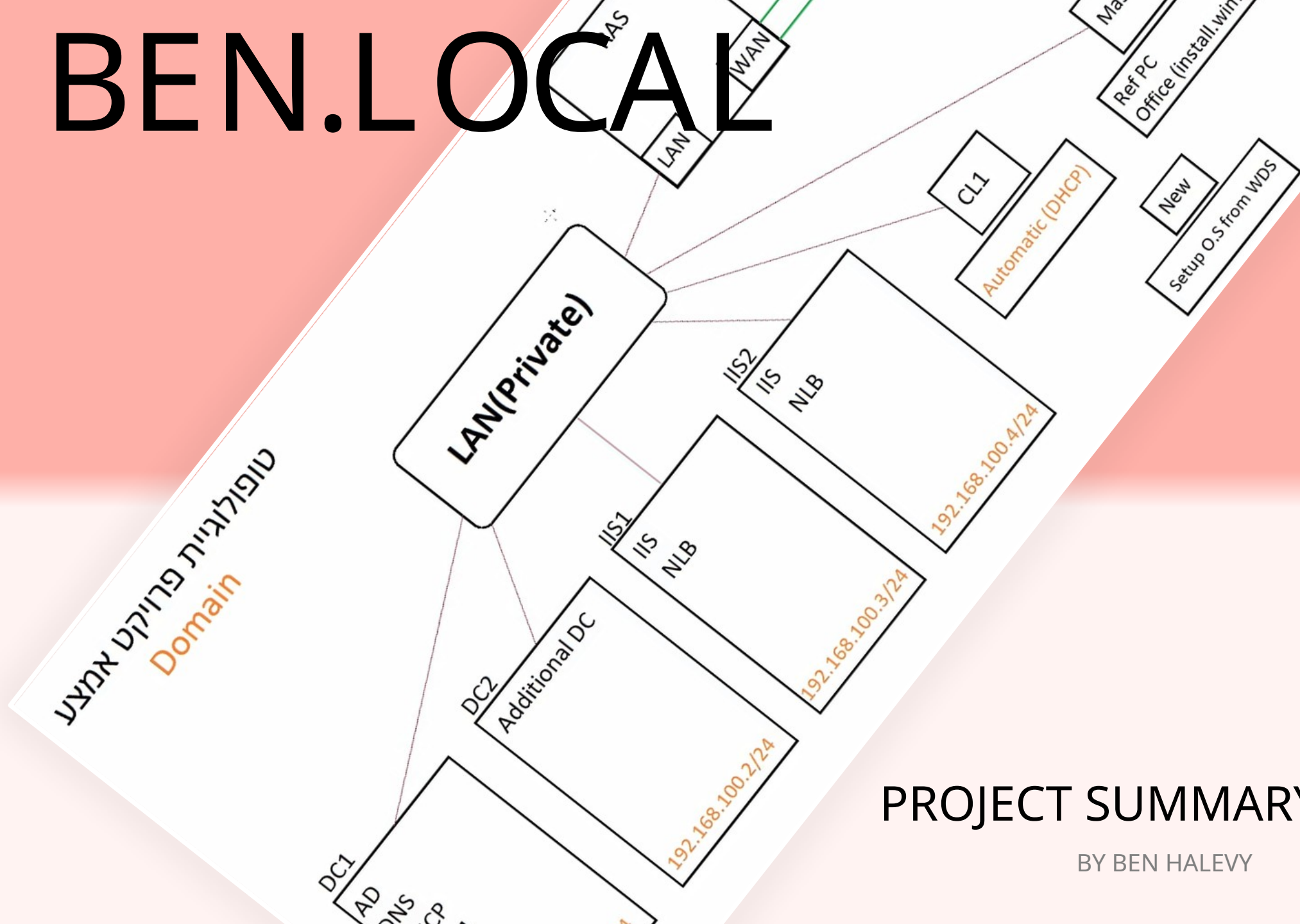


# BEN.LOCAL



## PROJECT SUMMARY

BY BEN HALEVY

# BEN.LOCAL

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## PROJECT SUMMARY

- ❖ A 111-slide build of a complete Windows Server Active Directory domain in Hyper-V
- ❖ 6 Organizational Units, 9 virtual machines, 2 networks (LAN / WAN)
- ❖ From the first virtual switch to mass deployment of Windows 10
- ❖ Identity, Group Policy, storage, remote access, high availability, deployment
  - ❖ What was built, why, and how it can be used

# Mission Parameters

## ORGANIZATIONAL INFRASTRUCTURE

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### WHAT THE PRESENTATION BUILDS

**A complete Active Directory domain : BEN.LOCAL (Lev Hagalil home office)**

**6 OUs : Management, Office, Finance, Sales, Architects, IT**

**LAN 192.168.100.0/24 and WAN 192.168.200.0/24 in Hyper-V**

**9 virtual machines : DC1, DC2, RAS, IS1, IS2, CL1, PC1, Master,**

### THREE SECTIONS

**Organizational Infrastructure (slides 3 - 54) : domain, users, delegation, Group Policy, file services, FSRM**

**Network Infrastructure (slides 55 - 95) : VPN, second DC, printers, DNS, IIS + NLB, iSCSI, WDS**

**Image Deployment (slides 96 - 110) : Sysprep, DISM capture and servicing, WDS import, PXE deployment**

**Build Map (slide 111) : every machine, IP address and role on one slide**

# Mission Parameters

## ORGANIZATIONAL INFRASTRUCTURE

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### PURPOSE

**Built as a Mid Term Project**

**Now a portfolio piece : end-to-end Windows Server administration**

**Every task : the requirement, the exact steps, the screenshots**

### WHAT IT SHOWS

**The full lifecycle : infrastructure, identity, policy, storage, remote access, high availability, deployment**

**Each task builds on the one before it - the network grows from one switch into a complete organization**

**Real troubleshooting : FSRM file screens broke GPO editing on Server 2019 - fixed with fltmc unload / load datascrn**

**Slides 96 - 110 : commands and click-paths from Microsoft documentation, no lab screenshots - all earlier slides show lab work**

# Mission Parameters

## ORGANIZATIONAL INFRASTRUCTURE

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### **SKILLS DEMONSTRATED - IDENTITY & POLICY**

**Active Directory Domain Services : forest, OUs, users, groups**

**PowerShell scripting for bulk OU and user creation**

**Delegation of control and fine-grained password policy (PSO)**

**Group Policy : password, lockout, restricted groups, redirection**

### **SKILLS DEMONSTRATED - SERVICES, NETWORK & DEPLOYMENT**

**DHCP and DNS (scope, forwarders, root hints) - File services, NTFS share permissions, drive mapping, item-level targeting**

**FSRM quotas and file screens - Shadow copies - Software and file deployment through GPO - Printer deployment through GPO**

**Routing and Remote Access : VPN (PPTP) with network policy - Second domain controller and FSMO (RID master) transfer**

**IIS web servers in a Network Load Balancing cluster - iSCSI target / initiator with a spanned volume**

**Windows Deployment Services, PXE boot, Sysprep and DISM image capture, servicing and**

# Mission Parameters

## ORGANIZATIONAL INFRASTRUCTURE

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### **SLIDE MAP - ORGANIZATIONAL INFRASTRUCTURE (1 - 25)**

**Slides 1 - 2 : Title and organizational requirements**

**Slide 3 : Private virtual switch LAN**

**Slides 4 - 5 : DC1, AD DS forest BEN.LOCAL, DHCP scope**

**Slide 6 : Client CL1 joined to the domain**

**Slides 7 - 9 : OUs and user accounts created with PowerShell scripts**

**Slides 10 - 11 : Delegation - Adam resets Sales passwords**

**Slides 12 - 15 : Domain password and lockout policy, password relief (PSO)**

**Slides 16 - 17 : Home folders mapped to Z:**

**Slides 18 - 21 : HelpDesk security group through Restricted Groups**

**Slides 22 - 25 : Folder redirection to \\DC1\Home, DHCP check**

# Mission Parameters

## ORGANIZATIONAL INFRASTRUCTURE

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### **SLIDE MAP - ORGANIZATIONAL INFRASTRUCTURE (26 - 54)**

**Slides 26 - 28 : Removable storage blocked for Sales**

**Slides 29 - 32 : Calc.exe blocked for Office**

**Slides 33 - 36 : Reports share Y: with group permissions**

**Slides 37 - 41 : FSRM quotas (2GB / 3GB) and file screens**

**Slides 42 - 44 : Shadow copies for previous versions**

**Slides 45 - 48 : Desktop file by GPO, FSRM / GPO bug workaround**

**Slides 49 - 50 : Control Panel and CMD blocked for Finance**

**Slides 51 - 52 : Software deployment by GPO (7-Zip)**

**Slides 53 - 54 : Item-level targeted drive map S:**

**SLIDE MAP - NETWORK INFRASTRUCTURE & IMAGE DEPLOYMENT (55 - 111)**

**Slides 55 - 57 : RAS server, WAN network and remote client PC1**

**Slides 58 - 63 : VPN server (PPTP) for the Management group**

**Slides 64 - 66 : DC2 and RID pool manager transfer**

**Slides 67 - 82 : Printer 1 and Printer 2 shared and mapped by GPO**

**Slides 83 - 84 : DNS forwarders and root hints**

**Slides 85 - 89 : IIS web servers and NLB cluster (www.site.com)**

**Slides 90 - 92 : iSCSI target and initiator, spanned volume E:**

**Slides 93 - 95 : WDS and PXE boot for VM NEW**

**Slide 96 : Image Deployment overview**

**Slides 97 - 110 : Seven steps - Master, Sysprep, WDS, DISM capture, DISM servicing, WDS import, PXE deploy**

**Slide 111 : Build Map**

## **BEN.LOCAL - BUILD MAP**

**DC1 - Windows Server 2019 (4Gb Ram) (40Gb HD) - 192.168.100.1 - AD DS, DNS, DHCP, WDS, FSRM, File & Print Server**

**DC2 - Additional Domain Controller (2Gb Ram) (40Gb HD) - 192.168.100.2 - RID Pool Manager, iSCSI Initiator (Drive E:)**

**RAS - Windows Server 2016 (2Gb Ram) (40Gb HD) - LAN 192.168.100.254 / WAN 192.168.200.1 - VPN (PPTP) + iSCSI Target**

**IS1 / IS2 - (2Gb Ram) (30Gb HD) - 192.168.100.3 / 192.168.100.4 - IIS Web Servers, NLB Cluster 192.168.100.10**

**Print1 / Print2 - 192.168.100.50 / 192.168.100.51 - Finance & Office / Sales & Architects (deployed by GPO)**

**CL1 - Windows 10 Pro (2Gb Ram) (40Gb HD) - DHCP - Domain client in the IT OU**

**PC1 - Windows 10 (1Gb Ram) (30Gb HD) - 192.168.200.10 (WAN) - VPN client to RAS**

**Master / NEW - Windows 10 Pro - DHCP (PXE) - Golden Image reference / PXE deployment target**

### HOW IT CAN BE USED

**Portfolio evidence of hands-on Windows Server work**

**Interview walkthrough - one Task / How To pair at a time**

**Rebuild guide and training material for new administrators**

### IN PRACTICE

**Portfolio : shown on the website as proof of Active Directory, Group Policy, networking and deployment work**

**Interview : each Task / How To pair is talked through in a few minutes with the screenshots as proof**

**Rebuild : the How To rows are click-paths and commands in order - the lab can be rebuilt from scratch in Hyper-V**

### SOURCES - IMAGE DEPLOYMENT COMMANDS (Microsoft Learn, click to open)

[Microsoft Learn - Sysprep \(Generalize\) a Windows installation](#)

[Microsoft Learn - Sysprep command-line options](#)

[Microsoft Learn - Capture images of hard disk partitions using DISM](#)

[Microsoft Learn - DISM image management command-line options](#)

[Microsoft Learn - DISM operating system package servicing options](#)

[Microsoft Learn - Add and remove drivers to an offline Windows image](#)

[Microsoft Learn - OEM deployment of Windows desktop editions \(Audit Mode\)](#)

[Microsoft Learn - wdsutil /Set-Server](#)

[Microsoft Learn - wdsutil /New-CaptureImage](#)

[Microsoft Learn - Create a Custom Install Image \(WDS\)](#)

[Microsoft Learn - Import-WdsInstallImage](#)

[Microsoft Learn - New-WdsInstallImageGroup](#)