



CyberInova®

INOVAMESH 2.0 – ZTNA MADE SIMPLE !

THE AGILE SECURITY SOLUTION FOR DYNAMIC ZTNA MESHES

MAR 2025

INOVAMESH - AN INNOVATIVE APPROACH

- Never as today the increasing moving of data and information due to digitalization and remote working request high protection to the integrity and the access of a system. Threats like data theft, alteration of the structure or impossibility of access, for a company can mean risk to stop and block entire manufacturing process.
- It is necessary to delineate new defensive strategies from aggression on the network with a new concept, called Software Defined Perimeter (SDP). This is the Zero Trust Network Access (ZTNA) , a security framework where access is continuously verified.
- Based on SDP/ZTNA concepts and exclusive capabilities like mesh network with Dynamic Overlay Control (DYNOC®, a CyberInova Ltd patent pending Id #102023000017760 technology). InovaMesh is designed to improve how people connect, offering the most agile, secure, and efficient cybersecurity framework.
- This is the reason why we designed InovaMesh.

InovaMesh 1.0 is described in detail in the previous document “InovaMesh by CyberInova - At a Glance - Extended (EN).pdf”

INOVAMESH 2.0 - THE AGILE SECURITY SOLUTION

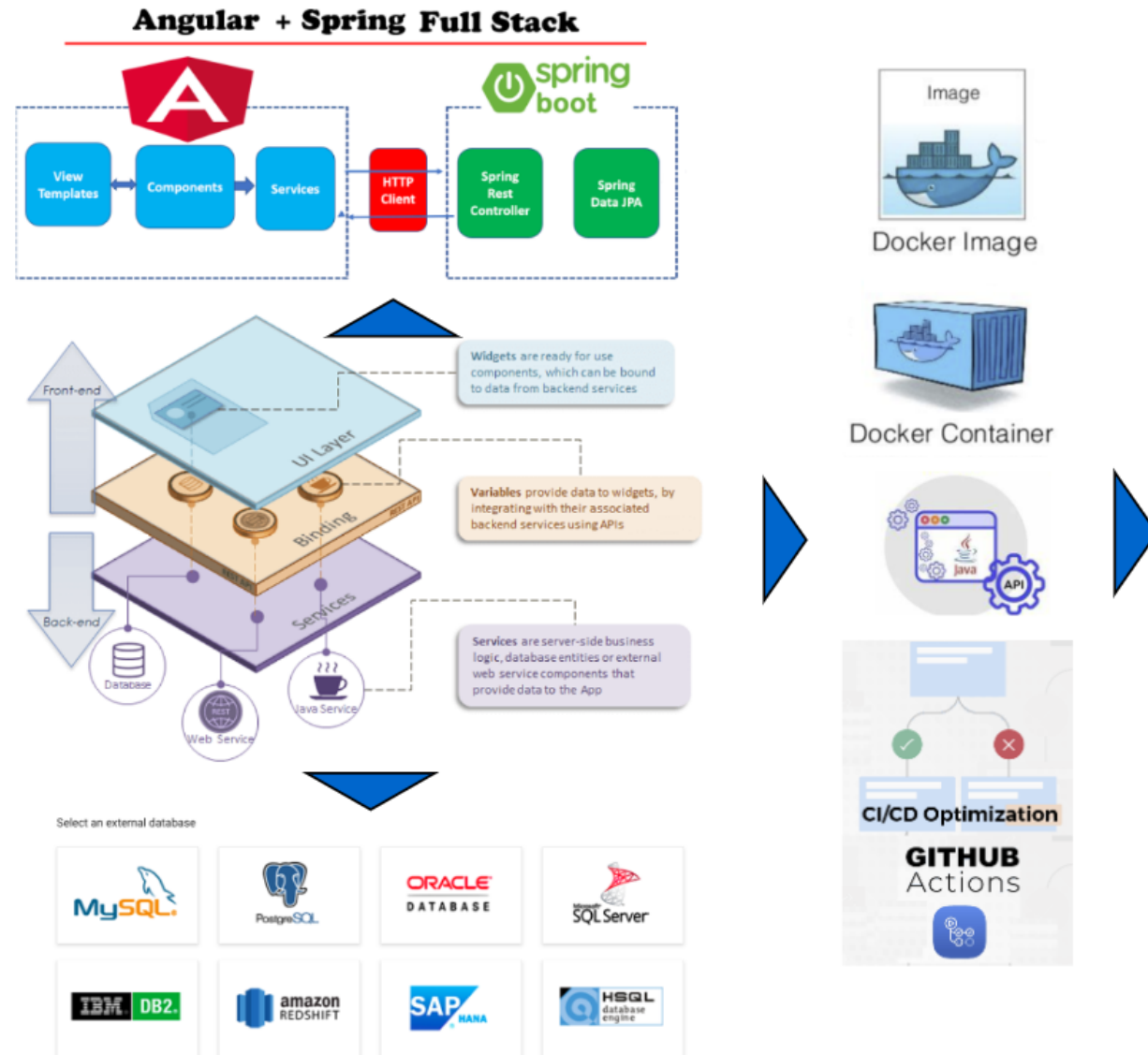
- The innovative cyber security strategy: Evolution of previous version, InovaMesh 2.0 now is a SaaS cloud system application . InovaMesh 2.0 replaces centralized security controls with distributed software agents that operate under the control of the web application manager. This will provide access to the application infrastructure only after identify verification.
- Security without compromise: Inovamesh 2.0 is a SaaS system developed with a VeraCode-certified Java architecture, using 'secure by design' software development techniques. More, is delivered on Amazon AWS, the leading cloud platform on the market.
- ZTNA made simple: ZTNA Mesh networks are recognized to be effective but very complex to implement. InovaMesh addresses this problem with auto-configuration agents wizard, graph representation of mesh device relationships, programmable security policies, orchestration. Device policies are deployed securely via a central repository, with no online exposure and full multi-customer, multi-mesh support.

InovaMesh 2.0 is the ZTNA Security SaaS Solution.

INOVAMESH 2.0 - THE SW DEVELOPMENT ARCHITECTURE

Cloud-native architecture

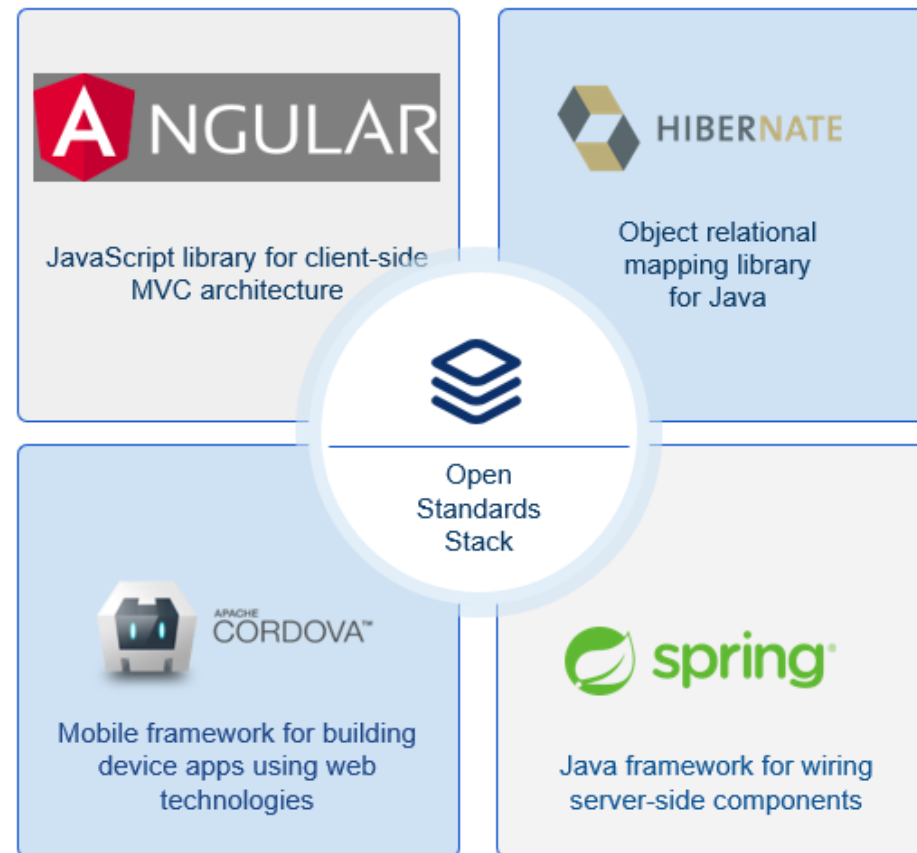
InovaMesh 2.0 is built on a modern, resource-optimized software environment. Its architecture is designed **with a secure-by-design** approach and **VeraCode-certified Java Spring code**. This ensures high availability and native application scaling, leveraging Angular, Java Spring, and a Hibernate layer for database independence.



INOVAMESH 2.0 - THE SW DEVELOPMENT ARCHITECTURE

Open Technology Stack

InovaMesh 2.0 is built using an **open-standards** technology stack, **without any lock-in** to vendor-specific software frameworks. This allows, alongside the main SaaS version, the customization and deployment of InovaMesh 2.0 on partner platforms.



1. Front-end: Angular for user interface, data binding and events. Bootstrap provides responsive layouts for various form factors

2. Object Relational Mapping (ORM): Hibernate and JPA provide standards based ORM layer and Entity model for database interaction and independence

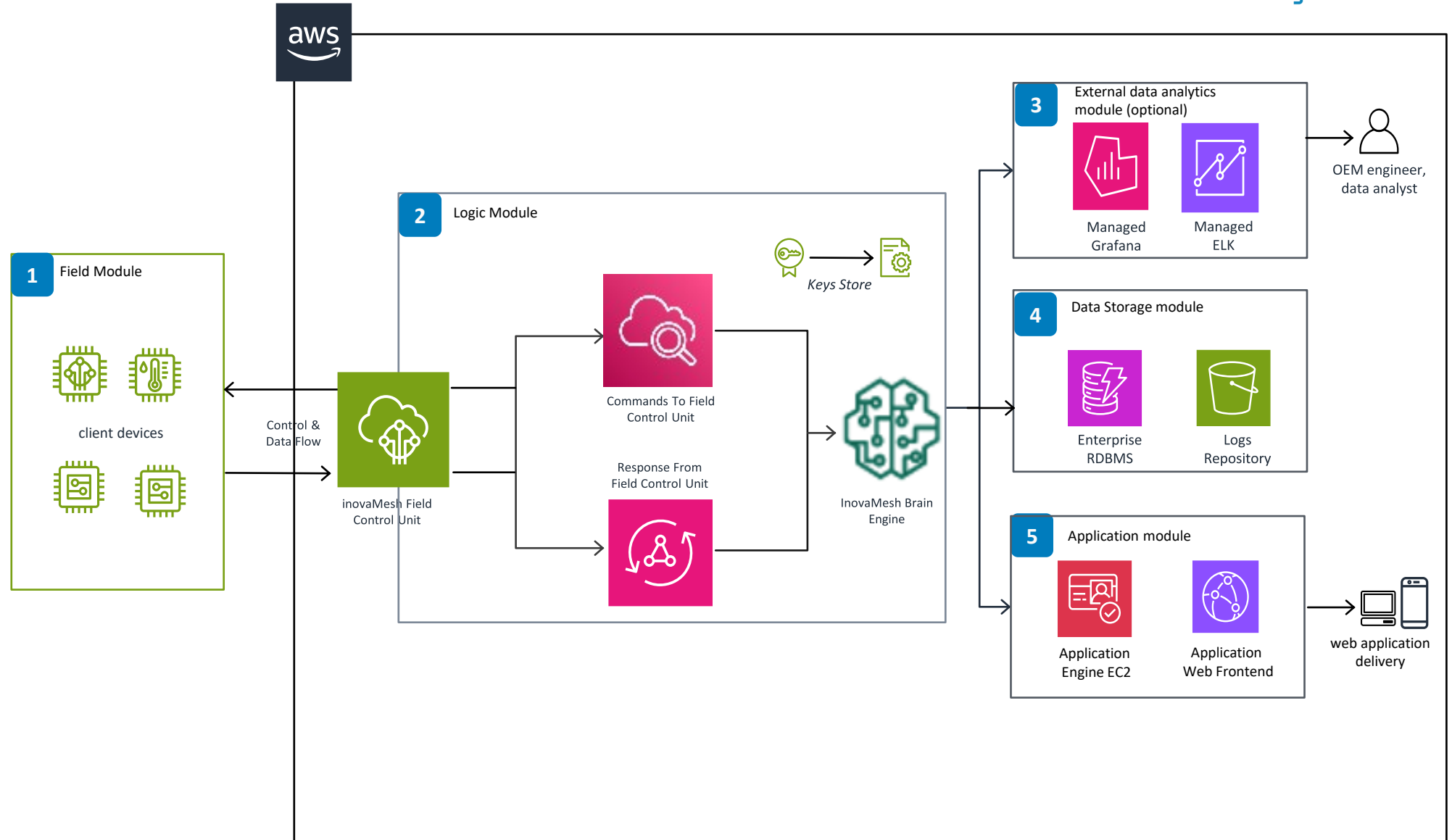
3. Back-end Services: Spring framework provides the back-end service layer in Java with support for dependency injection, REST controllers, security etc.

4. Hybrid Mobile: Cordova framework is used for enabling access to mobile device features and native installer creation using the appropriate SDKs.

INOVAMESH 2.0 - THE CLOUD SAAS ARCHITECTURE advanced device data collection

Native SaaS Cloud Solution

InovaMesh 2.0 is a cloud-native application built with advanced Amazon AWS services to ensure resilience, reliability, and compliance with leading security certifications.



INOVAMESH 2.0 - THE MULTI-CUSTOMER SAAS WEB MANAGER



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ACTIVE DEVICES

DEVICES GRAPH

MESH WIZARD

DEVICE WIZARD

MANAGE MESHES

MANAGE GROUPS

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MANAGE CUSTOMERS

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SYSTEM PARAMETERS

HELP/DOCS

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English Italian



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Innovative Technologies For Cyber Security

Highly innovative methodologies, products and services to face the new challenges imposed by Cyber Security, guaranteeing the protection of your assets in a proactive manner.

News | InovaMesh, Our Solution For SDP/ZTNA And Dynamic Mesh, Has Been Released. More Info..

Cyber Security & SDP/ZTNA

SDP/ZTNA & Dynamic Mesh
Vulnerability Assessment
Cyber Threat Protection

Compliance

Compliance Assessment
Incident Management & Data Breach
Consulting & Regulatory Support

Managed Service

Secure Cloud Services & IoT Devices
AntiThreat and AntiMalware control
Patching and Continuous Monitoring

*InovaMesh 2.0 Web
Manager - User Frontend*

INOVAMESH 2.0 – A MULTI-CUSTOMER SAAS APPLICATION



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ROLES OF USERS

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HELP/DOCS

Users of Customers

EXPORT

Search		Select Field				
ACTIONS	CUSTOMER	DESCRIPTION	FIRSTNAME	LASTNAME	USER ID	
 	Customer Demo	Customer Demo	Customer	Demo	admin.customer.demo	
 	CyberInova Ltd	CyberInova Ltd	CyberInova	Ltd	ettore@cyberinova.com	
 	Customer Demo	Customer Demo	Customer	Demo	global.admin	
 	CyberInova Ltd	CyberInova Ltd	CyberInova	Ltd	oscar@cyberinova.com	
 	CyberInova Ltd	CyberInova Ltd	CyberInova	Ltd	sal@cyberinova.com	
 	Customer Demo	Customer Demo	Customer	Demo	user.customer.demo	

Total records: 6

+ NEW

InovaMesh 2.0 Web Manager – A multi-customer, multi-mesh SaaS application that provides complete management of customers, users, user roles, customer meshes, mesh security policies. More, customer-specific visibility on their meshes and devices.

INOVAMESH 2.0 – MESH MADE SIMPLE BY WIZARDS



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Mesh Generation Wizard

Mesh ID

IoTMainSite

Mesh
Description

IoT Network On Production Main Site

Mesh
Dimension

255



Enter the identity for the Mesh (max 20 char, no space or special characters)

Enter the description for the Mesh (max 255 char)

Default mesh max dimension is 255 devices. Can be changed later as desired.

Cancel

Next >

InovaMesh 2.0 Web Manager – The Mesh wizard for automatic generation of mesh...

INOVAMESH 2.0 – MESH MADE SIMPLE BY WIZARDS



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HELP/DOCS



01

Define Mesh
Naming and
Description



02

Define Mesh
Topology



03

Build and Save
Mesh

Mesh Generation Wizard

Mesh Topology

☒ FULL

☐ STAR

☐ TREE



Gateway Device

If your mesh will need gateway functionality to reach other yours sub-network/s you need to declare below these sub-network/s with comma separated CIDR notation (192.168.0.0/24 , 172.16.0.0/16, ecc...)

Your network/s

192.168.1.0/24




Cancel

< Previous

Next >

InovaMesh 2.0 Web Manager – The Mesh wizard for automatic generation of mesh ...

INOVAMESH 2.0 – MESH MADE SIMPLE BY WIZARDS

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01
Define Mesh
Naming and
Description

02
Define Mesh
Topology

03
Build and Save
Mesh

Mesh Generation Wizard

Mesh ID

IoTMainSite

Mesh
Dimension

255

Your network/s

192.168.1.0/24

Mesh Description

IoT Network On Production Main Site

Mesh Topology

☐ FULL

Confirm to proceed with the creation of the mesh

Cancel

< Previous

✓ Done

InovaMesh 2.0 Web Manager – The Mesh Wizard for automatic mesh generation: with just a few inputs, InovaMesh creates a new mesh for you. This includes all necessary services, security policies, and configurations based on the selected topology. A similar wizard is available for device registration.

INOVAMESH 2.0 – MESH CLARITY THROUGH CONNECTIONS GRAPH



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HELP/DOCS

Device Network Graph

Search Select Field

DEV CUSTOMER	DEV MESH ID	DEV SN	DEVICE TYPE	DEVICE MODE
CyberInova Ltd	Alpha	1000000001	LIGHTHOUSE	PUBLIC
CyberInova Ltd	Alpha	1000000003	GATEWAY	PUBLIC
CyberInova Ltd	Alpha	1000000004	NODE	PRIVATE
CyberInova Ltd	Alpha	1000000005	NODE	PRIVATE
CyberInova Ltd	Alpha	1000000006	DESKTOP	PRIVATE
CyberInova Ltd	Alpha	1000000007	SERVER	PUBLIC
CyberInova Ltd	RealMesh	1016032256	LIGHTHOUSE	PRIVATE
CyberInova Ltd	Beta	2000000001	LIGHTHOUSE	PUBLIC
CyberInova Ltd	Beta	2000000003	GATEWAY	PUBLIC
CyberInova Ltd	Beta	2000000004	NODE	PUBLIC

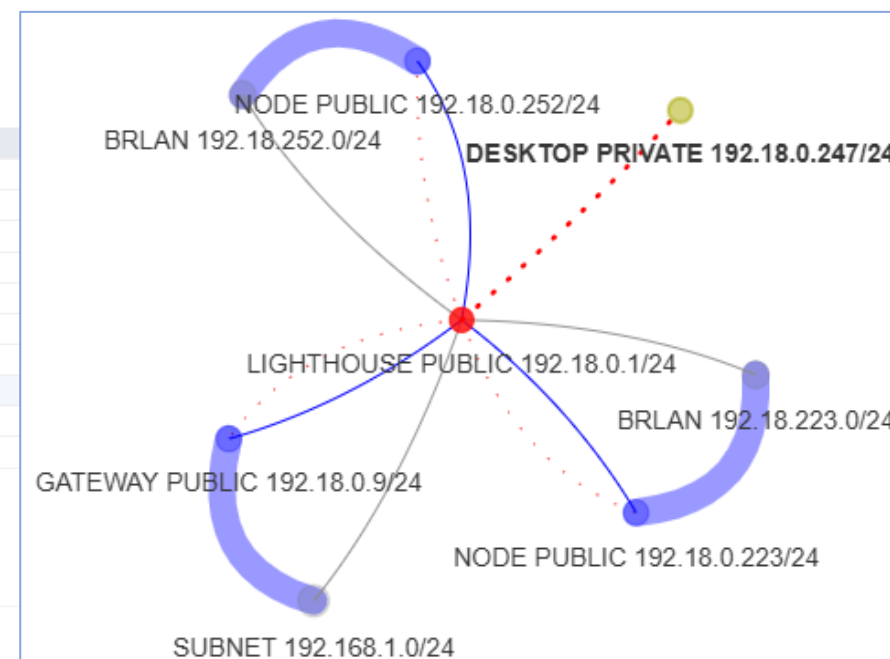
< 1 2 3 >

The object labeled **DESKTOP PRIVATE 192.18.0.247/24** with Serial Number: **2000000006** is connected to the selected device with Serial Number: **2000000001**.

Info: WAN UDP port: 4381

Note: The DESKTOP operates in firewall **PRIVATE** mode. It can initiate connections to any device, BRLAN, or SUBNET in **PUBLIC** mode on the mesh, but it cannot be contacted from the mesh.

Certified routes imported from security group(s): 1



InovaMesh 2.0 Web Manager – Device graph with detailed information about the device as resulting from its configuration, its connections within the mesh and its relationships to other devices.

INOVAMESH 2.0 – MESH AND DEVICE ARE OBJECT DEFINED ON DBMS



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



ROLES OF USERS

SYSTEM PARAMETERS

HELP/DOCS

Meshes

EXPORT

Search		Select Field											
ACTIONS	MESH CUSTOMER	MESH ID	MESH DESCRIPTION	NET CIDR	NET MAX DEV.S	SUB MAX ADDR.S	NET USABLE DEV.S	NET IP	NET MASK LEN	SUB USABLE ADDR.S	SUB MASK LEN	DEV TYPE RANGE	
 	CyberInova Ltd	Alpha	STAR default topology	192.18.0.0...	256	256	254	192.18.0.0	24	254	24	 ("LIGHTHOUSE";{"PERCENTAGE":1	
 	CyberInova Ltd	Beta	TREE default topology	192.18.0.0...	256	256	254	192.18.0.0	24	254	24	 ("LIGHTHOUSE";{"PERCENTAGE":1	
 	CyberInova Ltd	Gamma	FULLMESH default topology	192.18.0.0...	256	256	254	192.18.0.0	24	254	24	 ("LIGHTHOUSE";{"PERCENTAGE":1	
 	CyberInova Ltd	Omega		192.18.0.0...	256	256	254	192.18.0.0	24	254	24	 ("LIGHTHOUSE";{"PERCENTAGE":1	
 	CyberInova Ltd	PENDING	Provisional mesh to manage devices in a pending state	n/a	0	0						 N/A	
 	Cyberinova Ltd	RealMesh	Real devices mesh	192.18.0.0...	256	256	254	192.18.0.0	24	254	24	 ("LIGHTHOUSE";{"PERCENTAGE":1	
Total records: 6													+ NEW

INOVAMESH 2.0 – ACTIVE MONITORING OF DEVICES ON MESHES



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Active Devices

EXPORT

Search Select Field

ACTIONS	DEV CUSTOMER	DEV SN	DEV ROLE	DEV STATUS	DEV DATE TIME	DEV WAN MAC	DEV MESH NUM	DEV MESH ID	DEV MESH ADDR	DEV MESH STATUS	DEV DSN LIST	DEV NEIGH. LIST	DEV TICK SECONDS	DEV MESH AUTH. ID	DEV MESH AUTO ACT.	DEV MESH DL ID
<input checked="" type="checkbox"/> EXEC	Cyberinova Ltd	1016032256	LIGHTHO... PRIVATE	READY	2025-04-28 10:53:45.2... UTC	0634c970...	1	RealMesh	192.18.0.1...	UP	172.31.0.2 (ip-172-31-0-2.eu-north-1.compute...	null	10	RealMesh	false	Alpha,Real...
<input checked="" type="checkbox"/> EXEC	Cyberinova Ltd	3144671602	NODE PUBLIC	READY	2025-04-28 10:36:07.5... UTC	00155d01...	202	RealMesh	192.18.0.2...	UP	192.168.1.1 (vodafone...	null	10	RealMesh	false	Alpha,Real...
<input checked="" type="checkbox"/> EXEC	Cyberinova Ltd	3695497216	DESKTOP PUBLIC	READY	2025-04-28 10:36:09.2... UTC	00155d01...	114	RealMesh	192.18.0.1...	UP	192.168.1.1 (vodafone...	[["192.168....	10	RealMesh	false	Alpha,Real...
<input checked="" type="checkbox"/> EXEC	Cyberinova Ltd	3825856800	GATEWAY PUBLIC	READY	2025-04-28 10:35:41.7... UTC	00155d01...	9	RealMesh	192.18.0.9...	UP	192.168.1.1 (vodafone...	[["192.168....	10	RealMesh	false	Alpha,Real...
<input checked="" type="checkbox"/> EXEC	Cyberinova Ltd	7596400704	RELAY PUBLIC		2025-04-28 10:53:44.0... UTC	06c39768...	4	RealMesh	192.18.0.4...	UP	172.31.0.2 (ip-172-31-0-2.eu-north-1.compute...	[["172.31.1...	10	RealMesh	false	Alpha,Real...
<input checked="" type="checkbox"/> EXEC	Cyberinova Ltd	8474452582	NODE PUBLIC	UNKNOWN	2025-04-28 10:53:58.2... UTC	46470d33...	216	RealMesh	192.18.0.2...	UP	192.168.1.1 (vodafone...	null	10	RealMesh	false	Alpha,Real...

InovaMesh 2.0 Web Manager – Last but not least, the Device Monitor offers remote user action capabilities, including ping, mesh set/reset, device information and statistics, remote command shell execution, and more.

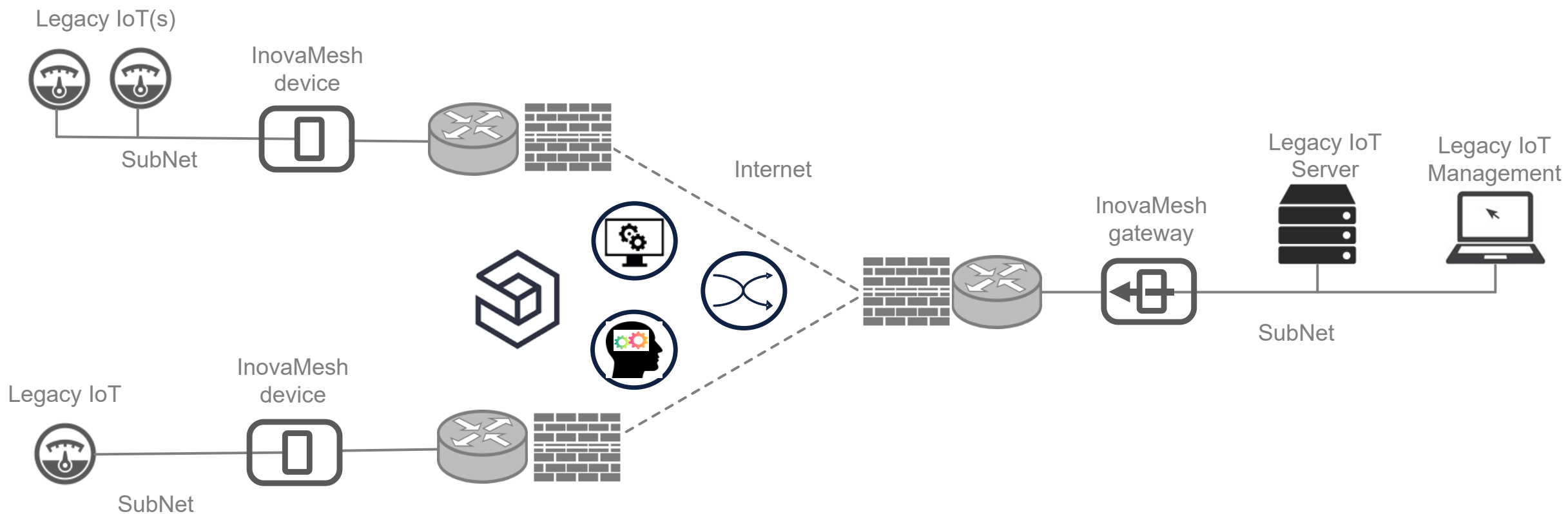
INOVAMESH 2.0 - MAIN FEATURES



Feature	InovaMesh
Network Segmentation	Yes
Private Virtual Network Mesh	Yes
Active Mesh Isolation	Yes
Running on amd64,arm,arm64,mips,mips64,riscv64,ppc64	Yes
Cloaking (hide device from rest network)	Yes
Support Android and iOS	Yes
Isolation (blocking device internet access)	Yes
Layer 3 Filtering and Access Control	Yes
User Portal	Yes
Active Directory Based Access Control	Yes
Support SAML, OpenID, OAuth2	Yes
Code available for inspection and assurance	Yes
Self-hosted (private)	Yes
Cloud-hybrid hosted	Yes

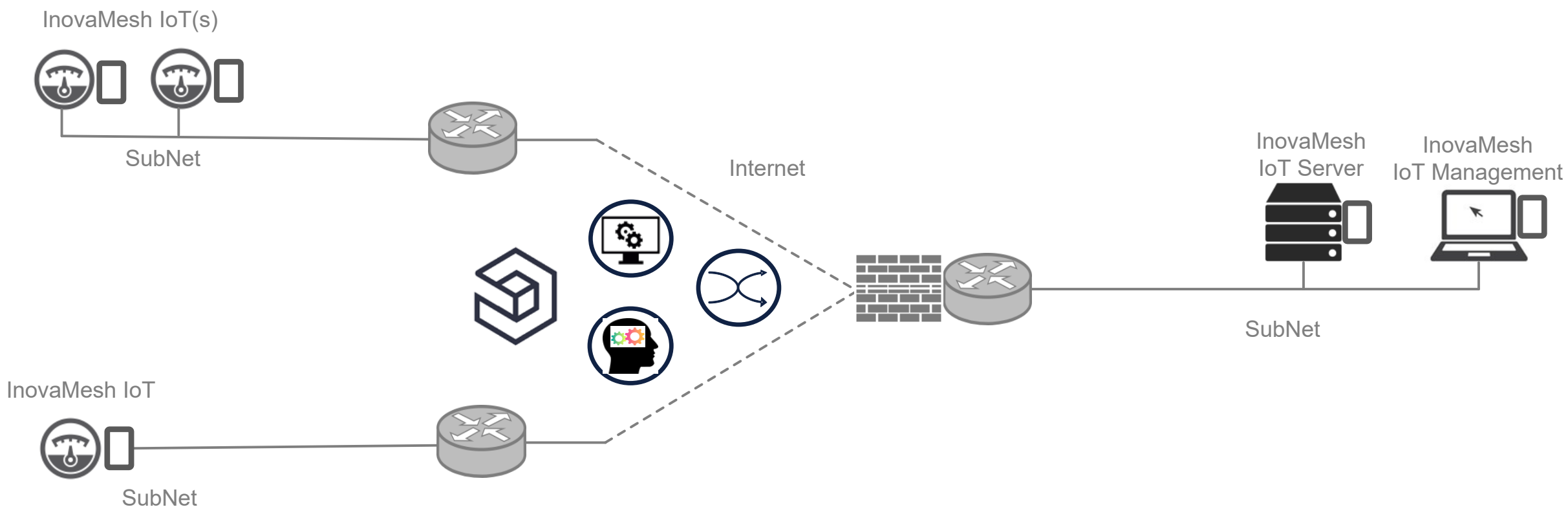
INOVAMESH 2.0 - LEGACY IOT USE CASE

Possible use case of legacy IoT(s), InovaMesh devices and server(s)



INOVAMESH 2.0 - EMBEDDED IOT USE CASE

Possible use case of Industry 4.0. IoT(s) with InovaMesh embedded and server(s)





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