



Cloud Native Software Design

With an introduction to Mind Maps

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What you'll learn today

After this session, you will be able to:

1. **Understand** what a **mind map** is and how it can be used to organize thoughts about a concept
2. **Describe** different types of cloud native architecture
3. **Advocate** for more **open source solutions** in the cloud domain
4. **Leverage opportunities** for **inclusive** and **experience-driven** design that are catalyzed by Cloud Native Software.
5. **Identify** when a particular problem might **not** be suited for cloud native design

Agenda

1. Introducing Mind Maps

Quick overview of what a mind map is and how it can be useful in exploring a concept

2. Review high-level questions about Cloud Native

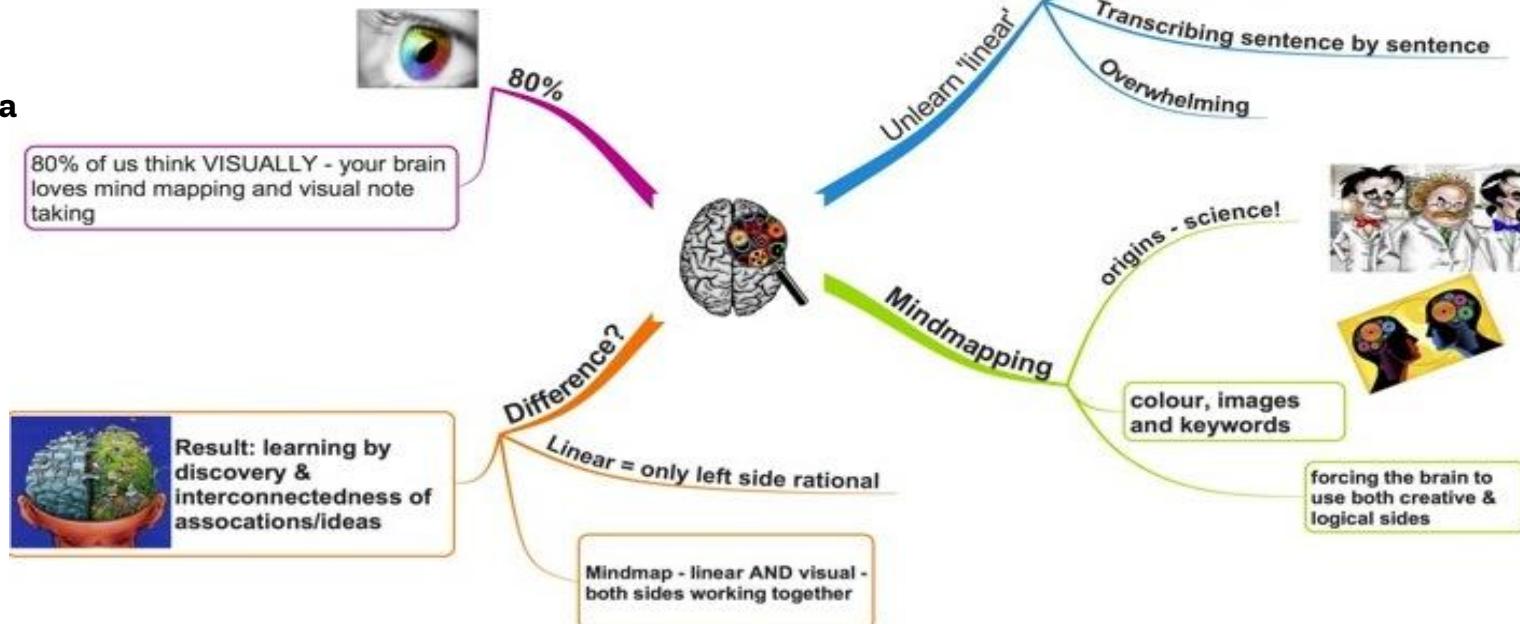
Ask the questions this presentation seeks to answer

3. Dive into the details of Cloud Native Architecture and Design

Explore how we might answer each of the questions about Cloud Native, by expanding the mind map.

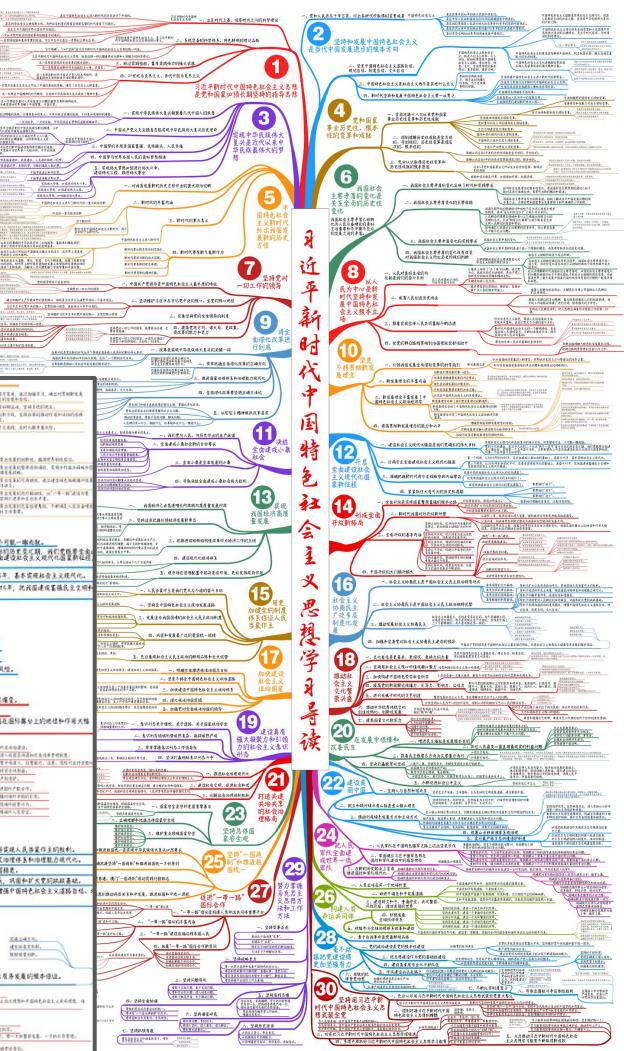
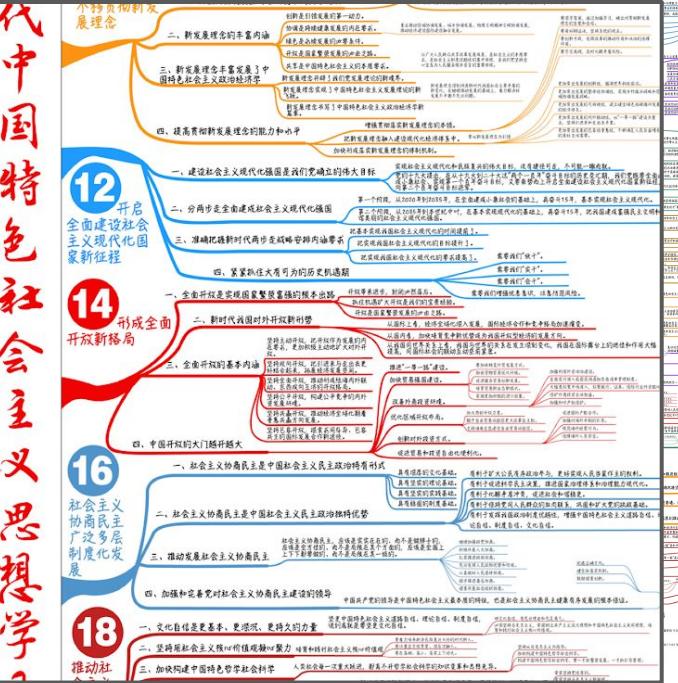
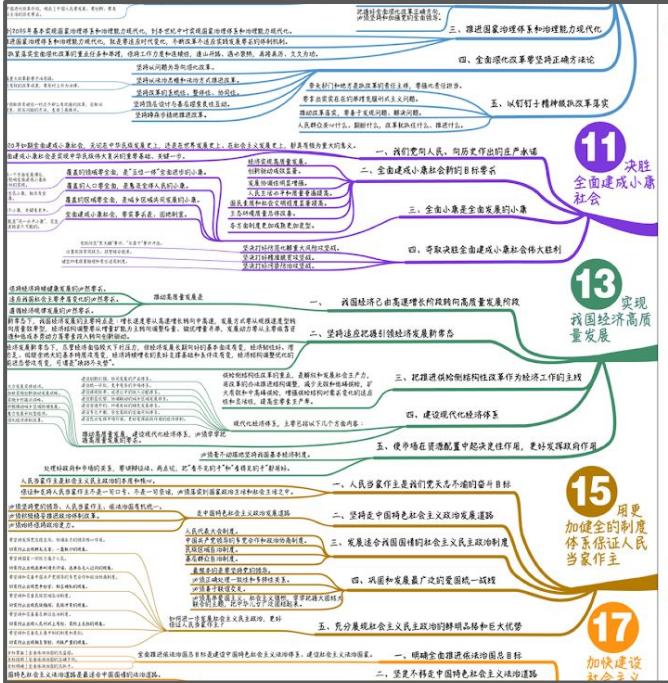
A mind map is a diagram that provides a hierarchical yet non-linear way to present and explore a topic.

WHY MIND MAP?



Get into the details and expand the concept! But be careful not to get too dense unless that's your intent.

This map is "Xi Jinping Thought of Socialism With Chinese Characteristics for the New Era", released by People's Daily



What is Cloud Native Architecture?

How does cloud native empower inclusive design?

Cloud Native Software Design

Opportunities for Cloud Native Open Source?

What is Experience-Driven Design?

When is cloud native not appropriate?

Cloud Native Software Design

What is Cloud Native Architecture?

Monolithic applications in
containers- "legacy"

Microservices- better use
of dynamic resources-
"evolutionary"

Serverless functions- the
essence of computing

Cloud Native naturally pairs
with efficient CI/CD pipelines

Cloud Native Software Design

Apache OpenWhisk

Is the Amazon
model open source?

Open runtimes and CI systems

Portable code standards-
not there yet

Can you run
your own
cloud?

**Opportunities
for Cloud Native
Open Source?**

Cloud Native Software Design

How does cloud native empower inclusive design?

Diverse behaviors/
user journeys

Improved
geographic reach

Better options for
user safety

Compute on demand
reduces resource usage

Collaboration is Cloud Native!

Cloud Native Software Design

What is Experience-Driven Design?

Design for behaviors and interactions, not state and captivity

Advisor as a Service

Supports offline paths and journeys

Can be integrated into legacy services

Experiment easily, change behavior often

More approachable through the cloud than through legacy methods

Cloud Native Software Design

What is Experience-
Driven Design?

When is cloud
native not
appropriate?

Low traffic, time sensitive tasks

Heavy state, light
interaction- not
cloud native

Don't decompose
interdependent functions!

Example- Applying Cloud Native to Making Music

Digital Audio Workstation in the cloud (like ProLogic)- legacy

Microservices- mixers, encoders, media service

Serverless- instruments that return audio, beat generators

Start with lyrics, or music, or a beat- different paths to a finished song

Localized instruments, services running around the world

Protecting the mix- use GitHub, IAM, or shared secrets

Collaborators don't need a computer, just a browser

Cloud models for music software

Cloud native empowers inclusive, worldly design

Making Music In the Cloud

Rethinking Music Making For The Cloud

Can't make all music in the cloud!

Specialists can focus on tiny services- instruments, filters, etc....

Music happens offline- creative offline work feeds into the compute services

Apply a cloud instrument or beat to a traditional track

Compose across time and geographic boundaries

Web latency blocks realtime improvisation

Don't break up a working band!



For more mind maps, and to track how this presentation develops into a conference offering, follow my GitHub at
<https://github.com/mvk-mozilla/Mozilla-mind-maps>

Thank You