Microsoft Azure

Securing virtual machines and containers for certification

A Mastering the Marketplace Video
https://aka.ms/MasteringTheMarketplace

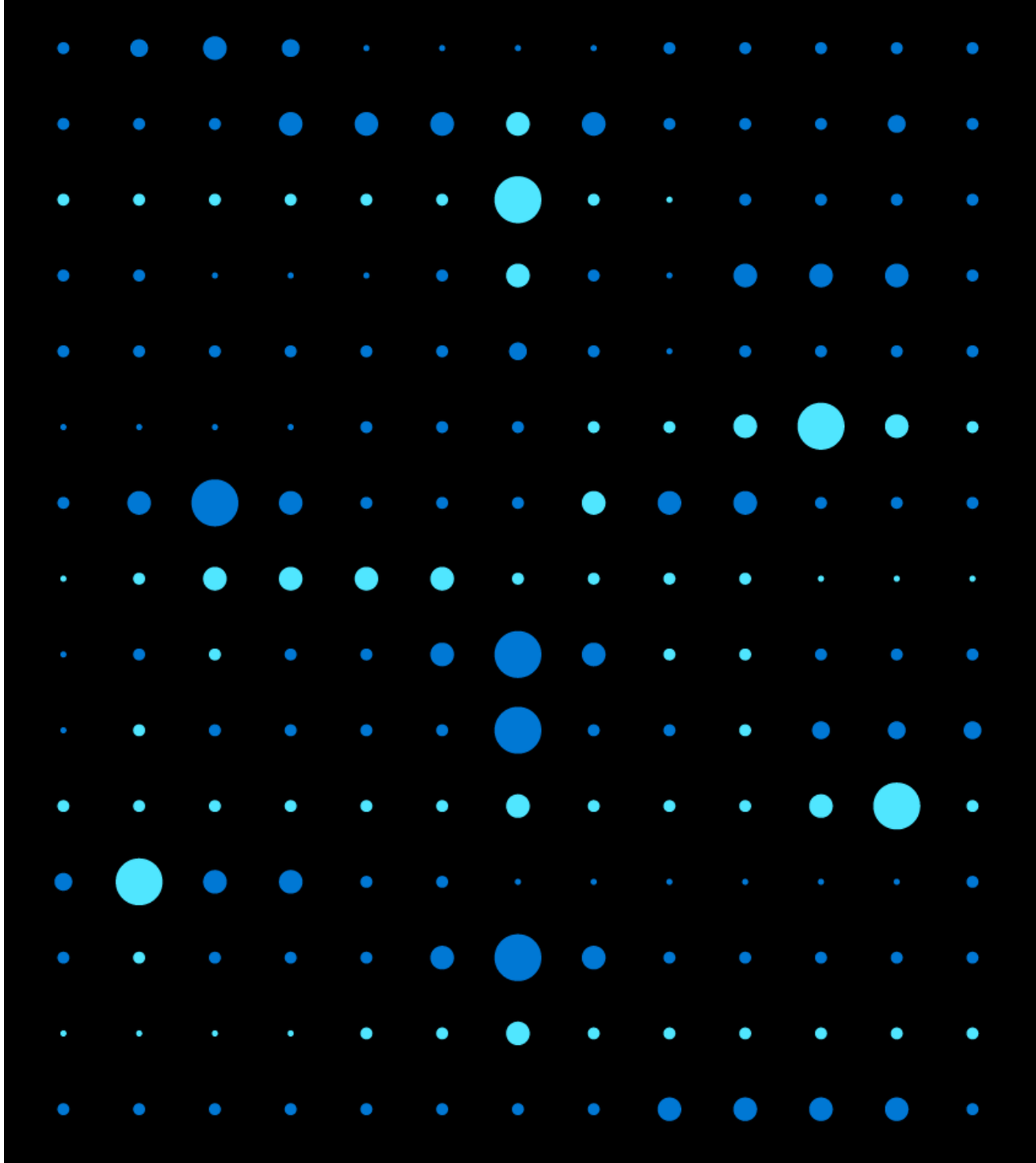
Microsoft Azure

Agenda

Security and the marketplace

Proactive scanning: CVE and Malware

Certification pre-check



Security and the marketplace

Security expectations by role

Customer expectations

Marketplace offers are secure

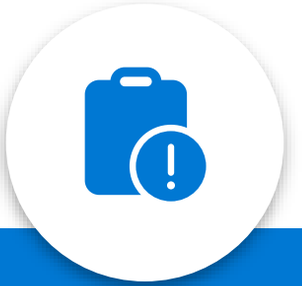
Applying security updates to purchased offers belongs to customer

Security updates to solution images will be made available by publishers

Publisher expectations

Microsoft's pre- and post-publish security checks are accurate

Azure infrastructure security belongs to Microsoft



Microsoft expectations

Publishers will update offers in the marketplace with latest releases

Customers will update accordingly

Virtual Machine and container certification

- Security, networking, and image checks are completed
- Offer submitted for certification by the publisher (Go live)
- Any failures are reported back to publisher
- Passing offers are published in the Marketplace
- Post-publish vulnerability scans are performed regularly
- High/critical vulnerabilities will be targeted for remediation

Proactive scanning for malware and CVEs

About malware

Malicious executable code, such as viruses, browser hijackers, ransomware

Malware must be installed on the system

Can spread to other computer systems

About CVEs and vulnerabilities

CVE: Common Vulnerabilities and Exposures

Can lead to system exploitation *without* installing any code

Unsecured exploit points that can be used by threat actors

About CVEs and vulnerabilities

Exploits weaknesses found in OS's, installed packages/apps, device drivers, etc.

XSS, extracting credentials from memory, website defacement, data exfiltration

Malware *could* be installed via a CVE

https://nvd.nist.gov/vuln

What publishers should do before publication

Scan before submitting

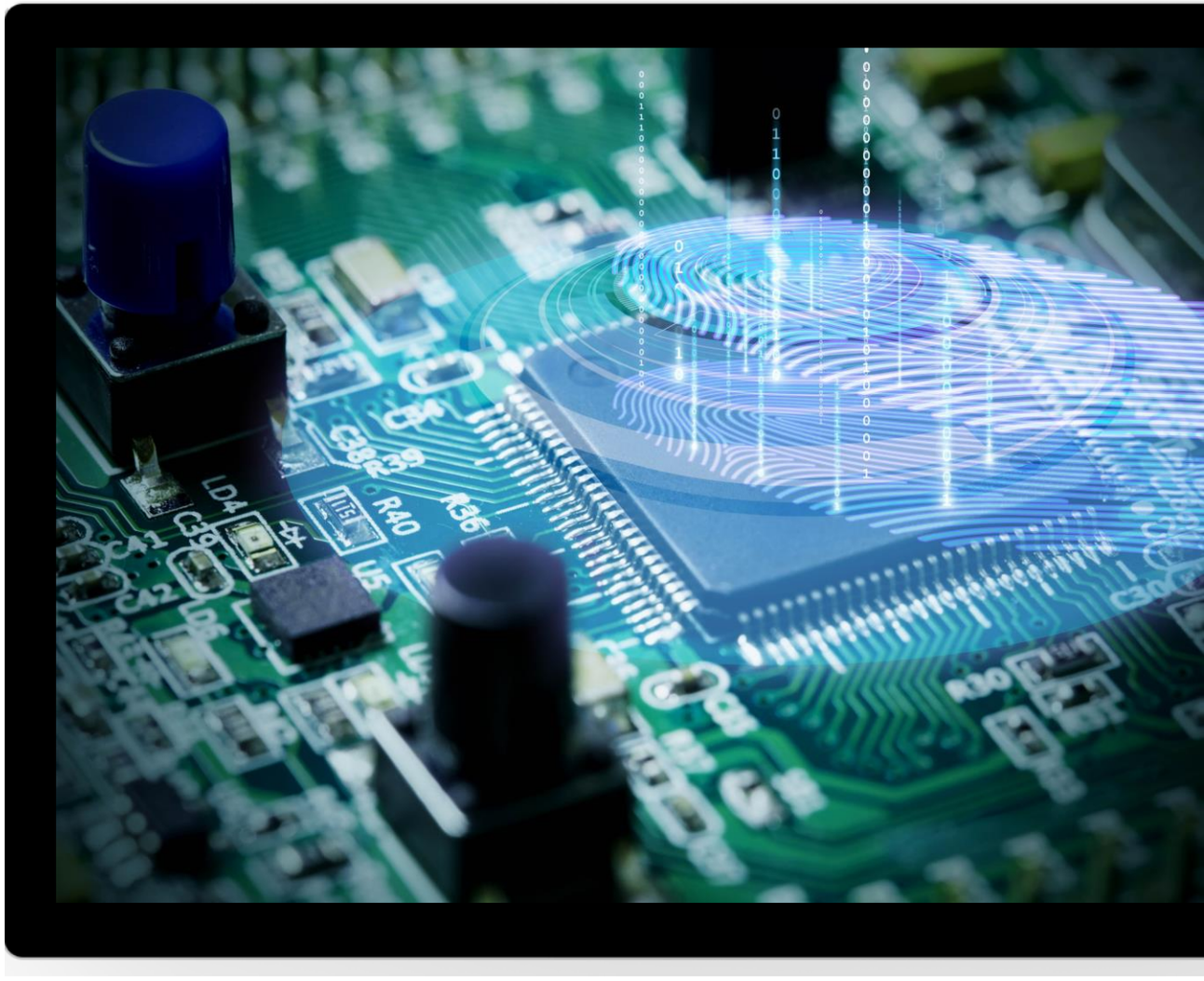
Finding malware and vulnerabilities prior to publishing saves you time

Validate your offer has no critical or high CVEs

Scanners to use

Numerous 3rd party scanners to choose from

Microsoft Defender for Cloud will give results closest to what Marketplace certification uses



What Microsoft does for vulnerability prevention

Malware

Scans containers and VMs

Binaries are extracted from images and checked against various anti-virus engines

CVEs

Performed pre- and post-publish

CVSS 3.0 score of 7+ (high or critical) will be blocked from publishing

Windows image checks and recommendations

Use the latest Azure approved Windows image

Install any missing security patches

Enable BitLocker drive encryption on all drives

Windows

Windows image checks and recommendations

Only install necessary Windows roles, features, and services

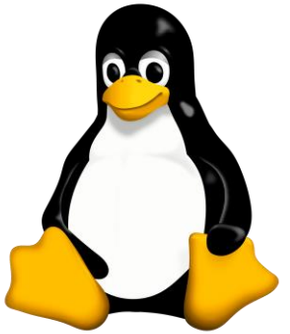
Set image to automatically update

Do not use default usernames and passwords!

Remove HOSTS files, log files, unnecessary PKI certificates (SSL, etc.)

Windows

Linux image checks and recommendations



Install latest security patches for OS and packages

- Azure approved Linux images have better chance of passing certification
- Custom loads will require more scrutiny

Do not use default usernames and passwords!

Clear bash/shell histories

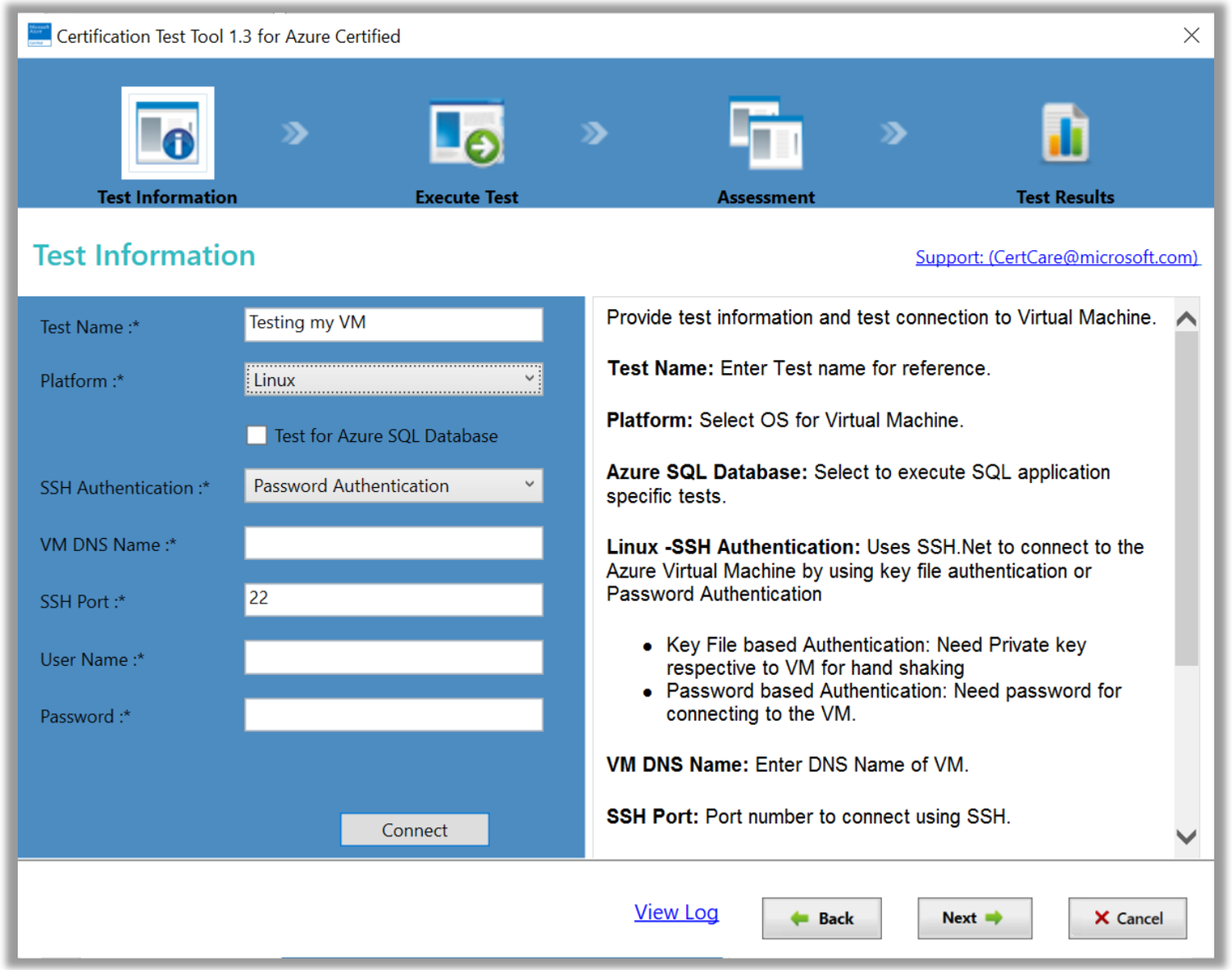
Remove all sensitive information from images, such as SSH keys, hosts files, log files, and unnecessary PKI certificates (SSL, etc.)

Install the latest libraries

- OpenSSL 1.1.1 or later
- Python 2.7 or later
- Pyasn1 package
- OMI v1.6.9-1 or later

Certification pre-check

Virtual machine certification tool



Used for both Windows and Linux Virtual Machines

See the Virtual Machine course on Mastering the Marketplace for a full demo

aka.ms/MasteringTheMarketplace/vm

Certify your images using code – Containers or Virtual Machines

Requires creating a service principal in your Azure AD tenant

Requires generating an access token

POST JSON describing your offer

https://isvapp.azurewebsites.net/selftest-vm

- Same endpoint for VMs and containers

Certification API via PowerShell

Linux

POWERSHELL Copy

```
$accesstoken = "token"
$headers = @{ "Authorization" = "Bearer $accesstoken" }
$DNSName = "<Machine DNS Name>"
$UserName = "<User ID>"
$Password = "<Password>"
$OS = "Linux"
$PortNo = "22"
$CompanyName = "ABCD"
$AppID = "<Application ID>"
$TenantId = "<Tenant ID>"

$body = @{
   "DNSName" = $DNSName
   "UserName" = $UserName
   "Password" = $Password
   "OS" = $OS
   "PortNo" = $PortNo
   "CompanyName" = $CompanyName
   "AppID" = $AppID
   "TenantId" = $TenantId
} | ConvertTo-Json

$body

$uri = "https://isvapp.azurewebsites.net/selftest-vm"

$res = (Invoke-WebRequest -Method "Post" -Uri $uri -Body $body -ContentType "application/
```

Windows

PowerShell Copy

```
$accesstoken = "Get token for your Client AAD App"
$headers = @{ "Authorization" = "Bearer $accesstoken" }
$Body = @{
   "DNSName" = "XXXX.westus.cloudapp.azure.com"
   "UserName" = "XXX"
   "Password" = "XXX@123456"
   "OS" = "Windows"
   "PortNo" = "5986"
   "CompanyName" = "ABCD"
   "AppID" = "XXXX-XXXX-XXXX"
   "TenantId" = "XXXX-XXXX-XXXX"
} | ConvertTo-Json

$res = Invoke-WebRequest -Method "Post" -Uri $uri -Body $Body -ContentType "application/j
$Content = $res | ConvertFrom-Json
```

Microsoft Azure

Summary

Scan Virtual Machines

Use Microsoft Defender for Cloud plus any other tools you like

A CVSS 3.0 score of 7 or greater will fail certification

Microsoft provides tools for pre-publish image scanning