



Belnet

Overview of Belnet portfolio

Belnet portfolio overview



Standard Services

- Belnet Connectivity
- Internet Connectivity
- IPv4 and IPv6

- DNS Services
- NTP
- Monitoring
- Service desk 24/7
- Workshops

« Plus » Services On demand

- Back-up Internet connectivity
- RRN Connectivity

- eduroam
- Belnet R&E Federation

« Plus » Services Associated cost

- Multipoint
- Belnet Leased Lines
- Multimedia Transport Service

- govroam
- Domain Name Registration
- Digital Certificates
- Antispam Pro
- Belnet Cloud Storage
- Belnet Cloud computing
- DDOS mitigation



Network Services

Connectivity

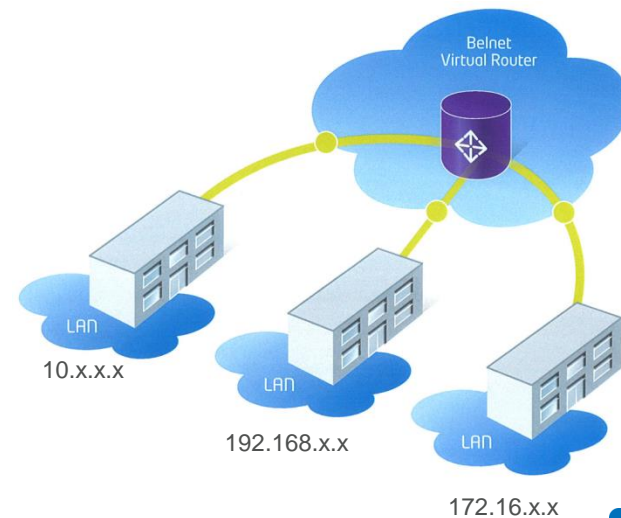
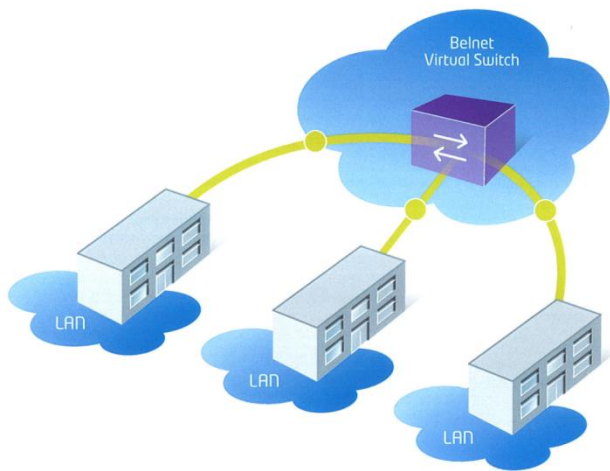


- A line
 - Customer owned Leased Line
 - Belnet Leased Line (BLL) => With Belnet Service Router (BSR)
 - Local patch / fiber (In Datacenters)
- An access port (N/A for BLL)
- Internet Bandwidth
- IPv4 and IPv6

Interconnectivity



- Multipoint services
 - Layer2 or Layer3
 - Port based or vlan based
 - IP or Optical (only port based)



Interconnectivity



- Other services:
 - Multimedia Transport Service (MTS)
 - FiberChannel

Back-up Connectivity

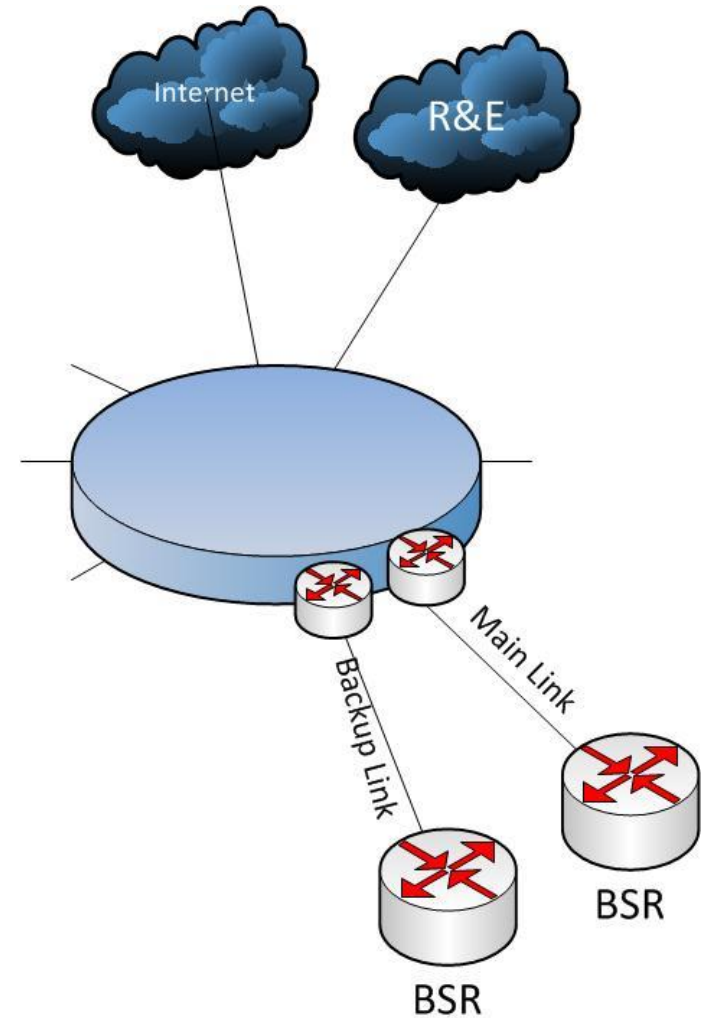


- For critical sites

- Lower the risk of isolation
- Increased SLD

- Different flavours:

- Preferred 2 different PoPs
- If BSR => Always 2 BSRs
- Preferred BGP but can use static routing with VRRP





Identity and Access Management (IAM) services

eduroam / govroam



- Wifi roaming service
- For research and education
- For administrations, governmental institutions,...



eduroam / govroam



- Increased Mobility:
 - users can make use of Wifi/Wired infrastructure at other members
 - One SSID: eduroam or govroam
- Simple:
 - users only need their home organization account to login
- Secure:
 - centralized accounts, no local copies
 - EAP Framework (WPA, EAP-TLS/PEAP)
- Based on radius hierarchy:
 - Chain of trust

edu- / govroam radius hierarchy



“Confederation”



“Federation”



“Institution”

AS



AS



AS



AS



Institution-A.be

Institution-B.be

Institution-C.fr


Institution-D.fr

Guestroam



- For eduroam and govroam
- To create accounts
 - Temporary access
 - To your site only
- Self registration with validation



BelnetEn Fr Ni

Belnet guestroom

Guest menu

- [Login](#)
- [Enter validation code](#)
- [Help](#)
- [Policy](#)

Welcome to guestroom interface

Please, fill in following form to request temporary WiFi access credentials in the institution you will visit.

Firstname :	<input type="text" value="John"/>
Lastname :	<input type="text" value="Doe"/>
E-mail :	<input type="text" value="John.doe@nowhere.org"/>
Mobile Number :	<input type="text" value="🇧🇪 0485456545"/> ✓ Valid
Visited Institution :	<input type="text" value="BELNET (BELNET)"/>
Visited Department :	<input type="text" value="SERVICES"/>
Contact person :	<input type="text" value="Philippe"/>
Visit from	<input type="text" value="2017-10-03"/> to <input type="text" value="2017-10-06"/>

I have read and accepted the [policy](#) :

Belnet R&E Federation

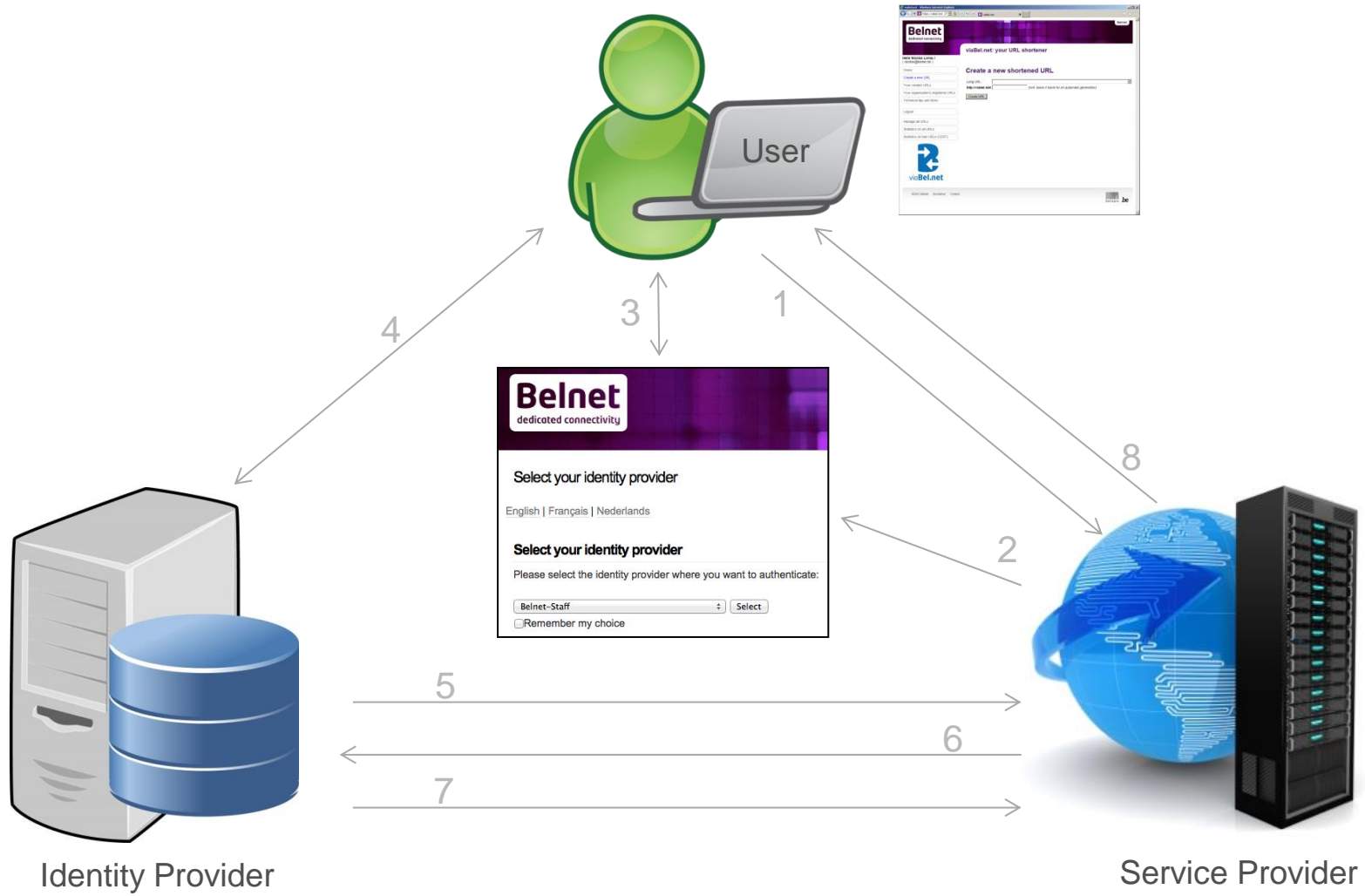


Belnet R&E Federation



- Purpose:
 - Facilitate user access to online resources
 - One account for several resources
 - Secure
 - Identity providers keep control on user credentials and attributes
- Belnet offers services as SP
- Edugain

Belnet R&E Federation





Cloud Services



Cloud Services




Domain name registration



- Register your domain name
- Use or DNS service
 - Primary or secondary with zone transfer

Domain name registration



Belnet

Belnet Domain Name Registration

Accueil > Espace client > Domaines

Connecté en tant que TATESTLAB DNS Master. [Quitter](#)

Vue d'ensemble Mes informations Domaines (1)

Domaines



Enregistrer Transférer
Domaines Mes contacts

Aperçu de nom de domaine

Montrer le details: ON

Montrer rangées par page

Filtrer

<input type="checkbox"/>	Nom de domaine	Expiration	<input type="checkbox"/>
<input type="checkbox"/>	belnet-ta.be 	06/09/2018	

Montre 1 jusqu'à 1 de 1 rangées

◀ Précédent Suivant ▶

Copy CSV PDF Excel Print

Belnet Cloud Storage



- Inline / real time storage
 - Using HDDs + SSDs (caching)
 - based on Netapp
- Typical usage
 - Shared space
 - Back-ups (DB replication, mail, offsite back-up, desktop sync,...)
 - VM datastore (need high BW capacity)
 - ...

Belnet Cloud Computing



- What is it?
 - Based on openstack
 - IaaS:
 - Measured
 - Highly-available
 - Scalable
 - Self-service
 - Community cloud
 - Belnet's stable network and architecture

Belnet Cloud Computing



- Why?
 - Developing your new network/web services
 - Raise or lower your resources in case of high / low load
 - Outsourcing
 - Disaster recovery
 - Win time / be quicker to deliver your solutions
 - Reduce your operating costs

Belnet Cloud Computing





Log In

Nom d'utilisateur

Mot de passe

[Sign In](#)

Belnet
belnet-ta
nicolas@belnet.be
Sign Out

Project

Compute

Overview

Instances

Volumes

Images

Access & Security

Network


Object Store

Orchestration


Identity

Overview


Limit Summary




Instances
Used 2 of 4




VCPUs
Used 3 of 4




RAM
Used 3Gio of 12Gio




Floating IPs
Used 1 of 3



Security Groups
Used 4 of 10



Volumes
Used 1 of 10



Volume Storage
Used 5Gio of 10Gio

Usage Summary

Select a period of time to query its usage:

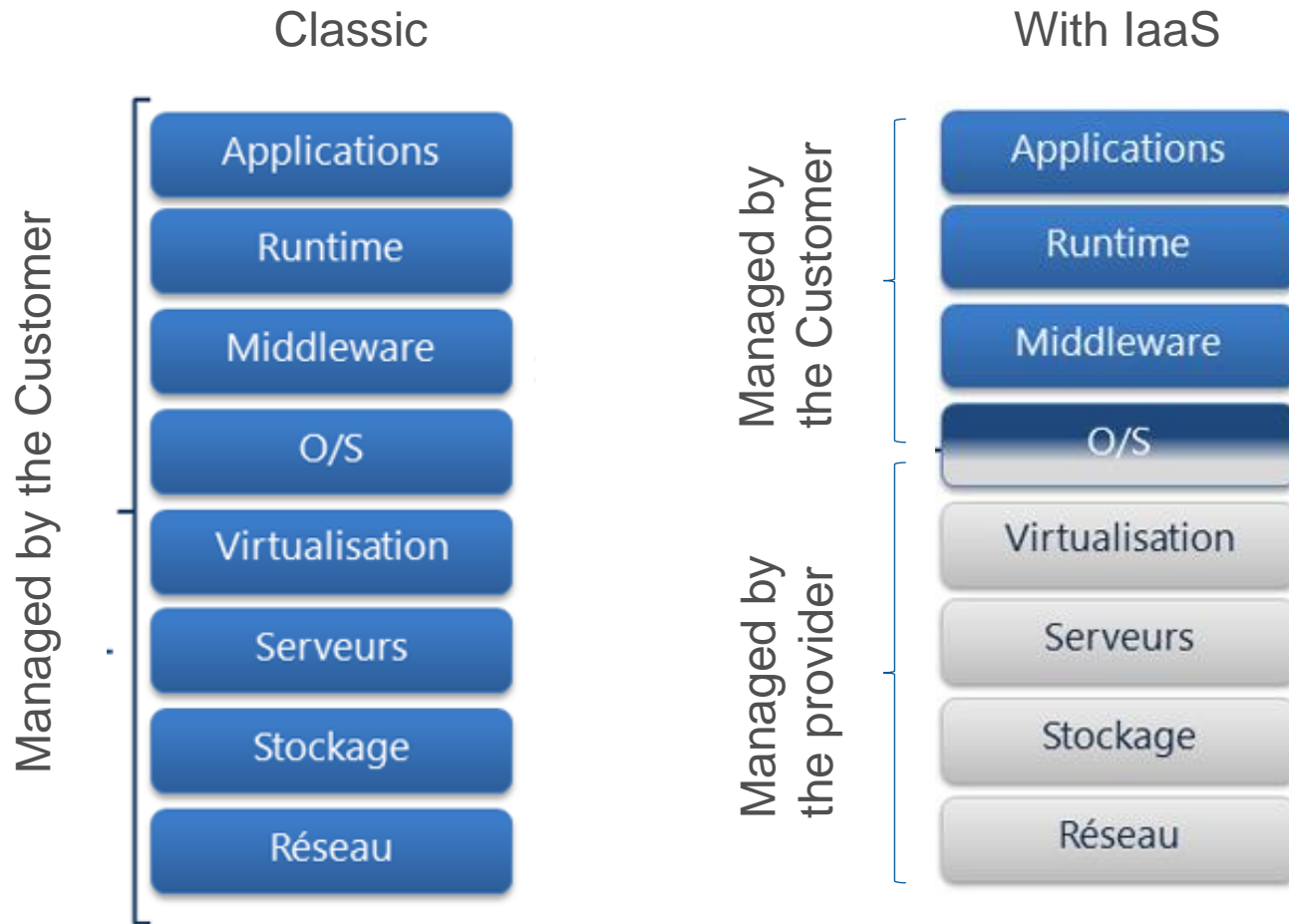
From: To: [Submit](#) The date should be in YYYY-mm-dd format.

Active Instances: 2 Active RAM: 3Gio This Period's VCPU-Hours: 318,91 This Period's GB-Hours: 8770,00

[Download CSV Summary](#)

Instance Name	VCPUs	Disk	RAM	Time since created
Proxy	1	20Gio	1Gio	1 semaine
Owncloud	2	35Gio	2Gio	1 semaine

Infrastructure as a Service



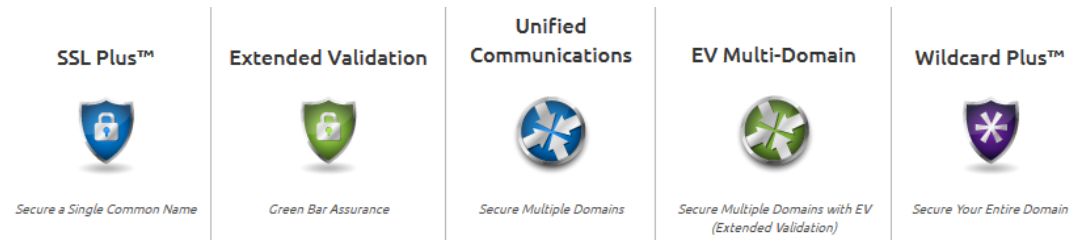


Security services

Digital Certificates Service



- Broad range of certificates available
 - Server certificates



- Personal certificates
 - Code and document signing
- Web interface:
 - Easy access
 - Can create sub-organizations for delegation

Digital Certificates Service



The screenshot shows the DigiCert CertCentral web interface. At the top, the DigiCert logo and 'CERTCENTRAL™' are visible on the left, and 'Account #099507' and 'Hello, Nicolas Loriau' are on the right. Below the header, the 'Belnet' logo and 'Belnet' text are on the left. The main navigation menu includes 'Dashboard', 'Domain Validation', 'Orders' (with sub-items 'Certificate Orders' and 'Request a Certificate'), and 'Tools'. The breadcrumb trail shows 'CertCentral / Request a Certificate'. The main heading is 'Request a Certificate'. Below this, there are tabs for 'SSL Certificates', 'Grid Certificates', 'Client Certificates', 'Code Signing', and 'Document Signing'. Under 'SSL Certificates', there are sub-tabs for 'EV Multi-Domain', 'EV SSL Plus', 'Unified Communications', 'SSL Plus', and 'WildCard Plus'. The 'EV Multi-Domain' sub-tab is selected, showing a description: 'Protect your most valuable assets your customers and your brand from phishing scams and online fraud with a DigiCert EV Multi-domain Certificate.' Below the description is a list of benefits: 'Improve conversion rates with the green bar. See the difference when visiting an EV-secured site.', 'EV converts more visitors into sales - increased conversion rates mean increased revenue!', 'Trusted by all major browsers and operating systems.', and 'Meets and exceeds PCI Compliance requirements for SSL certificates.' At the bottom of this section is an 'Order Now' button.

© 2003-2015 DigiCert® Inc

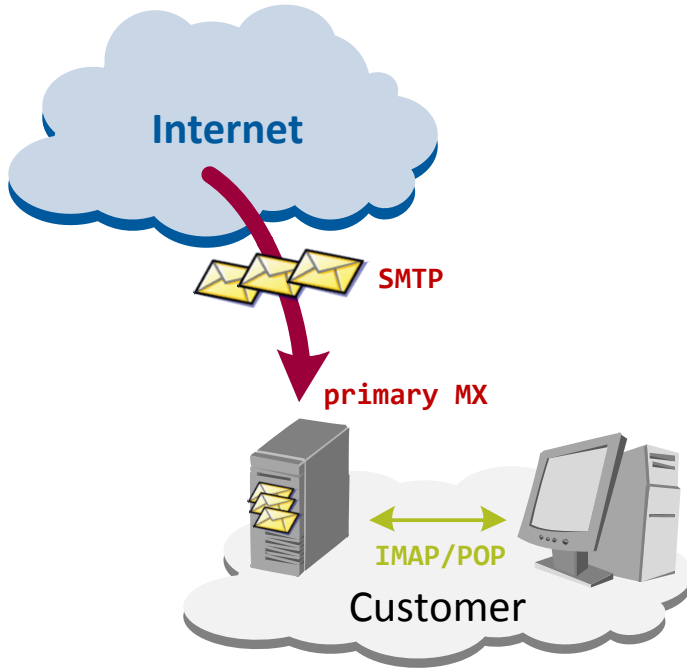


Antispam Pro

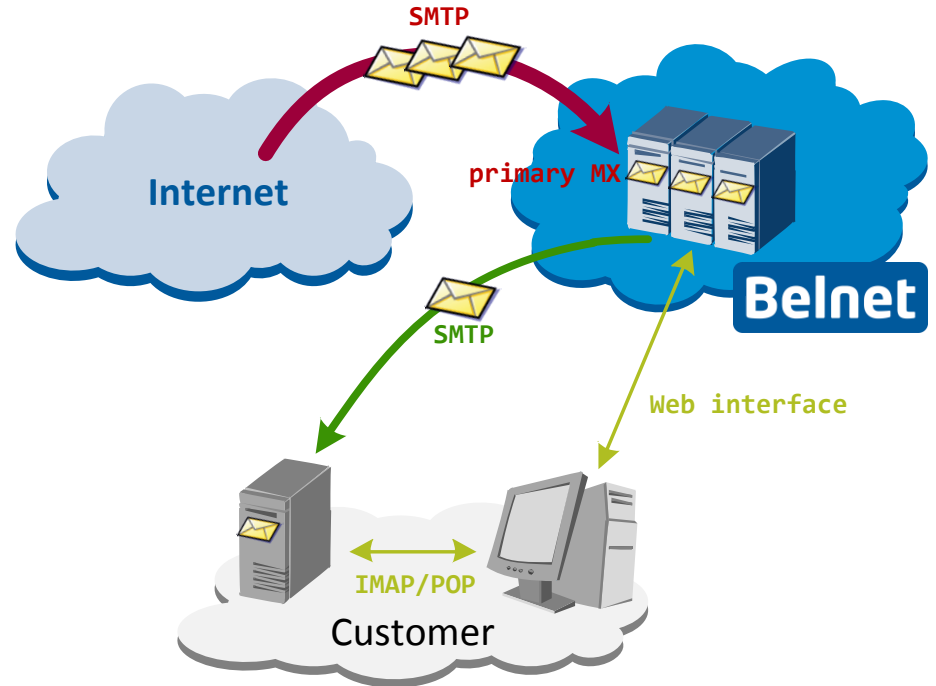


- Cloud-based Antispam solution
 - Efficiently analyzes and filter spam out of your e-mails
- Integrates an Anti-virus solution
 - E-mails are also scanned for viruses (in- and outbound)
- Web access :
 - Administration
 - Access to quarantine
 - Detailed logs and reporting

Antispam Pro




Without Antispam Pro



With Antispam Pro

Antispam Pro





Logged in as: **postmaster@ta.belnet.be** (Log Out)
Viewing stream **belnet-ta:postmaster** ← **belnet-ta:default** ← **advanced:default** ← **base:default** (Change Streams)

[Home](#) [Quarantine](#) [Rules](#) [Reports](#) [Preferences](#) [Setup](#) [Administration](#)

[Wizards](#) [Verification Servers](#) [Templates](#) [Domain Mappings](#) [Address-to-Stream Mappings](#) [Authentication Mappings](#) [User Lookups](#) [Aliases](#) [Realm Mappings](#)

[Domain Overview](#) [Domain Routing](#) [Paused Delivery](#)

[\(Online Documentation\)](#)

Wizards

The following wizards are available:

- [Domain Configuration Wizard](#)

Links to Documentation

Administration Guide	PDF	HTML
User's Guide	PDF	HTML
API Guide	PDF	HTML
Belnet Default Settings	PDF	

[User's Guide](#) [API Guide](#) [Administration Guide](#)

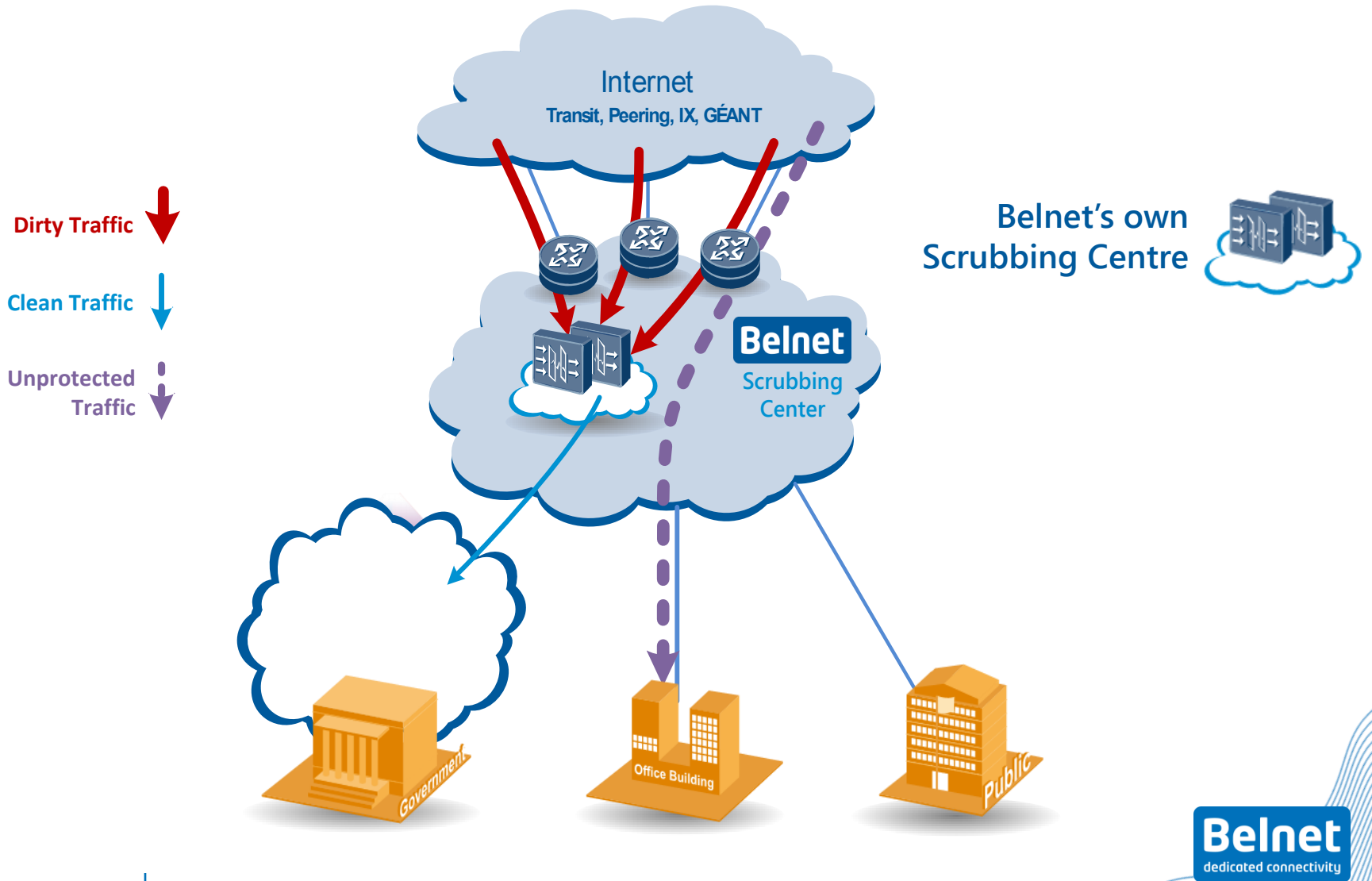
Powered by the [Canit-Domain-PRO anti-spam filter](#) (version 9.2.3) from Roaring Penguin Software Inc.

DDOS Mitigation



- Latest service of Belnet
- Mitigate volumetric attacks (not application!)
 - Using vectors like udp flood, tcp flood, syn flood,...
 - Based on traffic analysis
- Scrubbing center @Belnet on the edge of the network
 - Attacks do not reach your bandwidth
- Different Flavours for different needs (Basic, Tuned, Advanced)

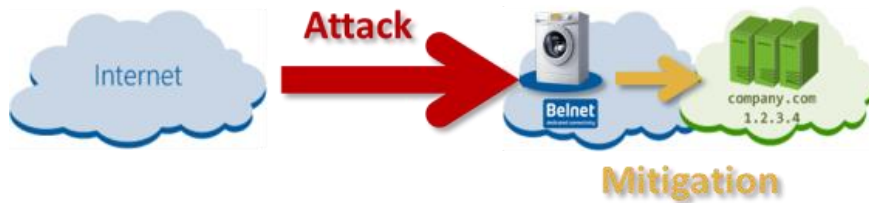
DDOS Mitigation



DDOS Mitigation



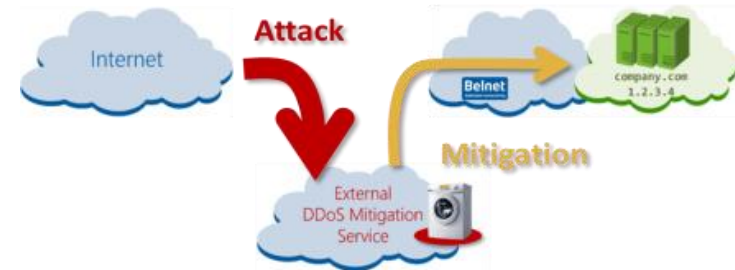
With Belnet



- ❖ Traffic does NOT leave Belnet network
- ❖ No re-routing latency
- ❖ Can protect 1 IP or whole subnet
- ❖ No extra bandwidth cost for clean traffic
- ❖ Future Proof
 - *cf. BGP Origin Validation*

One partner for everything

Without Belnet



- ❖ Customer traffic re-routed outside to third party
- ❖ Clean traffic re-enters network via GRE tunnel
- ❖ Minimum size /24
 - *Cannot protect individual 1 IPs*
- ❖ Additional bandwidth cost for GRE
- ❖ Not future proof
 - *BGP hijacking*

2 Parties, 2 services, 2 contracts




my.belnet.be



Belnet Portal - my.belnet.be



My account | Log out

Dashboard Services Monitoring Tickets Support Documents Contact 🔍

Agence du Numérique All contacts +

: - T: - F:

My network services

AWT_NAM_1

[View network services details](#)

My application services

Enregistrement de noms de domaine ●

Eduroam - Fournisseur de Ressources ●

My last tickets

TICKET NUMBER	TITLE	CREATED	TYPE	STATE
201705048030950	NETWORK PORT/INTERFACE DOWN - r1.nam - awt_nam_1:belgacom	2017-05-04 21:01:41	Incident: Monitoring	closed successful +
201703068029316	Transferecode invalides pour vos transferts de noms de domaine	2017-03-06 10:28:54	Service Request (SR)	closed successful +