



# Nubus: An Enterprise Open Source IAM Stack in Kubernetes

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# Agenda

1. About Univention
2. The Nubus IAM
  1. Components
  2. Interfaces, extensibility
  3. Integration package under the hood
3. Questions

# Univention

## **Produces 100% Open Source Software**

for centralized Identity and Access Management, integration of applications and accessibility through portals.

- **Univention GmbH**  
Founded 2002 in Bremen (Germany), about 100 employees in Germany, Spain, and USA.
- **Our products**  
Nubus, Univention Corporate Server (UCS), and UCS@school are used by 14,000 organisations and millions of users world wide.
- **Our customers**  
From SMB to telecommunications companies, focus on public and educational sector.





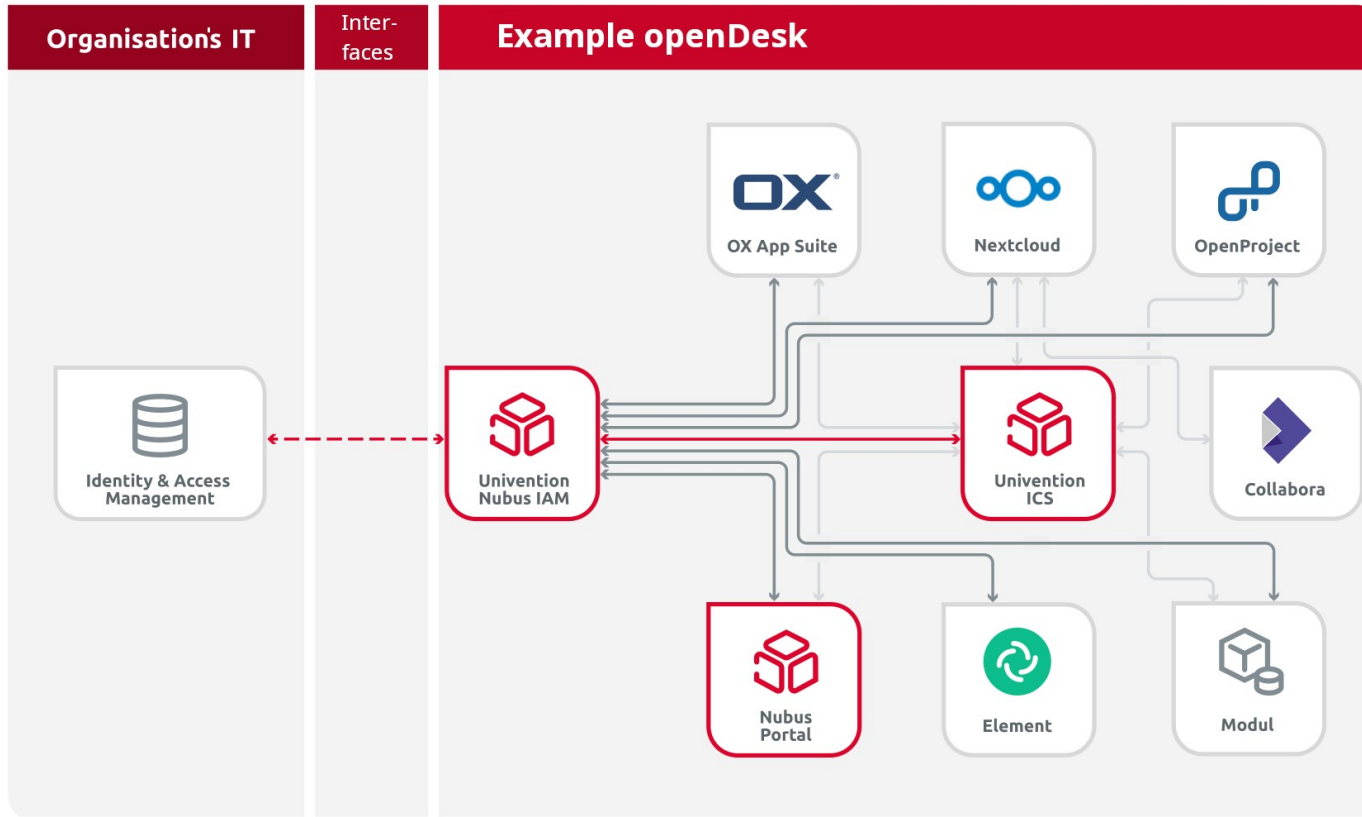


# Our vision & mission

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**Digital sovereignty** through an open, secure and federable IT platform.

- **Independence**  
We give our customers the choice of technology. Because we don't like dependencies on individual manufacturers.
- **Innovation**  
Our tools and resources are always up to date. This increases the value creation potential of our customers.
- **Control**  
Our customers retain control over user identities, data and IT processes at all times.
- **Self-determination**  
We are committed to ensuring that the freedom of choice and customisability of IT are permanently guaranteed for our customers.





or



### Focus: easy installation in virtual machines

- Easy installation of default configurations
- Quick implementation of base scenarios in customer projects
- Extensive functionality: Samba AD DC, IP Management etc.
- Works on hypervisor and bare metal

### Focus: automation and scalability

- Flexible scaling of functional modules
- Automation of deployment and scaling is part of the product (Helm charts)
- BSI compliant in higher security levels
- Lower resource usage in bigger environments
- Assumes existing Kubernetes

# nubus **Components**



# nubus Identity Management



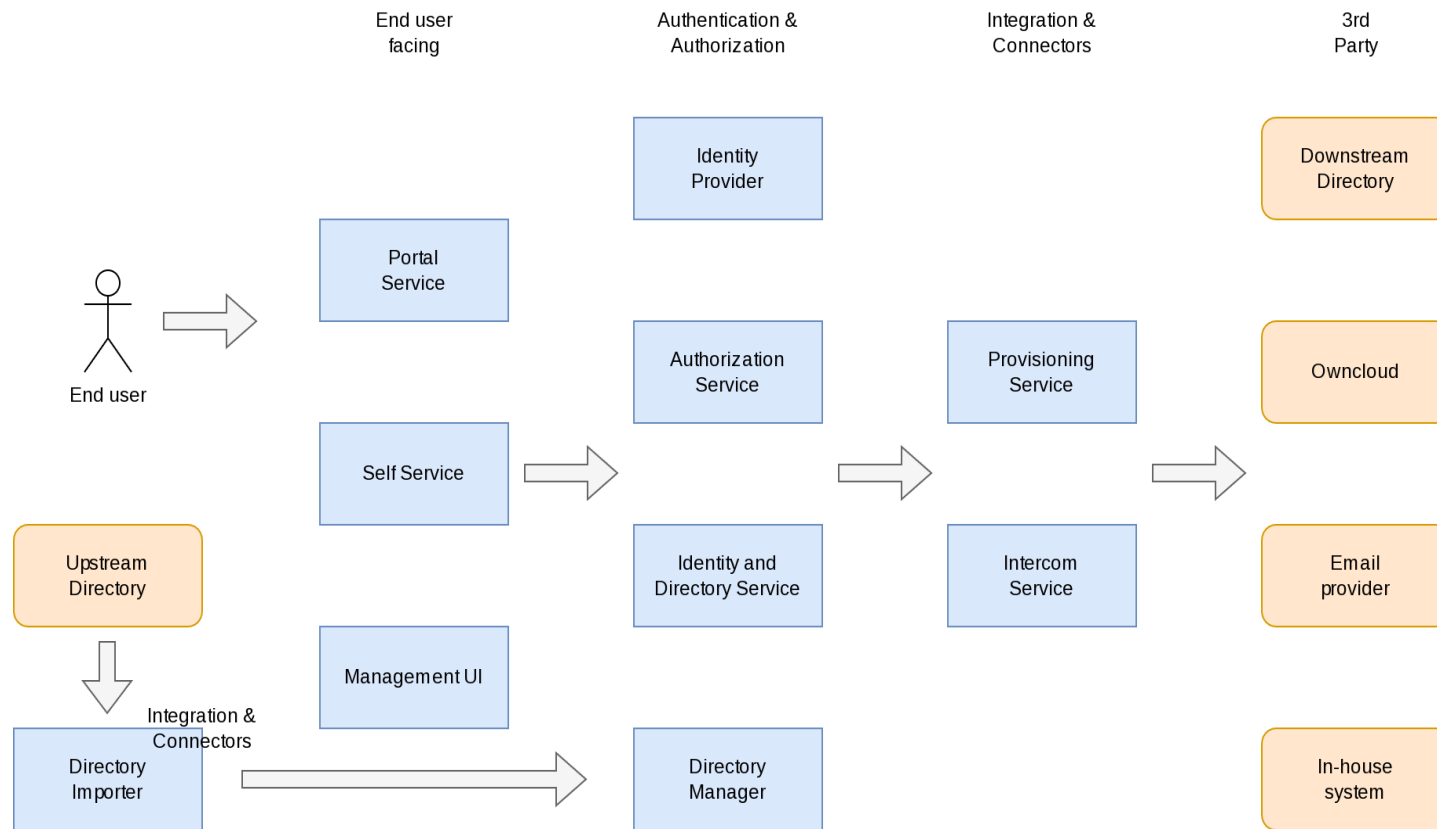
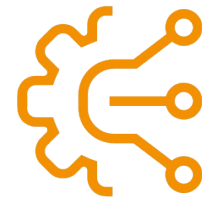
**Manage identities, roles & access,**

**store,**

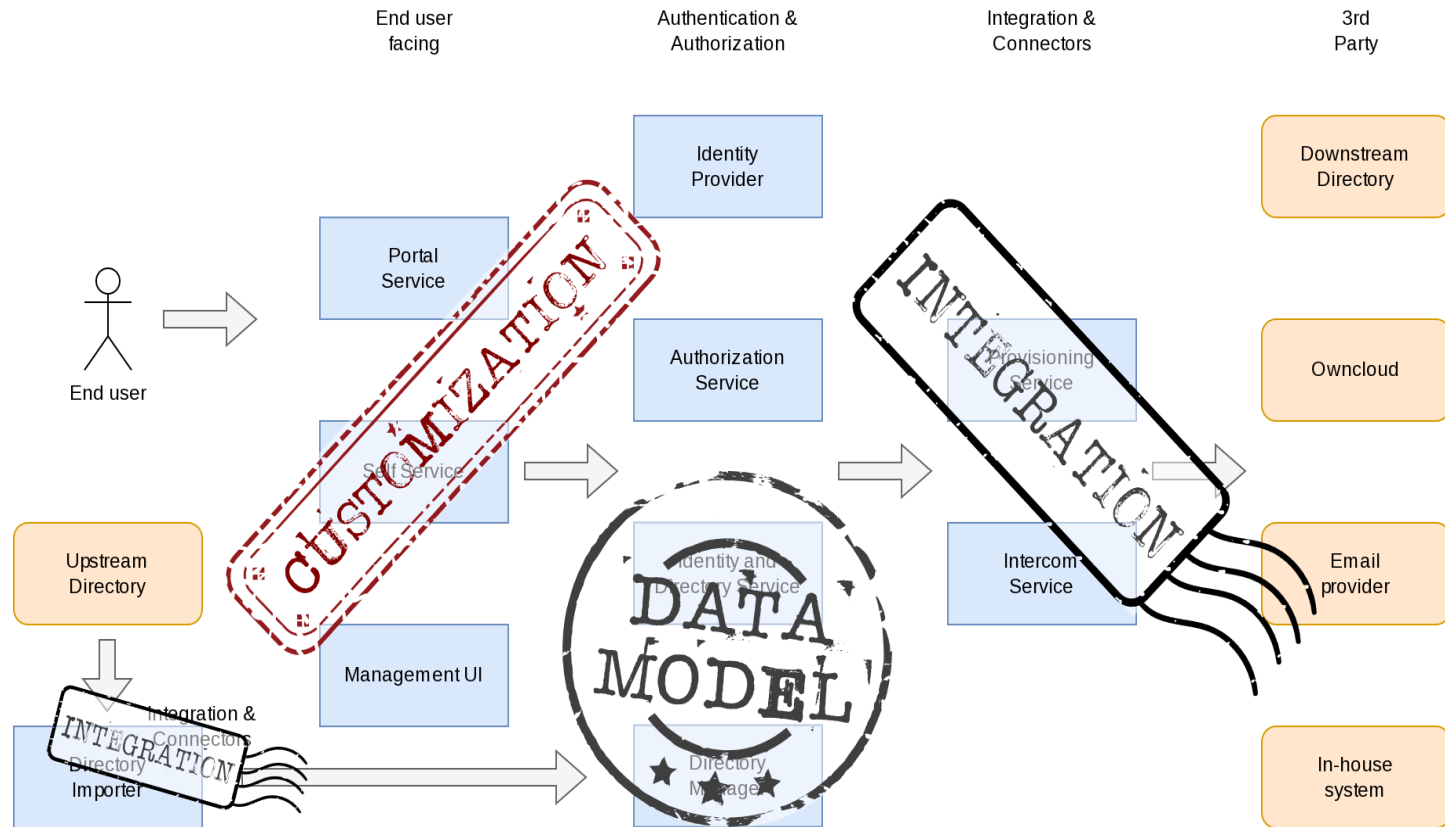
**and connect applications.**



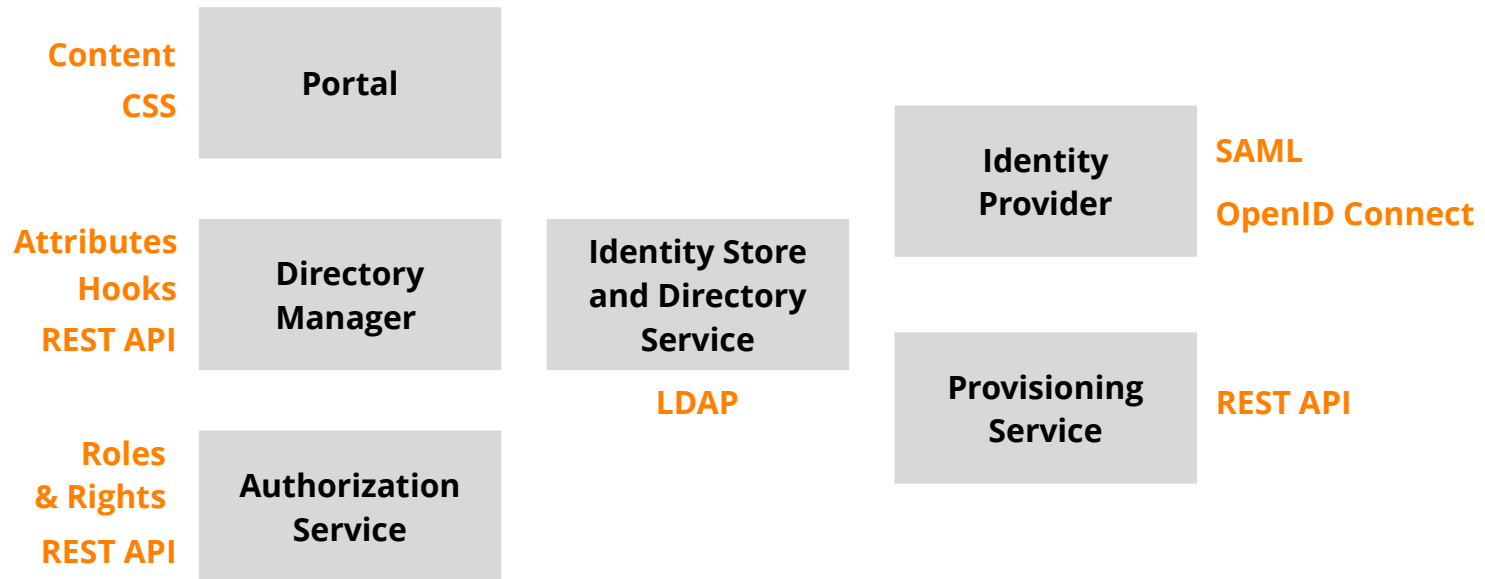
# nubus Extensibility



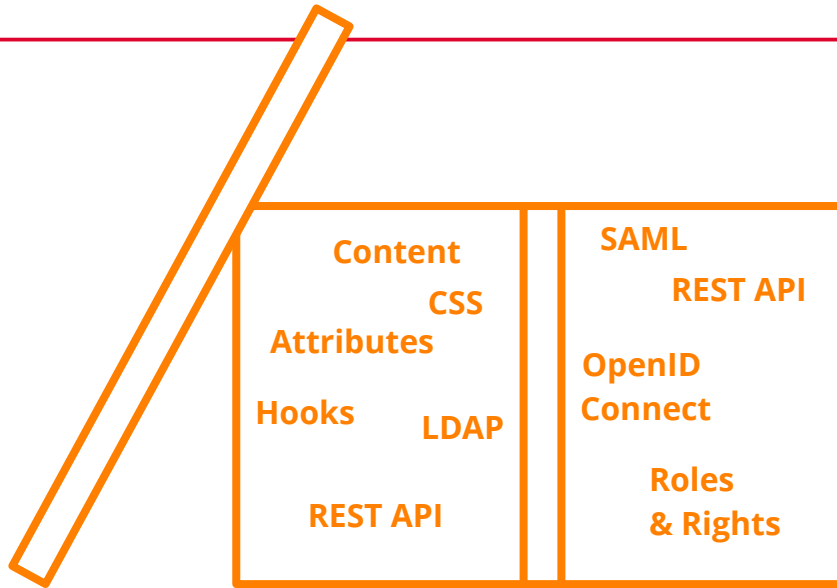
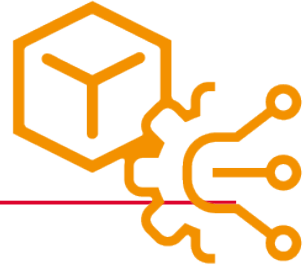
# nubus Extensibility



# nubus Extensibility & Interfaces

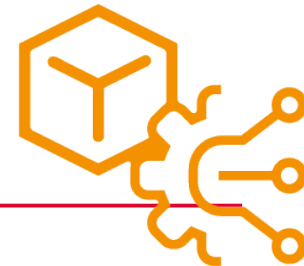


# nubus Integration package



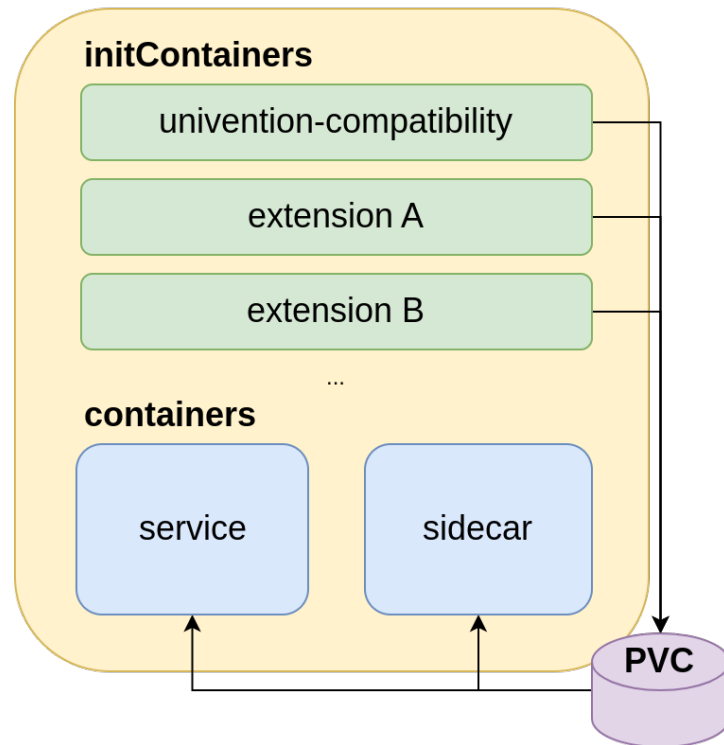
All extensions in one package:  
configuration & code

- Easy to deploy
  - Kubernetes: options for Helm
  - UCS: App Center
- Created by
  - Univention
  - Software vendors
  - Operators



- Standardized Structure:
  - `/bin/loader`: The plugin loader API.
  - `/plugins/{plugin-type}/`: Location of plugin sources.
  - `/target/{plugin-type}/`: Target paths for loaded plugins, will be a PVC at runtime.
- Loader script copies extensions from source to target paths.
- Simple copy operation in the file system.
- Each Nubus **component** only mounts the extension files that it **needs**.

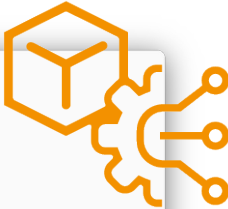
## Pod





# Integration package under the hood

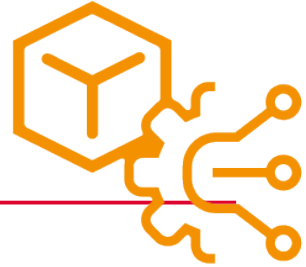
- LDAP: Extend **LDAP Access Control Lists** and modify **LDAP Schema**.
  - ldap-acls
  - ldap-schema
- Customize **Univention Directory Manager** behavior.
  - udm-handlers
  - udm-hooks.d
  - udm-syntax.d
- Enhance **Univention Management Console**.
  - umc-icons
  - umc-modules
- Bootstrap initial **directory content**.
  - udm-data-loader



```
$ tree /plugins/  
/plugins/  
├── ldap-acls  
│   └── 62univention-portal.acl  
├── ldap-schema  
│   └── univention-portal.schema  
├── udm-data-loader  
│   └── 01-portal-container.yaml  
│       ├── 02-portal-content.yaml  
├── udm-handlers  
│   └── portals  
│       ├── all.py  
│       ├── announcement.py  
│       ├── category.py  
│       ├── de.po  
│       ├── entry.py  
│       ├── folder.py  
│       └── portal.py  
├── udm-syntax.d  
│   └── univention-portal.py  
├── umc-icons  
│   ├── 16x16  
│   │   └── portal.png  
│   ├── 50x50  
│   │   └── portal.png  
│   ├── scalable  
│   │   └── portal.svg  
└── umc-modules  
    └── univention-portal.xml
```



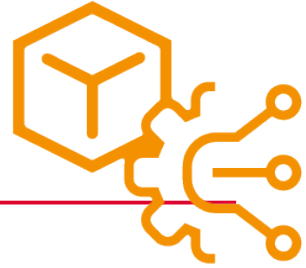
# Integration package under the hood

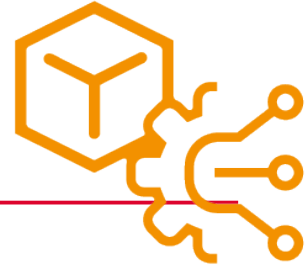


```
● ● ●  
  
# -- Extensions to load. Add entries to load additional extensions into Nubus.  
extensions:  
- name: "nextcloud"  
  image:  
    registry: "artifacts.software-univention.de"  
    repository: "nubus/images/nextcloud-extension"  
    imagePullPolicy: "IfNotPresent"  
    tag: "0.1.1@sha256:bbac701d6cbdc493b44e6d818a3df6f1ffd5e7e31faa9b0975f963777ee19f5c"  
  
# -- Allows to configure the system extensions to load. This is intended for  
# internal usage, prefer to use `global.extensions` for user configured  
# extensions.  
systemExtensions:  
- name: "portal"  
  image:  
    registry: "artifacts.software-univention.de"  
    repository: "nubus/images/portal-extension"  
    imagePullPolicy: "IfNotPresent"  
    tag: "0.44.3@sha256:734efc0adda680526dde09387db964612f9e0ab020382580984488cc993c68f0"
```



# Integration package under the hood





- Nubus is an Open Source IAM (<https://github.com/univention>)
- Nubus integrates into existing environments
- Nubus integrates with applications
- Nubus can be extended
  
- Contact: [troeder@univention.de](mailto:troeder@univention.de)
- Docs for architects, operators, developers: <https://docs.software-univention.de/>
- Forum: <https://help.univention.com/>