# Nutanix
## case study

**CI/CD and testing for Xi Epoch (now part of Prism) - design and development**

Our client, Nutanix, is a global leader in cloud software and hyperconverged infrastructure solutions. One of the company's products, **Xi Epoch**, is a real-time observability tool for multi-cloud applications. It provides an instant view into the system, monitors its health, and makes visible the interactions between components in a distributed environment.

codilime ✕ NUTANIX

# Challenge

Xi Epoch (currently part of Prism) is a full-stack monitoring and alerting service for every enterprise application at any scale across public clouds and private infrastructure. It generates terabytes of metrics and integrates with over 200 common applications to holistically understand application performance. The system is operations-ready from the first launch.

The challenge was to **build a continuous integration system** that would be easy to use and simple to develop for multiple engineers around the world.
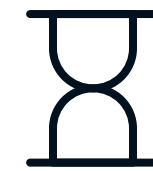
# What we delivered

**Backend development**

**1**
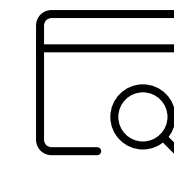
**DevOps**
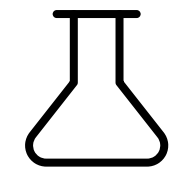
**2**

**Test automation**

**3**

→

# Results & benefits

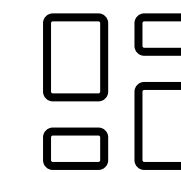**Decreased full-build time** from 2 hours to around 1 hour.

**Easier way to identify critical issues** and automatically block deployment of unstable code.

**Few test layers,** including smoke tests covering collectors.

**Improved CI/CD quality** - overall architecture is constructed from separate blocks with minimal dependencies.

**More efficient build system** - thanks to separated components and clean CI workflows.

**Improved product quality** - the team discovers and fixes issues immediately.

# Client's testimonial

**NUTANIX**

CodiLime's DevOps teams helped us reduce our development cycle time by 50%, and its software engineering helped us improve the quality of our product by increasing our test coverage by more than 80% in crucial parts of our system. This allows us to deliver new features and capabilities seamlessly without compromising on simplicity to our global customer base. We're looking forward to further collaboration with CodiLime as the Epoch product evolves with time.

**Harjot Gill, General Manager**

→

# The scope of the project

The project was split into **two phases** - designing the new CI/CD system and building the test automation framework. The needs of the system included:

### CI/CD

- Run periodical, scheduled builds
- Run full system builds or selected components only
- Run partial builds triggered by pull request
- Ensure high scalability and reliabilityComplex build system
- Multiple cross-dependencies with multiple management systems

### Tests automation

- Complex, cloud-based architecture
- Multi-platform framework needed
- Smoke tests
- Single component tests
- e2e tests
- UI tests
- High scalability and reliability

→

# The scope of the project

The first stage of the project involved **migrating CI workflows** from Jenkins to CircleCI. This was achieved by methodically gathering requirements and creating reusable resources to improve build reproducibility and reliability.

Changes to the toolchain brought corresponding changes to the build system's structure and flow. Multiple stages have been separated to parallelize the work and speed up the process and make it as close to **Agile** and **DevOps** standards as possible.

Ultimately, faster feedback means the work is done more effectively. Using CircleCI empowered us to make the builds highly reproducible and improve the way we conducted them.

The second stage involved **preparing a scalable test automation framework** that would be easy to integrate with the continuous integration system and enable developers to launch it locally against any built part of a system. This was achieved by mocking up every part of the system and using a containerized environment (Docker and Docker Compose) for the data aggregators and test execution.

# The scope of the project

Diagram 1 presents the **test architecture in CI for testing the collector**. All components in this architecture, except Agent, run within separated Docker containers connected together using Docker Compose.
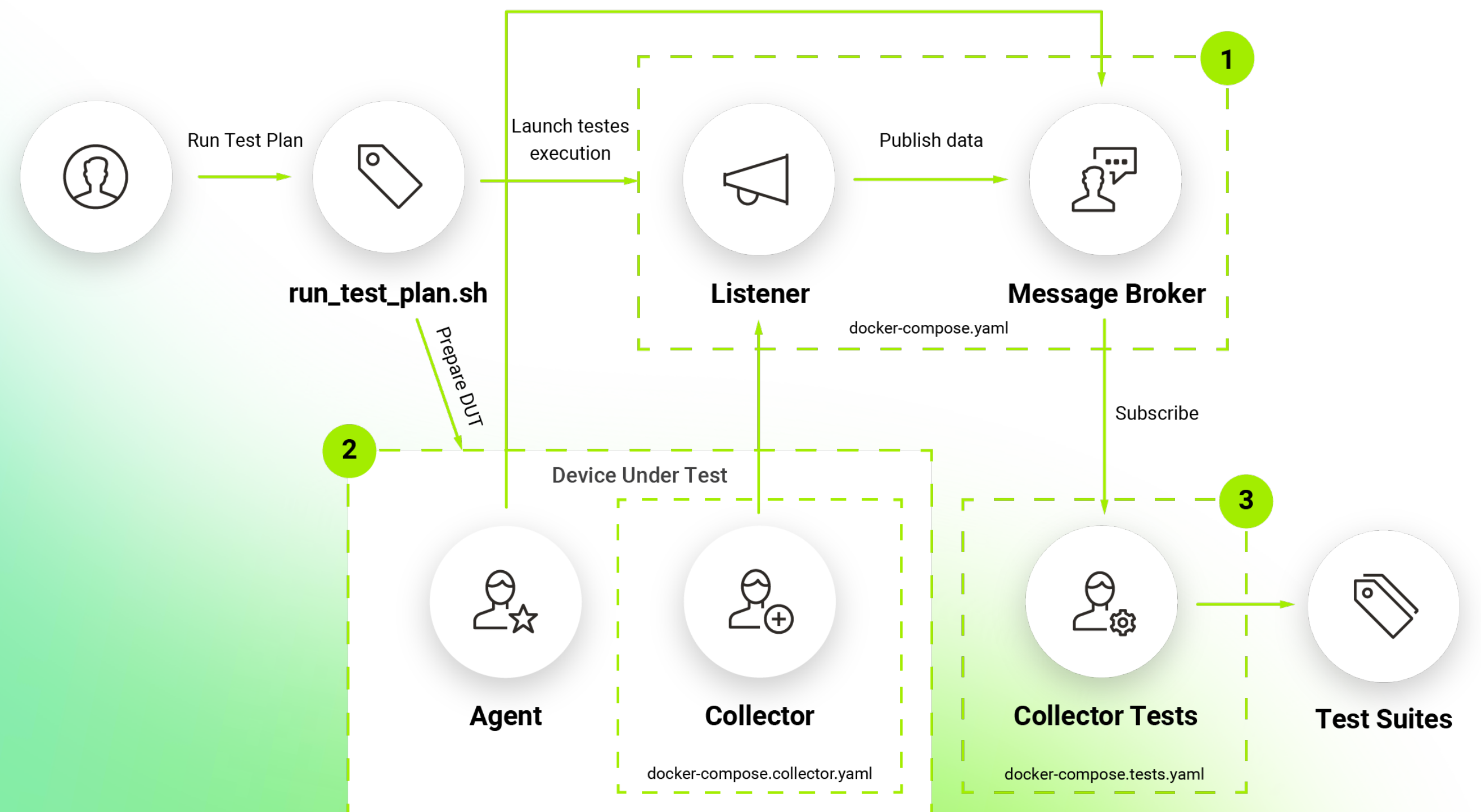
# The scope of the project

**Diagram 2** presents **the scheme for periodic builds that are executed by CircleCI** in constant time intervals (currently every 6 hours).

This process performs full builds of every component in the system, runs them using Kubernetes and finally performs all the tests. Additionally, the test results are delivered to the user via Slack.

# Technologies and tools

GO

python

aws

circleci

Spinnaker

harness

Google Cloud

→
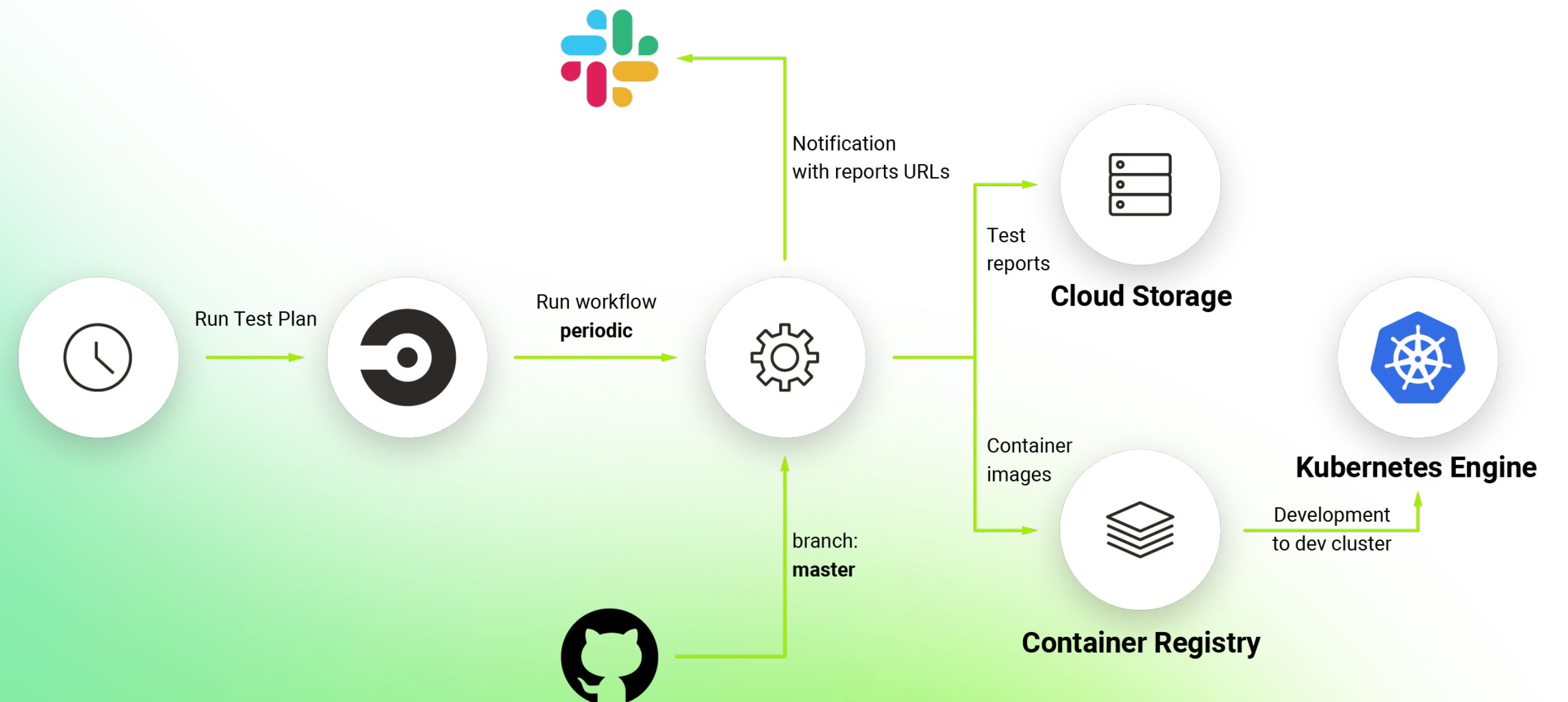
# About CodiLime

**codilime**

Since 2011, CodiLime has been the engineering partner of choice for semiconductor companies, networking services, telecom services, and software solution providers.

We have come a long way – from a startup to a company that hires more than 350 top-notch software developers, network engineers, DevOps experts, and solution architects. **We focus on five N.E.E.D.S. - Networks, Equipment, Environment, Data and Security.**

We aim to link engineering talent with business domain expertise. Everything to  provide our clients with delivery excellence and custom-tailored solutions.

Check out what our partners have said about us and how they evaluated our cooperation.

**Go to about us page**