

## Summary

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Senior System Infrastructure Engineer with 30+ years progressive experience in IT infrastructure, middleware integration, security, and cloud technologies. Recognized Axway product expert with 18+ years hands-on experience across the complete product suite including API Gateway, Transfer CFT, Secure Transport, and Gateway XFB/Interpel. Proven track record managing complex hybrid environments combining on-premise and Azure cloud infrastructure with 5 years continuous zero-downtime achievement at ING Belgium (2019-2025), leading critical hybrid cloud migration initiatives, implementing high-availability architectures, and driving DevOps transformation.

Exceptional professional track record: 40+ successful client projects spanning Belgium, Luxembourg, France, Netherlands, Switzerland, and Morocco with 98% success rate. Industries served include banking (ING, BNP Paribas, Luxembourg banks, Moroccan banks), insurance (Baloise, Foyer), government (French Ministry of Finance under Macron administration), telecommunications, retail (Delhaize), and automotive (Toyota, Bridgestone).

« Bruno possesses exceptional technical baggage combined with outstanding problem-solving capabilities. He is a true solution finder who quickly grasps complex requirements and implements high-quality, scalable solutions that exceed expectations. » - Yves Hayot, Technical Director at Speos

## Experience

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### ING BELGIUM, Senior Middleware Integration Consultant MFT - FT

September 2019 - September 2025  
Brussels, Belgium

Large infrastructure team managing complex middleware and MFT systems for Belgium's largest bank. Collaborated daily with external IT service providers for infrastructure design, implementation, and daily operations.

Key Achievements:

#### Hybrid Cloud Migration to Azure

- Led technical aspects of complete MFT infrastructure migration from on-premise to Azure
- Designed and implemented ExpressRoute connectivity for high-bandwidth, low-latency hybrid architecture
- Seamless migration ensuring continuous service availability
- Migration completed with zero business disruption (150+ file transfer partners maintained during transition)
- Technologies: Azure VMs, Virtual Networks, Storage Accounts, Key Vault, NSGs

#### High Availability Active-Active Architecture

- Designed and implemented active-active Axway XFB Gateway architecture for ING- ISABEL banking network
- Achievement: 5 YEARS CONTINUOUS OPERATION WITH ZERO DOWNTIME (2019- 2025)
- Automatic failover mechanisms with minimal RTO/RPO (RPO <1 min, RTO <5 min)
- Real-time monitoring health checks

#### Enterprise Monitoring Platform

- Built complete observability stack: Prometheus, Grafana, Elasticsearch, Kibana
- 1000+ custom middleware/infrastructure metrics implemented

- Impact: Reduced MTTD from 45 minutes to 3 minutes (93% improvement)
- DevOps Excellence - 2nd Prize ING Belgium Azure DevOps Hackathon
- Solo participant competing against 300+ participants
- Revolutionary CI/CD pipeline reducing deployment time by 92% (4 hours 20 minutes)
- Solution features: automated testing, parallel execution, intelligent caching, conditional deployments, automated rollback on failure

## LuxHub S.A.; API Gateway & Secure Transport, Senior Consultant

January 2019  
Luxembourg

- Axway Software (March-September 2017): "Ecosystem Engagement Service" Senior Consultant - Pre-sales technical support, architecture consulting

## BNP PARIBAS FORTIS, Senior Consultant Axway

March 2017 - November 2018  
Brussels, Belgium

2nd largest bank in Belgium

Key Achievements:

### Complete Axway Suite Implementation

- Designed and deployed production API Gateway cluster (4 nodes)
- API Manager platform with 150+ registered developers
- Gateway Xfb integration layer connecting 200+ backend systems
- Achieved 99.7% availability SLA

### PSD2 Compliance Gateway

- Built dedicated PSD2 gateway for Third Party Provider (TPP) access
- Implemented OAuth 2.0 + Strong Customer Authentication (SCA)
- eIDAS certificate validation and real-time fraud detection hooks
- Passed regulatory compliance audit with zero critical findings

### End-to-End API Flow Creation

- Developed 60+ REST APIs exposing banking services
- Created 200+ custom policies (authentication, authorization, rate limiting, transformation)
- Implemented REST\*SOAP conversion layer for legacy system connectivity
- Performance: Average response time 290ms (35% improvement from baseline 620ms)

### Additional Deliverables:

- Knowledge Transfer: Delivered 40 hours training to BNP staff
- Created 150+ pages technical documentation
- Conducted hands-on workshops
- Client satisfaction: 4.8/5.0, successful handover with full operational autonomy

## **AXWAY SOFTWARE; Banksys / ATOS Worldline, Senior Consultant**

January 2007 - March 2017  
Morocco

Role: Senior Consultant specializing in security, MFT middleware, monitoring, B2B integration, API expertise, and certified trainer

Client Engagement: 40+ successful projects across banking, insurance, retail, government, telecommunications with 98% success rate

Axway Certified Trainer Status (Rare Achievement)

- One of ~50 Axway Certified Trainers worldwide
- Certifications: API Gateway Trainer (2016), Transfer CFT Trainer (2007), XFB Gateway Advanced Trainer (2007)
- Delivered 200+ training hours to 100+ professionals
- Average training rating: 4.7/5.0

Major Banking Sector Clients (15+ years banking focus):

Luxembourg Banking (2007-2016):

- BCEE Spuerkees (2007) - Middleware integration
- Bank of Tokyo Luxembourg (2007) - Transfer CFT implementation
- BCP Bank Luxembourg (2007) - Secure file transfer
- Deutsche Bank Luxembourg (2008) - API Gateway
- SGBT Bank Luxembourg (2008) - MFT architecture
- KBL Bank Luxembourg (2010) - Integration platform
- BANQUE BGL (2010) - Transfer CFT optimization
- Six Group Luxembourg (2016) - API Gateway implementation
- Intesa Bank Luxembourg (2016) - Secure Transport

Belgium Banking (2008-2016):

- ING Belgium (2008) - Initial mission

before 2019-2025 employment

- Fortis Belgium (2009) - Middleware integration
- Banksys / ATOS Worldline (2009) - Payment systems
- Bank Van Breda Antwerpen (2010) - Transfer CFT
- Keytrade Bank (2010) - API integration
- Record Bank (2007-2016) - Longterm engagement, multiple projects

## **Bpost Banque Belgique, Senior Consultant**

2015 - 2016

Postal banking integration

International Banking (2010-2016):

## BANK DLL Group

January 2016  
Rotterdam, Netherlands

### MFT

- AttijariWafa Banque Morocco (2016) - SWIFT integration
- Banque Populaire / Chaabi Morocco (2016) - API Gateway

## Senior Consultant

January 2007 - January 2015

- La Baloise Assurance Luxembourg (2007) - Secure file transfer
- Foyer Group Luxembourg (2015-2016) - API Gateway & Secure Transport
- Cardif LuxVIE Luxembourg (2016) - Integration platform

## Government & Public Sector:

- AIFE - French Ministry of Finance (2015) - Under Emmanuel Macron's mandate as Finance Minister. 15K users, ANSSI certification obtained
- Vlaams Overheid (Flemish Government) (2012) - Secure government file exchange

## CCSS (Caisse de la Sécurité Sociale Luxembourg), Senior Consultant

January 2015  
Luxembourg

## Other Major Corporate Clients:

- Cetrel (ISABEL project) (2007) - Banking network integration
- Delhaize Group (2007) - Retail supply chain integration
- Total Petrochemical (2009) - Industrial MFT
- Toyota (2009) - Automotive EDI (Odette FTP)
- Bridgestone (2010) - Automotive protocols

## ATOS WORLDLINE, Senior Consultant Architect & Expert - MFT integration and support team

2011 - 2014  
Belgium

- Designed complete new MFT architecture from scratch
- Implemented global "Managed File Transfer" infrastructure using Synchrony Gateway in HA with DRP
- Architecture deployed worldwide across all ATOS entities requiring MFT (15+ countries)
- All protocols implementation including monitoring, alerting, and DRP/HA failover
- Performance: Optimized for 1M+ daily transfers
- Support for Belgian MFT team: DRP, Firewall, internal application integration, external partner tools, DMZ integration
- Architecture design and implementation for ATOS Europe MFT integration (France, Germany, Belgium)
- Complex implementation management with external partners (500+ partner configurations)

« Bruno possesses expert product knowledge and provides technical assurance in high-pressure situations with guaranteed quality delivery. » - Jean-Philippe Maya ATOS AWL

Insurance Sector:

## Cetelem Belgium

January 2011  
Belgium

- European Fund Service Luxembourg (2015) - Financial services
- Olkypay Luxembourg (2015) - Payment services

## International Post Corporation

January 2010

## Citibank / Diners Club International, Senior Consultant

January 2010

## Aubay Luxembourg, Consultant System Administrator - CURIA Project

2005 - 2006  
Luxembourg

Fully automated migration of 3,000 workstations

- Province de Luxembourg (2004): System Administrator - Belgian public administration

## Econocom Luxembourg, Support Consultant - Medical industry, administration, legal offices

January 2006  
Luxembourg

## Amsit S.A.; ING Belgium, Support Consultant

2002 - 2003  
Belgium

## Vedior Belgium HQ, System and Oracle Administrator - Windows/Oracle

2000 - 2002

administration, ICT marketing coaching

## Econocom Luxembourg, Support Consultant - Reuters system engineer

1998 - 2000  
Luxembourg

Finance/Press/Dealing Room coach, Reuters Dealing 3000 certified

## Electro Computer, Sales and Technical Professional

1997 - 1998

technical support, Helpdesk

## Skills

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### CORE TECHNICAL COMPETENCIES

#### Middleware & Integration Architecture (Expert Level - 18+ Years)

- Axway Product Suite Mastery
  - API Gateway 7.x: Complete expertise in policy development (500+ custom policies created), OAuth 2.0/OpenID Connect/SAML 2.0 implementation, mutual SSL/TLS authentication, API Gateway clustering and high availability configurations. Performance optimization achieving 10,000+ transactions per second. Deep knowledge of Policy Studio, Configuration Studio, and API Gateway Manager.
  - API Manager: Full API lifecycle management, developer portal configuration and customization, API virtualization, quota management, analytics and reporting, API versioning strategies. Experience managing 150+ registered developers at BNP Paribas Fortis.
  - Transfer CFT 3.x: 500+ partner configurations across multiple implementations. Advanced scripting for automated workflows, exits programming, catalog management.
  - Gateway XFB / Interpel: Banking-specific protocols expert: EBICS, SWIFT FileAct, ISABEL network integration. Expert in all transfer protocols (sFTP, FTPS, PESIT D/E/SIT, Odette FTP v1/v2, AS2/AS3). High-volume processing optimization (1M+ daily transfers at ATOS Worldline). Active-active clustering implementation at ING Belgium with 5 years continuous zero-downtime operation. Complex flow design connecting 200+ backend systems.
  - Sentinel: Real-time monitoring and alerting, performance metrics collection, custom dashboard creation, integration with enterprise monitoring systems (Prometheus, Grafana, ELK Stack).

#### Integration Patterns & Technologies

- API Technologies: REST API design and implementation (OpenAPI/Swagger 2.0 and 3.0 specifications), SOAP/WSDL web services, GraphQL fundamentals, API design patterns (rate limiting, throttling, circuit breakers, retry mechanisms, bulkhead isolation), API versioning strategies (URL, header, query parameter).
- Data Transformation: XML processing (XSLT 2.0/3.0, XPath, XQuery), JSON manipulation and validation, CSV/flat file parsing and generation, EDI formats (EDIFACT, X12), custom protocol development and binary data handling.
- Performance Optimization: Successfully handled 10,000+ TPS on API Gateway implementations, optimized Transfer CFT for 1M+ daily transfers at ATOS Worldline global deployment, reduced API response times by 35% at BNP Paribas Fortis (from 620ms to 290ms) through intelligent caching, connection pooling, and database query optimization.

#### Security & Compliance (Expert Level - 20+ Years)

- Authentication & Authorization
  - OAuth 2.0 Deep Expertise: Implementation of all grant types (Authorization Code with PKCE, Client Credentials, Resource Owner Password Credentials, Implicit flow for legacy apps, Device Authorization Grant), refresh token rotation, token introspection and revocation, custom scopes and claims, OAuth 2.0 security best practices (RFC 6749, RFC 6750, RFC 7636).
  - SAML 2.0: Identity Provider (IdP) and Service Provider (SP) configurations, SSO implementations, SLO, attribute mapping and transformation, federation metadata management, SAML assertion encryption and signing.

- JSON Web Tokens (JWT): JWT creation and validation, JWS and JWE, custom claims implementation, token expiration and renewal strategies, integration with API Gateway for stateless authentication.
- Regulatory Compliance
  - PCI-DSS: 6+ years banking sector experience with PCI-DSS compliance. Requirements implementation: secure network configuration, cardholder data protection, encryption in transit and at rest, access control measures, network monitoring and testing, information security policies. Regular compliance audits passed with zero critical findings.
  - PSD2: Complete implementation at BNP Paribas Fortis: dedicated PSD2 gateway for Third Party Provider (TPP) access, Strong Customer Authentication (SCA), eIDAS certificate validation, API security for AIS/PIS, regulatory compliance audit passed with zero critical findings.

## Infrastructure & Systems Administration (30+ years)

- Server Administration
  - Windows Server: 2012/2016/2019/2022 - Active Directory, Group Policy, PowerShell automation
  - UNIX/Linux: AIX, Solaris (Sun), HP-UX, Debian/Ubuntu, RHEL/CentOS, Kali Linux
  - System Management: systemd, performance tuning, security hardening, patch management
  - High Availability: Active-active clustering, load balancing, failover configurations, DRP (Disaster Recovery Plans)
  - Virtualization: VMware, VirtualBox, Hyper-V, Azure VMs
- Network & Security Infrastructure
  - Firewall Management: iptables, nftables, PIX Firewall, Azure Firewall - architecture design and rule optimization
  - Security Components: Web Application Firewall (WAF), Anti-DDoS solutions, Web proxy configuration, DMZ design with high availability and load balancing
  - Network Architecture: TCP/IP, VLANs, VPN (OpenVPN, WireGuard, IPsec), routing protocols
  - PKI & SSL: Mutual SSL authentication, certificate creation and management, SSL/TLS hardening
  - Switch/Router Administration: Cisco, monitoring and configuration
- Storage & Database
  - Storage Solutions: SAN/NAS, LVM (Logical Volume Manager), RAID configurations, Azure Storage Accounts
  - SQL Server: Database administration, performance tuning, backup/recovery strategies
  - Oracle: Basic PL/SQL, database administration experience
  - File Systems: NTFS, ext4, xfs, btrfs - quota management, disk optimization

## Cloud & DevOps (Advanced Level - 8+ Years)

- Microsoft Azure Cloud Platform
  - Compute Services: Azure Virtual Machines (Windows and Linux), VM scale sets for auto-scaling, availability sets and availability zones for high availability, Azure App Service for PaaS deployments, Azure Functions for serverless computing.
  - Networking: Virtual Networks (VNet) design and implementation, subnet segmentation, Network Security Groups (NSG), Application Security Groups (ASG), Azure Firewall, ExpressRoute for hybrid connectivity (implemented at ING Belgium), VPN Gateway for site-to-site and point-to-site connections, Azure Load Balancer and Application Gateway.
  - Hybrid Cloud Architecture: Designed and implemented hybrid cloud architecture at ING Belgium connecting on-premise MFT infrastructure with Azure cloud services. ExpressRoute circuit for high-bandwidth, low-latency connectivity. Seamless integration of 150+ file transfer partners during cloud migration with zero business disruption.

- CI/CD & DevOps
  - Azure DevOps: Complete pipeline automation (YAML-based), multi-stage pipelines (build, test, deploy), artifact management, release gates and approvals, variable groups and secrets management, pipeline templates for reusability.
  - Hackathon Achievement: 2nd Prize ING World Azure DevOps Hackathon (solo entry, 300+ participants). Revolutionary CI/CD pipeline reducing deployment time from 4 hours to 20 minutes (92% reduction). Solution included: automated testing, parallel execution, intelligent caching, conditional deployments, automated rollback on failure.
- Monitoring & Observability
  - Prometheus: 1000+ custom metrics for middleware and infrastructure
  - Grafana: 25+ business and technical dashboards with alerting
  - Elastic Stack/ELK: 500GB+ daily log ingestion, Kibana visualization
  - Alerting Systems: PagerDuty, email, Slack integration
  - Performance Impact: Reduced MTTD from 45 minutes to 3 minutes (93% improvement)

## Automation & Scripting (Active Development with passion)

- 24+ GitHub public repositories created and maintained since September 2025
- Bash Scripting: Infrastructure automation, monitoring scripts, security tools (109+ production scripts)
- Python: Automation projects, API integration, data processing (37+ major projects)
- PowerShell: Windows automation and Active Directory management

## LANGUAGES

- French: Native speaker (excellent written and verbal)
- Dutch (Nederlands): Intermediate (professional working proficiency)
- English: Fluent (C1 written technical documentation, B2 spoken)
- Spanish: Basic

## Education

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### Institut du Domaine de Harzir

Industrial Computing **1995**

### Cloud & Security

CCSP Preparation Series (6 courses completed): Cloud Concepts, Architecture & Design, Cloud Data Security, Cloud Platform & Infrastructure Security, Cloud Application Security, Cloud Security Operations, Legal, Risk & Compliance Professional Training **2023 - 2024**

### Axway Certifications

Multiple Axway middleware MFT/API training received **2011 - 2016**

### Axway Certifications

Axway API Gateway Certified **2008 - 2016**  
*March 2015*

### Axway Certifications

Axway Certified Trainer **2008 - 2016**

One of ~50 certified trainers worldwide o API Gateway Security (OAuth, XML encryption, WS-Security) o Transfer CFT o Secure Transport o Gateway XFB Advanced

### Axway Certifications

Multiple Axway training: Security, systems, products **2006 - 2016**

### Sopra Group

Oracle Programming SQL **2011**

### Sopra Group

Train the Trainer **2008**

## Microsoft Certifications

MCP Exam 70-270 Windows XP Professional **Jul 2005**

## Additional Certifications & Training

RMS Datapoint MF, Banking Security, Exchange **2002**  
*BBL/ING*

## Additional Certifications & Training

Update Skills from NT 4.0 Server to W2K Advanced  
Server **2001**

## Oracle Belgium

Basic PL/SQL Oracle **2000**

## Microsoft Certifications

Microsoft Exam 70-068 **1999**

## Microsoft Certifications

Microsoft Networking Essentials **1999**

## Additional Certifications & Training

Reuters Dealing 3000 Certification **1999**

## Additional Certifications & Training

Network Administrator Certification **Oct 1996 - May 1997**

## Microsoft Certifications

Microsoft Exam 70-073 **1997**