



REWIRE - Cybersecurity Skills Alliance A New Vision for Europe

R4.1.2. REWIRE Cyber Range



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1. EXECUTIVE SUMMARY

This document briefly covers components of the deployed REWIRE Cyber Range Platform and provides access descriptions and links for the platform's general documentation that is publicly accessible in a GIT repository. For a more detailed description of the platform and its internal components, please refer to the previous document [R4.1.1 Cyber Range Establishment methodology and roadmap](#).

The REWIRE Cyber Range Platform will be used for the hands-on exercises in REWIRE courses. The REWIRE CRP will be accessible by students through the REWIRE Virtual Learning Environment, where the exercises will be launched.

2. REWIRE CYBER RANGE PLATFORM

REWIRE Cyber Range Platform is built on top of multiple open-source projects, which implements all required functionalities – IaaS cloud platform, Version Control System, OIDC issuer, and Cyber Range Platform. The platform is currently deployed on Masaryk University infrastructure and is available to all collaborating partners.

2.1. Components

REWIRE Cyber Range Platform utilizes services provided by Masaryk University (OpenStack IaaS platform, GitLab) and by CESNET (EINFRA AAI). The REWIRE instance of KYPO Cyber Range Platform is deployed exclusively for the REWIRE project.

2.1.1. OpenStack IaaS

The IaaS cloud platform is one of the main building blocks of Cyber Range because it accommodates virtual environments (sandboxes) used to simulate real-world infrastructures. REWIRE Cyber Range Platform is hosted by the OpenStack cloud platform operated by Masaryk University (MU). MU OpenStack supports a wide range of cloud resources:

- Virtual machines
- Virtual networking (virtual routers, networks, subnets, ports, floating IP addresses, security groups)
- Block storage
- Object storage
- Image store
- Orchestration engine
- Load Balancer as a Service

Rewire CRP manages directly only a subset of resources with the following quota:

- Virtual machines – 600
- VCPUs – 600
- RAM – 3,5 TB
- Networks – 1800
- Ports – 7200

Users don't have or need direct access to the OpenStack platform. All cloud resources are managed and accessed via the KYPO portal.

2.1.2. GitLab MU

Git is a store and development platform for sandbox definitions and training scenarios. KYPO portal directly interacts with Git API using Git as a scenario repository. REWIRE Cyber Range Platform leverages Masaryk University GitLab instance, which is the foundation for REWIRE Scenario Sharing Platform. GitLab MU can be accessed with EINFRA AAI or MU accounts.

2.1.3. EINFRA OIDC

OIDC service is used as an authentication component for the KYPO portal. User accounts and their credentials are not created directly in the platform, but instead used the ones from company Identity Providers. REWIRE Cyber Range Platform leverages services of EINFRA authentication proxy, which supports Identity Providers of all connected entities, enabling access with an SSO company account instead of a platform-specific account. For partners without a provider in EINFRA proxy, a guest account in Masaryk University provider will be used instead.

2.1.4. KYPO CRP

KYPO CRP is a platform with a focus on cybersecurity trainings and exercises. It consists of two main components:

- KYPO head node – KYPO web portal for sandbox management, training management, and execution and access management
- KYPO proxy jump – jump host for accessing sandbox environments with SSH

KYPO CRP is deployed in the most recent version – 22.12.

2.2. Access and documentation

KYPO portal is available at <https://rewire.crp.kypo.muni.cz>. It interacts with GitLab instance, <https://gitlab.ics.muni.cz>. Access to both systems can be requested at support@kypo.cz. Documentation describing the functionalities and API of the KYPO portal can be found at <https://docs.crp.kypo.muni.cz/>.