ownCloud Infinite Scale

State of the Art Secure Content Collaboration

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ownCloud

ownCloud
Infinite
Scale

New units: Quettabyte and Ronnabyte

For the first time since 1991, in late 2022 new prefixes had to be defined:
To keep up with the steadily increasing
amount of data, Quettabyte and Ronnabyte were specified. One Quettabyte equals 10^{30} Bytes.

In words (short scale)	Prefix	Decimal	Power of ten	Exponent
nonillionth	quecto- (q)	0.000 000 000 000 000 000 000 000 000 001	10^{-30}	-30
octillionth	ronto- (r)	0.000 000 000 000 000 000 000 000 001	10^{-27}	-27
septillionth	yocto- (y)	0.000 000 000 000 000 000 000 001	10^{-24}	-24
sextillionth	zepto- (z)	0.000 000 000 000 000 000 001	10^{-21}	-21
quintillionth	atto- (a)	0.000 000 000 000 000 001	10^{-18}	-18
quadrillionth	femto- (f)	0.000 000 000 000 001	10^{-15}	-15
trillionth	pico- (p)	0.000 000 000 001	10^{-12}	-12
billionth	nano- (n)	0.000 000 001	10^{-9}	-9
millionth	micro- (µ)	0.000 001	10^{-6}	-6
thousandth	milli- (m)	1	10^{-3}	-3
hundreth	centi- (c)	0.01	10^{-2}	-2
tenth	deci- (d)	0.1	10^{-1}	-1
one	one	1	10^{0}	0
ten	deca- (da)	10	10^{1}	1
hundred	hecto- (h)	100	10^{2}	2
thousand	kilo- (k)	1 000	10^{3}	3
million	mega- (M)	1 000 000	10^{6}	6
billion	giga- (G)	1 000 000 000	10^{9}	9
trillion	tera- (T)	1 000 000 000 000	10^{12}	12
quadrillion	peta- (P)	1 000 000 000 000 000	10^{15}	15
quintillion	exa- (E)	1 000 000 000 000 000 000	10^{18}	18
sextillion	zetta- (Z)	1 000 000 000 000 000 000 000	10^{21}	21
septillion	yotta- (Y)	1 000 000 000 000 000 000 000 000	10^{24}	24
octillion	ronna- (R)	1 000 000 000 000 000 000 000 000 000	10^{27}	27
nonillion	quetta- (Q)	1 000 000 000 000 000 000 000 000 000 000	10^{30}	30

ownCloud Infinite Scale released!

Multi-year development effort originally start by CERN
Scalability through storage – stateless services connected with CS3 APIs
Secure Content Collaboration – platform for a modern Digital Workplace with best of breed applications

Architectures compared

ownCloud 10

LAMP-Stack (Linux, Apache,

MySQL, PHP)

Dependencies

Metadata in a database

Serial processing

Architecture (Server,

Database, Storage)

Infinite Scale

Microservices based on cloud native software written in Go

Infinite scalability

"Database-less" no state outside storage

Parallel and async processing

3-Tier-Architecture (UI, Services, Storage)

ownCloud
Infinite
Scale

Performance

Might depend on storage backend

Search across received shares and space membership will be magnitudes faster

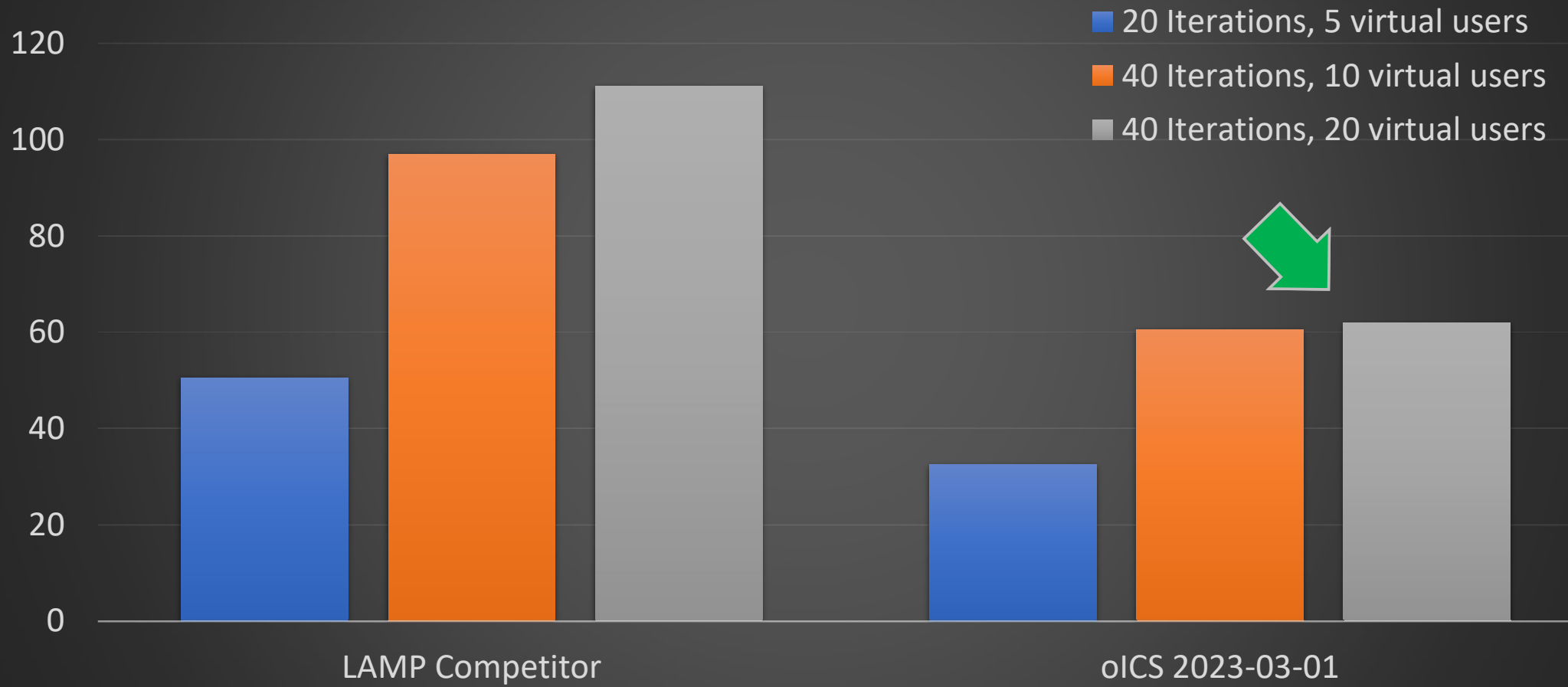Test was done with K6 and code can be found
https://github.com/owncloud/cdperf

Each iteration is an upload of 10 files with 1MB each

Avg. Request Duration [seconds]

Overall Time [seconds]

Legend:
- 20 Iterations, 5 virtual users
- 40 Iterations, 10 virtual users
- 40 Iterations, 20 virtual users

Y-axis: 0, 20, 40, 60, 80, 100, 120

X-axis categories: LAMP Competitor, oICS 2023-03-01
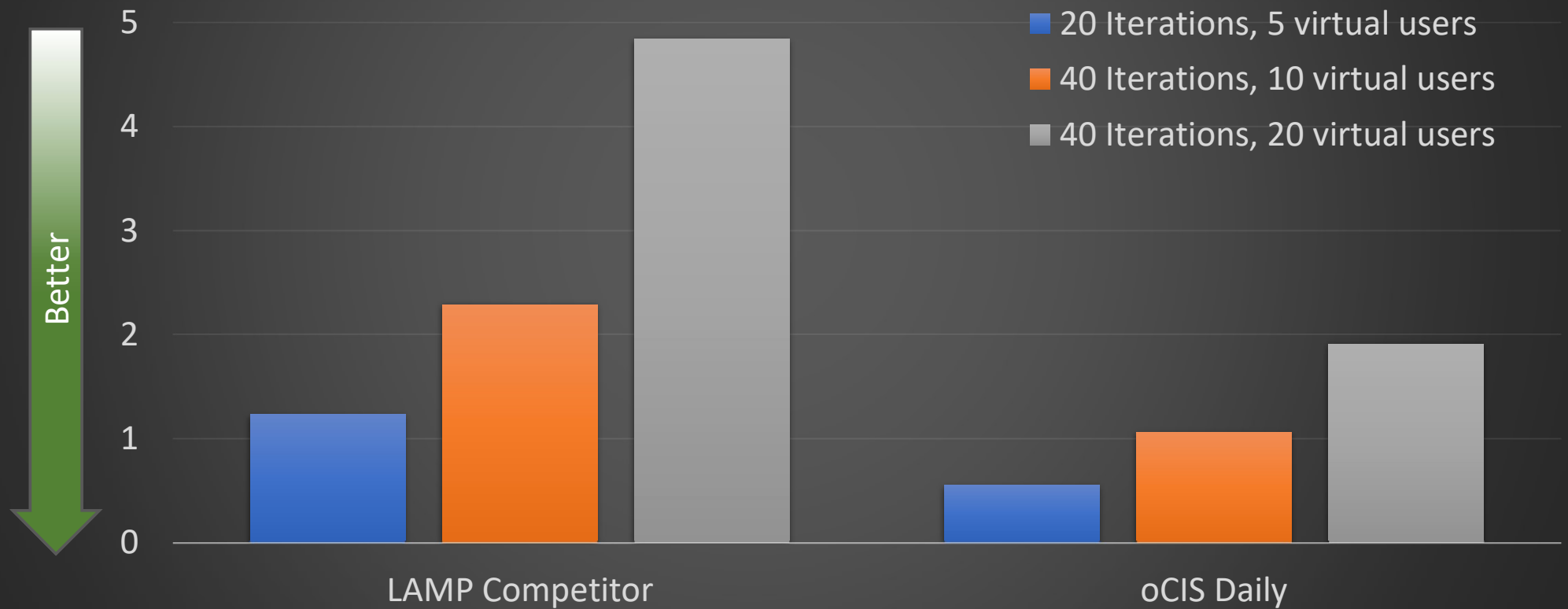
Available with ownCloud Infinite Scale 2.0

- Audit Log
- Spaces – people-independent data rooms
- Full openAPIs
- WebUI is using APIs only as do desktop and mobile apps including visibility for Spaces
- WOPI Integration for Office applications

- List of features in the factsheet:
  ownCloud_Infinite_Scale_Factsheet.pdf
  https://oc.owncloud.com/rs/038-KRL-592/images/ownCloud_Infinite_Scale_Factsheet.pdf

Spaces: more Compliance, more Options, easier Administration.

Spaces are a revolutionary new way of collaboration in modern companies, institutions or organizations.

Spaces boost collaboration, save money and significantly reduce administrative overhead while improving compliance, control and security.
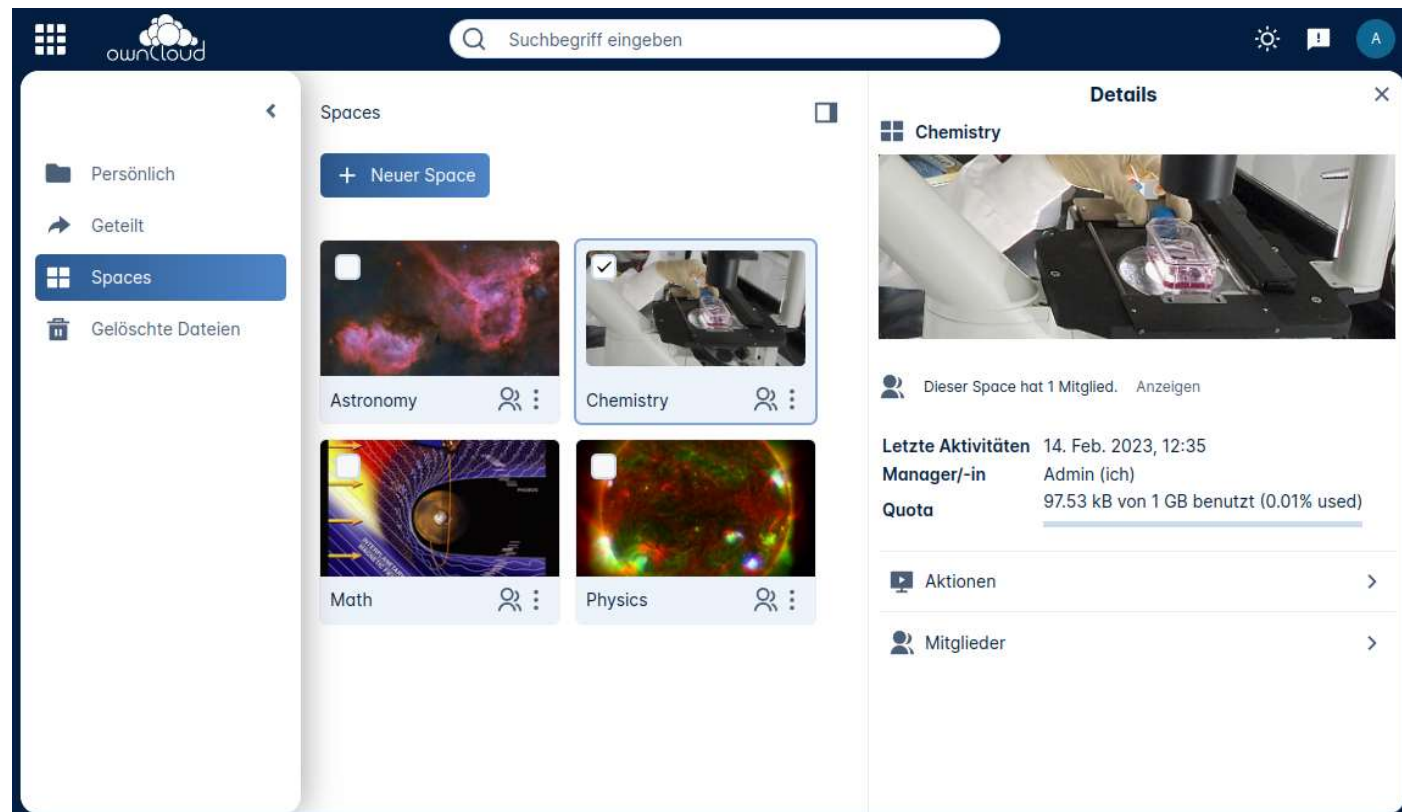
ownCloud Infinite Scale Roadmap 3.0

- Currently developed via daily builds, Apache 2.0 licensed
- Spaces in Android Mobile App and ownCloud Filepicker (for integration in digital workplace applications)
- Tags = Metadata add-ons which are saved with the file/folder
- Search and Full Text Search
- Deny Access for Folders in Spaces
- ICAP Antivirus scanning (Asynchronous after upload in quarantine zone)
- Tiles view
- File Firewall and Policy engine – overhead in the milli-seconds
- EOS Storage Driver supported
- Application Admins can't read or access user content including Spaces – but disable them to support

ownCloud Infinite Scale Roadmap 4.0

- Guest Accounts

- Federated Sharing via OCM

- Migration guide and tooling

- Ceph- and Spectrum Scale Storage Driver

- Metadata Framework

- Extension system for Server and Web UI

- Device data backup

- Ransomeware Protection and Prevention

- Activity UI / Recent Files

- Introduction of Workflows

- Full practice for Kubernetes deployment

ownCloud Infinite Scale 2024+

- Attribute based access controls

- File Lifecycle Management

- SMB Storage Driver

- Marketplace integration

- Encryption at Rest

- End-to-End-Encryption

- Replication and multi-site support

- Many ideas including yours!

Content life-cycle

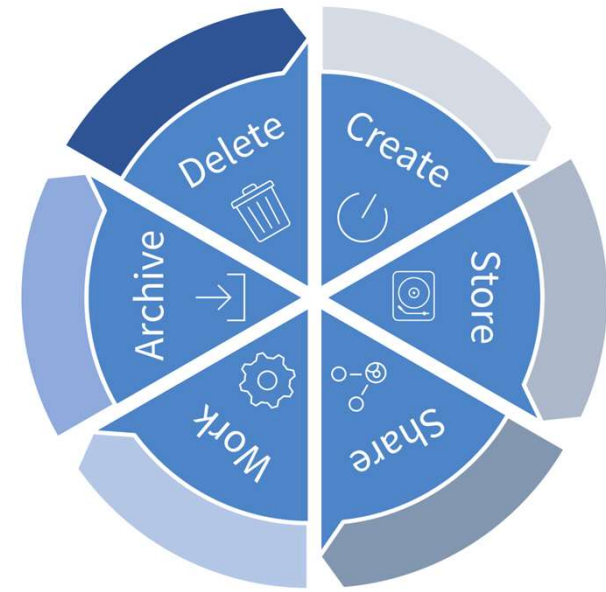Complete life-cycle management

Create – Store – Share – Work – Archive – Delete

To create and work with office content full integration with

      Collabora Online including True Secure View

      OnlyOffice including Forms and

      Microsoft Office

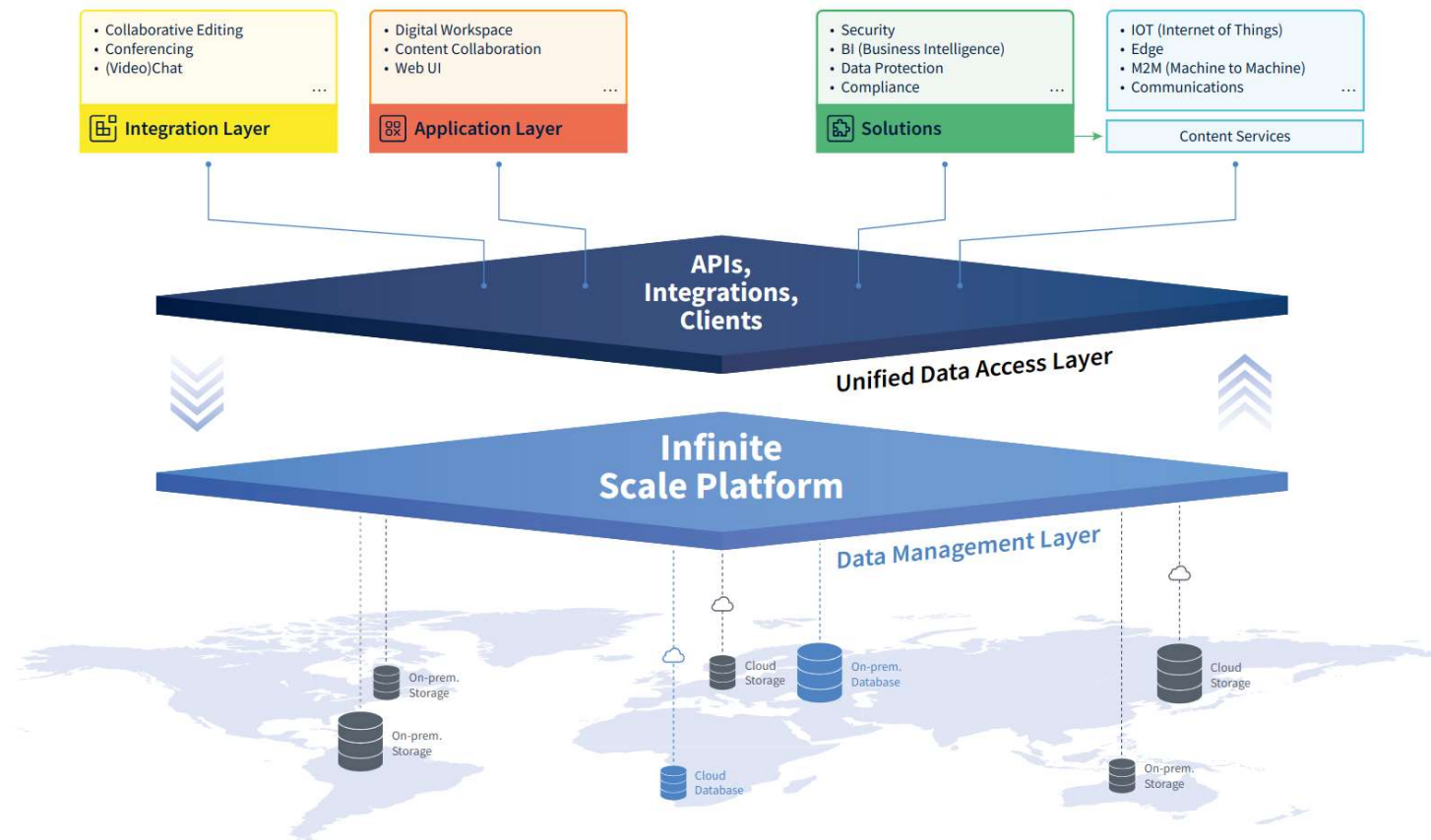# Microsoft Office Online Integration

- Office Online Server (on-premises) supported

- Microsoft Office 365 (cloud)

    - Microsoft Cloud Storage Partner Program

    - Talk to us: Solution for your own datacenter possible

- Soon: Open in Desktop

Ready for the Quettabytes: Create your Cloud Data Ecosystem with ownCloud Infinite Scale

ownCloud 10 Roadmap

- Version 10.12 in preperation, available in March 2023

- Highlight: Persistent Versions – Sharepoint experience

- New feature: Allow OIDC for all users, while guest user can login with basic auth

- Next: CS3 Sharing integration

- Next: Version approval API/workflow

- Next: file classification with LibreOffice and PDF formats

Upcoming Talks: APIs and Science/Education use cases

- Tomorrow, Tuesday, 9:15 AM
  Reinhard Schuller, Account Executive Science/Education: use cases

- Tomorrow, Tuesday, 2:15PM, Klaas Freitag, CTO ownCloud: CS3 APIs

Thank You!

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