RADIUS
4ISP

SOFTWARE SUITE OF TOOLS FOR ISP AND WISP

Technical Offer

OUR
SOLUTION

NOT ONLY A RADIUS BUT A SOFTWARE SUITE FOR ISP AND WISP CONTINUOUSLY GROWING

Radius4ISP software stems from Vayu's experience supporting **WISP**s and **ISP**s in user management. It is based on the open-source Freeradius 3 software, on which **custom modules** have been built to expand its functionalities and an intuitive and **responsive graphical interface**. It is provided both **On Premises** and and **Cloud (SaaS)**..

Radius4ISP is **constantly updated**, and thanks to its modular structure, it is tailored to the specific needs of each project. The customer is guided step by step in the deployment phase, both in the migration processes from a previous platform and in a new implementation scenario.

The **main benefits** derived from adopting Radius4ISP platform are:

Simple

Everything needed is directly accessible and organized from a functional standpoint

Modular

Each ISP has its own Radius tailored to its specific needs

Reliable

Sized for proper load management and redundant architecture for high reliability
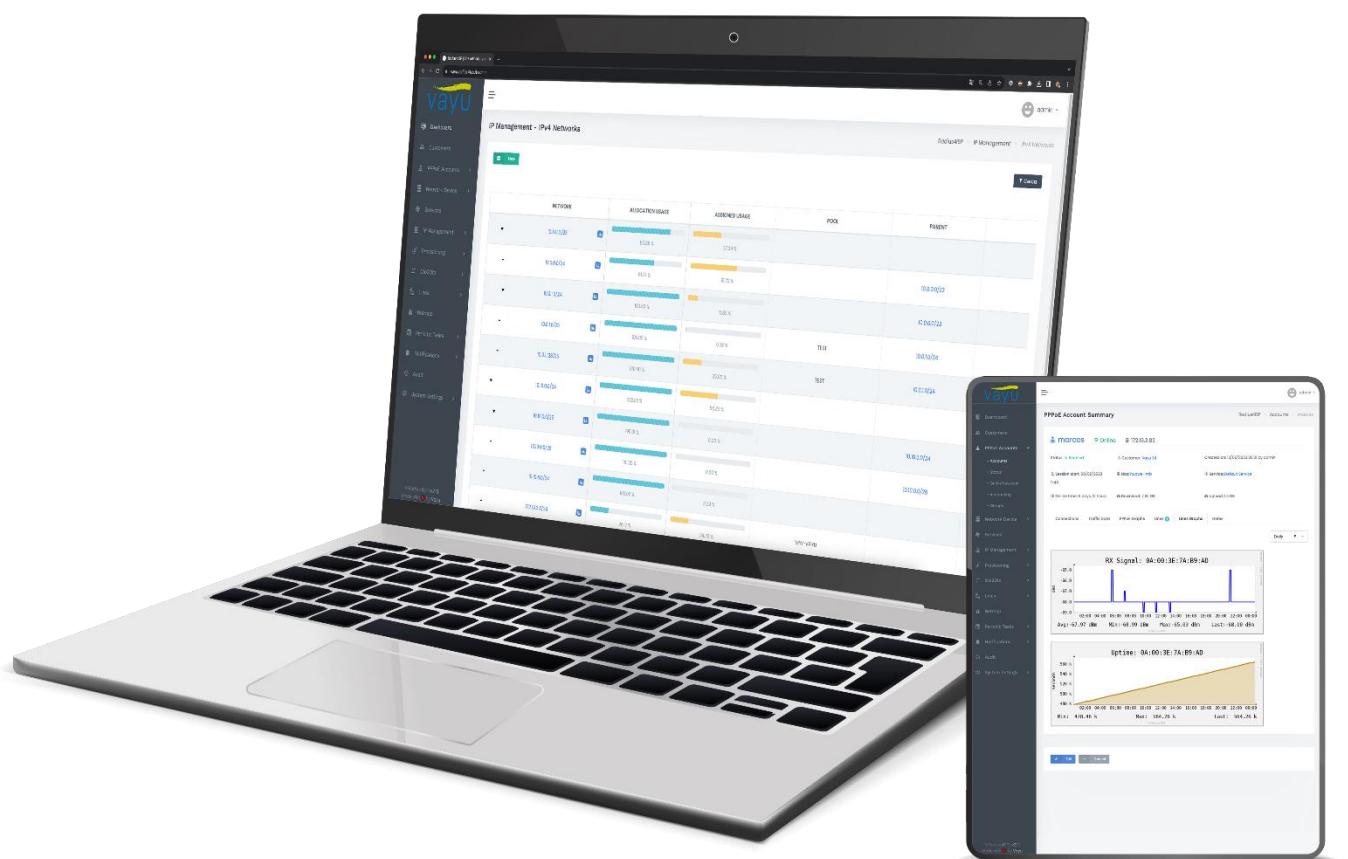
Open

Accessible via API for every function, ensuring seamless integration with other corporate systems

R4I
FEATURES

Below are listed all the modules of the Radius 4 Isp platform, available in both Cloud and On-Premises installations.

Basic features: NAS management
NAS creation for different brands: Mikrotik, Huawei, Juniper, Cisco IOS, Cisco IOS-XE, etc..
Support of COA commands for user disconnection
Definition of Accounting interval for automatic session termination management.
Management of the list of allowed services on the NAS.
Advanced search functionality.

Basic features: Account PPPoE management

PPPoE account creation with assigned username, password, and service type.

Simplified interface: Only fields relevant to the associated service type are displayed.

Definition of simultaneous usage limits.

Association of Mac Address <> PPPoE caller and possible Bridge CPE device.

Definition of limits and expirations (if specified by the service), custom radius attributes.

Management of IPv4 and IPv6 configuration.

Monitoring offline users.

Data export for an easier management

Advanced search functionality with filters.

User Groups creation and management.

Summary report on the account status: open sessions, last sessions and aggregated bandwidth used per day/month.

Status Table with account view organized by status: Online, Offline, Offline Ack, Frequent Disconnections, Bad Authentications.

Online session table with a list of all open sessions.

Accounting table containing the history of all sessions.

Search form starting from assigned IP address and desired time interval.

Basic features: service/bandwidth profile management

Service Management to assign profiling attributes to PPPoE accounts.

Definition of bandwidth limits in kbps or mbps, policy map, Mikrotik burst.

Definition of time limits: maximum daily online time and expiration date/time

Definition of IP Pools and custom Radius attributes.

Management of the list of authorized NAS to use a particular service

"Next Service" mechanism for fallback to a secondary service in case of account expiration or deactivation (associable with notification page for alerting the customer).

Advanced search

Basic features: DNS management

Profile management to assign DNS server attributes to PPPoE accounts.

Definition of IPv4 and IPv6 addresses for primary and secondary DNS.

Integration with Customer Portal for special configuration and assignement,

IPv4 e IPv6: IPAM (IP Address Management)

IP Pools management

Organization of IPs in Networks with tree structure visualization and usage statistics with assignment and allocation percentages.

Supported IPv4 types: static, dynamic, infrastructure, subnet.

Supported IPv6 types: static delegated prefix, static prefix, infrastructure.

Easy assignment of IP resources to PPPoE accounts with automatic selection of the first available resource.

Notification management

Communication channel via email or Telegram

Mass sending to recipients from a customer list, a PPPoE list or a line list.

Automated management of alarms (PPPoE, radio signal, latency, system errors, etc.).

Customized management via templates.

Admin panel

Unlimited access to the platform for internal users

Full management of view/read/write permissions organized by groups, configurable for each PPPoE account.

Two-factors authentication access and password management policy

System audit with access logs and recorded modifications

Scheduled backup and data export management (daily in Cloud installation)

Weekly management of snapshots of the entire platform (only in Cloud installation)

Automatic removal of accounting data after 6 months (as required by law)

Customer management

Creation of customer records with the ability to enter contacts hierarchically for individuals and companies
Easy access to all information linked to the customer's profile: list of PPPoE accounts, lines, etc
Data export, for an easy management
Advanced search feature with filters
Internal notes linked to the customer, for complete traceability of information

API

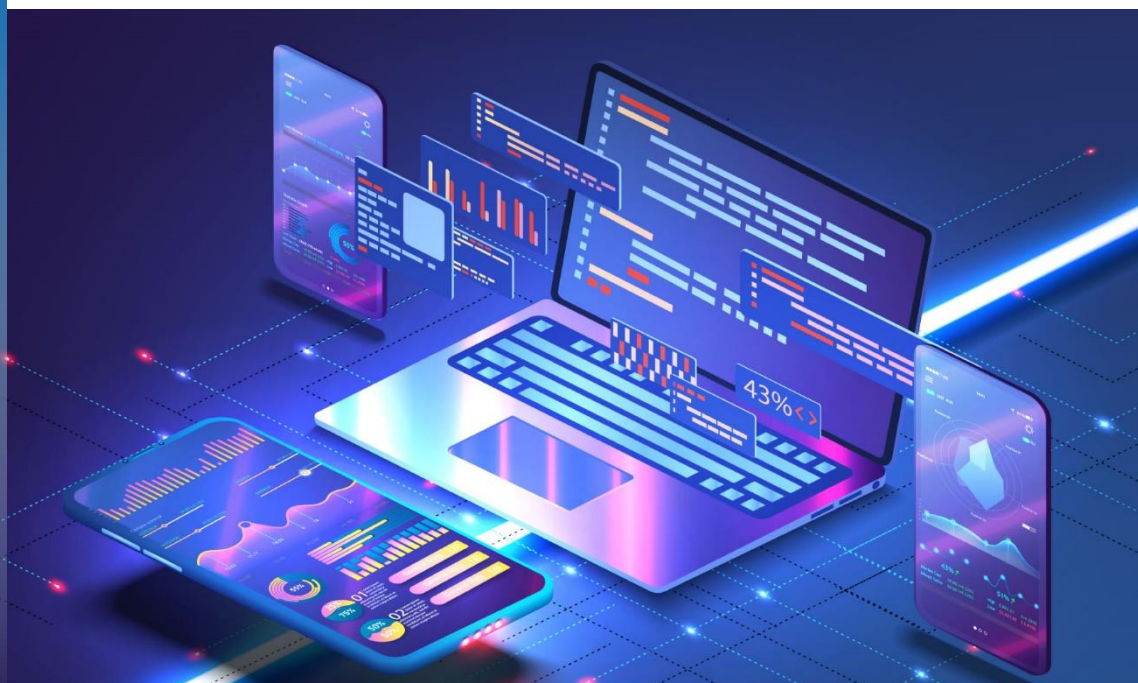| Create and get Customer data |
| --- |
| Create and get PPPoE accounts |
| Create and get Services data |
| Query IP resources |
| Query accounting data |

RADIUS
4ISP

ADDITIONAL
FEATURES

TIM EASYIP Module

Included in KIT OPERATOR, ENTERPRISE and WHOLESALE

Type of authentication service according to TIM EASYIP offer

Definition of realms associated with services, differentiated for static IP profiles and dynamic IP profiles.

Automatic management of radius attributes required by TIM and NAS authorization on TIM's list.

Management of TIM notifications on line provisioning orders via email (through access to XML files on TIM's SFTP repository).

Line Inventory Module

Included in KIT OPERATOR, ENTERPRISE and WHOLESALE

Line Inventory distinct by vendor and access types (FTTC, FTTH, Radio, etc.).

Custom fields (for number, type, and description) according to client specifications.

Association of lines with customers and/or PPPoE accounts for quick access to information useful for provisioning and assistance activities

Graph Module

Included in KIT OPERATOR, ENTERPRISE and WHOLESALE

A Bandwidth usage graph is added in the account status summary tab.

ICMP monitoring on PPPoE accounts: latency and packet loss.

Base Station Module

Included in KIT OPERATOR, ENTERPRISE and WHOLESALE

Database of own Base Stations with GPS coordinate localization, ACL management with custom radius attributes, registration table.

SNMP monitoring of Base Stations

Automatic creation of radio line objects with customizable templates and automatic association with PPPoE accounts.

Customer Portal Module

Included in KIT OPERATOR, ENTERPRISE and WHOLESALE

Dedicated and reserved area for customer access.

Account, line data, and connection status info.

Native integration with Odoo 4 Wisp: invoices are

Web filtering services (Parental Control).

Top-up Module

Included in KIT OPERATOR, ENTERPRISE and WHOLESALE

Reseller area with their own portfolio and dedicated interface

Integration with User Panel for customer line top-up.

Integration with PayPal

Commission management, with fixed amounts and/or percentage logic.

Product portfolio management for predefined top-up

Profile change functionality for service upgrades.

HA (High Availability) Module

Included in KIT ENTERPRISE and WHOLESALE

Active-Failover Mode: Real-time synchronization Failover with primary server, probe for automatic activation in case of primary fail

Active-Active Mode: Real-time synchronization of the database, possibility of configurations in load balancing.

Available as full On-Premises, full SaaS, or Hybrid: one On-Premises machine and a second SaaS.

Italian NetMAP Module

Available as additional module or stand-alone service
Included in KIT ENTERPRISE and WHOLESALE

Coverage check from a street address with display of available connectivity organized by operator and technology (FTTC, FTTH,...)

Databases updated daily: Telecom Italia, Open Fiber, Fastweb, Eolo

Possibility to integrate one's own coverage (Fiber and/or Radio)

Interrogation via API from third-party software.

ACS Module

Included in KIT WHOLESALE

Auto Configuration Server for devices supporting TR-069 (powered by GenieACS)

Control panel for monitoring and configuration

Support for TR-098, TR-181:1, TR-181:2 data models

SSL configuration and authenticated management of server-client communications.

Pre-configuration of provisioning flows

Native integration with Radius4ISP: management of device configurations from the line module in the 'Customer Device' section, bandwidth monitoring even on non-PPPoE lines

Support for customization of default configuration for the modem-router models in use.

OLO2OLO Module

Available as additional module or stand-alone service (stand-alone service available only in SaaS)

Complete management of phase 2 for data line migrations according to Italian AGCOM Resolution 274/07/CONS

Inbox management for migration requests as OLO donating.

Outbox management for migration requests as OLO recipient.

Simplified visualization focused on a 'migration' view that groups all the flow related to each migration request.

Notification management via email for changes in the status of requests.

Generation of migration codes.

Operator list with activation status and test/first communication date.

Turnkey service: management and updating of certificates, updating of operator contact points, technical testing support with other OLOs.

Interrogation via API from third-party software

Parental Control Module

Servizio di protezione Web DNS Filter per la tutela dei minori dal rischio del cyberspazio conforme alle linee guida della delibera AGCOM 9/23/CONS del 25 gennaio 2023.

Dual On-Premises DNS proxy servers to optimize response times from your network. Alternatively, SaaS server option available.

Support of the latest security standards: DNSSEC, IPv6, or DNS-over-HTTPS

DNS web filtering functionality via categories, blacklist, whitelist powered by Whalebone (category updates via AI).

Integration with Italian regulatory block management system powered by Vayu.

Integration with User Panel for DNS filter modification and customization.

Real-time reporting on usage statistics and detected threats.

Starter Pack for up to 1500 clients, with additional packages available for scalability

RADIUS 4ISP

4 DIFFERENT
VERSIONS

R4I offer consists of versions that integrate different modules and functionalities, capable of satisfying various customer needs.

BASE KIT
Our entry-level version, for those who want to start without worrying about an On-Premises infrastructure. Not expandable with additional modules, available only in the Cloud.

OPERATOR KIT
Specifically designed for the resale of L3 accesses, inclusive of IP addresses (e.g., TIM's Easy IP). Available in Cloud and On-Premises.

ENTERPRISE KIT
If you require a High-Availability infrastructure. Available with double instance, in Cloud, On-Premises, and hybrid mode.

WHOLESALE KIT
Our most complete and flexible solution. Available with double instance, in Cloud, On-Premises, and hybrid mode.

The following table details modules, functionalities, and services included in each version.

	BASE KIT	OPERATOR KIT	ENTERPRISE KIT	WHOLESALE KIT
Basic features Radius	✓	✓	✓	✓
IPV4 e IPV6 IP Address Management	✓	✓	✓	✓
Notification management	✓	✓	✓	✓
Admin Panel	✓	✓	✓	✓
Customer Management	✓	✓	✓	✓
API	✓	✓	✓	✓
TIM Easy IP Module	-	✓	✓	✓
Line Inventory Module	-	✓	✓	✓
Graph Module	-	✓	✓	✓
Base Station Module	-	✓	✓	✓
Customer Portal Module	-	✓	✓	✓
Top-up Module	-	✓	✓	✓
HA (High Availability) Module	-	-	✓	✓
Italian NetMAP Module*	-	opt	✓	✓
ACS Module*	-	opt	opt	✓
OLO2OLO*	-	opt	opt	opt
Parental Control	-	opt	opt	opt
Priority Support R4I (annual hours included)	3	6	8	16
24/7 Support – via troubleticket	-	-	opt	opt

* NetMAP, OLO2OLO e ACS modules are available as stand-alone software also

PROJECT MANAGEMENT
THE OPERATIONAL PROCESS

HOW IT WORKS?

STEP 1: ASSESSMENT

A joint assessment of the customer's specific needs is carried out to understand their real requirements. The requested functionalities and the existing context are meticulously evaluated.

STEP 2: OFFER

We formulate a document of functional specifications that reflects the results of the analysis and we integrate it with costs, production timelines, and delivery conditions.

STEP 3: KICK-OFF

Once our offer is accepted we kick-off the project presenting a shared gantt chart with the related process milestones

STEP 4: SERVICE ACTIVATION

We install and configure the services (whether they are SaaS or On-Premises). In case of migration from an existing system, data import tests are performed.

STEP 5: TRAINING

Dedicated training sessions start simultaneously with the software installation

STEP 6: SERVICE DELIVERY

The service is delivered, if planned, by performing the final data import. A comprehensive acceptant test session is performed and the acceptance document is compiled.

STEP 7: SUPPORT AND MAINTENANCE

Once the implementation and training phase is completed, the Support and Maintenance service begins through the ticketing portal and the help desk service.

MISSION
.

**A conscious choice is the first step
to optimizing your business**

vayu

Be agile.

Be agile.

VAYU S.R.L.
Via Cornelia, 498 – 00166 – Roma
E Info@Vayu.It - T +390698373335
P.Iva: 12612511001 – Rea: Rm 1388393