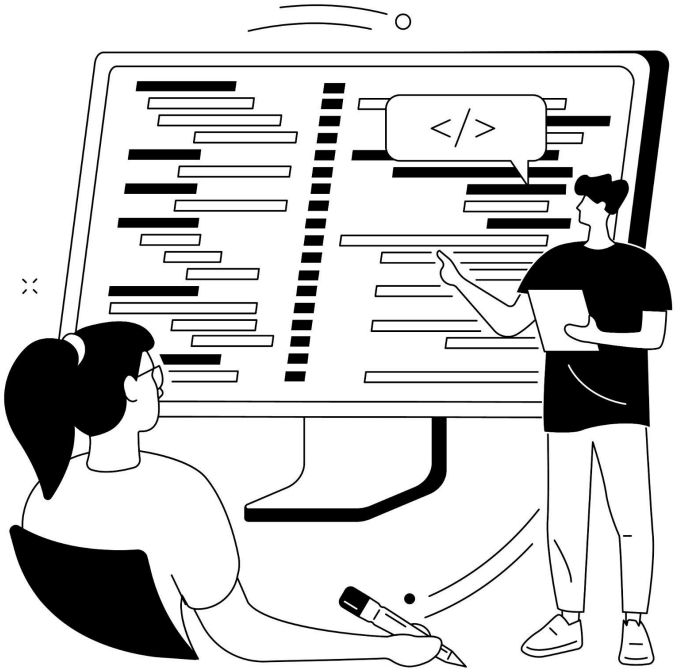




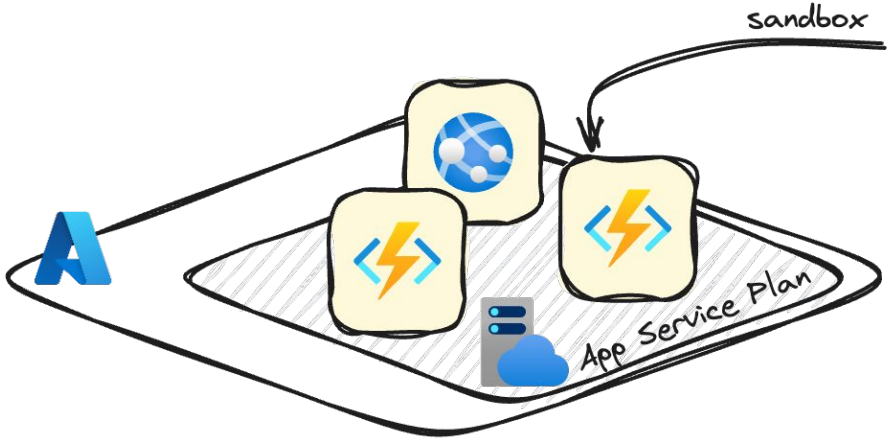
Easy Auth: simplifying authentication with Entra ID



Demo: implementing access control in action



The reality of serverless – how managed is my function (and how much should I care?)



Resources

Reference architecture (Azure Architecture Center):
https://learn.microsoft.com/en-us/azure/architecture/example-scenario/integration/app-gateway-internal-api-management-function

'User' auth type:
https://github.com/Azure/azure-functions-host/issues/3857#issuecomment-460741067

Decrypting Azure Function AppKeys:
https://www.netspi.com/blog/technical-blog/cloud-pentesting/what-the-function-decrypting-azure-function-app-keys/

Privilege Escalation via storage accounts:
https://rogierdijkman.medium.com/privilege-escalation-via-storage-accounts-bca24373cc2e

Secrets in key vault:
https://dev.to/massimobonanni/azure-functions-tips-how-to-store-the-functions-app-keys-into-keyvault-4nij

Azure App Service access restrictions:
https://learn.microsoft.com/en-us/azure/app-service/overview-access-restrictions

Work with user identities in Azure App Service authentication:
https://learn.microsoft.com/en-us/azure/app-service/configure-authentication-user-identities

Use your Azure Function securely:
https://nicodecleyre.com/2023/06/30/use-your-azure-function-securely/

Azure Web App Sandbox:
https://github.com/projectkudu/kudu/wiki/azure-web-app-sandbox

questionnaire