PRODUCT TECHNICAL SPECIFICATIONS
Perennity Universal Portal PLUS
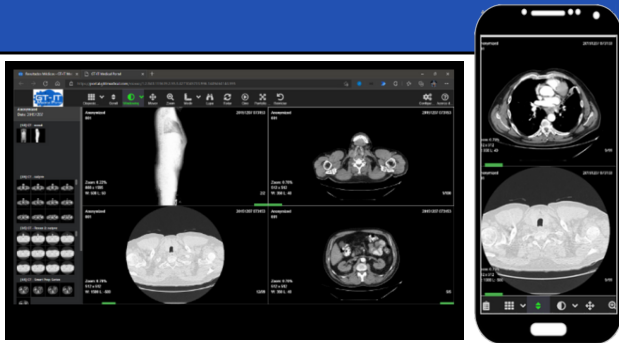
GENERAL DATA

Name:	Perennity Universal Portal PLUS
Tradename:	Universal Portal PLUS
Country of origin:	Guatemala–Belgium
Document date:	August 31, 2022
Revision:	0

Perennity Universal Portal PLUS is a switchable solution in Spanish or English, for the effective delivery of radiology and laboratory results to patients and referring physicians.

Delivery can be done automatically or by operator, in different ways

- Email
- QR code
- WhatsApp Business (Messaging services contracted by the client)
- SMS (Messaging services contracted by the client)

The patients can open their studies from their PC, smartphone or tablet and from there

- See their story
- Visualize them with a lite viewer
- Share them by Email
- Share them on WhatsApp
- Download them in different formats: DICOM, DICOM with viewer or JPEG
- View their lab reports (when the clinic has these services)

The referring doctor can from his PC, smartphone, or tablet

- View the history of his patients' studies
- Open a study and view it with a lite viewer
- Download the studies in different formats: DICOM, DICOM with viewer or JPEG.
- View lab reports with QR code

Roles managed by the portal

- Administrator
- Operators
- Doctors
- Patients
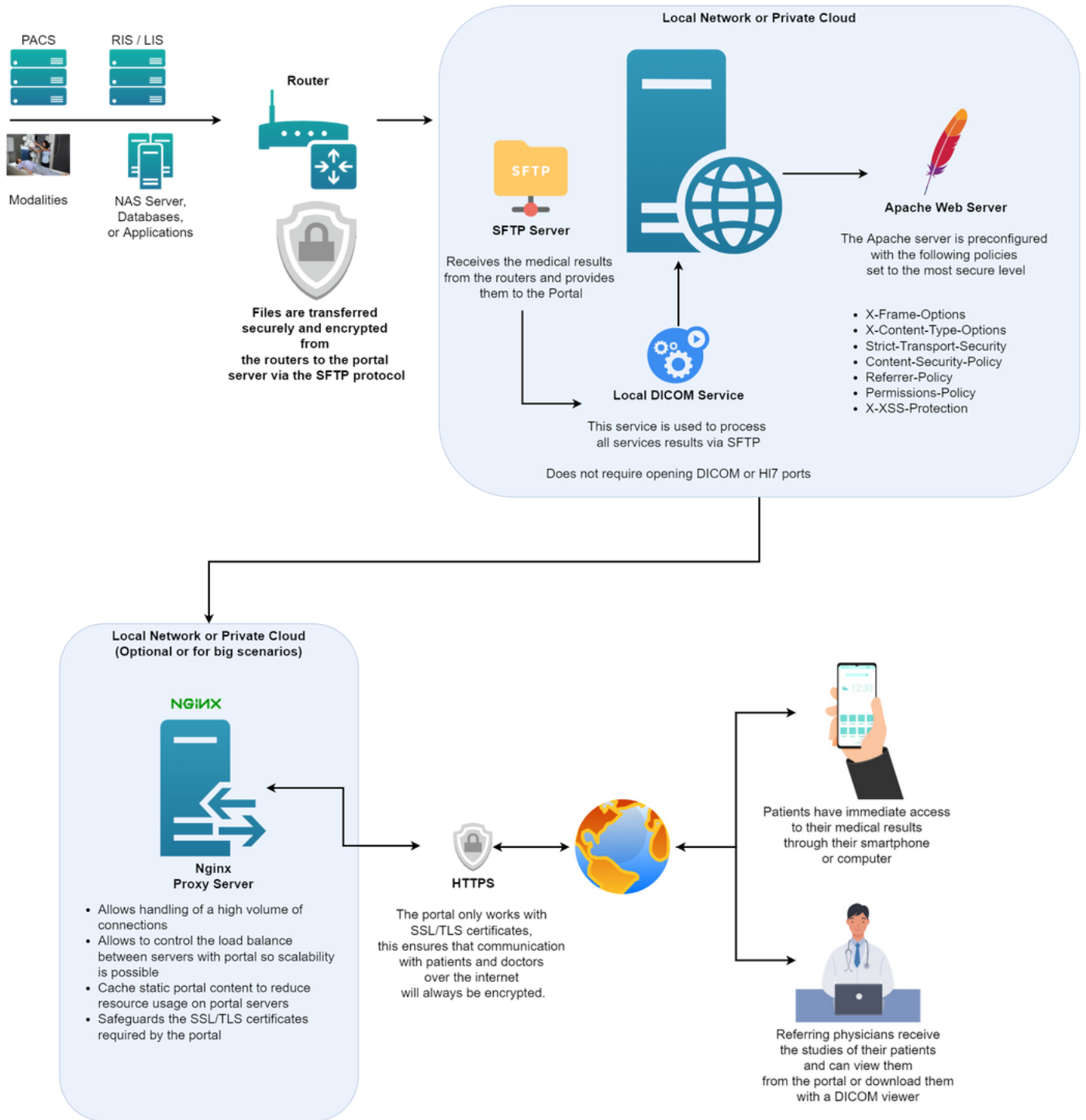- Radiologists (when applicable)

Everything is personalized

- Data, logo and image of the clinic, hospital, or diagnostic center
- Letters for patients with QR code
- Disclaimer
- Privacy policy
- Frequent questions
- Terms and conditions
- Contact

www.perennity.io
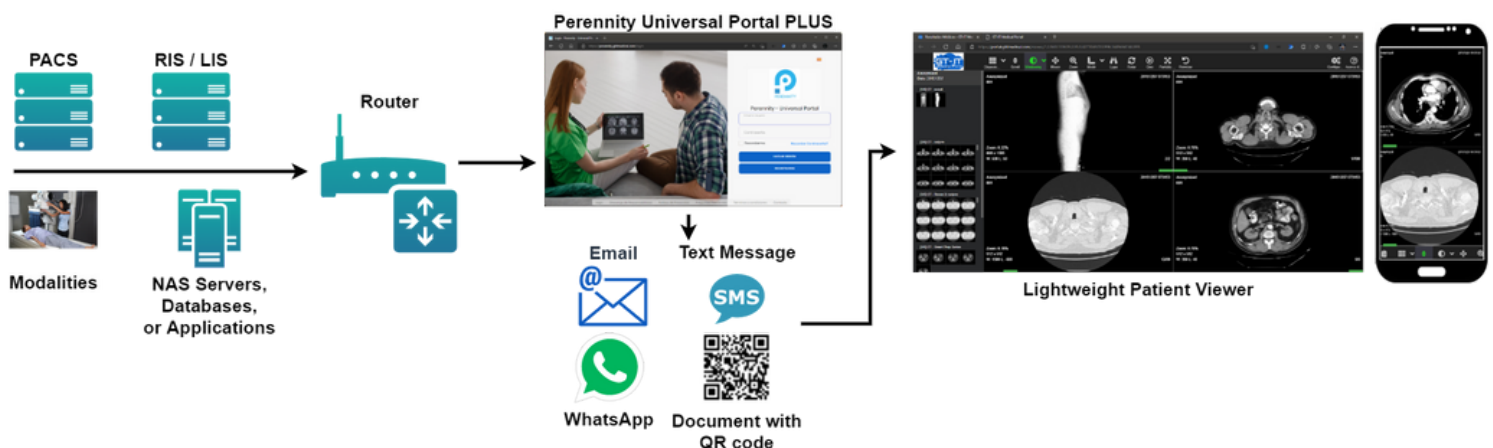
Security Scheme

It is classified as Class Level "A" by the major forensic platforms (immuniweb.com, securityheaders.com, etc.) that monitor and diagnose security. This guarantees that the studies delivered are private and cannot be intercepted. The Portal acts as a secure "barrier" between "external" users and the "internal" PACS.

PACS

RIS / LIS

Modalities

NAS Server, Databases, or Applications

Router

Files are transferred securely and encrypted from the routers to the portal server via the SFTP protocol

Local Network or Private Cloud

SFTP Server

Receives the medical results from the routers and provides them to the Portal

Local DICOM Service

This service is used to process all services results via SFTP

Does not require opening DICOM or HI7 ports

Apache Web Server

The Apache server is preconfigured with the following policies set to the most secure level

- X-Frame-Options
- X-Content-Type-Options
- Strict-Transport-Security
- Content-Security-Policy
- Referrer-Policy
- Permissions-Policy
- X-XSS-Protection

Local Network or Private Cloud (Optional or for big scenarios)

NGINX

Nginx Proxy Server

- Allows handling of a high volume of connections
- Allows to control the load balance between servers with portal so scalability is possible
- Cache static portal content to reduce resource usage on portal servers
- Safeguards the SSL/TLS certificates required by the portal

HTTPS

The portal only works with SSL/TLS certificates, this ensures that communication with patients and doctors over the internet will always be encrypted.

Patients have immediate access to their medical results through their smartphone or computer

Referring physicians receive the studies of their patients and can view them from the portal or download them with a DICOM viewer

Technical specifications for each Router

The solution can be installed in the cloud or on a local server (on-premises). The only thing that needs to be installed on the client side in each remote location is a Router (software that the portal itself provides). As many Routers as necessary can be installed, depending on the number of remote locations that need to be connected to the portal.

- The Router can be configured directly from the portal
    - Router configuration
        - Port
        - Latency (seconds)
        - Concurrent tasks (number of tasks)
        - Active cache
        - Cache days

- The portal provides a synchronization key that the Router will request at startup, with which it will automatically synchronize the DICOM configuration and all the collection rules
    - The equipment resources that the Router requires are minimal since its only task is to collect studies. These are the requirements
        - Processor: 2.5 GHz Intel Core i5 or mid-range Xeon
        - 4 GB RAM
        - 20 GB or more of free space
        - Internet connection
        - A rule in the firewall to open a port on the local network, not the internet, established in the Router configuration

Technical specifications of the server that will host the portal

Operating system
- Windows Server 2016 or higher
- Essentials or Standard license

Hardware
- The suggested space is calculated using an average of 1 TB per 10,000 studies (using different combinations of modalities)

    - Suggestion for a small scenario (average of 2,500 studies per month considering a maximum storage time of 2 months)
        - 2 CPUs (virtual processors)
        - 4 GB RAM
        - 500 GB of storage

    - Suggestion for a medium scenario (average of 5,000 monthly studies considering a maximum storage time of 2 months)
        - 2 CPUs (virtual processors)
        - 8 GB RAM
        - 1000 GB of storage

    - Suggestion for a large scenario (average of 10,000 monthly studies considering a maximum storage time of 2 months)
        - 4 CPUs (virtual processors)
        - 16 GB RAM
        - 2000 GB of storage