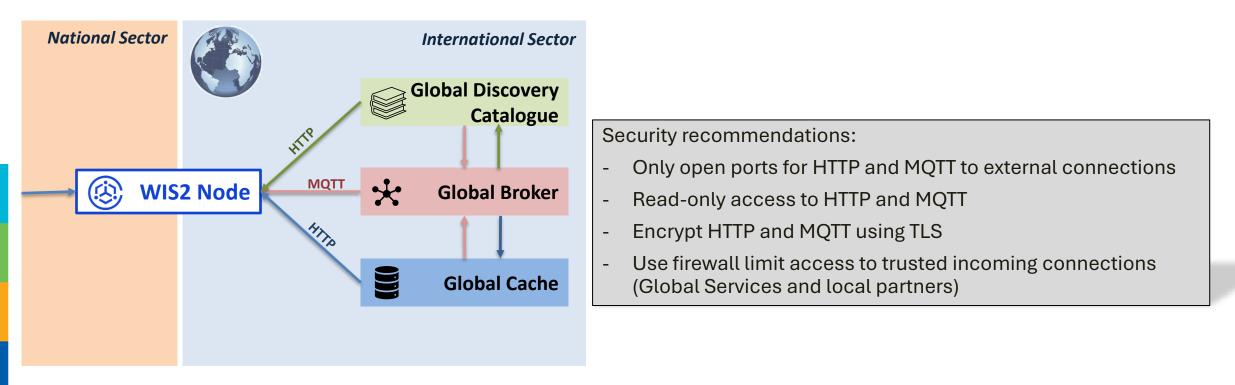
# WIS2 Node implementation: hosting, networking, security and maintenance



# Reminder: what is a WIS2 Node ?

The WIS2 node is composed of 2 endpoints that need to be <u>exposed over the public Internet</u>:

- MQTT broker: to publish WIS2 notifications for metadata and data
- HTTP endpoint: to enable the download of data files and metadata records





## Hosting a WIS2 node





**Public Cloud:** Remote servers hosted by commercial cloud service providers, for example: Amazon Web Services, Microsoft Azure or Google Cloud Platform

*Private Cloud:* Remote servers hosted in a private data centre, for example: European Weather Cloud or GISC Casablanca



## **Network and security**

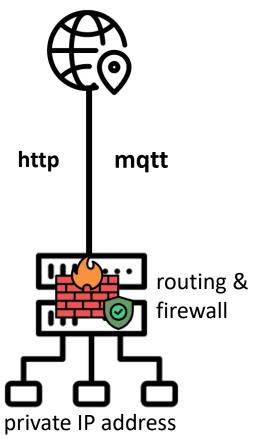
# Traffic of your WIS2 node needs to be routed to a public IP address

#### Incoming connections limited to <u>MQTT</u> and <u>HTTP</u> ports

**Cloud:** use cloud interface to request a public IP address and manage the allowed incoming connections via security groups **On-premise:** work with local IT/Network Team to provide public IP address and manage routing and firewall





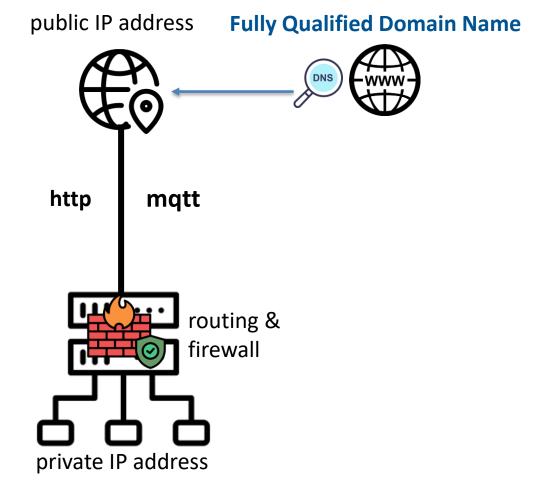


# Setting up a web address for your WIS2 Node

An FQDN (Fully Qualified Domain Name) specifies the **web address** for your WIS2 Node

#### **Coordinate with your IT/Network Team:**

- Choose a specific subdomain for your WIS2 node on your organization primary domain: e.g <u>wis2node.knmi.nl</u>
- Request to create a DNS record pointing the subdomain to the public IP address of your WIS2 Node





# TLS/SSL Certificates for HTTP and MQTT encryption

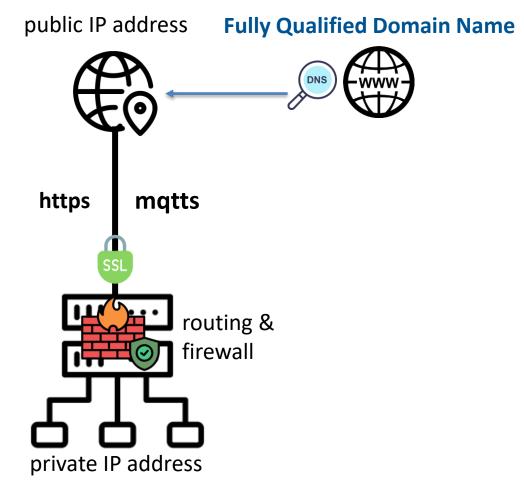
Use TLS/SSL certificates to encrypt your data and ensure clients can validate the identify of your host

Purchase an TLS/SSL certificates from a trusted Certificate Authority (CA) or use a free CA like Let's Encrypt

TLS/SSL certificates can be installed in a proxy routing the HTTP traffic from your wis2box-host to the public Internet

wis2box can use TLS/SSL certificates installed in your host (see wis2box documentation)





# **WIS2 Node Operations: Maintenance and monitoring**

#### Host monitoring:



- Uptime
- Internet access
- CPU and memory
- Disk usage



#### Software updates:

- WIS2 Node software (e.g. wis2box, IBL MW ...)
- host operating system
- any other software dependencies



#### WIS2 Node configuration updates:

- Datasets and associated discovery metadata
- Station list and associated WIGOS station metadata
- Regularly review data quality of published data







wmo.int

