APPLICATION NOTE
AUTOMOTIVE INDUSTRY, RACING MOTORS CONSTRUCTOR

RL RED LION®

The company is one of the high-tech manufacturers of engines used for car racing. The motors are pushed to the limits of engineering. Besides it, they also produce their own lab test equipment.

CUSTOMER

High tech manufacturer of racing car engines

LOCATION

France

CHALLENGE

Connection of identical test cells without creating address conflicts on the same network.

RESULTS

◢ Equipment for all test benches keep the same address on the internal network

◢ Multiple test benches can be connected on the same network without conflict

◢ Deployment, operations & support are greatly simplified

THE
PROBLEM

It is common for a machine manufacturer to use the same IP address scheme for the internal network of all their machines. Our customer here designed their own specialized lab equipment, to measure the performances of the engines under different parameters & conditions. The test cells are all built on the same pattern, making it easy for the engineers to set them up on a new motor. This standardization also greatly simplifies the system design, production, support, and maintenance.

However, when deployed and integrated into the end user's production network, conflicts can arise. In this case, several systems were deployed in the same network. The challenge was to network multiple systems without causing an IP conflict.

THE
SOLUTION

To ensure smooth and seamless integration onsite, the machines or the test cell need a front-end device that will hide the component's internal IP address from anyone on the factory floor, and still allow connectivity and communication with the other production systems. This front-end device is a NAT gateway.

To measure and compare the behavior and performance of engines on the test cell, it is not only important to have a lean integration into the network or to maintain communication despite possible address conflicts but also to consider the security aspects and ensure that our high-tech test cell remains as we originally designed it.

The concept of Least Privilege Access is used here. Least Privilege Access gives a user or group the minimum level of permissions needed to perform a given task. No user or group should have access rights or permission that

PRODUCTS

Model: RA10

▲ Micro-segmentation firewall & NAT gateway

▲ OT-friendly configuration tool with graphical user interface

▲ Bridge mode & self-learning capability, to simplify setup
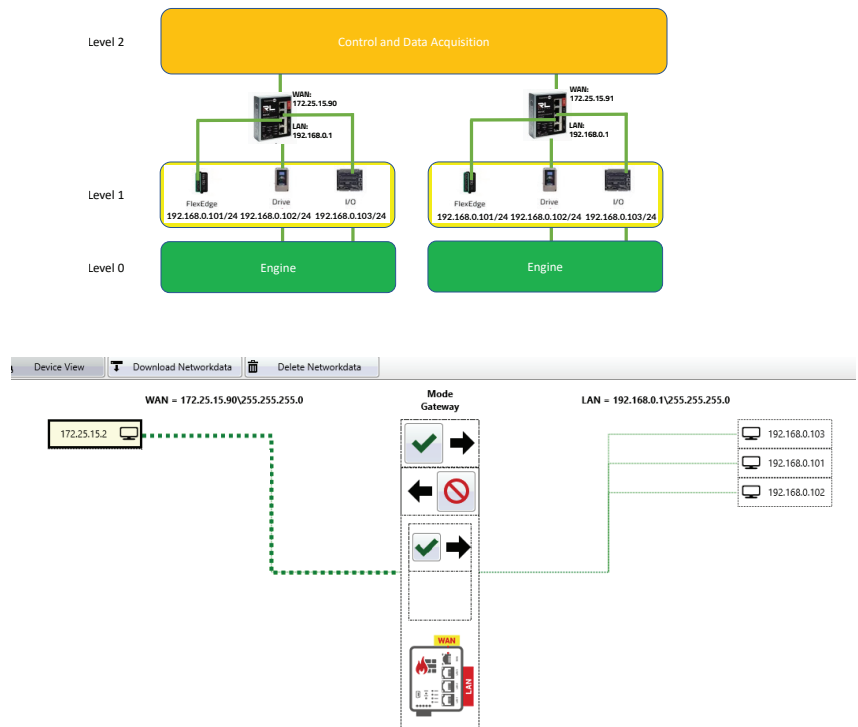
▲ Cybersecurity upgrade for OT equipment

exceed the minimum required to perform their role within the organization. The main issue was controlling access to the machine through the factory network, who is allowed to communicate with whom. Since Red Lion's RA10 NAT gateway purchased by them is designed primarily as an OT micro-segmentation firewall, it was able to perform this task as well. This side benefit of the RA10 device was equally important to the company.

THE
RESULT

It was very important for the Constructor to have both key functions on the same device- Configurable by an OT engineer, using a configuration tool that looks and works like PLC programming software. Red Lion's RA10 micro firewall with NAT gateway is now installed as standard in all measurement and monitoring systems for all engine test cells. It simplifies connectivity and network integration.

THE
DIAGRAM

NETWORK SEGMENTING OF THE SAME NETWORK ADDRESSES
NAT-ING OF IDENTICAL TEST CELLS TO ALLOW INTEGRATION IN THE SAME NETWORK

www.redlion.net