

Network Management as a Service (NMaaS)

NMaaS concept, architecture and deployment

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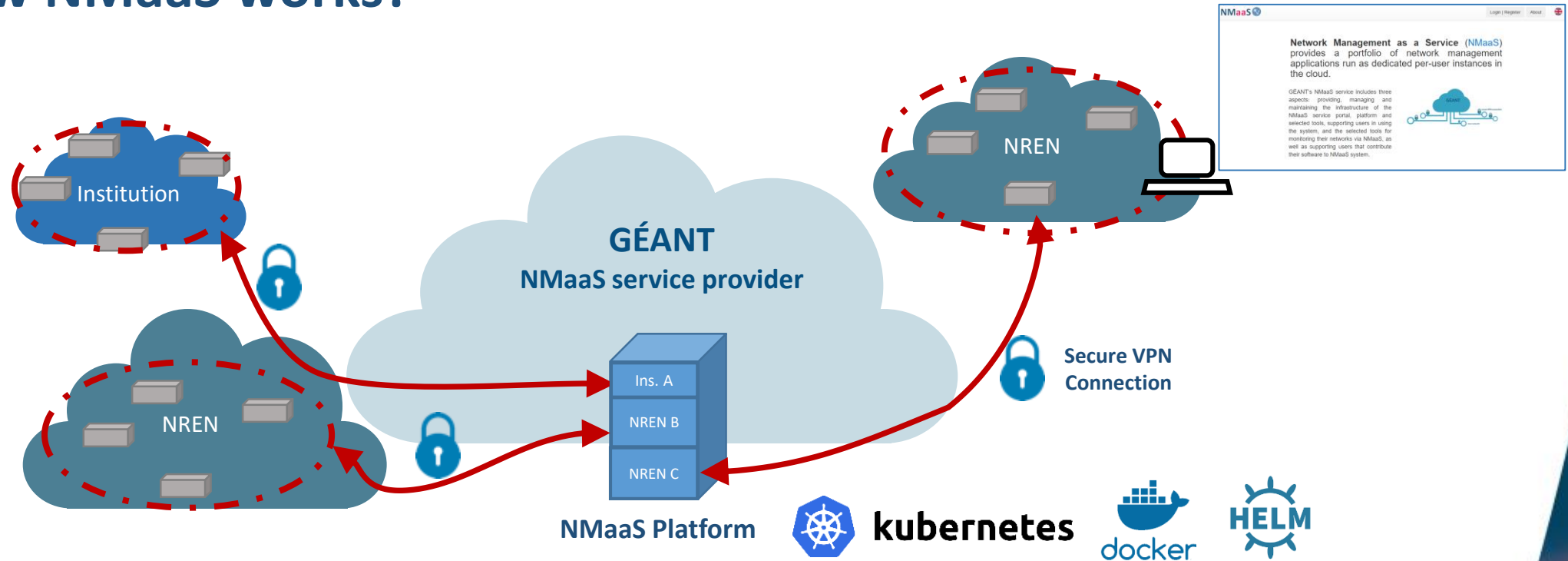
GN4-3 WP6T3 – NMaaS Team Leader

GÉANT Network Management as a Service (NMaaS)
Infoshare

November 25th 2020

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How NMaaS works?

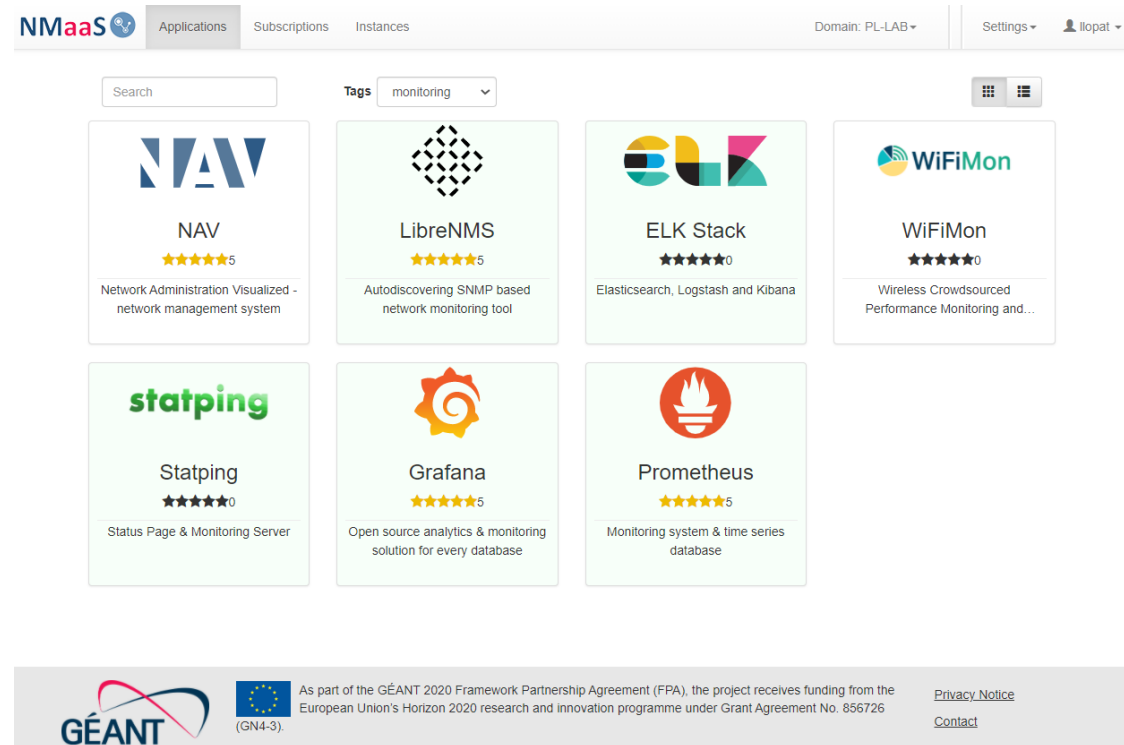


Shared **cloud platform** managed by the GÉANT Project
Each user gets an **isolated** tenant environment connected over a **VPN** to his network
Tool deployment and access via a **web portal**

NMaaS solution

Goals

- Easy to install and use
- Easily extendable with more tools
- Federated login 



NMaaS solution

Software components

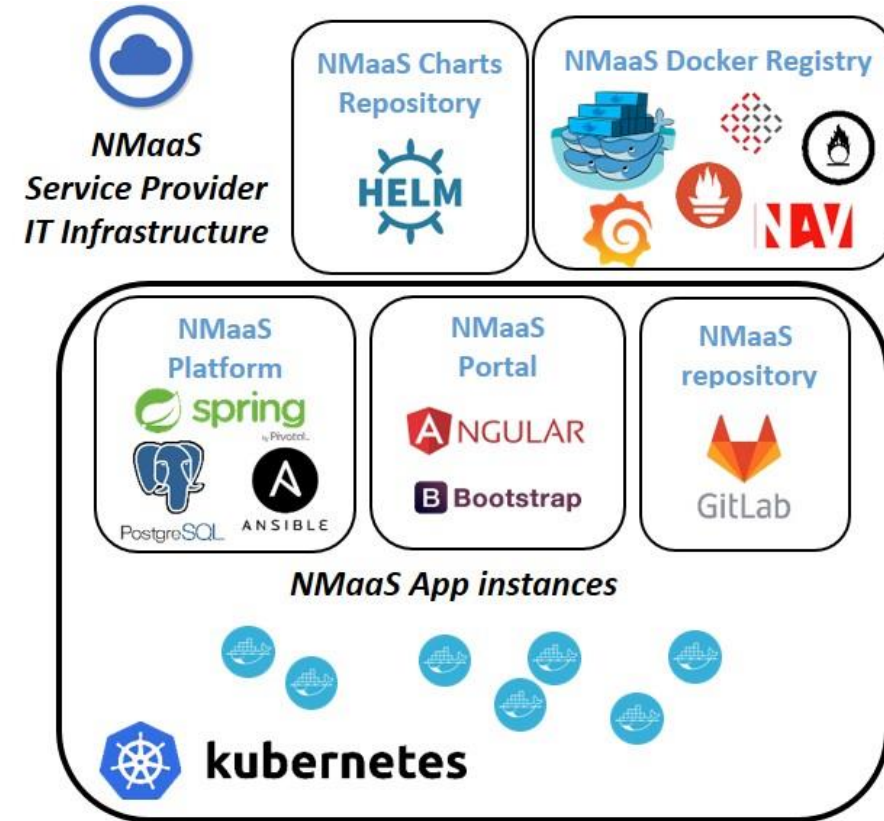
- NMaaS Platform
 - Domain and user management
 - Tool deployment process orchestration
- NMaaS Portal
 - Web-based user front-end

Tools (packaged applications)

- Docker images
- Helm charts

Infrastructure

- Kubernetes
- VPN
- Networking



NMaaS tool deployment process

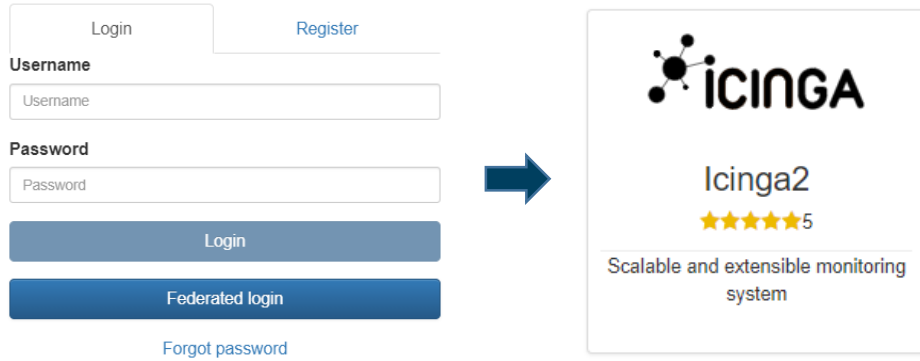


Diagram illustrating the NMaaS tool deployment process, showing the login/register interface and the Icinga2 tool details.

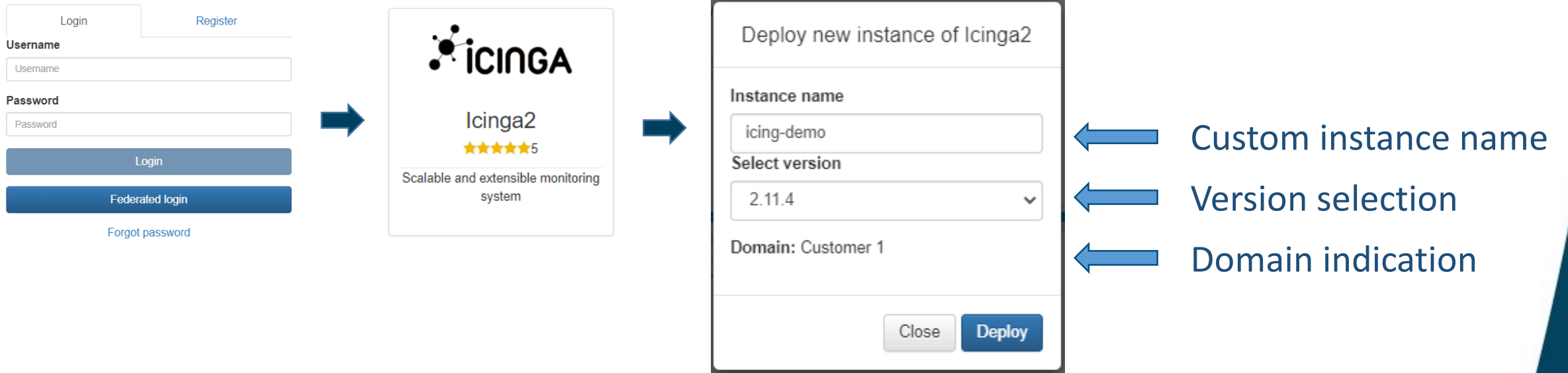
Login / Register Interface:

- Buttons: Login, Register
- Fields: Username, Password
- Buttons: Login, Federated login
- Link: Forgot password

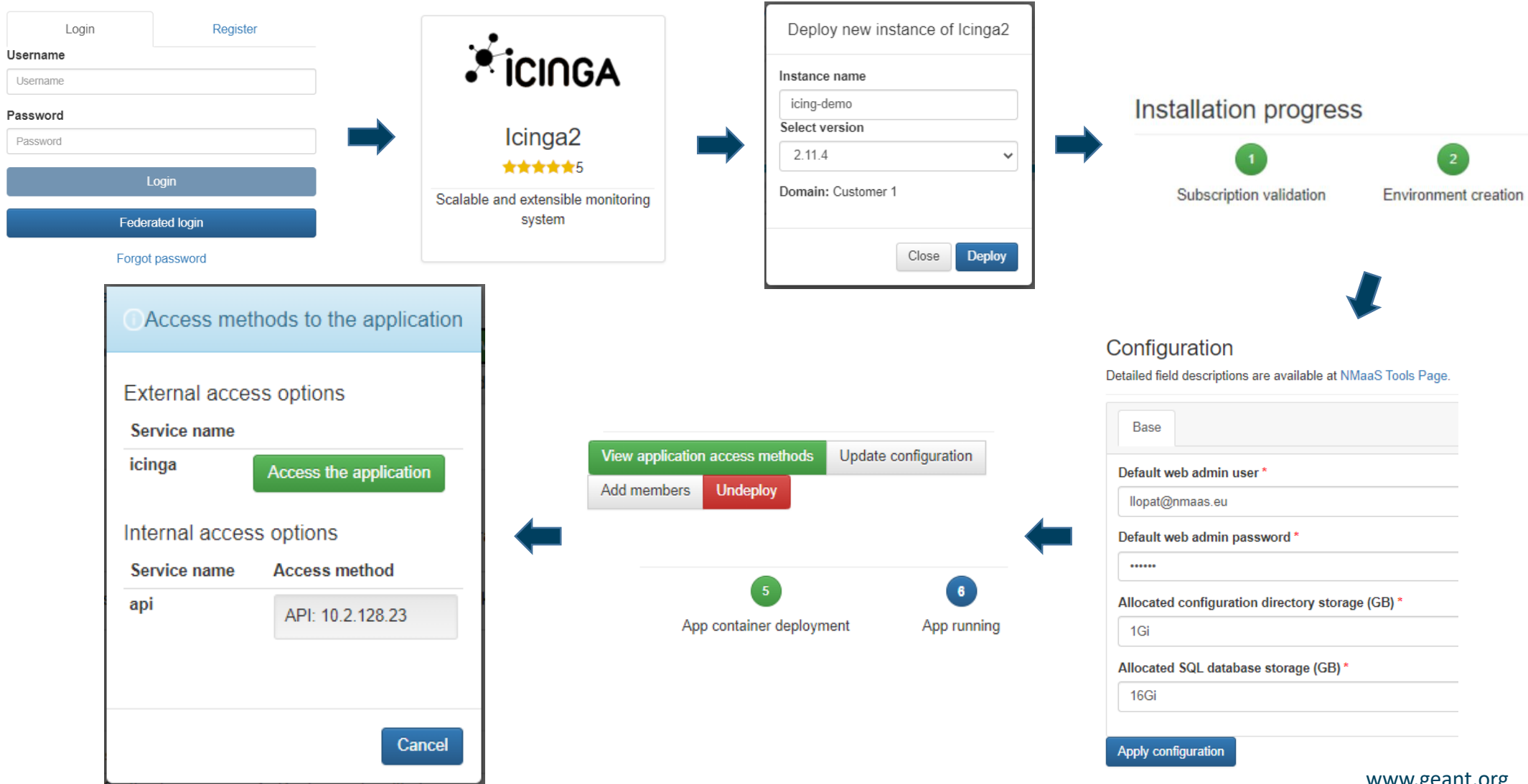
Icinga2 Details:

- Logo: Icinga
- Text: Icinga2
- Rating: ★★★★★5
- Description: Scalable and extensible monitoring system

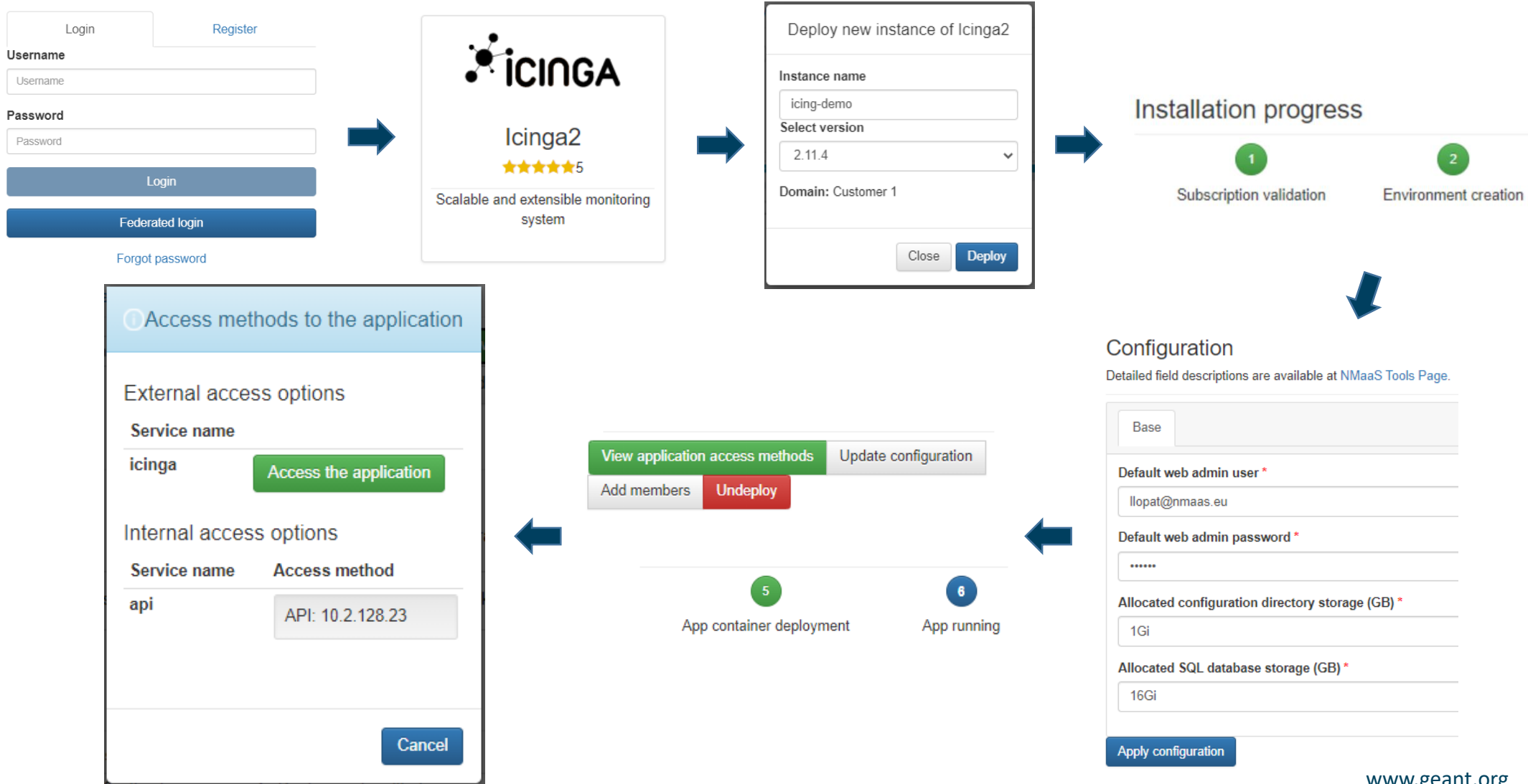
NMaaS tool deployment process



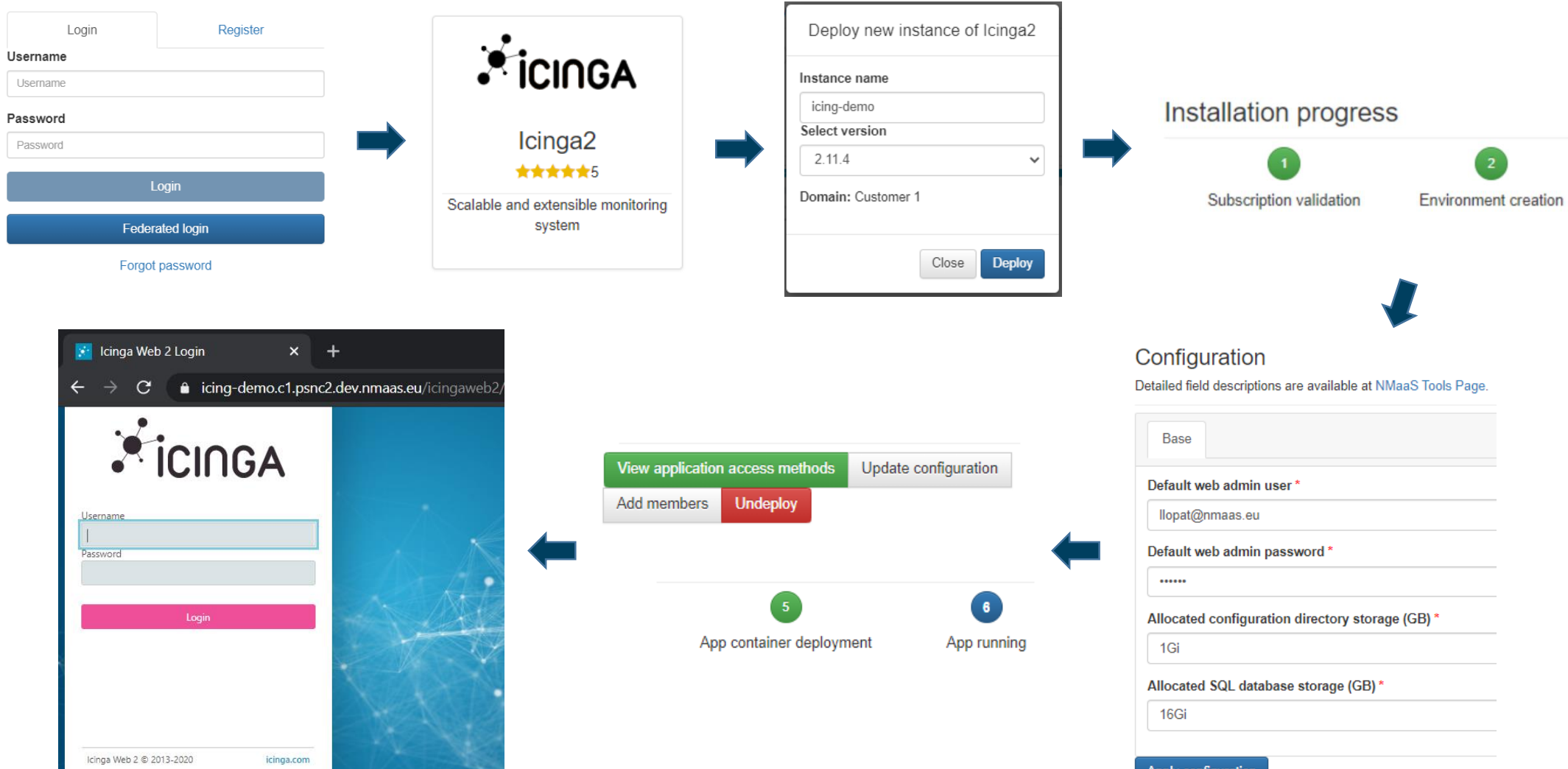
NMaaS tool deployment process



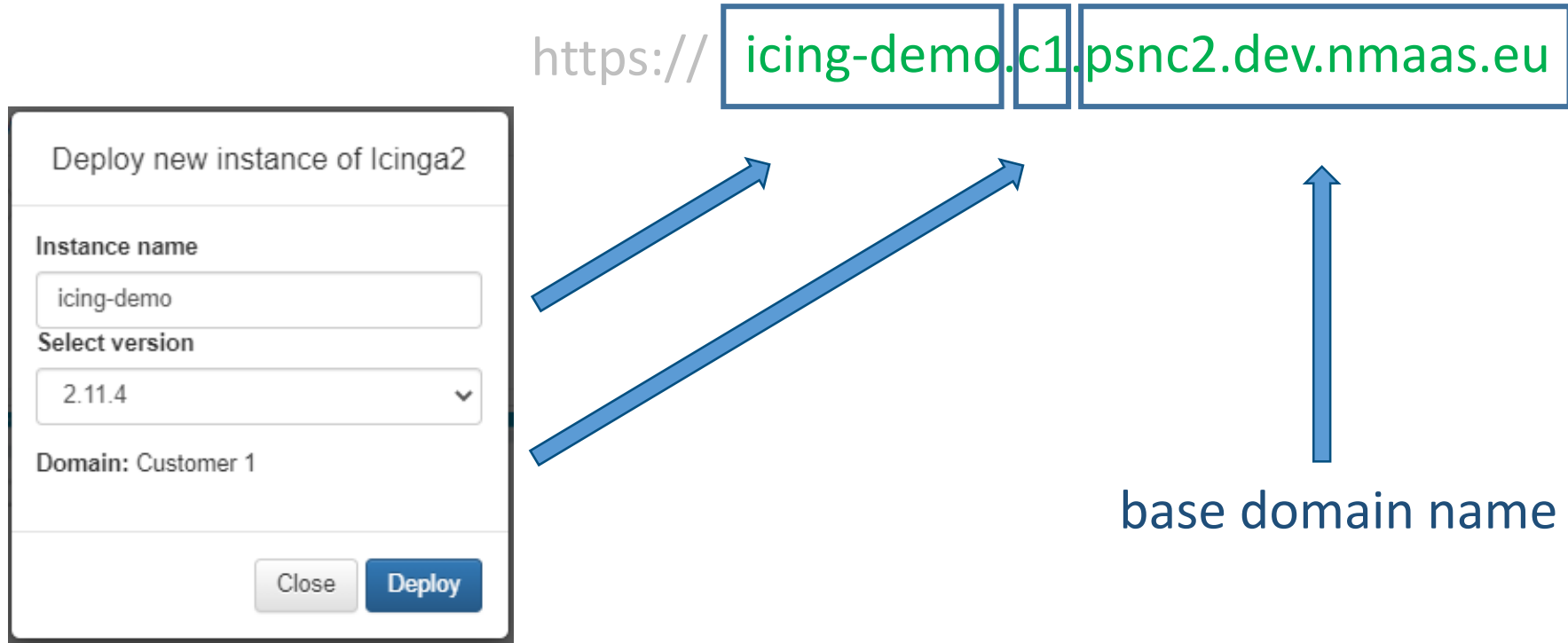
NMaaS tool deployment process



NMaaS tool deployment process



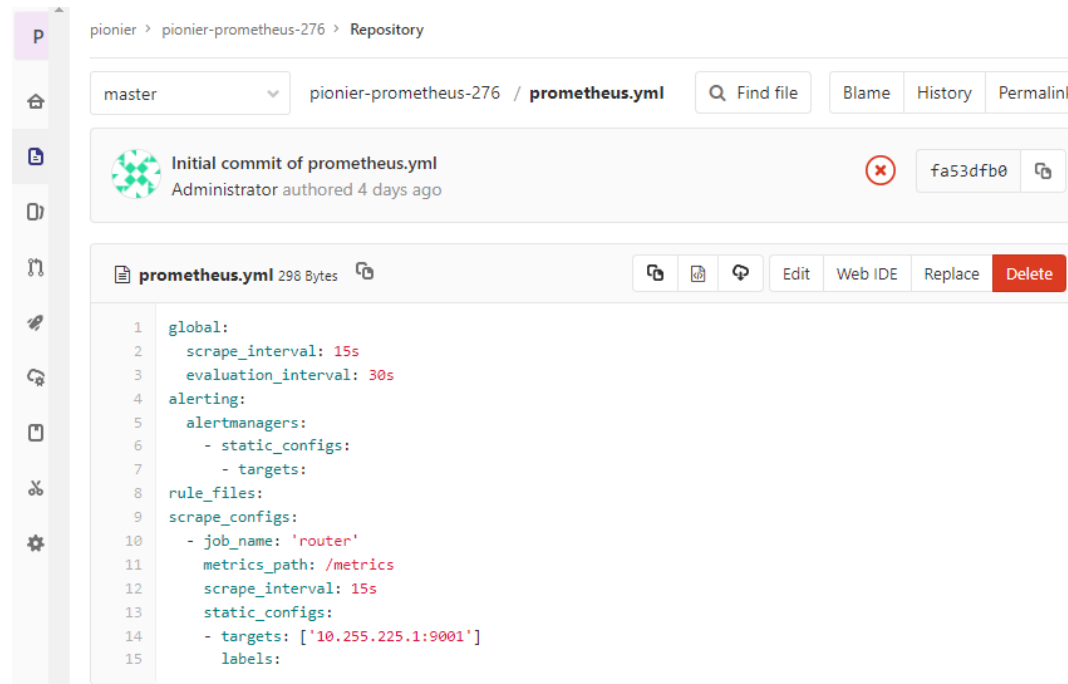
NMaaS tool instance access



NMaaS tool instance configuration process



- Dedicated **git repository** created for tool instance
- Configuration files **populated with custom data** entered by the user
- SSH key based user access to clone, **commit and push configuration changes**
- **Automated tool configuration reload** triggered by push action (depends on the tool)



The screenshot shows a GitLab repository interface for 'pionier-prometheus-276'. The file 'prometheus.yml' is selected, showing its initial commit by 'Administrator' 4 days ago. The file content is a Prometheus configuration for a router job.

```
1 global:
2   scrape_interval: 15s
3   evaluation_interval: 30s
4 alerting:
5   alertmanagers:
6     - static_configs:
7       - targets:
8 rule_files:
9 scrape_configs:
10  - job_name: 'router'
11    metrics_path: /metrics
12    scrape_interval: 15s
13    static_configs:
14      - targets: ['10.255.225.1:9001']
15    labels:
```

Thank you

Any questions?

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© GÉANT Association on behalf of the GN4 Phase 3 project (GN4-3).
The research leading to these results has received funding from
the European Union's Horizon 2020 research and innovation
programme under Grant Agreement No. 856726 (GN4-3).