



A secure path to the Cloud

Hoe kan ik mijn diagnostische data op een veilige manier naar de CLOUD brengen

Agenda

1. CLOUD: Wat zijn de mogelijkheden?

2. CLOUD: Welke diensten zijn er beschikbaar

3. Cloud Connectivity: Wat zijn de uitdagingen

4. CLOUD Connectivity: Hoe werkt het

5. CLOUD security: Encryption

6. CLOUD security: User agreement

7. CLOUD security: Password management

8. CLOUD security: Avoid storing sensitive information in the cloud

9. Conclusie



CLOUD: Wat zijn de mogelijkheden?



CLOUD: Wat zijn de mogelijkheden?

Data availability

Accessible by every (mobile) device

Machine learning

Big data analysis

Remote access

Business Intelligence solutions

Artificial Intelligence

And much more...



CLOUD: Wat zijn de mogelijkheden?



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Containers

Q Search...

Start Stop Kill Restart Pause Resume Remove Add container

Name ↓↑	State ↓↑	Filter	Quick Actions	Stack ↓↑	Image ↓↑	Created ↓↑	IP Address ↓↑	GPUs	Published Ports	Ownership ↓↑
container-manager	running			data	container-manager:latest	2022-02-16 11:55:15	172.20.0.3	none	-	administrators
mqtt_broker	running			data	eclipse-mosquitto:1.6.13	2022-02-16 11:55:14	172.20.0.2	none	1883:1883 9001:9001	administrators
ntp	healthy			data	wagoanalytics/ntp:latest	2022-02-16 11:55:14	172.21.0.2	none	123:123	administrators
portainer	running			-	portainer/portainer:latest	2022-11-19 22:04:16	172.17.0.3	none	8000:8000 9000:9000	administrators
wago_PLC_PRG.oAnomalyDetectio...	running			-	wagoanalytics/onnx_classifier:latest	2022-07-26 12:17:46	172.17.0.4	none	3306:3306 33060:33060	administrators
wago_PLC_PRG.oGrafana.oGeneri...	running			-	wagoanalytics/grafana:latest	2022-07-26 12:17:13	172.17.0.2	none	5000:3000	administrators

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**CLOUD: Welke diensten
zijn er beschikbaar**

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CLOUD: Welke diensten zijn er beschikbaar



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Cloud Connectivity: Wat zijn de uitdagingen

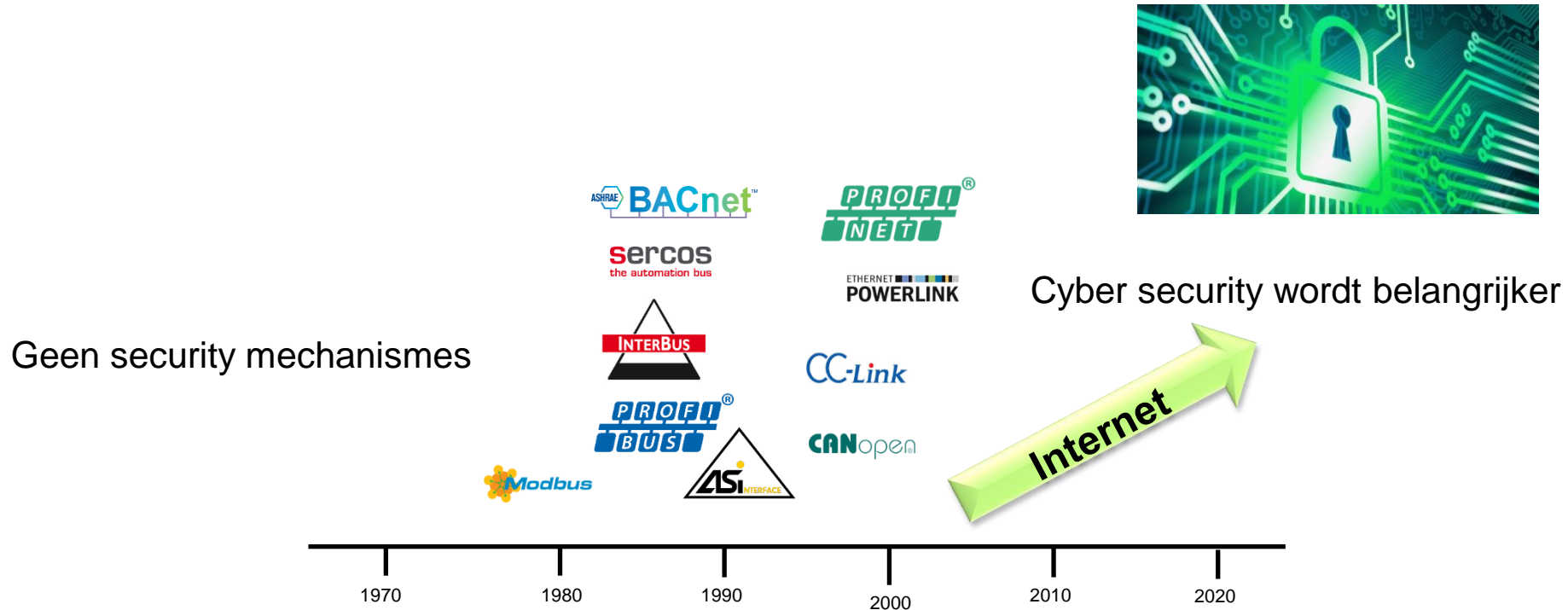


Cloud Connectivity: Wat zijn de uitdagingen?

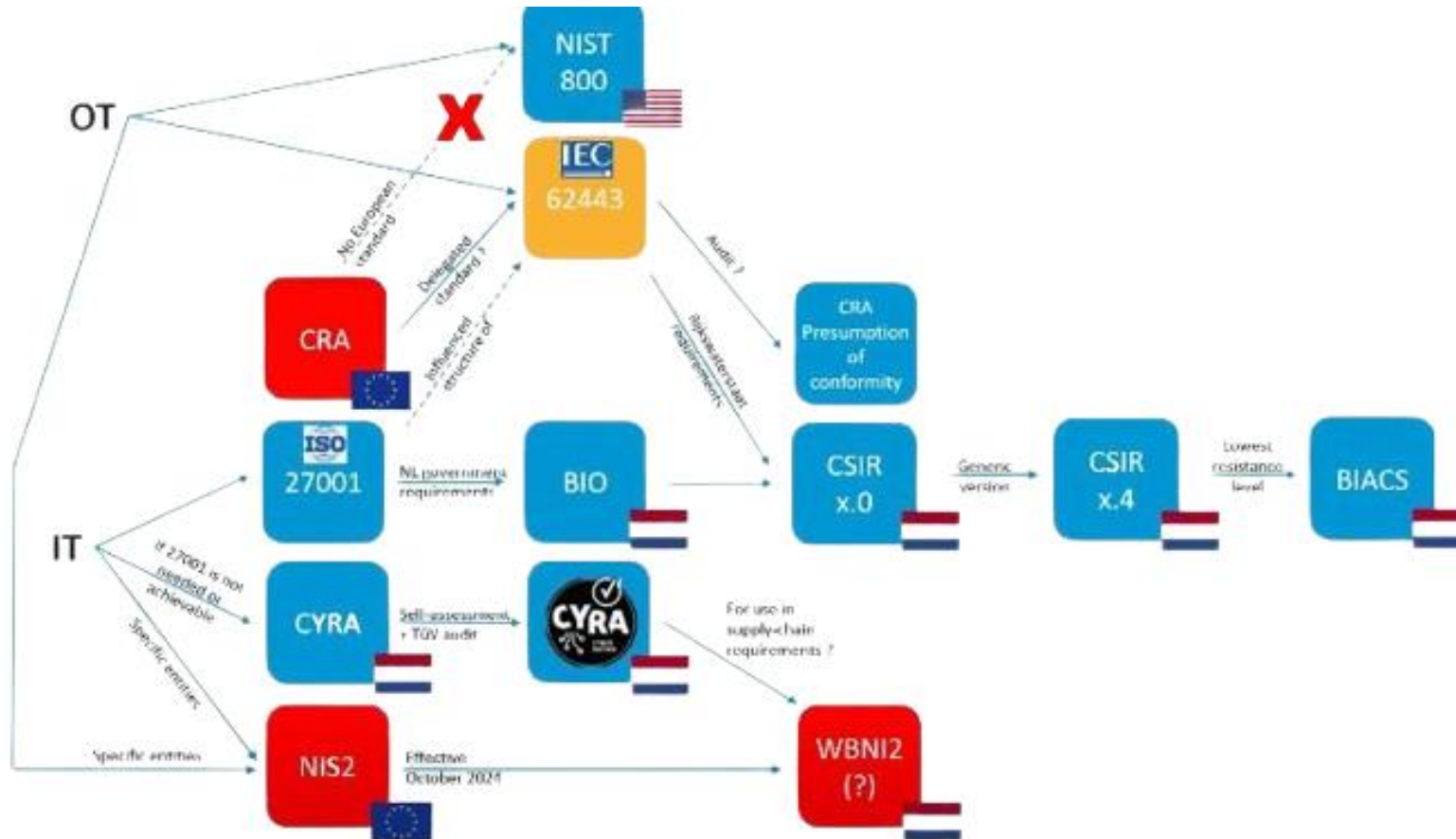
	IT (Information Technology)	OT (Operation Technology)
Omgeving	Dynamisch	Deterministisch
Focus	Data	Proces
Prioriteit	CIA (confidentiality, integrity & availability)	Process & AIC (availability, integrity & confidentiality)
Netwerk	bandbreedte	Latentie
Veiligheid	Cyber security	Safety



Cloud Connectivity: Wat zijn de uitdagingen?



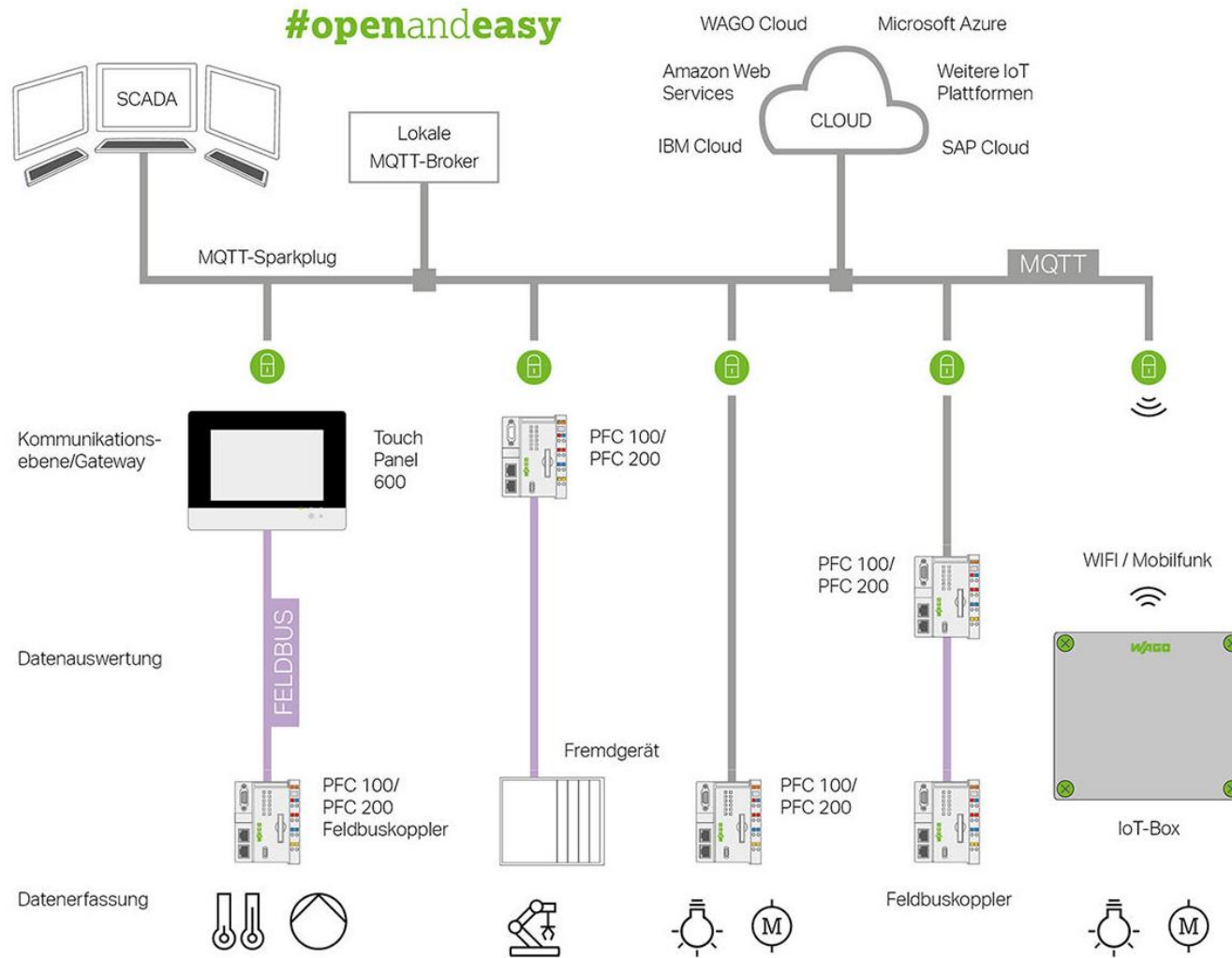
Cloud Connectivity: Wat zijn de uitdagingen?



CLOUD Connectivity: Hoe werkt het



Cloud Connectivity: Hoe werkt het?



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Cloud Connectivity: Hoe werkt het?

	MQTT	REST	OPC UA
Closed Firewalls	Yes	Yes	No
Low bandwidth & Low latency	Yes	No	Partial
Ability to scale	Yes	No	Partial
Standardized	No	No	Yes
QoS	Yes	No	Partial



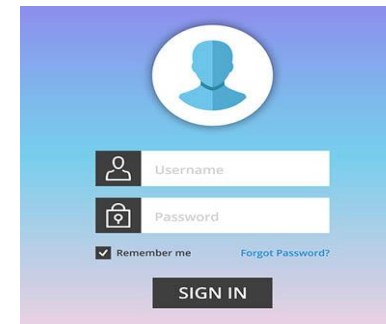
CLOUD security: **Encryption**



CLOUD security: Encryption

Security functionaliteiten

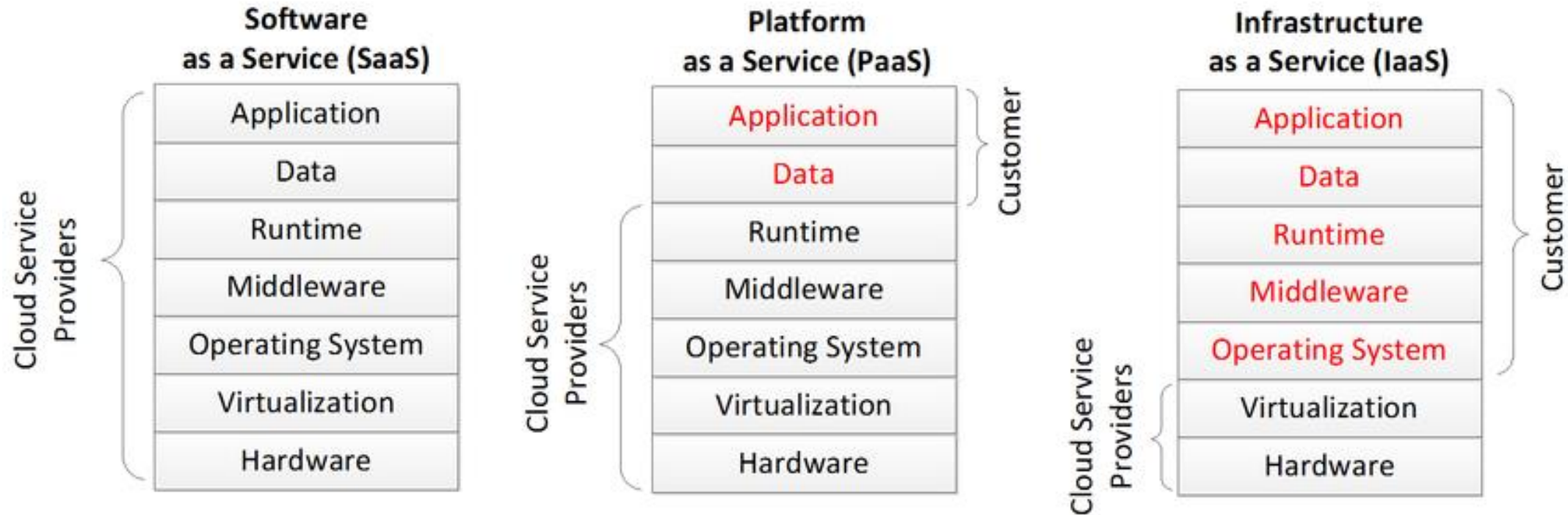
- **Network layer**
 - VPN
 - Firewall
- **Transport layer**
 - TLS / SSL
- **Application layer**
 - Username / Password



CLOUD security: **User agreement**



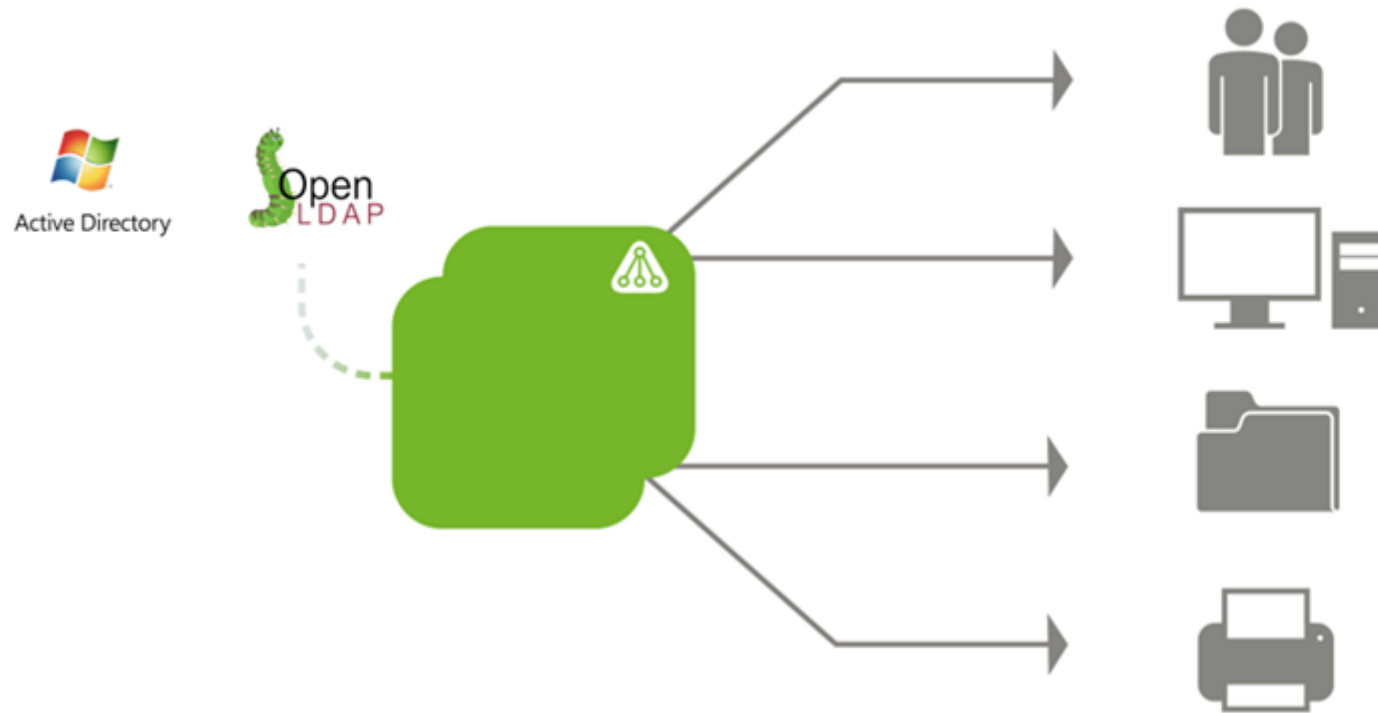
CLOUD security: User agreement



CLOUD security: **Password management**



CLOUD SECURITY: Password management



**CLOUD security:
Avoid storing sensitive
information in the cloud**



CLOUD security: Avoid storing sensitive information in the cloud

Important

- Use different (cloud) databases for example financial data
- Remove unused personal data directly
- Avoid storing passwords



Conclusie

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Conclusie

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The logo features the word "WAGO" in a bold, green, sans-serif font. A thick, green double-headed arrow is superimposed over the letters "W" and "A", pointing diagonally upwards and downwards.