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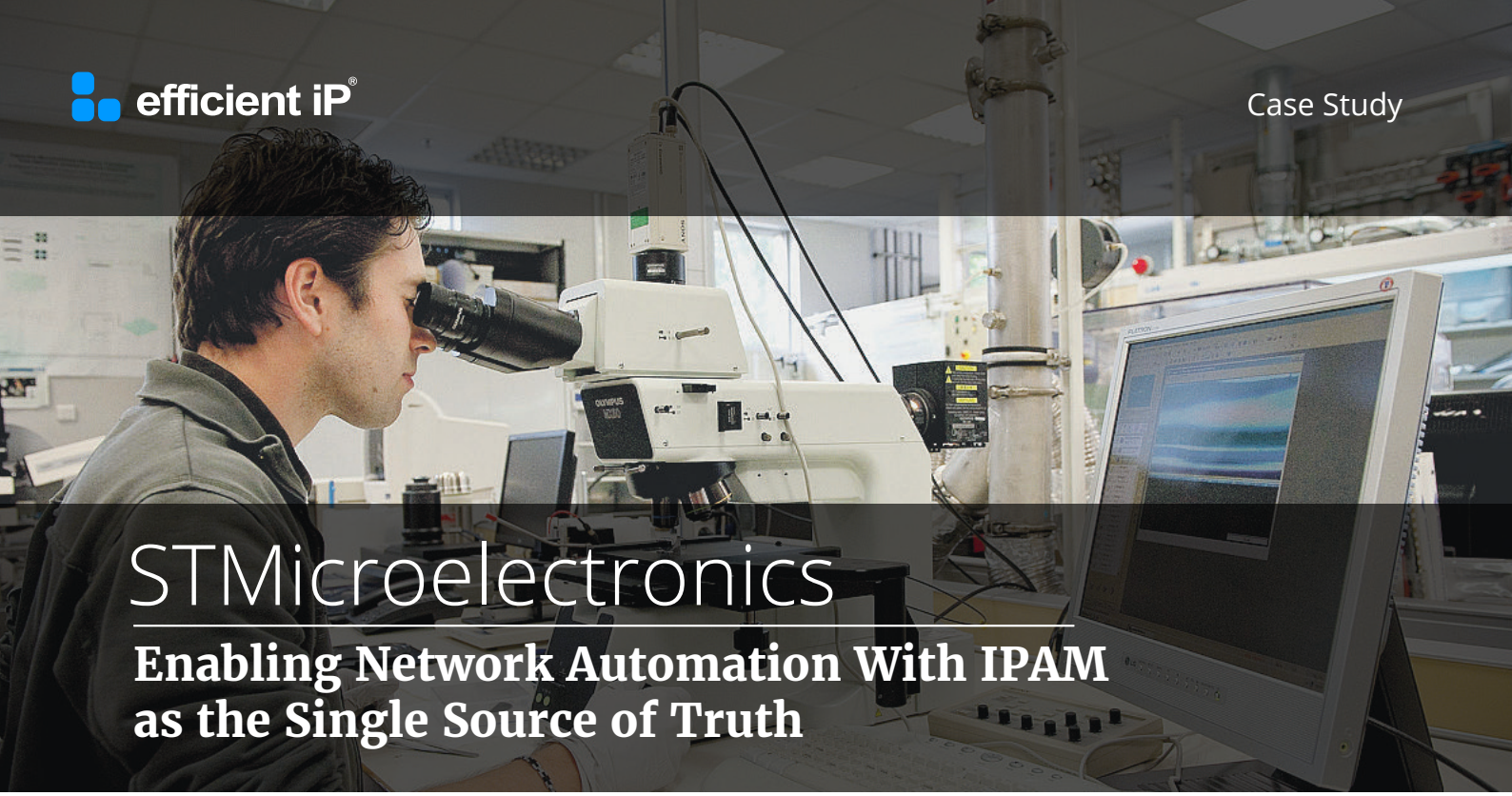
Case Study



STMicroelectronics

Enabling Network Automation With IPAM as the Single Source of Truth

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Project Objectives

- **Unify silos of inaccurate data into single repository acting as source of truth**
- **Centralize the management of IP inventory, DNS and DHCP service**
- **Offer more complete visibility over subnets network-wide**
- **Automate time-consuming, error-prone manual tasks**
- **Simplify network/security analysis capability**

Key Benefits

- **Significant time savings**
- **Configuration errors eliminated**
- **DevOps and NetSecOps enabled, based on IPAM data as source of truth**
- **Improved reliability as firewall rules kept up to date**
- **Faster forensics due to valuable metadata added to IP addresses**

STMicroelectronics (ST) creates and makes semiconductor technologies, devices, and solutions. The company has 48,000 employees spread across 14 manufacturing sites and they support more than 200,000 customers worldwide.

The focus of ST's innovation includes Smart Mobility, more efficient power and energy management, and deployment of the Internet of Things (IoT) and connectivity. ST's products have pioneered IoT transformation and big-data collection, and today those products are at the forefront of connectivity technologies and embedded security solutions.

> **"The up-to-date accurate data and metadata provided by SOLIDserver helps reduce configuration errors and save time, making it a key starting point for our DevOps and NetSecOps journeys"**
>
> Aldo De Luca – Manufacturing Network Security Solutions Services Manager, STMicroelectronics

Situation and Challenges Being Faced

Having several manufacturing and CAD/lab sites handling many thousands of devices connected to the network, ST faced issues that result from their operations being decentralized. Prior to integration of SOLIDserver, each site had a local network team to manage its IP inventory, as well as DNS and DHCP services. This led to standardization inconsistencies, e.g. local Windows implementation or BIND used on DNS of some sites.

Keeping information up-to-date proved to be a major challenge. Multiple inventories were in place, with updates for the inventories being performed manually. Apart from being extremely time-consuming, these tasks could be error-prone, which could result in data errors in the inventories. Also, network admins had only partial visibility over subnets, so were unable to ascertain which site certain subnets belonged to. Lastly, performing accurate analysis on network activity was complicated.

Automation challenges

Network automation was an important IT initiative planned by ST, with integrations being developed with 3rd-party solutions. This required subnets to be exposed to other tools like network automation tools, firewall tools, and security tools (e.g. SIEM). Visibility on subnets and their associated sites was mandatory, and ST also needed advanced inventory data to determine who owned each subnet, its purpose, and what devices were connected e.g. standard PC, IoT device.

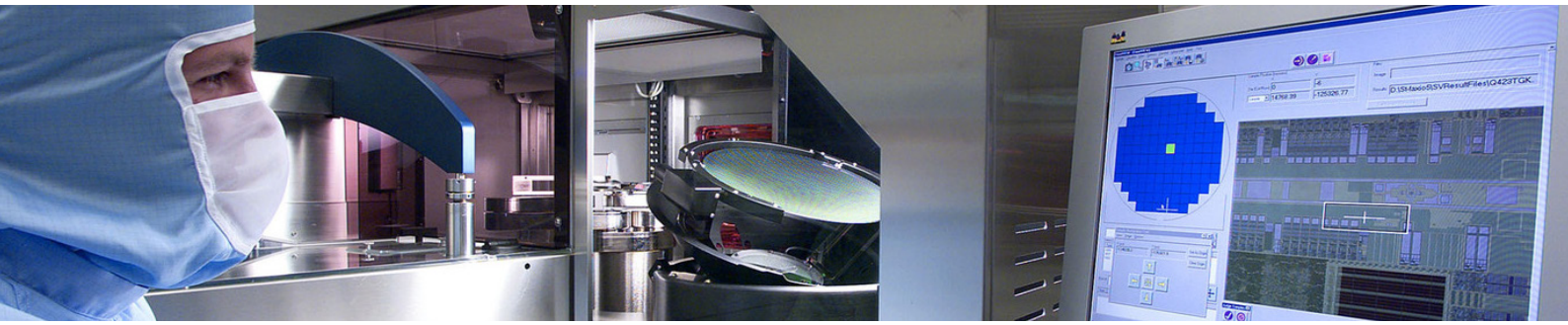
Solution Implemented

Wishing to standardize their DDI offering, ST created an RFP. Several DDI vendors were compared, and ST selected EfficientIP for several key reasons, the main ones being:

- more advanced RBAC for delegating management to many teams
- better scalability
- easier to manage multiple DNS servers
- pricing attractiveness

The DNS & DHCP servers became almost exclusively EfficientIP ones, and with SOLIDserver DDI implemented, the IPAM was able to manage 100% of the subnets - a total of over 6000 subnets internally. ST was very keen to use IPAM data as the “source of truth”, and in addition, they wanted to use the advanced data (metadata) offered by the IPAM. Working with EfficientIP’s professional services team, ST developed custom modules, including a custom DB for obtaining specific data for additional fields, and development of integrations with 3rd parties.

These efforts helped ST with many of the cybersecurity projects and network automation projects already in progress. Cloud projects had previously been automated e.g. when spinning up a new VM the IP Addresses were put in the IPAM.



Main Results

For ST, the most obvious result of implementing SOLIDserver DDI was the time saving they've seen for NetOps and SecOps activities. The tool has reduced configuration errors, and the Single Source-of-Truth data and metadata provided by IPAM brings value for ST's network and security automation projects.

As highlighted by Aldo de Luca (Network Security Solutions Services Manager): ***"The up-to-date accurate data and metadata provided by SOLIDserver makes it a key starting point for our DevOps and NetSecOps journeys."***

The trusted data provided by SOLIDserver IPAM also ensures firewall rules are kept up-to-date and accurate. Previously, traffic had occasionally been dropped due to incorrect firewall rules (managed manually) based on subnet classification. For ST, the quality of generating rules is almost 100%. De Luca states that ***"Reliability has been improved as critical operations are now based on accurate information".***

On the security side, the identity of servers and asset types is now possible, resulting in faster security analysis - it's now easier to identify on which network an attack is located, and to know the server or asset type involved, as metadata is added to each individual IP address rather than just the subnet. This brings critical time savings for forensic activity.

Conclusions / Future Plans

ST plans to build on the value brought by the SOLIDserver DDI solution to improve their operations in several areas including network management, network automation, and security.

Inventory synchronization of subnets is also being looked at, as is metadata of individual IP address information and IP address reservation using Terraform.

For strengthening DNS Security, improved separation between internal DNS and Public DNS is being investigated - to avoid risks associated with public DNS resolution (which is normally forced by SaaS, Azure, etc...).

Lastly, for enhancing resilience with intelligent application traffic steering, ST is implementing EfficientIP's Edge DNS GSLB solution.

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