



Nextcloud

# City of Geneva: Deploying Nextcloud to achieve digital sovereignty

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V I L L E D E  
G E N È V E

# Project overview

**Goal:** Providing a digital infrastructure for secure file exchange and cross-location collaboration

**Organization:** City of Geneva, Switzerland

**Branch:** Government

**Employees:** 4500

**Solution:** Nextcloud Files

# Key requirements

- Make file sharing available internally, externally and on the go (everywhere, anytime from any device)
- Remain in control over the data by storing it in Switzerland
- Proven security features and successful pass of an Audit
- Backups performed by the IT team, good performance when dealing with large files
- Source code available to avoid vendor lock-in, applications available for all platforms





## About the City of Geneva

The City of Geneva is a diplomacy and banking hub, headquartering the United Nations, the Red Cross, CERN (where the web has been invented) and many more international organizations.

It is the second most populous city in Switzerland and home of over 200.000 people. The administration has six municipal departments with a total of about 4500 employees and a yearly budget of about 1m euros to serve the public from 260 different locations. This ranges from daily administrative tasks, official document requests, supporting cultural events, to garbage collection, building & park maintenance and a lot more.



*Times change and processes should evolve in order to work efficiently. Employees should have the right tools for managing their workflow.*





## The Challenge

Employees relied on technology to cooperate daily with one another as well as with people outside of the organization who, sometimes, worked from a location in a different time zone.

This includes document exchanging across departments and services and communication with press.

The existing system (Novell file systems) lacked the required sharing capabilities to extend collaboration across departments and external parties. The limited sharing options were a blocker for exchanging files and using emails was an old, slow and inconvenient method.

## The Challenges

- Replace outdated tools with modern tools to help employees facilitate their work
- Keep data in Switzerland
- Find a cloud solution that is secure, compliant with the privacy law and performs well with large files
- Provide a reliable collaboration platform which ensures that data can still be available even in case of vendor bankruptcy

## Moving to the cloud: Pros and cons

At this point, the decision was that a cloud platform was the perfect solution. With it, sharing of confidential documents and large files sending and receiving was easy and files would always be available from anywhere. The open question was: public or private cloud? Let's have a look at the pros and cons of public cloud below.

### Pros

- Sharing internally and externally
- No more large emails
- No maintenance needed
- Outsourced backups

### Cons

- Security concerns
- Performance
- Not in control of data
- Not in control of backups
- Risk in case of vendor bankruptcy
- Updates of GUI without warning
- Risk of vendor price increases

The costs of public cloud were too great: unverifiable security and lack of control over the data as a result of the closed source code. Furthermore, Swiss privacy and security laws are very strict and documents needed to be locally hosted in Switzerland, not floating on foreign servers. Other concerns are related to pure performance, unexpected GUI changes and most importantly fear of losing data if the company fails or disappears.







## From ownCloud to Nextcloud due to security concerns

The City of Geneva considered three available open-source options, Alfresco, Seafile and ownCloud. In 2013 the City of Geneva implemented ownCloud. The quality and product evolution after version 8 took a not appreciated direction and the city of Geneva, after using ownCloud for four years decided on Nextcloud after a proof of concept and an extensive audit. By using open-source software, we still can act on the sources even if the company behind it disappears.

*After testing the solution in a Proof of Concept, it clearly appeared that Nextcloud was professionally developed and maintained. It was very stable and the security audit was excellent. It was prompt, professional and very efficient.*

## Security in Nextcloud

Nextcloud and the IT team of the City of Geneva collaborated on a Proof of Concept. A security audit by a third-party was conducted as well, showing excellent results.

You can find the results of the Nextcloud code audit by Swiss Kyos and more security related information on this page <https://nextcloud.com/secure/>

*I must take the chance to congratulate your team for taking care of one of the rare web applications I ever tested in my career that didn't yield any substantial result during a pentest.*

M. Dell'Ambrogio - Kyos SA

## The migration process, infrastructure & platform decisions

The City of Geneva hosts one Nextcloud instance on premise. Servers are in the ESX farm for their Virtual Machines, or on premises in brick and mortar buildings for physical servers and they use two different sites for redundancy servers. Nextcloud was deployed on a virtual ESX based server running a CentOS 7 with 8 cores and 32 GB RAM.

The installation uses Reverse Proxies to provide additional security. The team is currently studying hybrid cloud benefits to measure

potential productivity gains if they setup a Platform as a Service solution. This would free up time consuming tasks and the IT team, with about 100 employees, could focus on other projects.

The City of Geneva stores 1 025 000 files that make up an approximate of 1.2 Tb of data and 2200 active users use Nextcloud to collaborate internally or externally.

Administrators were very relieved to be able to manage users in a few seconds whereas it took up to 8 min to display users from our set of 4,500 objects in the ActiveDirectory under ownCloud.



*On paper it is supposed to be automatic but we all know how these things go in the 'real world'. To our surprise, the conversion went exactly as expected! We should have moved earlier.*



## Results

Sharing files with museums, designers or even distributing press releases is now being done in one-two clicks, as many sharing methods are available. A large email sending slowly to the recipient is no longer an issue as the mostly used sharing method is via link protected by a password with an expiration date set. This means stability and security at the same time while getting things delivered! Exchange of files via Nextcloud doesn't even require the recipient to have a Nextcloud account.

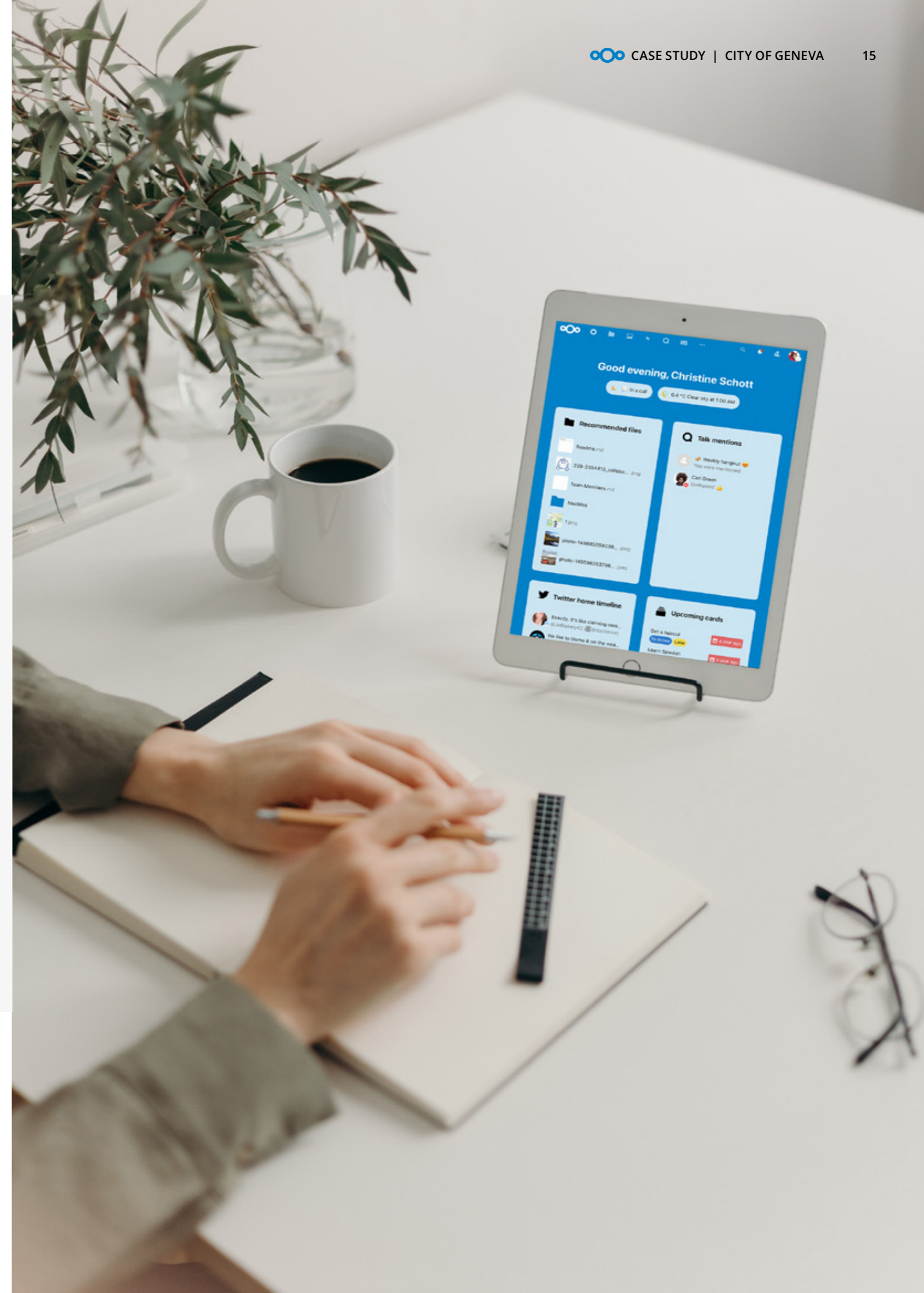
The performance when dealing with large media

files increased significantly.

Remote work is now enabled, a key benefit for many employees using the desktop client offline and online. The mobile clients are also used heavily, especially on tables using meetings.

Another benefit is the ability to share folders for uploads only. This is key for tender offers where candidates should be able to submit their documents to our platform in a folder gathering all submissions, while not being able to see submitted documents by the competition.

*It is as easy as accessing a webpage. The best about it is that people who receive the link do not have to install Nextcloud or anything, they just click the link!*





## The future of Nextcloud in the city of Geneva

Employees find Nextcloud useful, intuitive and easy to use. Getting things done using a single trusted environment is more productive than using several separate tools. As employees have a word on that and they find Nextcloud useful, more Nextcloud products will be tested in a Proof of Concept later on. At the moment Calendar & Contacts are being used, Kanban (Deck) is being considered and the performance of Talk is being tested.

## Signing up for Nextcloud Enterprise

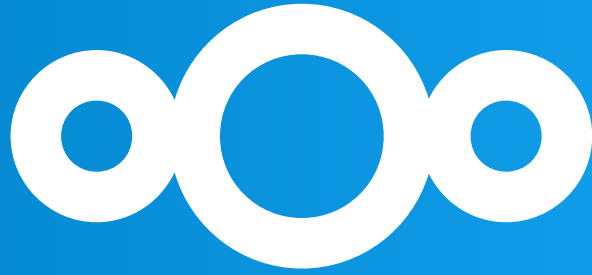
The administration of the City of Geneva decided to deploy Nextcloud Enterprise as this was a critical service and security, stability and reliability were very important. With Nextcloud Enterprise, there is no need for worries about compliance, security and stability issues. Nextcloud Enterprise means direct access to the engineers who build the product they rely on, so the city can allow their IT team focus on using their time on other aspects that really need their input.

Find out more about the benefits of Nextcloud Enterprise here:

<https://nextcloud.com/enterprise>



*We wanted to use Nextcloud Enterprise because we can have a voice and ask for new features. We also want to have quick resolutions to our problems rather than spending days tinkering with a product we don't know as well as the engineers behind it.*



Nextcloud GmbH  
Hauptmannsreute 44A  
70192 Stuttgart  
Germany

Email [sales@nextcloud.com](mailto:sales@nextcloud.com)  
Phone +49 711 252 428 - 90  
Fax +49 711 252 428 - 20

[nextcloud.com](https://nextcloud.com)