NAMEX
ROMA INTERNET EXCHANGE POINT

annual
report
2023

Your Mediterranean IXP ——— September 2024

«Namex is a consortium where every single voice matters; its uniqueness lies in its neutrality and the collective commitment to improving the internet every day.»

——— **Maurizio Goretti** Namex CEO

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Namex at a glance

Namex – Roma IXP is a neutral non-profit exchange and interconnection point for both national and international Internet Service Providers (ISPs) and content providers.

Namex was founded in 1995 as a neutral access point within an academic institution (CASPUR, now CINECA). It began as the first true attempt to create an infrastructure that could optimize interconnection and reduce costs for Internet providers, emerging in a world where the Internet was still a niche known only to a few enthusiasts and researchers.

Since then, Namex has grown significantly and now connects over 240 networks, becoming one of the leading Internet eXchange Points (IXPs) in Italy. Located in Rome, Bari, and Naples, Namex provides a crucial link in the country's digital infrastructure, facilitating the exchange of Internet traffic between various content and access providers.

Namex owns the data center in Bari and recently acquired

The Namex Team

ownership of the historic Caesar data center in Rome, located on Via dei Tizii. The other Points of Presence (PoPs) are hosted in partner data centers.

The Namex Consortium includes, in addition to the largest national and international providers, many local ISPs operating in Italy, particularly in the South. All consortium members and affiliates benefit from the interconnection services provided by Namex in all its PoPs, through a neutral platform.

The latest developments in network topology further confirm Namex's Mediterranean focus. Thanks to the new submarine cables connecting Central and Southern Italy to the Mediterranean basin, the Consortium's data centers serve as a gateway to the rest of the world.

Supporting operators for continued growth

Renato Brunetti Namex President

The Consortium has gone through a significant phase of expansion and consolidation over the past year, thanks to the growth of its members, the opening of new data centers, and the establishment of strategic agreements with our partners. The economic and energy crisis was addressed by adopting extraordinary measures to support providers.

More and more operators are choosing to join the Namex Consortium, confirming the success of our member-based philosophy, where all members count and have an equal voice in the decision-making process. Throughout 2023, the increase of memberships continued and traffic grew at a steady pace.

Namex always aims to offer its members high-quality services at fair rates. In 2023 the Consortium, which operates on a non-profit basis, adopted extraordinary measures to alleviate the burden of the energy crisis that marked the last two years, providing free services otherwise valued at over 300,000

euro. Consortium members benefited from fixed discounts on colocation and peering services, regardless of their size or joining

«The Consortium absorbed the cost of basic services for over 300,000 euro. The discounts on colocation and peering services had the greatest impact on smaller operators.»

date, with the traffic and housing allowances having the greatest impact on smaller operators.

The Consortium continues its expansion throughout Italy, with the launch of Namex Napoli and agreements with Open Fiber and Fastnet for the creation of Micro Edge IXPs. These proximity Internet eXchange Points meet the needs of our consortium members: the trend, also supported by the Italian Ultra-Broadband Strategy 2023-2026, envisions the distribution of data centers and eXchange Points across the territory. This decentralization does not replace large IXPs and data centers; instead, it supports them in areas where certain performance and resilience levels must be guaranteed.

The agreements with TOP-IX for the establishment of a federation of Internet eXchange Points and with RASH to outline a new management model for ANIX, the Albanian IXP that we helped found and manage for several years, are further concrete examples of the Consortium's commitment to expanding its reach, enabling its members to explore new frontiers, both geographically and technologically.

«Namex adopted extraordinary measures to alleviate the burden of the energy crisis that characterized the last two years, benefiting all members of the Consortium.»

Rome grows at the Center of the Mediterranean

Maurizio Goretti Namex CEO

Namex means to play a leading role in the rapidly evolving context that sees Rome and Italy occupying an increasingly important position in the development of internet infrastructure, both nationally and for the countries bordering the Mediterranean.

Currently, over 240 Autonomous Systems are connected to Namex, a number that reflects consistent double-digit growth in recent years and highlights the growing significance of the Roman internet hub, which will celebrate its 30th anniversary in 2025. Over the years, Rome's transformation into a strategic hub for Italy and the Mediterranean has been realized not only through the increase in connected Autonomous Systems but also with the expansion in the number of data centers (DCs) where Namex is present – four by 2023. We named each DC after a Roman emperor, in tribute to our historic city: after Caesar, Namex's original DC that boasts one of the highest densities of national and international operators in Italy, other DCs followed, which we named Augustus, Tiberius, and Claudius.

The opening of Aruba's IT4 data center, renamed Hadrianus after our PoP was installed in April 2024, further enhanced Rome's capacity to host large installations for international cloud and artificial intelligence players. Digital Realty will soon join this constellation of data centers, having begun work on constructing its own hub, further strengthening Rome's position as an internet interconnection point.

Namex is owned by the community that uses it, which has proven to be its strength along with the reliability of its infrastructure. Nearly 200 ISPs, both national and international, own Namex and guide the consortium's strategic decisions. Each company holds an equal share of ownership, ensuring that the services offered align with the needs of both

«Namex's growth will receive a further boost with the arrival of the first submarine cables. BlueMed, Sparkle's submarine cable that will connect Rome to various Mediterranean countries, has been partially operational for several months.»

major global cloud providers and regional Italian providers.

The consortium's growth enabled the purchase of the historic Caesar data center in 2024, located in the heart of Rome. Direct control of the facility and its full management will allow us to raise our standards while always focusing on the Consortium members.

Thanks to the presence of Namex and other entities, all PoPs are carrier-neutral, allowing affiliates to freely choose their connectivity providers from a wide range of options, including Internet eXchange Points for local traffic and operators dedicated to long-distance transit.

In addition to the data centers, Namex's growth will receive a further boost with the arrival of the first submarine cables. BlueMed, Sparkle's submarine cable that will connect Rome to various Mediterranean countries, has been partially operational for several months. The direct branch to Rome is nearing activation and will be the first international submarine cable to serve the Capital. Unitirreno, Unidata's cable, is in production and will be operational by the second half of 2025. The two cables will land at separate stations, ensuring resilience.

The center of gravity of the European internet network is shifting from the four cities of Northern Europe (FLAP: Frankfurt, London, Amsterdam, Paris) to the South, thanks to new submarine cable infrastructures and the significant growth in internet traffic from Mediterranean countries. The new cables connecting Italy to the Balkans since 2023, such as TAE and Ionian, along with the future. Medusa, will create a reliable and strategic route that Rome, due to its geographic location, will be able to benefit from in the near future.

Our presence in Albania, in collaboration with the local research network RASH, is a testament to this. The management of the Tirana IXP, ANIX, has created opportunities for our consortium members through synergy with the presence of a Namex IXP in Bari.

In addition to international expansion, Namex is focused on developing Italy's internet infrastructure, playing a crucial role as an interconnection infrastructure between providers for the past 30 years. We have opened interconnection points in Bari and Naples to create more opportunities for local
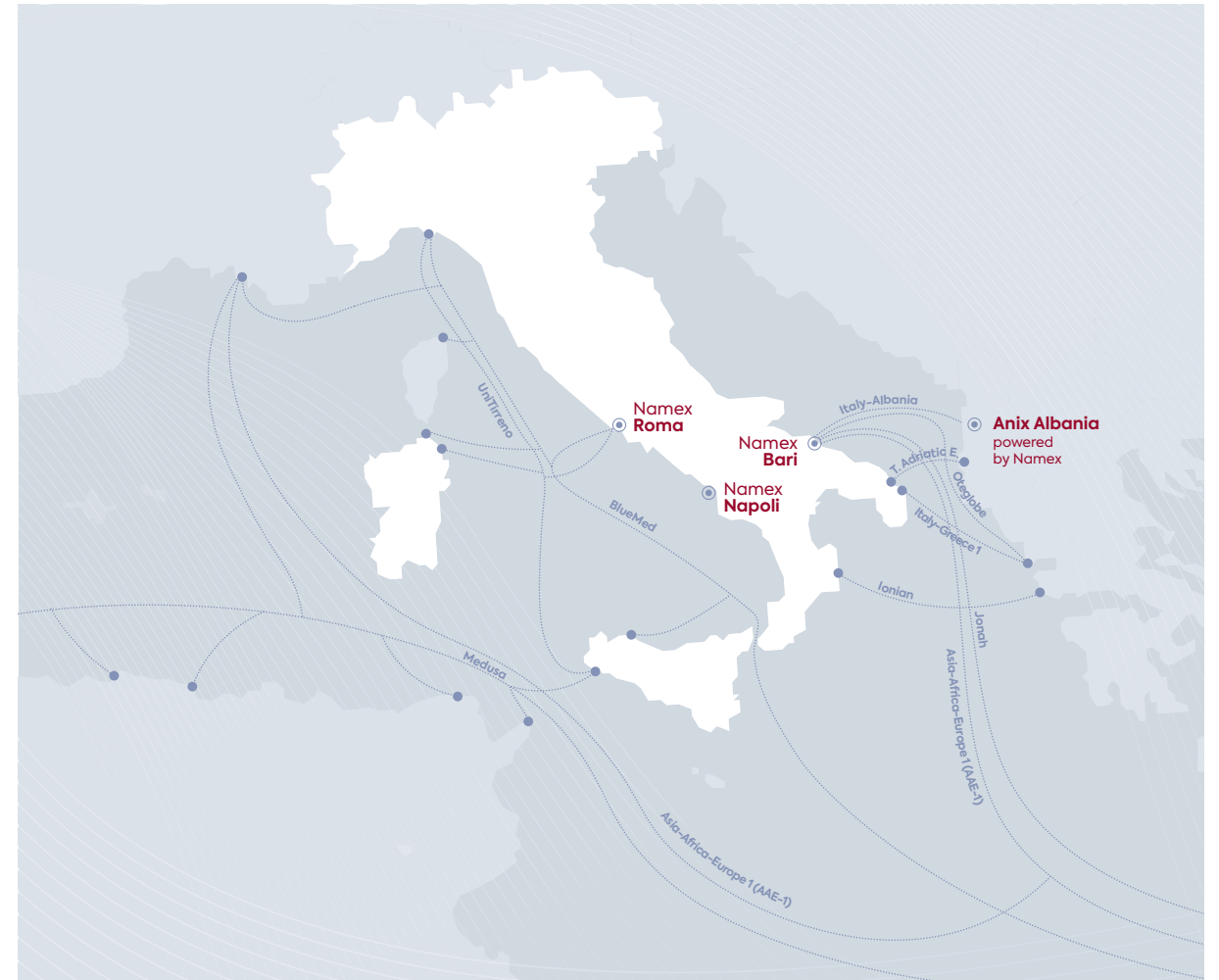
providers and contribute to the growth of the national internet infrastructure, particularly in the central and southern regions. Rome, Bari, Naples, and Tirana form the Mediterranean exchange points that underpin the goals of the first providers that established Namex, the NAutilus MEditerranean eXchange point.

We initiated, in collaboration with some ISPs which are Namex members, a new project called Namex Edge: it aims to meet the needs of a new type of internet traffic that

seeks to move interconnections between operators - both content and access ones - increasingly to the edge of the network, responding to the lower latency demands of certain applications.

Much has been accomplished by Namex over the years - next year will mark 30 - but the future holds many more challenges and growth opportunities that we do not want to miss. Namex will be ready.

Protecting the Heart of the Internet: The Role of IXPs in Routing Security

—— **Flavio Luciani** Namex CTO

With the expansion and increasing complexity of the Internet, routing security has become an increasingly relevant concern and a top priority.

As critical nodes for network interconnection, Internet eXchange Points play a fundamental role and are uniquely positioned to promote and implement security measures that can significantly impact the stability and integrity of the entire Internet.

In recent years, we have witnessed a significant rise in cyberattacks aimed at compromising Internet routing. Incidents such as prefix hijacking, route leaks, and man-in-the-middle attacks have become more frequent and sophisticated. These attacks can have devastating consequences, causing service disruptions, financial losses, and compromising the privacy and security of end users.

IXPs, by nature of being exchange points for large volumes of traffic, are attractive targets

for attackers aiming to maximize the impact of their attacks. For this reason, protecting routes and communications within an IXP has become essential to preventing these attacks from having large-scale consequences.

Additionally, the volume of traffic passing through IXPs has grown exponentially, especially with the increasing demand for digital services, live streaming, and cloud computing. This increase in traffic not only puts pressure on IXP infrastructures but also makes their role in routing security even more important and critical.

Over the years, we have worked on the security and hygiene of our technological infrastructure, focusing great attention and effort on adopting advanced and innovative technologies to address new challenges

«Namex plays a fundamental role and is uniquely positioned to promote and implement security measures that can significantly impact the stability and integrity of the entire Internet.»

related to routing security. This has led Namex to have a cutting-edge infrastructure in the development and implementation of technical solutions such as advanced route filtering, the implementation of RPKI (Resource Public Key Infrastructure), and more generally, all standard mechanisms that mitigate the impact of routing threats. All of this aims to provide a more controlled and secure environment for traffic routing, improving overall routing security for affiliated ISPs.

Routing security cannot be addressed in isolation. By sharing information on security incidents, vulnerabilities, and best practices, IXPs can help build a more resilient and informed community. Moreover, international collaboration is crucial for responding quickly and in a coordinated manner to attacks that cross national borders. IXPs play a central role in this network of cooperation, acting as hubs for the dissemination of security information and the implementation of coordinated responses.

From the perspective of national and

international collaborations, Namex supports MANRS (Mutually Agreed Norms for Routing Security), a global initiative launched by the Internet Society (now carried forward by the Global Cyber Alliance) with the goal of improving the security and resilience of the Internet's routing system.

As Namex CTO, I served as an Ambassador in 2020 and I've been a member of the project's Steering Committee for three years.

Additionally, the collaboration between Namex and the National Cybersecurity Agency has been strengthened with the signing of an agreement aimed at consolidating the security collaboration for national IXP operators.The agreement will facilitate the launch of an information exchange program on the state and evolution of cyber threats, the development of guidelines on BGP (Border Gateway Protocol) security configurations, and, more generally, the security of national IXP operators, in line with the implementation plan of the National Cybersecurity Strategy.
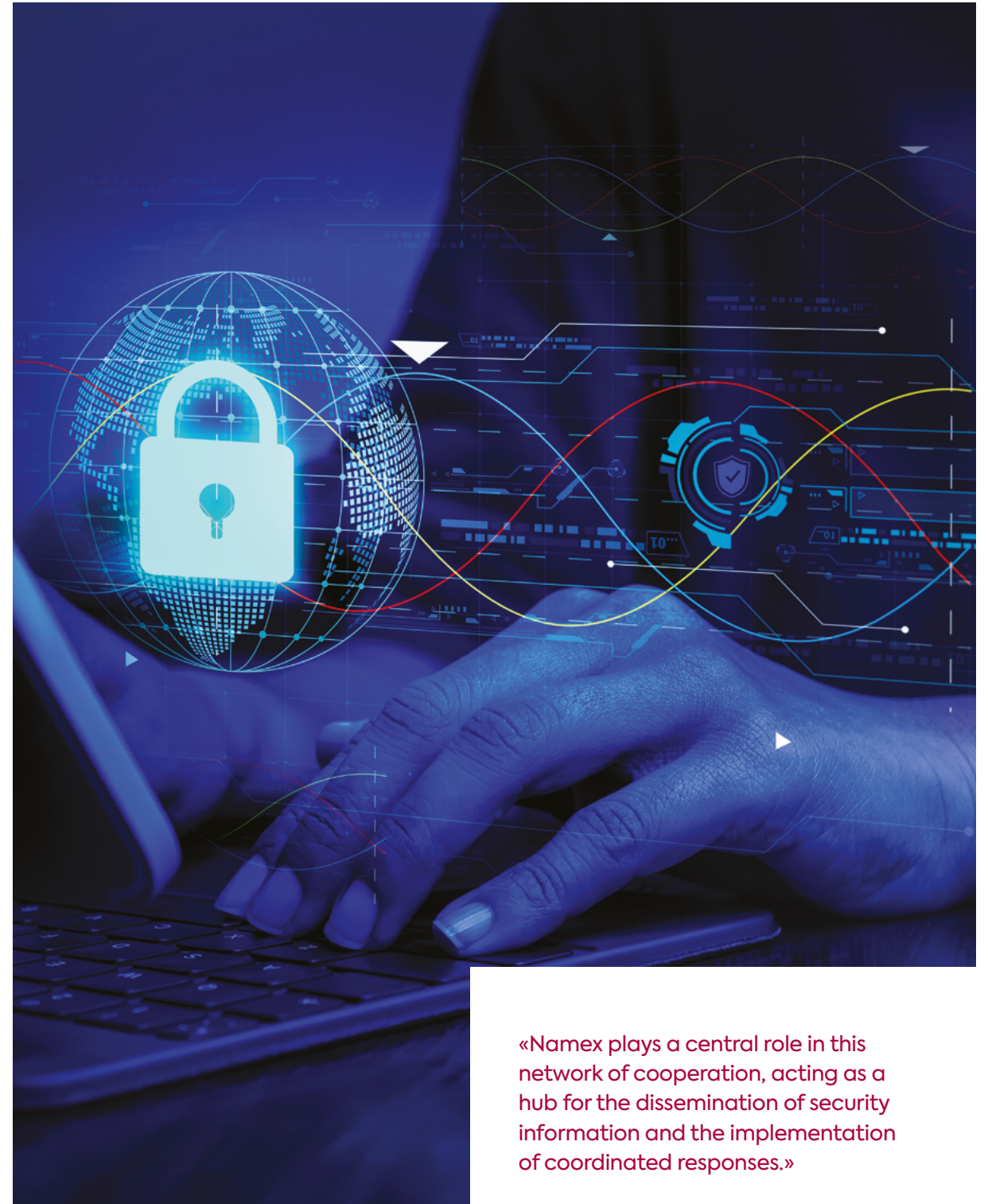
«Namex plays a central role in this network of cooperation, acting as a hub for the dissemination of security information and the implementation of coordinated responses.»
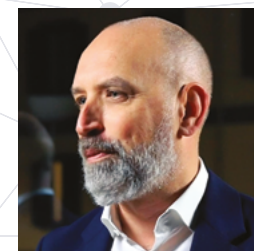
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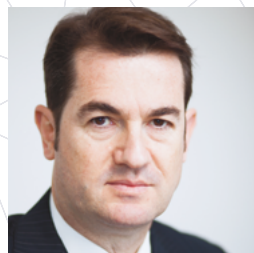
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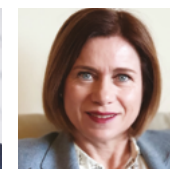
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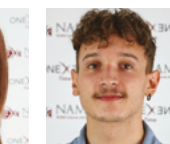
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Alessandra Festa
Communication and Events

Daniele Arena
International projects consultant

Innocenzo Genna
Public policy consultant

2023 results at-a-glance

STABLE REVENUE
4,7 MLN EURO

It reflects the impact of the extraordinary discounts offered to members in order to alleviate the burden of the energy crisis, which have enhanced accessibility to our services

+13%
AS 2023
235 ASNs

31 new ASNs joined in 2023, +15% compared to 2022 EOY, 19 new affiliates and 12 remote aggregation

+35%
PUBLIC PEERING TRAFFIC PEAK
585 GBPS

In 2023, +35% compared to 2022

New members in 2023

At the end of 2023, the Namex community consisted of **235** operators. Of the 31 new ASNs connected throughout the year, these **18** joined the Consortium:

Argosid Network	argosid.it	AS206988
Bootstrap	Senzalice	senzalice.it	AS207227
Dimensione	dimensione.com	AS202870
Easy Tech Solution	Civitanet	civitanet.com	AS198257
El Towers	www.eitowers.it	AS34599
GAMGROUP	gam-group.net	AS199699
Lan Communication	Lancom	lancom.gr	AS199081
LAZIOcrea	www.laziocrea.it	AS212350
Micso	WAdsl	micso.it	AS21034
MVA Connect	Velanet	www.mvaconnect.it	AS202803
Network Sistemi	networksistemi.it	AS21058
Novaconn	novaconn.it	AS203462
Rocket Way	rocketway.it	AS208920
Samtel Network	samtel.org	AS200345
Telemanapoli	www.telemanapoli.com	AS208337
Wi-Go	wi-go.eu	AS206655
Wispone	wispone.it	AS60822
XStream	x-stream.biz	AS198102

Resellers

Operators can peer at Namex through the following partner operators, who act as aggregators and resellers:


New remote aggregations in 2023

Operator	Website	ASN	Reseller
Altitud	www.altitud.it	AS57111	Fiber Telecom
Cicorella	cicorella.it	AS62093	Fiber Telecom
Epiclink	epiclink.it	AS204482	Fiber Telecom
Flonet	flonet.it	AS207739	Fiber Telecom
JCom Telecomunicazioni	jcomwifi.it	AS201502	8Route
Lcom	lcom.it	AS207715	8Route
Neomedia	neomedia.it	AS206617	8Route
NewMediaWeb | BluWifi	bluwifi.it	AS203180	8Route
Sicilcom	sicilcom.it	AS203713	8Route
Sielte	www.sielte.it	AS204280	8Route
WeNetwork | WeLan	www.welan.it	AS205891	Intendo
Wifly	wi-fly.it	AS207013	Fiber Telecom

Public peering

The volume of traffic exchanged on the peering platform reached a peak of 585 Gbps, representing a 35% increase compared to last year, reflecting a linear growth trend that has continued into 2024 so far.
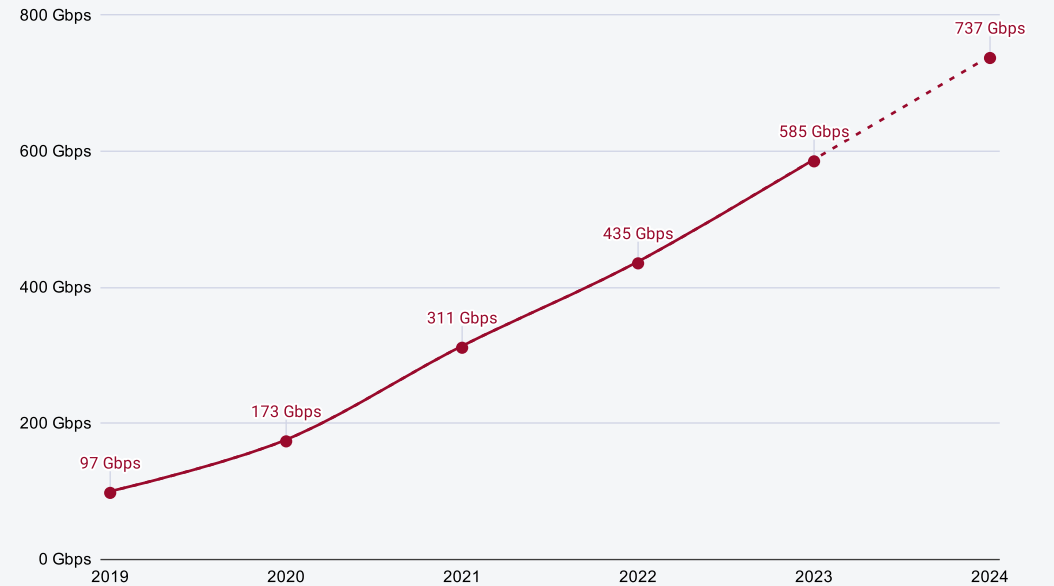
Connected Networks in the last 10 years
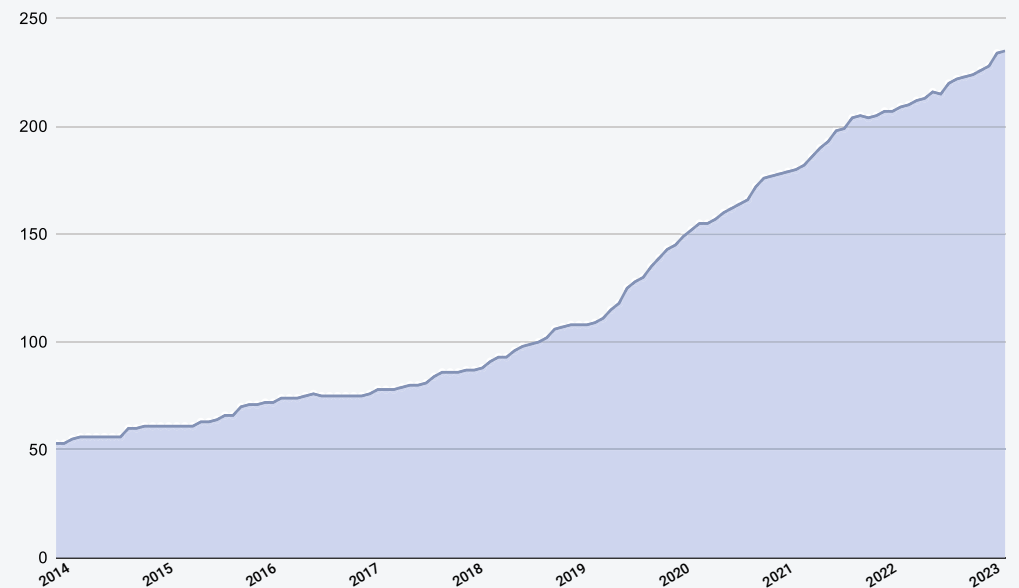
Financial statement

Namex, in line with its strategy of redistributing surpluses into activities that support its members, introduced promotions in 2023 on some consortium service fees. These promotions had the effect of neutralizing the growth in service volumes in the 2023 final balance sheet.

Namex plans to continue reinvesting its surpluses in activities to support its members and in projects aimed at fostering the growth of the Italian internet community in the present and coming years.

	2023 Final	2022 Final
Revenues	4.713.066*	4.746.052
Costs	4.313.105	4.228.542
EBITDA	**399.961**	**517.510**
Credit Notes	–	–
Depreciation	193.107	166.985
Provisions Devaluation	7.167	4.659
EBIT	**199.687**	**345.866**
Financial income/(expense)	224	–
Extraordinary income	–	–
Extraordinary expense	–	32.759
Tax charges	63.127	89.956
FY PROFIT (LOSS)	**136.336**	**223.151**

* The lack of revenue growth is due to the free provision of basic housing and peering services, offered to counteract the energy crisis. In 2023, Namex provided its members with a discount equivalent to the charges for ⅛ of a rack and 1 Gbps of traffic.
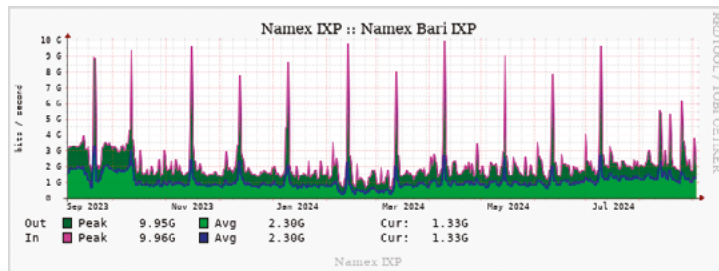
Namex Bari

➜ bari.namex.it

Namex Bari is the first "edge" IXP created by Namex in Italy's easternmost region, an area featuring the presence of numerous local ISPs, national carriers, and submarine cable landing stations. Namex operates its carrier-neutral data center in the city of Bari.

In 2023, the second year of the data center's operations, the setup and maintenance of core systems continued. Additionally, the fire detection system, intrusion detection system and a remote monitoring system for the data center were completed.

By the end of 2023, there were 22 connected networks: almost double the number from the previous year. During the year Namex completed the installation of the Microsoft and Netflix caches, while EXA added the PoP to its network, which extends to our partner IXP ANIX in Albania through the Trans Adriatic Express submarine cable.

NAMEX BARI Connected Networks in 2023

8ROUTE	8route.it	AS34428	Open Fiber	openfiber.it	AS210218
Convergenze	convergenze.it	AS39120	Progeform | Ermes	ermes.biz	AS206961
EXA	exainfra.net	AS8928	Retelit	retelit.it	AS28716
Fastweb	fastweb.it	AS12874	TechDigital	techdigital.it	AS199536
Fiber Telecom	fibertelecom.it	AS41327	TIM	tim.it	AS3269
Hurricane Electric	he.net	AS6939	Unidata	unidata.it	AS5394
Intendo	intendo.it	AS34691	Warian	warian.net	AS56911
Meta	meta.com	AS63293	WeNetwork | Welan	www.welan.it	AS205891
Microsoft Connected Cache	microsoft.com	via AS24796	WI-GO	wi-go.eu	AS206655
Netflix Open Connect	openconnect.netflix.com	via AS24796	WicitY	wicity.it	AS59766
			WiFi Multimedia	wifimultimedia.it	AS206947
Numeria	numeria.net	AS199042			

Namex IXP :: Namex Bari IXP

Out	■ Peak	9.95G	■ Avg	2.30G	Cur:	1.33G
In	■ Peak	9.96G	■ Avg	2.30G	Cur:	1.33G

Namex IXP

Namex Napoli

→ napoli.namex.it

Namex Napoli is the second "edge" IXP established by Namex, located in the region with the highest population density in our country. Campania is also a region where numerous ISPs operate, mainly on a local level. As a result, Naples, the most populous city in Southern Italy, was chosen to host this Internet eXchange Point.

Following in the footsteps of Namex Bari, our second edge IXP aims to optimize regional traffic between local ISPs and content providers, as well as to serve as a carrier-neutral data center where ISPs can interface with national wholesale operators and international players to purchase delivery kits and transit services.
The data center is hosted by the Parthenope University, with which Namex signed a cooperation agreement in October 2022. The site is located in the city center (Monte di Dio area), near the TIM "Tupputi" PoP and the local GARR PoP.

At the end of January 2023, the installation of the cluster dedicated to the peering service and the fiber cabling between the various racks available to Namex was completed. The Internet eXchange Point became operational in December 2023 and is fully functional thanks to the presence of access operators, content providers, and wholesalers.

NAMEX NAPOLI Connected Networks in 2023

DNS-OARC-112	as112.net	AS112
Fastweb	meta.com	AS12874
Meta	fastweb.it	AS32934
TIM	tim.it	AS3269
Telemanapoli	telemanapoli.com	AS208337
Warian	warian.net	AS56911
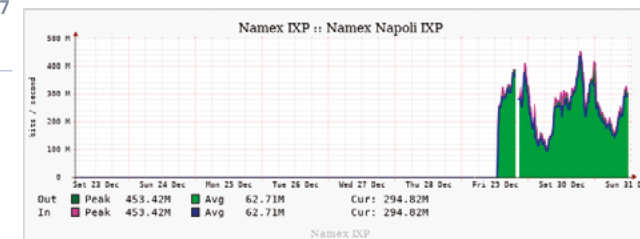
ANIX
and partnerships
with other IXPs

In 2023, Namex continued its collaboration with RASH for the management of ANIX, the Albanian Neutral Internet eXchange. This exchange point, the only neutral one in Albania, is hosted by RASH (the Albanian academic network) in its data center, with Namex providing the technical management of peering equipment free of charge.

In 2023, RASH took over the administrative management of the exchange point, requesting that connected ISPs contribute a fee for their connection. In this context, six local ISPs joined ANIX during 2023: Tele.Co Albania, iTirana, Abnet, Albanian Fiber Communication, Priam Net, and MC Networking, with Optixcom joining in early 2024.

Traffic slightly decreased, with peaks reaching 16G (down from 26G the previous

year); this is a natural development as some ISPs have activated local caches for Meta and Netflix, and therefore no longer retrieve their content through ANIX. In fact, data exchange between local ISPs and CDNs constitutes nearly 90% of the traffic exchanged on ANIX.

In June 2024, during NAM 2024, RASH director Arjan Xhelaj and Namex president Renato Brunetti signed a collaboration agreement, which ensures that Namex will continue to manage ANIX's peering

operations (pro bono) and allows Namex to act as a one-stop shop for operators wishing to connect to ANIX, interacting directly with Namex for both membership and fee payments.

At the end of 2023, contacts were also established with KOSIX, the Kosovo exchange point operated by ARKEP (the Kosovo communications regulator). Namex provided advice and support to the KOSIX staff, including a mission to Pristina in July 2024.

«In June 2024, during NAM 2024, RASH director Arjan Xhelaj and Namex president Renato Brunetti signed a collaboration agreement.»

ANIX Connected Networks in 2023

Abissnet	abissnet.al	AS35047
Abnet	abnet.al	AS202710
Albanian Fiber Telecommunications	madcom.al	AS198890
Albanian Telecommunications Union	atu.al	AS198279
AS112	as112.net	AS112
Diginet	diginet.al	AS6843
FirstCom	www.firstcom.al	AS205244
Hurricane Electric	he.net	AS6939
IBC Telecom	ibc.al	AS57388
Isa.Net	isa.net.al	AS209240
ITirana	itirana.com	AS48265
Keminet	keminet.net	AS197706
MC Networking	mcn.al	AS56468
Meta	meta.com	AS63293
Mobitel	mobitel.al	AS60471
Netflix Open Connect	openconnect.netflix.com	via AS24796
Nisatel	nisatel.al	AS29328
Optixcom	www.optixcom.net	AS213295
Packet Clearing House AS3856	pch.net	AS3856
Packet Clearing House AS42	pch.net	AS42
Priam Net	–	AS210125
PRONET	pronet.al	AS33924
RASH	rash.al	AS57961
Selcom	selcom.al	AS60352
Starnet Albania	starnet.al	AS60304
Tele.Co Albania	tele-co.al	AS199276
TiBO Communications	tibo.al	AS39611
Tring	tring.al	AS47394

Tech focus

Evolution of the peering platform in a multi–data center environment

—————— **Francesco Ferreri** Namex Chief Engineering Officer

As is well known, the current generation of Namex's peering platform is based on *EVPN/VxLAN IP fabric* technology. The factors that led us to choose this architecture as an evolution from the previous fabric based on Brocade proprietary technology have been extensively discussed in the past[1], but they can be summarized in a few key points: simplification of the architecture and ease of implementation, modularity, and scalability over time.

EVPN/VxLAN technology was originally developed for data centers to support the growing connectivity needs of virtualization infrastructures. The solution we chose for implementation, based on Mellanox hardware and Cumulus Linux software (both now part of NVIDIA's networking division), was at the time heavily focused on this type of application, and its use in a different context, although theoretically sound and valid, had not yet been widely considered within the internet exchange community.

The initial application scenario, where most of the peering platform and active connections were confined to the main data center, *Caesar*, was not very different from that of a network infrastructure aimed at interconnecting virtual machines. For the *Augustus* and *Tiberius* data centers, the decision was made to equip them with satellite switches, simply connected at L2 to the leaf switches of the main infrastructure, which was physically housed in *Caesar*.

Over time, with the prospect of opening new data centers (*Claudius* and *Hadrianus*), a revision of the infrastructure became necessary: extending the IP fabric to the peripheral sites was desirable to make the infrastructure homogeneous and ensure the extension of all services supported by the platform, as well as integration within the automated configuration framework.

To address this issue as broadly as possible, we initially identified two potential expansion strategies, also tied to the need to increase the interconnection capacity between the platform's spine and leaf switches:

– Development of a *super-spine* layer to interconnect the individual spine–leaf islands located in the data centers.
– Expansion of the number of spine switches and subsequent redistribution of the existing connections.

In both cases, detailed studies were conducted, with validation of the architectures through the *digital twin* simulation capabilities provided by NVIDIA. The solution based on a super-spine layer was deemed premature for the platform's current state of evolution, which still saw the main core of connections in the central site *Caesar*. Meanwhile, the introduction of new models with higher port density on the market led us to replace the two SN2700 spine switches (32 100GBE ports) with the new SN4600 models (64 200/100GBE ports), thus doubling the availability of ports for interconnecting leaf switches.

The next step was to evaluate the possibility of extending the fabric to remote sites using DCI (Data Center Interconnect) solutions, moving beyond the initial application scenario of the technology for the first time. Once again, the good old BGP came to our aid[2]: since the routing between the leaf and spine nodes is managed at the L3 level, according to a control plane operated by BGP, there were no contraindications to extending the platform in terms of distances,

technologies, or underlying transport providers.

The first test was with the activation of the *Claudius*/Cloud Europe node, which features an SN3420 leaf switch (48 10GBE ports + 12 100GBE ports) connected to the spine switches via a protected 100G WDM link operated by Retelit.

A second significant "experiment" arose from a need identified during discussions with the Namex Technical Committee: the possibility of extending the peering LAN from the Namex Napoli exchange point to Rome, to facilitate the connection of certain content providers who could act as a catalyst for the growth of the newly established Neapolitan IXP. In this case, we opted to replace the switch supporting the local LAN with an SN3420 leaf switch (our current reference model for mixed 10/100G connections), this time connected via a protected 10G geographic link provided by Fastweb.

As is always the case when activating a new local node in a data center, the infrastructure at each site was equipped with a network performance measurement probe[3], integrated into our quality of service control system[4]. The monitoring results showed performance in line with expectations given the distance of each
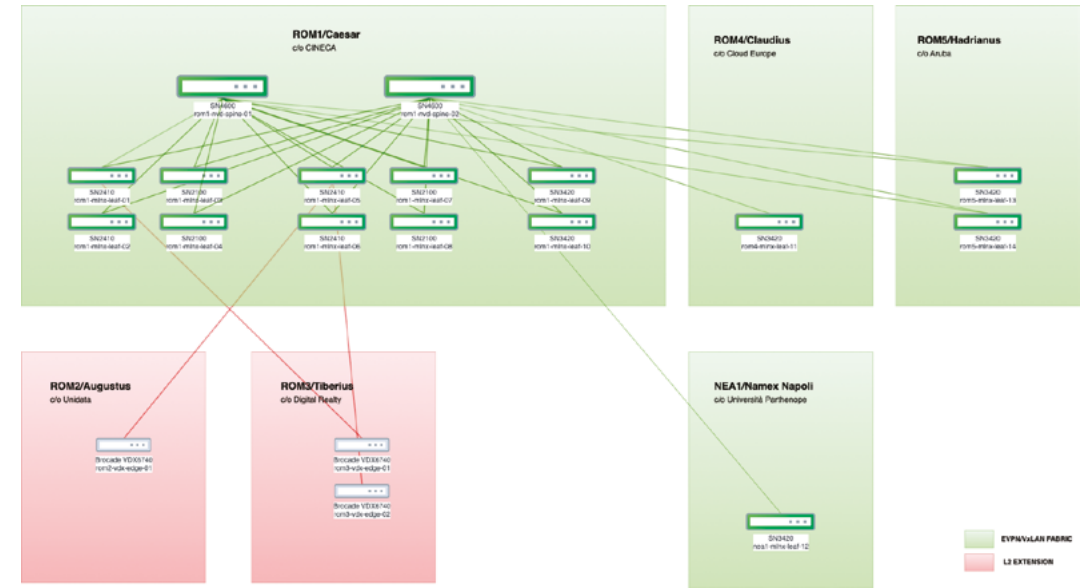
node, with no specific issues of service degradation.

The next step will be to extend the fabric to the new *Hadrianus* site, at the Aruba data center (*completed in February 2024, AN*), this time using four 100G WDM links provided by Aruba itself, and to convert the *Tiberius* node at the Digital Realty data center to *IP fabric*, using a DCI link managed directly by Namex via a new optical infrastructure provided by SmartOptics, based on 400G OpenZR+ connectivity (*completed in May 2024, AN*).

In conclusion, about four years after the initial feasibility studies, we can only be satisfied with the implementation choices made over time and reaffirm our absolute confidence in the technology. Thanks also to the always precise and timely support from the vendor, this technology has enabled us to accompany and support the evolution of the exchange point, ensuring stability and reliability of performance in increasingly complex scenarios.

1 namex.it/switching-to-ip-fabrics/
2 namex.it/bgp-in-the-evpn-model/
3 namex.it/assessing-performance-and-qos-of-a-distributed-peering-platform/
4 my.namex.it/content/1/qos (Namex members only)

School of Advanced Networking

→ school.namex.it

This year, the Namex School of Advanced Networking once again received widespread acclaim from the Consortium members. The educational offerings, carefully defined and approved by the Technical Committee, received excellent feedback. The strong partnership with Reiss Romoli further enhanced the quality and prestige of the courses offered.

This initiative continues to emphasize the importance of investing in education and skills development, which are essential in a constantly evolving sector like telecommunications.
The tables below provide an overview of the courses delivered and participation statistics, demonstrating the positive impact of the school.

Course	editions	participants
BGP: from theory to practice	2	32
MPLS Services	1	16
The DNS universe	1	16
Introduction to Multicast Routing	1	16
Introduction to Cybersecurity	1	20
FWA and 5G Networks	1	16
Edge Cloud Computing architectures	1	16
DC Networking	1	16

Students in total (2023)	Certifications*	Companies reached
148	187	122

(*) this is a total aggregate of the certification issued since the start of the School of Advanced Networking. Students can do the certification up to six months after the end of the course.

«The Namex School of Advanced Networking once again received widespread acclaim from the Consortium members.»

Namex Annual Meeting
#NAM2023

➡ nam2023.namex.it

The Namex Annual Meeting (NAM) 2023 was held in a hybrid format, just like the previous one. In 2020 and 2021, due to the COVID-19 pandemic, the events were held exclusively in a virtual format.

The meeting brought together a broad and diverse audience from the telecommunications sector. NAM is undoubtedly a great opportunity as it brings together all the key decision-makers of the Italian Internet community to meet and discuss the latest trends and developments in the industry.

The conference began with an opening speech by the Namex President, who introduced the main theme of the day: the redemption of Rome through the construction of new neutral data centers and the laying of the first international submarine cables landing in the Capital. Following Renato Brunetti's speech were those of Maurizio Goretti, Namex CEO, and Flavio Luciani, Namex CTO, who provided updates on the Consortium from operational and technical perspectives, respectively.

The first panel of the morning, *The Mediterranean Submarine Silk Road*, focused on the Mediterranean submarine

«The first panel of the morning focused on the Mediterranean submarine cables.»

cables. Representatives from the companies involved in this cable network participated.

Next, we were pleased to present an update on the conflict in Ukraine, featuring testimony from a local ISP and an update on the *Keep Ukraine Connected* project, presented alongside Jan Žorž.

Representatives from TIM and Meta shared their views on the debated topic of fair share, on which a final decision has yet to be made by the regulator.

The second and final panel, *Data Centers and beyond*, brought together key players from the data center world and industry representatives. The panel discussed the attraction phenomenon that the construction of adequate data centers exerts on services.

Namex Supports

Namex supports some important initiatives within the Internet community and also some solidarity initiatives outside the telcos market.

Keep Ukraine Connected is an initiative aimed at supporting Ukrainian operators damaged by the ongoing conflict, so that the Internet infrastructure can be kept functioning.

Telethon is an Italian non-profit organisation that support scientific research on rare genetic diseases.

Peter Pan is an Itlaian non-profit organisation that provides care for pediatric oncology patients and their families.

BIRD and **OpenBGPD** are the two software deployed on our Route Servers. Namex supports the developments of both software and strongly encourages software diversity.

IXP Manager is our customer portal and we happy to support its development. It helps us with automations, and it enhance customer experience.

PeeringDB is a public database used by network operators to exchange information about peering, IXPs, and data centers. It facilitates collaboration and optimization of global internet connections.