Microservices: What, Why, When and How

Andrej Koelewijn // Product Manager // Mendix
Will Ma // Director Solutions Architecture // Mendix
Rom van Arendonk // Architect // Timeseries
Agenda

• Why microservices
• How do you use microservices
• Case study: Enexis Aansluitingen
• Remote Entities & Data Hub
What starts with architecture...
Often ends in spaghetti chaos...
Usually due to necessary shortcuts...
Increasing cost of change...
Almost impossible to repair...
How do you ensure long term agile architecture?
Start with productized components...
Add small autonomous teams...
not building architecture...
But city planning...
Teams/components
Independent Components
Independent Roadmap
Autonomous Teams
Independent Solution Architecture
Scale Development... And Infrastructure
Design thinking to determine components
Microservices @ Enexis

- Grid operator
- Provides infrastructure for gas and electricity
- Process Redesign
- Case Management system to manage infrastructure projects
- Transitional architecture
- Time-to-market
Results

• 12 Devs, 9 business product owners
• 3 months to deliver MVP
• Decentralized ownership led to best possible applications
• Small, clean apps which are easy to adapt and extend
• Independent scaling proved valuable
REST = HTTP

- Polling sync based on change date
- Custom change date to enable aggregates
- Automatic swagger contracts + example data
  - Developers
  - API Gateway
- Understand how to build REST
  - Resource first
  - Verbs
Versioning

- Versioning facilities in Mx
- Cross team orchestration
- Only consume production APIs
- N-2 API versions in production
Summary

• Basics for building microservices with Mendix are good

• Hardest parts:
  • Building the technical integration using rest or webservice
  • Knowing what is available for reuse
Simplifying data sharing
Anybody can use Enterprise Data

No-code Integration

Out-of-the-box integration patterns - drag and drop data into your app and retrieve remote data like local data in widgets and microflows.
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Up-to-date catalog
All published and consumed API automatically registered in the Mendix Data Hub.
Discoverable Enterprise

Enterprise Hub
- Environments
- Data
- APIs

Services
- Events
- Deeplinks

Mendix Studios

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Discover

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Deploy

Enterprise deployment environments

Mendix

Deployed App
- Data
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Discoverable Enterprise

Curate

Discover

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Remote entities

- Retrieve remote data with xpath
- Uses REST/OData
- No need for integration microflows
Link app and remote data

- Remote data is read only
- App data can be linked to remote data using associations
How do you use it?

- Publish data APIs using OData
- Deploy your app
- Find enterprise data
- Connect and use your data
How does it work?

**Consuming App**

- **Model**
  - [Model from database]
  - Name
  - Description
  - Search, New, Edit (default), Delete
  - Sort order (default)

**Publishing App**

- **Brand**
  - Name (String)
- **Model**
  - Name (String)
  - Description (String)
  - YearIntroduced (Long)
- **Published OData Service**
  - CarDB/CaDBAP/
  - Service name
  - CarDBAPI
  - Version
  - 1.0
  - Example of location
  - Http://localhost:8080/odata/CaDBAP/
Target use cases

**Show remote data**
Fastest way to build pages on data in other apps, just drag and drop remote objects on widgets and pages.

**Enrich data**
Workflow apps can easily associate remote data with local data to store enrichments.

**Microservices**
Build autonomous micro-services using cacheable remote objects.
Why is it awesome?

- Searching, paging and sorting of the box
- Supported in microflow retrieve activities
Demo time
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Q&A