

NXP SEMICONDUCTORS STREAMLINES PRODUCT DESIGN PROCESSES WITH RED HAT



SOFTWARE

Red Hat® Enterprise Linux®

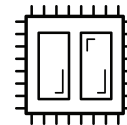
Red Hat Satellite

Red Hat Ansible® Automation

NXP Semiconductors N.V., one of the world's largest producers of electronic components, needed to handle increasing product design complexity and growing quality requirements. It required greater compute power to support simulations and testing completed by its 10,000 design engineers. With an efficient IT environment based on Red Hat Enterprise Linux, supported by Red Hat Satellite and Red Hat Ansible Automation for automated provisioning and configuration, the company has reduced provisioning time, improved quality through standardization, and simplified management. As a result, it can deliver high-quality components to market faster.

Eindhoven, Netherlands

HEADQUARTERS



**ELECTRONICS
MANUFACTURING**

31,000 EMPLOYEES
33 COUNTRIES

"We needed to deliver better changes faster, using fewer people. With Red Hat Ansible Automation, we can centrally orchestrate and automate repetitive tasks from a single repository."

SEBASTIAAN LAURIJSSE
SENIOR DIRECTOR, I.T. INFRASTRUCTURE SERVICES
NXP SEMICONDUCTORS

BENEFITS

- Simplified and automated management to reduce errors and improve efficiency
- Streamlined global work by standardizing IT configurations
- Reduced storage provisioning times from 8 hours to just 5 minutes



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“With our Red Hat environment, if an engineer runs an application in Austin, Texas, they can expect the same environment in Eindhoven or India.”

SEBASTIAAN LAURIJSSE
SENIOR DIRECTOR,
IT INFRASTRUCTURE SERVICES
NXP SEMICONDUCTORS

COMPLYING WITH HIGH QUALITY REQUIREMENTS

Operating in more than 33 countries, NXP Semiconductors N.V. is one of the world’s largest producers of electronic components. NXP supplies the tools and infrastructure needed to run engineering design software applications, designing its semiconductors and integrated circuits in hardware design environments to support innovative technology—such as the connected car and other Internet of Things (IoT) solutions.

In an increasingly competitive market, NXP must not only keep pace with growing design complexity, but also meet the high quality requirements and diverse use case needs of automotive and consumer producers.

“Year over year, our products are getting more complex,” said Sebastiaan Laurijsse, senior director of IT infrastructure services at NXP. “This shift requires a culture focused on quality, which in turn demands a huge amount of validation and testing. Every change in quality and complexity requires more simulation capacity, and therefore, more compute power.”

To design its products efficiently and meet quality requirements, NXP sought a reliable IT platform with effective management capabilities—including automation.

SUPPORTING HIGH-PERFORMANCE COMPUTING

After evaluating potential solutions, NXP decided to deploy Red Hat software to establish this agile, scalable IT environment. The company built its design environment on Red Hat Enterprise Linux, running on HPE hardware, with configuration and automation provided by Red Hat Satellite and Red Hat Ansible Automation. Red Hat Satellite is used to provision new servers and push applications to specific nodes. Red Hat Ansible Automation, including Ansible Tower, manages the configuration of 9,000 nodes, as well as managing storage for NetApp, servers, and other physical infrastructure.

“We chose Red Hat Enterprise Linux over SUSE Linux and Red Hat Ansible Automation over Salt and other options because it offered the best support and maintainability,” said Laurijsse. “A lot of the application vendors validate their products on Red Hat, and it’s very important for us to have end-to-end support for our infrastructure, operating system, and applications.”

In its new IT environment, NXP also uses Jenkins for test automation, Splunk for event management, data aggregation, and correlation, and ServiceNow to trigger event management workflows in Red Hat Ansible.

This environment, including nine high-performance compute clusters, provides almost 12,000 engineering design applications—including its own libraries and third-party software—to 10,000 hardware designers worldwide.

“We have about 70,000 cores in our data centers running on Red Hat Enterprise Linux, letting us simulate all kinds of environmental situations and design and deliver a quality product,” said Laurijsse.

MEETING SERVICE DELIVERY GOALS FASTER

SIMPLER, MORE EFFICIENT MANAGEMENT

To manage its design environment, NXP has operations and development teams in the United States, Europe, and India. With Red Hat Ansible, the company can use automation to more effectively manage its Red Hat environment for employees in all of these locations.

“Because it is centrally managed with Red Hat Ansible and Red Hat Satellite, Red Hat Enterprise Linux is more efficient,” said Laurijsse. “Security is simple to manage because the profiles can be standardized, so it’s easy to see changes, and it’s very easy to run and deploy environment controls.”

NXP also uses Red Hat Ansible to configure and scale its cloud systems, running in Amazon Web Services (AWS). Using public cloud resources to access additional capacity when needed helps NXP efficiently and cost-effectively meet short-term peaks in demand for computing resources when local infrastructure is already at maximum use.

Another key capability of Red Hat Ansible is the elimination of agent involvement. “As an agent-free tool, Ansible is easy to orchestrate and integrate from one central location,” said Laurijsse. “There is also less risk of manual errors or unauthorized access.”

In addition, centralized updates to Red Hat Enterprise Linux through Red Hat Satellite—and access to troubleshooting assistance from Red Hat’s development team—help NXP ensure its Red Hat software is up to date and error-free.

FINANCIAL AND TIME SAVINGS THROUGH STANDARDIZATION

Using Red Hat Satellite and Red Hat Ansible, NXP can standardize the configurations, management, and structure of its IT environment worldwide. Standardization is essential to ensuring NXP can offer high product quality and comply with customer requirements. With the same application version being used, NXP can trace the source of errors if product issues arise.

As a result, the company’s engineers can save time by focusing on valuable work, rather than routine processes.

“We needed to deliver better changes faster, using fewer people,” said Laurijsse. “With Red Hat Ansible, we can centrally orchestrate and automate repetitive tasks from a single repository. And with our Red Hat environment, if an engineer runs an application in Austin, Texas, they can expect the same environment in Eindhoven or India. As a result, we achieve a higher quality of changes, and making such changes faster reduces costs.”

FASTER PROVISIONING AND TIME TO MARKET

Reducing time to market for new products is key for NXP to increase its competitiveness and profitability. With IT automation, the company can speed the overall product design process, supporting faster time to market.

“Red Hat Ansible has helped us to cut storage provisioning time from more than eight hours to only five or six minutes,” said Laurijsse. “Once an engineer’s request for more storage is approved, Ansible triggers a specific playbook with the right parameters, and the storage is then provisioned. There is no delay due to manual intervention. As we don’t lose any CPU cycles to agents, we can allocate as much of our compute capacity as possible to running simulations that help us maximize product quality. This efficiency means we need fewer application licenses, which can cost up to \$50,000 per user.”



CUSTOMER CASE STUDY NXP Semiconductors streamlines product design processes with Red Hat

Automating with Red Hat Ansible also supports NXP’s use of predictive analytics to help its engineers work more efficiently. For example, the company uses Splunk to predict when an engineer is likely to run out of storage in the near future, then alerts the engineer and automatically provisions more storage before this happens.

MOVING TOWARD DEVOPS

Inspired by their shift to a new Red Hat environment, design engineers at NXP have started using continuous integration/continuous delivery (CI/CD) approaches. NXP is also gradually moving to a DevOps approach, supported by Red Hat Ansible.

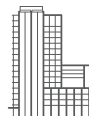
The company is also considering implementing Red Hat OpenShift® as its container application platform. “The designers use a lot of Jenkins solutions, and as we build and test clusters, we will increasingly provide containers,” said Laurijsse.

“Red Hat is really going the extra mile to build a relationship with us,” said Laurijsse. “Its strategic direction will fulfill our business needs. We are confident we’ll be supported in our future initiatives.”

ABOUT NXP SEMICONDUCTORS N.V.

NXP Semiconductors N.V. enables secure connections and infrastructure for a smarter world, advancing solutions that make lives easier, better, and safer. As the world leader in secure connectivity solutions for embedded applications, NXP is driving innovation in the secure, connected vehicle, end-to-end security and privacy, and smart connected solutions markets. Built over more than 60 years of combined experience and expertise, the company has 31,000 employees in more than 33 countries and posted revenue of US\$9.5 billion in 2016.

ABOUT RED HAT



Red Hat is the world’s leading provider of open source software solutions, using a community-powered approach to provide reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.



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