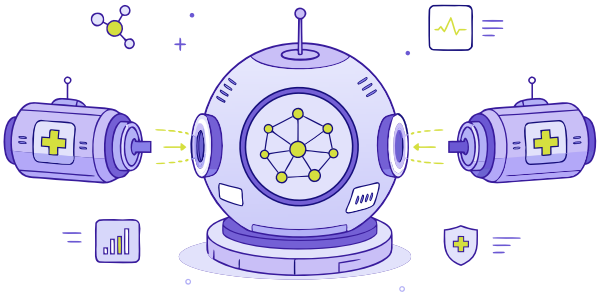
ARCHITECTURE OVERVIEW

HOW WANAWARE MAPS A HOSPITAL MERGER



The technical architecture behind day-one visibility into PHI paths, identity trusts, and alarm routes across merging hospital networks

When two hospital networks merge, WanAware does not treat them as one environment to be scanned later. It treats them as two populations of **connected assets** to be discovered, correlated, and mapped into a single graph from the moment the networks are attached. This overview describes the architecture that makes that possible: what WanAware ingests, how it discovers without agents or active scanning, and how the resulting Relationship Graph answers the specific questions a hospital merger raises about PHI continuity, identity trust, and emergency alarm routing.

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01. THE MERGER ENVIRONMENT WANAWARE INGESTS

A hospital network merger brings together systems that were never designed to be inventoried together: EHR platforms, ADT and HL7 interface engines, directory and identity services, nurse call and alarm systems, medical device VLANs, building management systems, and whatever cloud workloads each organization has already adopted. WanAware's discovery layer is built to ingest all of it without requiring a common format, a shared schema, or a single point of administrative access across both organizations.

Integration source	What it contributes	Discovery method
EHR and interface engines	ADT feeds, HL7 message flows, application dependencies between clinical systems.	API integration, read-only
Directory and identity services	AD and LDAP trusts, group memberships, access paths between merging domains.	Read-only directory queries
Network infrastructure	IP subnets, VLAN membership, device population, routing paths.	Passive network telemetry (NetFlow, DHCP, DNS)
Nurse call, paging, and alarm systems	Alarm routing paths and the devices and networks they depend on.	Passive network observation
Cloud and endpoint platforms	Active cloud resources, EDR-monitored endpoints, virtualized workloads.	API integration (AWS, Azure, EDR platforms)

02. DISCOVERY: AGENTLESS, PASSIVE, AND READ-ONLY

None of the discovery methods above require installing software on a clinical device, running an active or credentialed scan, or collecting administrative credentials from either organization. That matters specifically in a merger context, where clinical uptime cannot be interrupted to build an inventory, and where neither organization's security team wants to hand over standing credentials to the other side just to get a network map.

- **Passive network telemetry.** NetFlow, DHCP, and DNS signals reveal every connected asset and its subnet and VLAN membership without sending a single packet to the device itself.
- **Read-only API integrations.** Cloud provider APIs, EDR platforms, and ITSM tools are queried directly, using the access each organization already has configured, rather than a new discovery footprint layered on top.
- **Read-only directory queries.** AD and LDAP trusts, group memberships, and access paths are read, not modified, so identity mapping never touches production authentication systems.
- **No agents, ever.** Infusion pumps, telemetry monitors, badge readers, and building sensors are observed the same way as any other connected asset: from the network, not from software installed on the device.

03. THE RELATIONSHIP GRAPH, APPLIED TO A MERGER

Once both networks are connected, WanAware's schemaless graph architecture ingests every discovered asset from both organizations into a single Relationship Graph, without waiting for a data-modeling project to define how the two environments' asset types should be reconciled. New asset types, new vendor formats, and new interface conventions from either side become graph nodes the moment they appear, not after a schema change.

- **PHI path mapping.** ADT feeds and HL7 interfaces are mapped as live dependencies between systems, so a path that would silently break when a subnet or routing table changes is visible before the change happens, not after the data stops arriving.
- **Identity trust mapping.** Directory trusts and access paths between the two merging domains are mapped alongside the systems they authenticate into, so a trust that has not established cleanly, or an account with unexpectedly broad access, is visible immediately.
- **Alarm and paging route mapping.** Nurse call, code-blue paging, and monitoring alarm paths are mapped against the network infrastructure they depend on, so a routing change that would silently sever an alarm path is caught before it goes live, not discovered during an actual emergency.
- **IP subnet conflict detection.** Because both networks are ingested into the same graph, overlapping private address ranges, a near-certainty when two independently run hospital networks combine, are flagged immediately rather than discovered through a routing failure.

04. THE ONBOARDING SEQUENCE

WanAware's architecture is built to go from network attachment to a fully populated, relationship-mapped inventory of both organizations within a single working session, not a multi-week or multi-month discovery project.



STEP 1
Connect

Read-only API and passive telemetry connections are established to each organization's cloud, EDR, directory, and network infrastructure. Nothing is installed on any endpoint.

STEP 2
Synthesize

Continuous telemetry from every connected source is ingested into the schema-less graph and resolved into a single, deduplicated set of connected assets across both networks.

STEP 3
Map

The Relationship Graph computes PHI paths, identity trusts, alarm routes, and IP subnet overlaps automatically, the moment the underlying assets and connections are discovered.

STEP 4
Monitor

As integration work proceeds and systems are cut over or decommissioned, the graph updates continuously, so every change is visible the moment it happens, not at the next scheduled review.

ZERO NEW AGENTS

Every clinical device stays untouched, on both networks, throughout the merger.

ZERO ACTIVE SCANS

Discovery never sends unexpected traffic to fragile clinical or building systems.

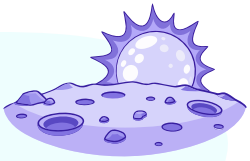
ONE GRAPH, TWO NETWORKS

Both organizations' connected assets are correlated from day one, not reconciled after the fact.

05. WHAT THIS ARCHITECTURE PREVENTS

Failure mode	Without a unified graph	With WanAware
PHI path continuity	A broken ADT or HL7 feed is discovered when a clinician or auditor notices missing data.	Mapped as a live dependency, so a break is visible before it becomes a compliance gap.
Identity trust verification	Confirmed by a checklist and a test login, days or weeks after go-live.	Visible in the same graph as every system the trust authenticates into, from day one.
Emergency alarm routing	Verified once, by walking the floor before cutover.	Continuously mapped as a live dependency against the network paths it actually depends on.
IP subnet conflicts	Discovered through a routing failure or a misdirected packet.	Flagged automatically the moment both networks are ingested into the same graph.
Decommission timing	Driven by a project plan and a scheduled date.	Driven by confirmed live traffic on the replacement system, not a date on a calendar.

NEW HORIZONS



None of this architecture depends on which organization built which system, or which vendor each side standardized on. WanAware ingests both networks as they actually exist and lets the Relationship Graph do the reconciliation that a manual due-diligence process was never built to do.

06. THE TAKEAWAY

A hospital merger's technical risk is not that either organization's systems are poorly built. It is that no architecture existed to see both networks as one connected environment before they actually became one. WanAware's schemaless, agentless design closes that gap the moment the networks touch, mapping PHI paths, identity trusts, and alarm routes continuously, so the architecture behind the merger is as unified as the organization is meant to become.

See how WanAware connected two distinct hospital networks on day one of their regional merger—delivering full operational visibility before integration even began.

Read The Solution Overview



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