

Today's agenda

- Recap
- The Cloud
- Logic and Computing
- Networking

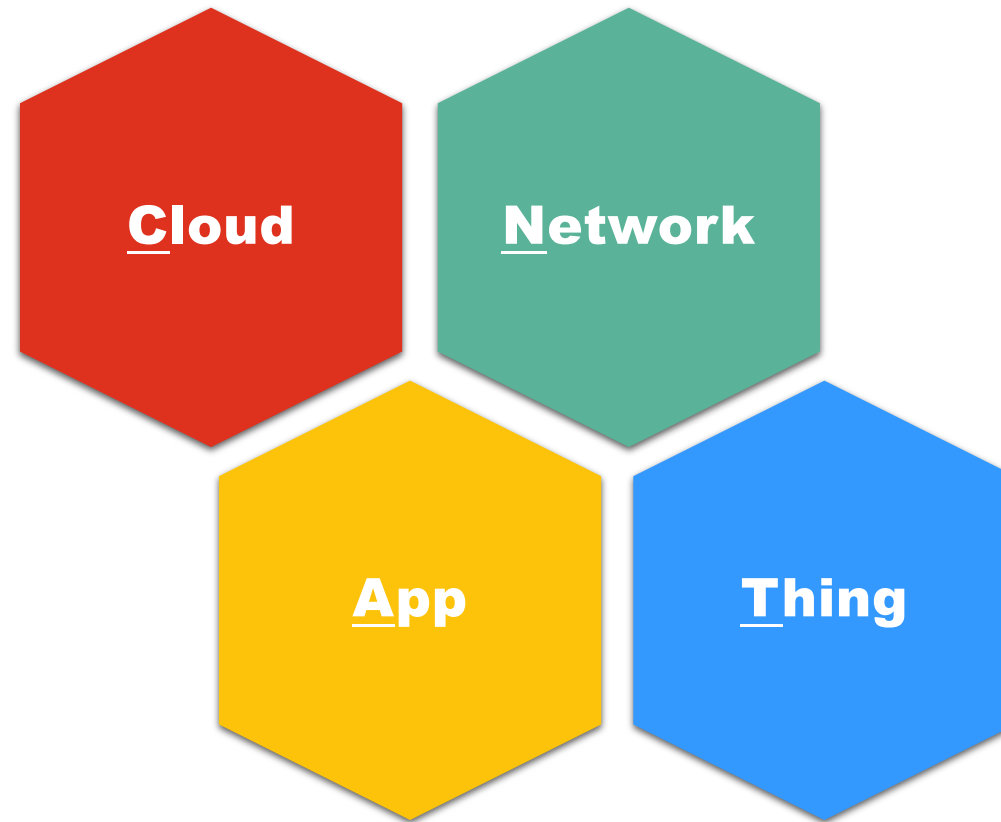
Recap of last week's lecture

- What is meant by the term IoT, what are the typical main components of an IoT system?
- What are sensors and what are actuators?

Key parts of IoT system



Key parts of IoT system



The virtual side of IoT

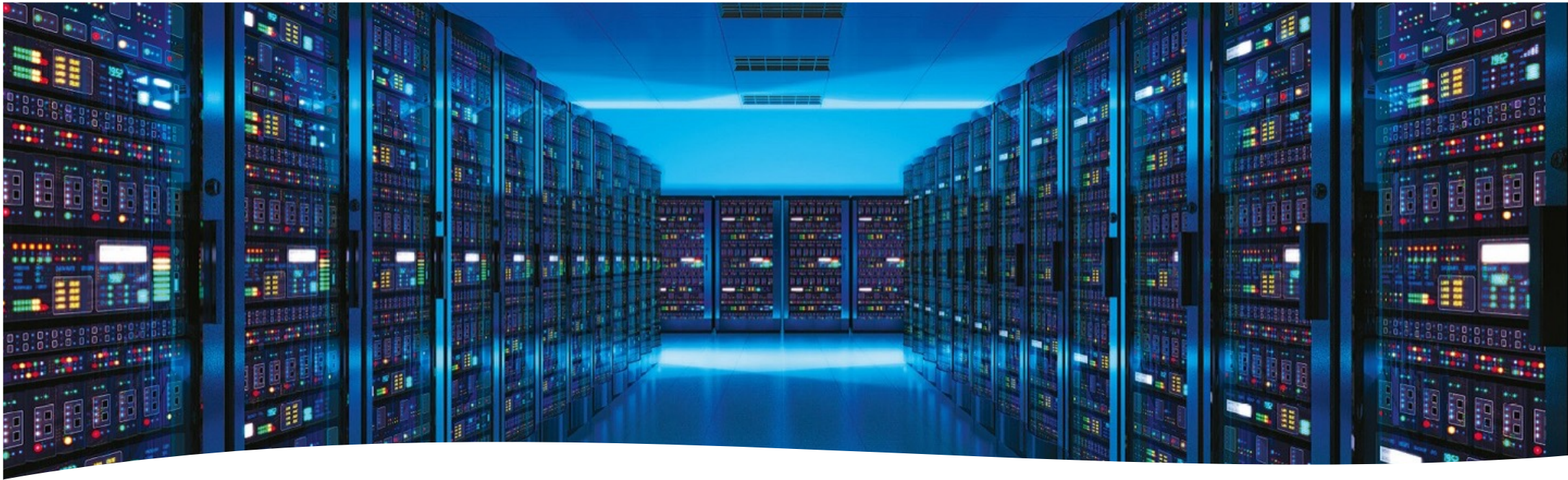
1/4 The Cloud

Salu Ylirisku

8.11.2021

Learning Goals

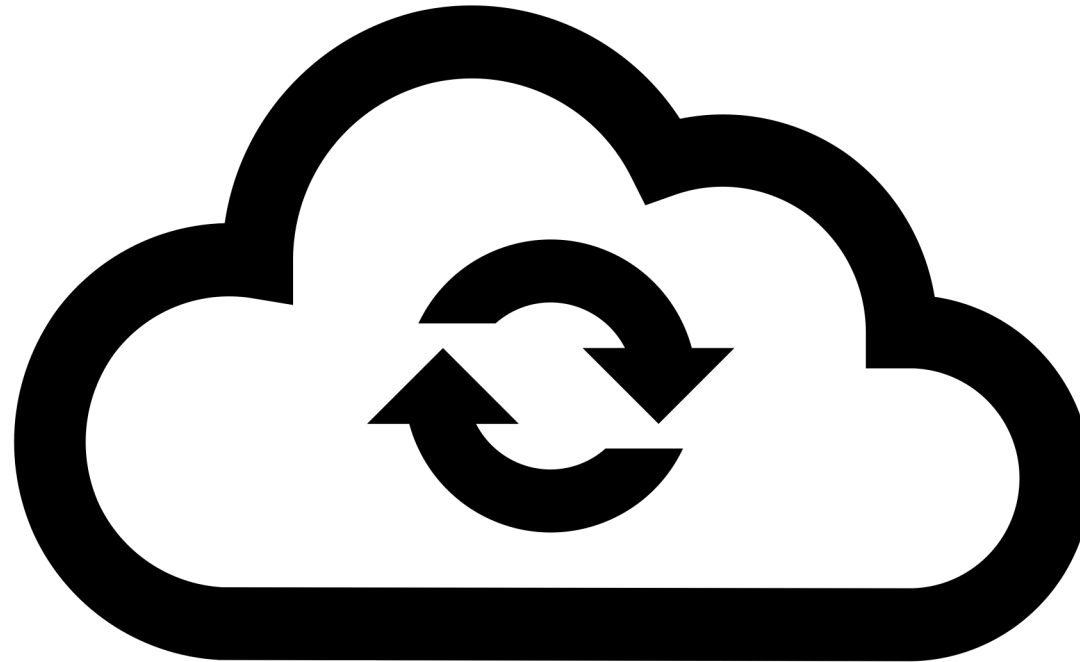
- What are cloud services
- What are the typical uses for cloud services
- What are the typical ways for IoT devices to connect to the cloud, and what is their practical difference



The Cloud

- Essentially an **over-simplified idea** of different kinds of online services.
- They run on data centers, which have servers (=computer that does not have a display) as the foundation

Cloud services?



Cloud services:

- AWS, GCP, Azure, IBM Cloud
- iCloud ()
- Windows 365 (Office 365)
- Adobe Creative Cloud
- DropBox / Google Drive (file storage) / One Drive
- E-Mails
- Streaming

Some cloud service providers

- IBM Cloud
- Microsoft Azure
- Google Cloud
- Amazon Web Services
- Alibaba Cloud
- Oracle Cloud
- Salesforce Cloud(s)
- Rackspace cloud
- VMWare
- Linode
- Kamatera
- Scalahosting
- Cloudways
- OVH Cloud
- Liquid Web
- Digital Ocean
- Vultr
- CloudSigma
- Open Nebula
- Pivotal

Use case: A web shop

What do you need?

- Website
 - Written content (jargon) + Product itself (that will be sold)
 - Photographs
- A host
- Database
 - Content management
- Handling the transactions
- SEO (Search engine optimization)
- Customers and relations management (CRM)
 - Chatbot and customer support

Use case: A web shop

What do you need?

- Website
 - Written content (jargon) + Product itself (that will be sold)
 - Photographs
 - HTML (hypertext markup language)
 - Heading, body text, image..
 - CSS (cascading style sheets)
 - Styling the content, managing the different screen sizes (=responsive design)
 - JavaScript (ES6, ECMAScript 2015)

Use case: A web shop

What do you need?

- A host
 - NEPPI Inc. – domain name (what users write on the browser)
 - neppi.store (bought it, OVH Cloud -> need to point to our server, DNS needs to know our IP address)
 - web hotel (storage for images and files, data base)
- Old solution:
 - Get a server that has a permanent address (IP)
 - Get the domain name ...

Use case: A web shop

What do you need?

- Database
 - Content management
 - Some web shop platforms give you ready-made CMSs (content management system)
 - MySQL (relational databases)
 - Who bought what (GDPR)
 - Who (customers)
 - What (product info)

Use case: A web shop

What do you need?

- Handling the transactions
 - Shopping cart (choosing products, paying)
 - Payment handling (payment gateway)
 - Squarespace, WooCommerce, ...
- SEO (Search engine optimization)
- Customers and relations management (CRM)
 - Chatbot and customer support

A-J's advice – Don't use WordPress

- Well firstly, the usage of browser memory is immense, as the media content is not optimised (compressed, resized) and that will result the loading pages to be huge (10's of MB's).
- This will result slowness and unnecessary traffic (because the content is loaded whether or not it is visible).
- Secondly, the way of developing the site is clumsy, as it is done with a complex UI that for example doesn't allow real time preview of the site.
- These are just my personal opinions of course, based on my own experience with WP.
- If terms as “Headless CMS” or “Jamstack” is not familiar and you want to get something out there, go with Shopify, Squarespace etc even though they are not free (WP is not free either is you count the cost of hosting and the time required to troubleshoot silly problems).
- If you want to learn, the course CS-C3170 Web Software Development is an awesome starting point.

Some web shop alternatives

Web Shop Platforms

- Wix
- Shopify
- Squarespace
- Zyro
- Volusion

Opensource Web Shop software

- WooCommerce
- Magento Open Source
- PrestaShop
- OpenCart

A web shop on own website: What do you need?

1. Domain name
2. Webhosting service (storage and database)
3. Web pages/web app
4. Payment gateway

What did we learn?

- What are cloud services
- What are the typical uses for cloud services
- What are the typical ways for IoT devices to connect to the cloud, and what is their practical difference