

OGIT

Full Network Breakdown

Complete Infrastructure Documentation

Version 1.0 | April 26, 2026
OGIT HQ — Rochester, Minnesota

Domain	Tenant	Timezone	Build Date
OGIT.INFO / ogit.local	NETORG18282275.onmicrosoft.com	America/Chicago (CST/CDT)	April 2026

1. Project Overview

The OGIT network build is a complete enterprise network infrastructure deployment for OGIT headquarters in Rochester, Minnesota. This document provides a full breakdown of every system, configuration, and service deployed.

1.1 Build Summary

Phase	Description	Status
Phase 1	Physical & ISP connectivity — UCG Ultra, switches, APs adopted	✓ Complete
Phase 2	UniFi VLANs, security, WireGuard VPN, firewall rules	✓ Complete
Phase 3	C9500 core switch — SVIs, DHCP relay, ACLs, NetFlow, AAA	✓ Complete
Phase 4	Access switches C9200CX and C9200-24P	✓ Complete
Phase 5	Windows Server 2025 DCs — AD, DNS, DHCP, CA/PKI	✓ Complete
Phase 6	Cisco ISE 3.5 — RADIUS, AD join, dot1x	✓ Complete
Phase 7	WLC migration — Foreign/Anchor mobility, SSIDs	✓ Complete
Phase 8	Email — Proofpoint, M365, SPF, DMARC	✓ Complete
Phase 9	Monitoring — LibreNMS, Graylog, Grafana, ntopng	✓ Complete
Phase 10	ESXi networking — vSwitches, iSCSI MTU 9000	✓ Complete
Phase 11	DHCP Failover — DC-01/DC-02 LoadBalance	✓ Complete
Phase 12	User environment — QNAP domain join, logon.bat, roaming profiles	✓ Complete

2. Network Topology

2.1 Physical Topology

Layer	Device	Connection	Speed
Internet	Spectrum WAN1	UCG Ultra WAN1	2.18G↓/882M↑
Internet	Metronet WAN2	UCG Ultra WAN2	543M↓/924M↑
Edge	UCG Ultra	C9500 Twe1/0/1	25GbE trunk
Core	C9500-24Y4C Stack	SW-ACC-01 Po2, SW-ACC-02 Po1	25GbE LACP
Access	C9200CX-8P (SW-ACC-01)	C9500 Po2	25GbE LACP
Access	C9200-24P (SW-ACC-02)	C9500 Po1	25GbE LACP
Wireless	WLC-FOR-01	C9500 Po3+Po4	25GbE LACP
Wireless	WLC-ANC-01	C9500 (VLAN10)	1GbE trunk
Servers	ESX-HV-01	C9500 multiple ports	25GbE
Servers	ESX-HV-02	C9500 multiple ports	1GbE
Storage	QNAP TS-869 (QNAP-01)	C9500 Po6 LACP	25GbE LACP
Storage	QNAP TS-870 (QNAP-02)	C9500 Po7 LACP	25GbE LACP

2.2 VLAN Architecture

VLAN	Name	Subnet	Gateway	DHCP Server	Purpose
10	MGMT	172.16.0.0/24	172.16.0.1	DC-01/02	Network management
20	SERVERS	172.16.1.0/24	172.16.1.1	Static only	Server infrastructure
30	USER-DATA	172.16.10.0/23	172.16.10.1	DC-01/02	User workstations
40	WIFI-USERS	172.16.12.0/23	172.16.12.1	DC-01/02	Wireless users

VLAN	Name	Subnet	Gateway	DHCP Server	Purpose
50	iSCSI	172.16.20.0/24	172.16.20.1	Static only	Storage network
60	IOT	172.16.30.0/24	172.16.30.1	DC-01/02	IoT devices
70	GUEST	172.16.40.0/23	172.16.40.1	DC-01/02	Guest WiFi
80	LAB	172.16.50.0/24	172.16.50.1	DC-01/02	Lab environment
90	DMZ	172.16.100.0/28	172.16.100.1	Static only	DMZ services

3. Complete Device Inventory

3.1 Network Devices

Hostname	IP Address	VLAN	Model	Role	Status
UCG-Ultra	172.16.0.1	10	UniFi UCG Ultra	Firewall/Router	✓ Up
OGIT-HQ-SW-CORE-01	172.16.0.2	10	Cisco C9500-24Y4C Stack	Core Switch	✓ Up
OGIT-HQ-SW-ACC-01	172.16.0.3	10	Cisco C9200CX-8P-2X2G	Access Switch	✓ Up
OGIT-HQ-SW-ACC-02	172.16.0.4	10	Cisco C9200-24P	Access Switch	✓ Up
OGIT-HQ-WLC-FOR-01	172.16.0.20	10	Cisco C9800-L-F-K9	Foreign WLC	✓ Up
OGIT-HQ-WLC-ANC-01	172.16.0.22	10	Cisco C9800-L-C-K9	Anchor WLC	✓ Up
OGIT-HQ-USW-LITE-01	172.16.0.105	10	UniFi USW Lite 8 PoE	Access Switch	Pending
OGIT-HQ-USW-LITE-02	172.16.0.106	10	UniFi USW Lite 8 PoE	Access Switch	Pending

3.2 Server Infrastructure

Hostname	IP Address	OS/Platform	Role	Host	Status
HQ-WIN-DC-01	172.16.1.10	Windows Server 2025	PDC, DNS, DHCP, CA	ESX-HV-01	✓ Up
HQ-WIN-DC-02	172.16.1.11	Windows Server 2025	Replica DC	ESX-HV-02	✓ Up
OGIT-HQ-ESX-HV-01	172.16.1.7	VMware ESXi 8.0 U2	Hypervisor	Physical	✓ Up
OGIT-HQ-ESX-HV-02	172.16.1.8	VMware ESXi 8.0 U2	Hypervisor	Physical	✓ Up
OGIT-HQ-ESX-HV-03	172.16.1.22	VMware ESXi 6.7	Hypervisor	Physical	Standby

Hostname	IP Address	OS/Platform	Role	Host	Status
HQ-ISE-01	172.16.1.30	Cisco ISE 3.5.0.527	NAC/RADIUS	ESX-HV-01	✓ Up
OGIT-HQ-LIBRENMS-01	172.16.1.40	Ubuntu 24.04 LTS	SNMP/NetFlow/Syslog	ESX-HV-01	✓ Up
OGIT-HQ-NETMON-01	172.16.1.41	Ubuntu 24.04 LTS	Graylog/Grafana/ntopng	ESX-HV-02	✓ Up

3.3 Storage Devices

Hostname	IP (File)	IP (iSCSI)	Model	Role	Status
HQ-NAS-QNAP-01	172.16.1.13	172.16.20.13	QNAP TS-869 Pro	File Server + iSCSI	✓ Up
HQ-NAS-QNAP-02	172.16.20.13	172.16.20.13	QNAP TS-870	iSCSI Storage	✓ Up
HQ-NAS-NETG-01	172.16.20.12	172.16.20.12	Netgear ProSafe	Additional Storage	✓ Up

3.4 Wireless Access Points

AP Name	MAC Address	Controller	VLANs	Location
AP01-IT-Closet	588b.1cb6.ff8c	WLC-FOR (Cisco)	40, 60, 70	IT Closet
AP02-IT-Office	588b.1cb7.2080	WLC-FOR (Cisco)	40, 60, 70	IT Office
UniFi U7 Pro #1	Various	UCG Ultra	40, 60, 70	Area 1
UniFi U7 Pro #2	Various	UCG Ultra	40, 60, 70	Area 2
UniFi U7 Pro #3	Various	UCG Ultra	40, 60, 70	Area 3

4. Cisco C9500 Core Switch

4.1 Configuration Summary

Parameter	Value
Hostname	OGIT-HQ-SW-CORE-01
IOS-XE Version	17.12.03 (Dublin)
StackWise-Virtual Domain	100
System MTU	9216 (Jumbo frames for iSCSI)
Management IP	172.16.0.2 / VLAN 10
Stack Members	Switch 1 + Switch 2 (C9500-24Y4C x2)
Uplink to UCG Ultra	Twe1/0/1 — trunk VLANs 10,20,30,40,50,60,70,80,90
NTP Primary	172.16.1.10 (prefer)
NTP Secondary	172.16.1.11
SNMP Community	OGIT-SNMP-2026 (RO)
RADIUS Source	Vlan10 → ISE at 172.16.1.30
Syslog Servers	172.16.1.40:514 + 172.16.1.41:1514
NetFlow (LibreNMS)	172.16.1.40:2055 from Vlan20
NetFlow (ntopng)	172.16.1.41:2055 from Vlan20
Logging Source	Vlan20
RADIUS Key	OGIT-ISE-RADIUS-2026!

4.2 Port Assignments

Port	Description	Mode	VLAN(s)
Twe1/0/1	UPLINK-UCG-ULTRA	Trunk	10,20,30,40,50,60,70,80,90
Twe1/0/4+2/0/4	NETGEAR-bond0-LACP (Po5)	Access	50 (iSCSI)
Twe1/0/5+2/0/5	HQ-NAS-QNAP1-LACP-Fileserver (Po6)	Access	20 (Servers)
Twe1/0/7+8+2/0/7+8	HQ-NAS-QNAP2-iSCSI (Po7)	Access	50 (iSCSI)

Port	Description	Mode	VLAN(s)
Twe1/0/9	ESX-HV-01-VMNIC4-VLAN20	Access	20
Twe1/0/13+2/0/6	ESXi-01-MGMT	Access	20
Twe1/0/17+2/0/2	ESX-HV-02-VMNIC-MGMT	Access	20
Twe1/0/19	ESX-HV-01-vmnic11-iSCSI	Access MTU9216	50
Twe1/0/20+2/0/20	UPLINK WLC-1 (Po4)	Trunk	10,40,70
Twe1/0/21+2/0/21	UPLINK WLC (Po3)	Trunk	10,40,70
Twe1/0/22+2/0/22	SW-ACC-01 uplink (Po2)	Trunk	10,30,40,60,70
Twe1/0/23+2/0/23	SW-ACC-02 uplink (Po1)	Trunk	10,20,30,40,60,70
Twe2/0/9	iSCSI-device	Access MTU9216	50
Twe2/0/11	HQ-ESXi-02 SERVERS	Access	20
Twe2/0/13	OGIT-HQ-WIN-DC-01	Access	20
Twe2/0/18	ESX-HV-02-VMNIC12	Trunk	10,20,80
Twe2/0/19	ESX-HV-01-vmnic10-iSCSI	Access MTU9216	50

4.3 ACLs

ACL Name	Applied To	Rules
BLOCK-IOT-TO-INTERNAL	Vlan60 inbound	Permit DHCP → Deny IOT to RFC1918 → Permit to internet
BLOCK-LAB-TO-SERVERS	Vlan80 inbound	Permit DHCP → Deny LAB to SERVERS (172.16.1.0/24) → Permit rest

5. Windows Active Directory & Services

5.1 Domain Configuration

Parameter	Value
Domain Name	ogit.local
NetBIOS Name	OGIT
Forest/Domain Level	Windows Server 2025
M365 Tenant	NETORG18282275.onmicrosoft.com
Primary DC	HQ-WIN-DC-01 — 172.16.1.10
Replica DC	HQ-WIN-DC-02 — 172.16.1.11
FSMO Roles	All on HQ-WIN-DC-01
CA Name	OGIT-ROOT-CA (Enterprise Root, SHA256, 2048-bit)
Domain Admin	OGIT\Administrator / Kenw00d1
DSRM Password	OGIT@dm1nS@fe2026!

5.2 DHCP Scopes

Scope	Network	Range	DNS	Failover
MGMT	172.16.0.0/24	.50–.254	172.16.1.10/1.11	LoadBalance DC-01/02
USER-DATA	172.16.10.0/23	.50–11.254	172.16.1.10/1.11	LoadBalance DC-01/02
WIFI-USERS	172.16.12.0/23	.50–13.254	172.16.1.10/1.11	LoadBalance DC-01/02
IOT	172.16.30.0/24	.50–.254	172.16.1.10/1.11	LoadBalance DC-01/02
GUEST	172.16.40.0/23	.50–41.254	8.8.8.8/8.8.4.4	LoadBalance DC-01/02
LAB	172.16.50.0/24	.50–.254	172.16.1.10/1.11	LoadBalance DC-01/02

5.3 User Environment

Feature	Configuration
File Server	HQ-NAS-QNAP-01 (172.16.1.13) — joined to ogit.local
H: Drive	\\HQ-NAS-QNAP-01\Users\%USERNAME%
D: Drive	\\HQ-NAS-QNAP-01\Downloads
P: Drive	\\HQ-NAS-QNAP-01\Public
Roaming Profiles	\\HQ-NAS-QNAP-01\Profiles\%USERNAME%
Logon Script	\\ogit.local\NETLOGON\logon.bat
GPO	OGIT-Logon-Script (linked to domain)
Users Configured	Kurt, MaintAdmin, HD1

6. Wireless Infrastructure

6.1 Cisco WLC Configuration

Parameter	WLC-FOR-01	WLC-ANC-01
IP Address	172.16.0.20	172.16.0.22
Model	C9800-L-F-K9	C9800-L-C-K9
Serial	FCL263500RC	FCL2525003Y
IOS-XE	17.15.3	17.15.4b
Role	Foreign WLC	Anchor WLC
Mobility MAC	0845.d11f.640b	687d.b4ff.f26b
Mobility Tunnel	Up ✓	Up ✓
Management VLAN	10	10

6.2 WLANs

WLAN ID	SSID	Security	VLAN	APs	Policy
1	ogit_users_C	WPA2-PSK / Special1	40	Cisco APs	USERS POLICY
2	ogit_iot_C	WPA2-PSK / iot@2026	60	Cisco APs	IOT POLICY
20	ogit_guestwifi	Open	70	Cisco APs	GUEST-POLICY-FOREIGN → Anchor
—	ogit_users	WPA2-PSK / Special1	40	UniFi APs	UniFi policy
—	ogit_iot	WPA2-PSK / iot@2026	60	UniFi APs	UniFi policy
—	ogit_guestwifi	Open	70	UniFi APs	UniFi policy

7. ESXi Hosts & Storage

7.1 ESXi Host Summary

Host	IP	Model	CPU	RAM	ESXi
OGIT-HQ-ESX-HV-01	172.16.1.7	Dell Precision 7920	24x Xeon Gold 5118	111 GB	8.0 U2
OGIT-HQ-ESX-HV-02	172.16.1.8	ASUS RS400-E8-PS2	16x Xeon E5-2630 v3	255 GB	8.0 U2
OGIT-HQ-ESX-HV-03	172.16.1.22	ASUS RS100-E7	—	—	6.7

7.2 iSCSI Networking

Host	vSwitch	VMkernel	IP	MTU	NIC
ESX-HV-01	vSwitch1iSCSI	vmk1	172.16.20.7	9000	vmnic10 (10GbE)
ESX-HV-01	vSwitch1iSCSI	vmk2	172.16.20.8	9000	vmnic11 (10GbE)
ESX-HV-02	vSwitch1iSCSI	vmk1	172.16.20.9	9000	vmnic7 (1GbE)

7.3 Shared Datastores

Datastore	Type	Size	Free	Available On
iSCSI-1	VMFS-6	2 TB	996 GB	ESX-HV-01 + ESX-HV-02
iSCSI-2	VMFS-6	2 TB	1.31 TB	ESX-HV-01 + ESX-HV-02
iSCSI-3	VMFS-6	4 TB	2.98 TB	ESX-HV-01 + ESX-HV-02
iSCSI-4	VMFS-6	7.5 TB	7.5 TB	ESX-HV-01 + ESX-HV-02
iSCSI-5	VMFS-6	14.6 TB	14.5 TB	ESX-HV-01 + ESX-HV-02

8. Monitoring Stack

8.1 Service Overview

Service	Server	URL	Version	Purpose
LibreNMS	OGIT-HQ-LIBRENMS-01	http://172.16.1.40	26.3.1	SNMP polling, NetFlow, Syslog
Graylog	OGIT-HQ-NETMON-01	http://172.16.1.41:9000	6.1.16	Syslog analysis, alerts
Grafana	OGIT-HQ-NETMON-01	http://172.16.1.41:3000	13.0.1	Unified dashboards
ntopng	OGIT-HQ-NETMON-01	http://172.16.1.41:3001	5.2.1	NetFlow AI analysis
OpenSearch	OGIT-HQ-NETMON-01	http://172.16.1.41:9200	2.14.0	Graylog search backend
MongoDB	OGIT-HQ-NETMON-01	localhost:27017	6.0.27	Graylog config DB

8.2 Monitored Devices — LibreNMS

Device	IP	Protocol	Status
UCG-Ultra	172.16.0.1	SNMP v2c	✓ Monitored
OGIT-HQ-SW-CORE-01	172.16.0.2	SNMP v2c + NetFlow	✓ Monitored
OGIT-HQ-SW-ACC-01	172.16.0.3	SNMP v2c	✓ Monitored
OGIT-HQ-SW-ACC-02	172.16.0.4	SNMP v2c	✓ Monitored
OGIT-HQ-WLC-FOR-01	172.16.0.20	SNMP v2c	✓ Monitored
OGIT-HQ-WLC-ANC-01	172.16.0.22	SNMP v2c	✓ Monitored
HQ-WIN-DC-01	172.16.1.10	SNMP v2c	✓ Monitored
HQ-WIN-DC-02	172.16.1.11	SNMP v2c	✓ Monitored
OGIT-HQ-ESX-HV-01	172.16.1.7	SNMP v2c	✓ Monitored
OGIT-HQ-ESX-HV-02	172.16.1.8	SNMP v2c	✓ Monitored

Device	IP	Protocol	Status
HQ-ISE-01	172.16.1.30	SNMP v2c	✓ Monitored
OGIT-HQ-LIBRENMS-01	172.16.1.40	SNMP v2c	✓ Monitored
OGIT-HQ-NETMON-01	172.16.1.41	SNMP v2c	✓ Monitored
HQ-NAS-QNAP-01	172.16.1.13	SNMP v2c	✓ Monitored
HQ-NAS-QNAP-02	172.16.20.13	SNMP v2c	✓ Monitored
HQ-NAS-NETG-01	172.16.20.12	SNMP v2c	✓ Monitored

8.3 Syslog & NetFlow Flow

Source	Destination	Port	Tool
All Cisco devices	172.16.1.40 (LibreNMS)	UDP 514	rsyslog → LibreNMS DB
All Cisco devices	172.16.1.41 (Graylog)	UDP 1514	Graylog OpenSearch
UCG Ultra	172.16.1.41 (NETMON)	UDP 514 → 1514	rsyslog forward → Graylog
C9500 NetFlow	172.16.1.40 (LibreNMS)	UDP 2055	nfcapd → /opt/netflow/
C9500 NetFlow	172.16.1.41 (ntopng)	UDP 2055	ntopng analysis
UCG Ultra NetFlow	172.16.1.41 (ntopng)	UDP 2055	ipt_NETFLOW → ntopng

9. Credentials Reference

⚠ CONFIDENTIAL — Restrict to authorized IT personnel only

9.1 Network Device Credentials

Device	Username	Password	Notes
C9500 / SW-ACC-01/02 / WLCs	admin	(configured)	SSH only
Cisco APs	kwise	Special1	mgmtuser in ap profile
RADIUS Key	—	OGIT-ISE-RADIUS-2026!	C9500 ↔ ISE
SNMP Community	—	OGIT-SNMP-2026	Read-only all devices
WiFi ogit_users	—	Special1	WPA2-PSK
WiFi ogit_iot	—	iot@2026	WPA2-PSK
WiFi ogit_guestwifi	—	Open	No password

9.2 Server & Service Credentials

Service	Username	Password	URL
Domain Admin	OGIT\Administrator	Kenw00d1	ogit.local
DSRM	Administrator	OGIT@dm1nS@fe2026!	DC-01 recovery
Cisco ISE	admin	(configured)	https://172.16.1.30
LibreNMS DB	librenms	LibreNMS2026	MariaDB localhost
Graylog	admin	OGIT@Graylog2026!	http://172.16.1.41:9000
Grafana	admin	OGIT@Grafana2026!	http://172.16.1.41:3000
ntopng	—	No login	http://172.16.1.41:3001
ESXi Host 1	root	(configured)	https://172.16.1.7
ESXi Host 2	root	(configured)	https://172.16.1.8

10. Pending Items & Known Issues

10.1 Outstanding Tasks

Priority	Item	Description	Action Required
High	Graylog Email Alerts	SMTP auth failing — need M365 App Password	Create app password at myaccount.microsoft.com
High	Drive Mapping Issue	H/D/P drives not mapping on client PCs	Verify QNAP share access and GPO
High	Veeam Backup	VM backups not configured	Install Veeam Community on DC-02
High	Cisco Config Backup	TFTP auto-backup not configured	Set up TFTP on LibreNMS VM
Medium	802.1X Port Auth	dot1x configured but not applied to ports	Apply to SW-ACC-01/02 access ports
Medium	Guest WiFi Cisco APs	ANCHOR_NOT_EXPORT_WLAN bug IOS-XE 17.15	Upgrade WLC firmware
Medium	M365 DKIM	DKIM not configured for ogit.info	Configure in M365 admin portal
Medium	ISE Patch	Running 3.5.0.527 — not latest	Upgrade to latest 3.5 patch
Low	USW Lite Adoption	USW-LITE-01/02 not adopted in UniFi	Adopt via UniFi console
Low	ESX-HV-03	Running ESXi 6.7 — old version	Upgrade to ESXi 8.0 or decommission
Low	DHCP Failover Auth	AutoStateTransition = False, EnableAuth = False	Enable for better failover

10.2 Known Issues

Issue	Root Cause	Workaround
Guest WiFi on Cisco APs fails	ANCHOR_NOT_EXPORT_WLAN bug in IOS-XE 17.15	UniFi APs broadcast ogit_guestwifi successfully
NETMON VM disk I/O errors	Storage connectivity issue during iSCSI config	VM rebooted and recovered — monitor disk health
MongoDB log file crash	Log file permissions lost after disk I/O error	Fixed by recreating log directory permissions

11. Quick Reference

11.1 Management URLs

System	URL	Credentials
UniFi Console	https://172.16.0.1	admin / (set)
WLC-FOR	https://172.16.0.20	admin / (set)
WLC-ANC	https://172.16.0.22	admin / (set)
ESXi Host 1	https://172.16.1.7	root / (set)
ESXi Host 2	https://172.16.1.8	root / (set)
Cisco ISE	https://172.16.1.30/admin	admin / (set)
LibreNMS	http://172.16.1.40	admin / admin
Graylog	http://172.16.1.41:9000	admin / OGIT@Graylog2026!
Grafana	http://172.16.1.41:3000	admin / OGIT@Grafana2026!
ntopng	http://172.16.1.41:3001	No login
QNAP-01 (File)	http://172.16.1.13	admin / (set)
QNAP-02 (iSCSI)	http://172.16.20.13	admin / (set)
DC-01 RDP	172.16.1.10:3389	OGIT\Administrator / Kenw00d1
DC-02 RDP	172.16.1.11:3389	OGIT\Administrator / Kenw00d1

11.2 Key CLI Commands

Cisco C9500 — Verification

- show vlan brief — check VLAN database
- show ip interface brief — check SVI status
- show interfaces trunk — check trunk ports
- show flow monitor OGIT-FLOW-MONITOR — NetFlow status
- show wireless mobility summary — WLC mobility tunnel
- show logging | include 172.16.1 — syslog destinations

LibreNMS — Discovery & Polling

- sudo -u librenms /opt/librenms/discovery.php -h all

- `sudo -u librenms /opt/librenms/poller.php -h all`
- `sudo -u librenms /opt/librenms/snmp-scan.py 172.16.0.0/24`

NETMON — Service Status

- `sudo systemctl status graylog-server grafana-server ntopng opensearch mongod`
- `sudo tail -f /var/log/graylog-server/server.log`

Windows DC — DHCP & AD

- `Get-DhcpServerv4Failover | Format-Table` — check failover status
- `Get-ADComputer -Filter *` | `Select Name,DNSHostName` — list computers
- `Invoke-DhcpServerv4FailoverReplication -Name '...' -Force` — sync DHCP

— End of OGIT Full Network Breakdown Document —