

A6 - Integration

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how we tackled some of the key challenges of a distributed application?

- transparency
- security
- speed
- complexity
- scalability

transparency

- The end user does not need to know the physical location of the contents.
- The requested contents might not be in the connected server so a global search is performed but the user does not realize it.

security

- Couple the Central Server and WS on the same server so there is not need to expose the WS on the internet.
- Keep in mind delicate data is being transferred (username, passwords).
- If we decided to expose the WS over the internet we would have to use HTTPs to encrypt the data sent, hence why we would need to pay for a SSL/TLS certificate.

speed

- For the download operation, it is likely that the server that the user is connected to, owns the content to download: hence why we made sure that the server checks if it owns the content first.
- If the server doesn't know the content then it will proceed with a call to the central server. The central server will then contact the server that owns the content.
- With that procedure we avoid having to call the central server when the server owns the content.

complexity

- Tackled through the RMI and JAX-WS technologies.

Scalability

- Many servers and clients can be added without compromising the overall functioning of the server. They can be hosted in different machines or in the same machine and different ports.

Future work / improvements

- When the server cannot contact the central server it should try to contact it again multiple times before giving up. Same goes for the client and the server.
- Open to suggestions