

O'REILLY®

Software Architecture

16:50-17:35, 6 Nov / Hall A2

Architecture for Modular Frontend Applications

oreillysacon.com

#OReillySACon

```
std::cout << "Hello Berlin!";
```



Lothar Schöttner

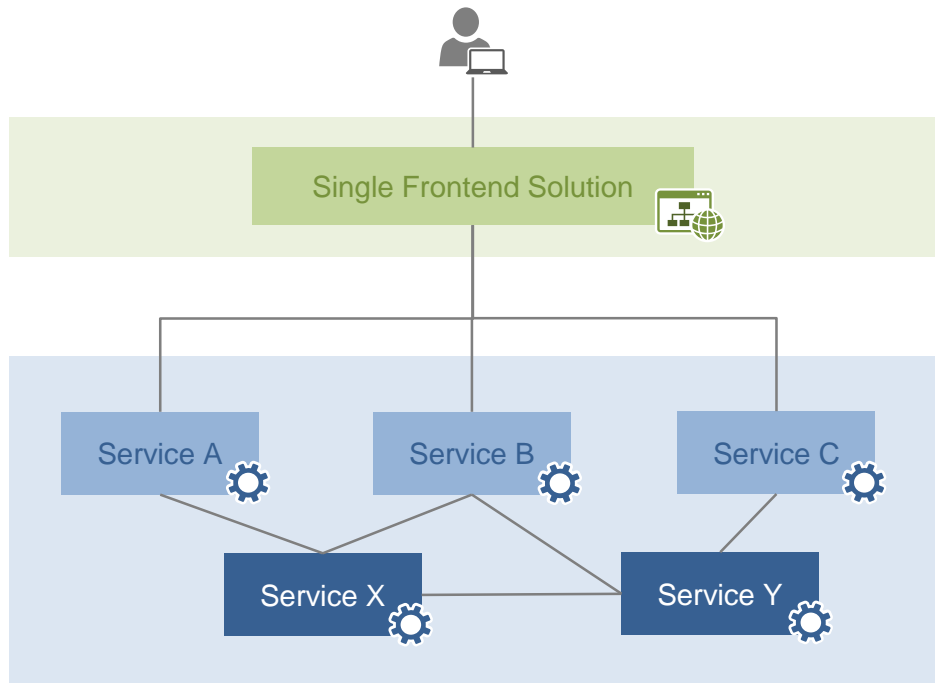
- CEO and founder of smapiot
- Worked for Accenture and Microsoft
- IoT and Security Architecture



Florian Rapp

- Solution Architect at smapiot
- Previously at ZEISS and innogy
- Digital Transformation Architecture

System Architecture Example



Frontend

- Monolithic architecture
- Integrated and consistent user experience
- Developed by one central team
- Larger deployment releases

Microservices

- Scoped around business capabilities
- Developed by autonomous teams
- Own development & deployment lifecycle
- Loosely coupled
- Technology independent

Examples

Distributed Web Applications

Microsoft Azure

Search resources

Dashboard + New dashboard Edit dashboard Share Fullscreen Clone Delete


New

- Resource groups
- All resources
- Recent
- App Services
- SQL databases
- Virtual machines (classic)
- Virtual machines
- Cloud services (classic)
- Subscriptions
- Azure Active Directory
- Monitor
- Security Center
- Billing
- Help + support

More services >

koukia
WEB APP


Running




Visual Studio Enterprise with MSDN
MONETARY CREDIT

CREDIT LEFT
121.73 CAD

DAYS LEFT
6





Koukia
APPLICATION INSIGHTS



aramdev

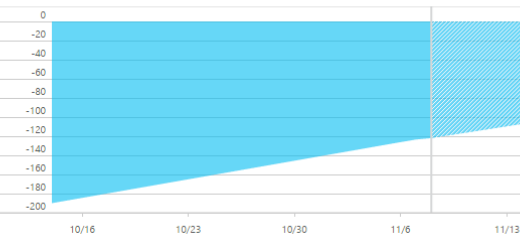
Available





aramdev

Burn rate
VISUAL STUDIO ENTERPRISE WITH MSDN




LEFT TO CAP **121.73 CAD**

STARTING CREDIT **190 CAD**


CURRENT CHARGES **0 CAD**

WorkoutCoachInsights
APPLICATION INSIGHTS



aramfunction
FUNCTION APP

Running



My messages Demo User

ZEISS

Home

Services

Software Center

Software Licensing

Technical Service

My Systems


Academy Metrology

Home / Software Center


Software Center

Software Download


Which software do you want to download?




ZEISS CALYPSO
The easy way to get from drawing to measurement.




ZEISS CALIGO
Specialist for freeform surfaces.




ZEISS PiWeb
Perfect control of all important data. Everywhere.



ZEISS colin3D
Software for optical 3D sensor systems.



ZEISS NEO insights
Easily visualize and analyze CT volume data.



ZEISS Reverse Engineering
Back to CAD model.

ZEISS AirSaver

ZEISS BLADE PRO

ZEISS CMM-OS

ZEISS GEAR® PRO

Portal v0.14.2

ZEISS International

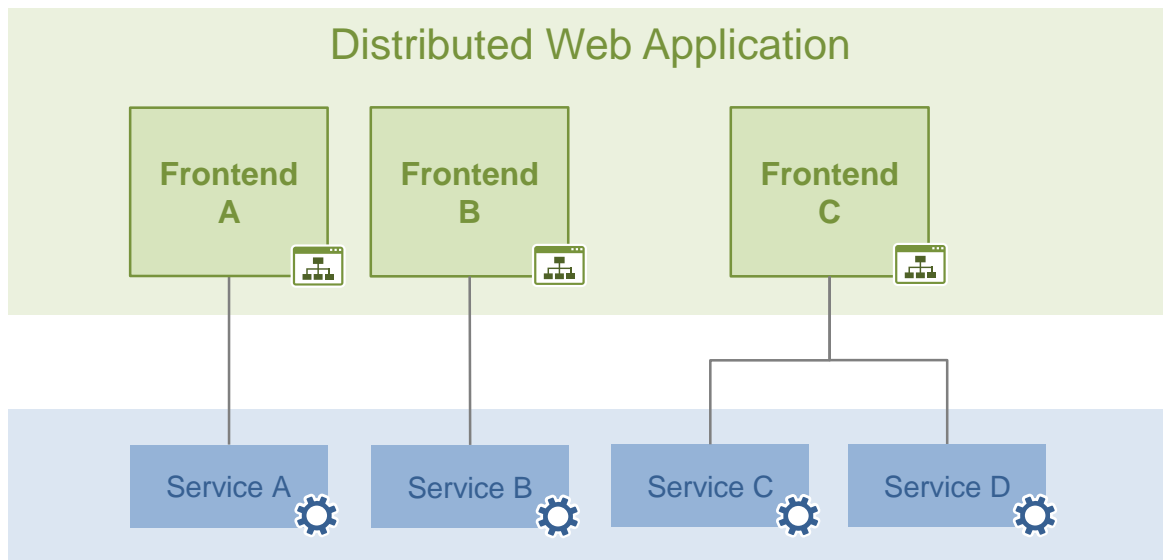
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★ Feedback

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Microfrontend Architecture

Microfrontend Architecture



Frontend

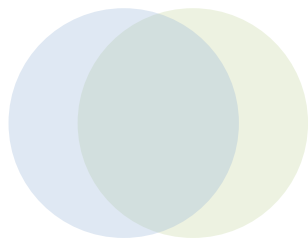
Microfrontend

Backend

Microservice

Desired Solution

Microservices Aspects



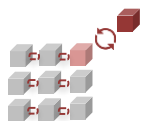
Aspects of a Monolith Approach



Best of both worlds for a **modular distributed web application**



Business capabilities
as **modules**



Loose coupling with
dynamic loading



Shared **architecture**
foundation



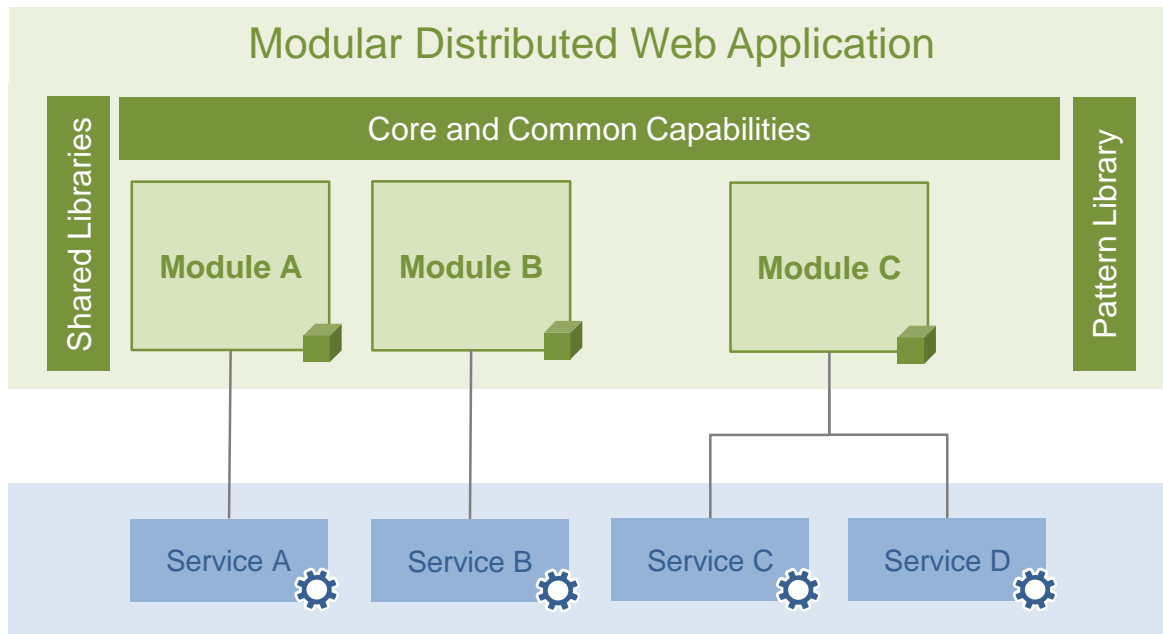
Consistent
UI & UX



Development by
independent teams

		Application Shell	
		NO	YES
Shared Libraries	YES	Framework shared libs only	„MODULITH“ Architecture Foundation, Design & Shared Libraries
	NO	Empty No basis	Layout Design only

Proposed Frontend Architecture



Frontend

- App Shell Component
- Business Capability Module

Backend

- Microservice

Principles and Challenges



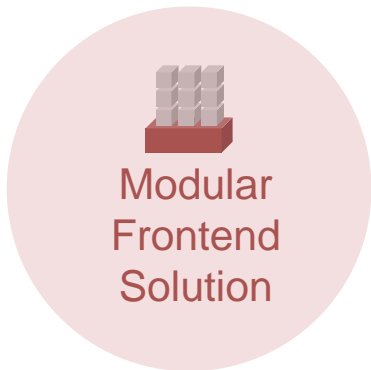
First class development experience
“setup of local dev environment in minutes”



Supporting Backend Services
e.g. feed for dynamic loading of modules



Comprehensive development tooling
e.g. scaffolding modules based on templates



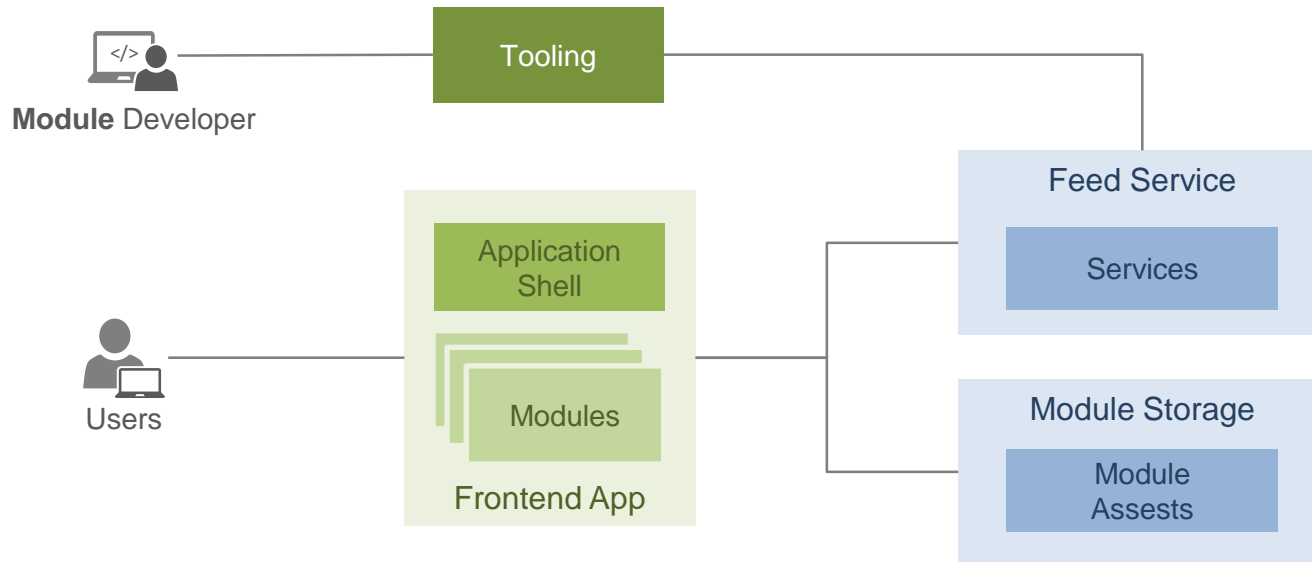
Support for multiple frameworks
e.g. React, Angular, Vue



Distributed development of modules

Realized Architecture

High Level Architecture



piral.io

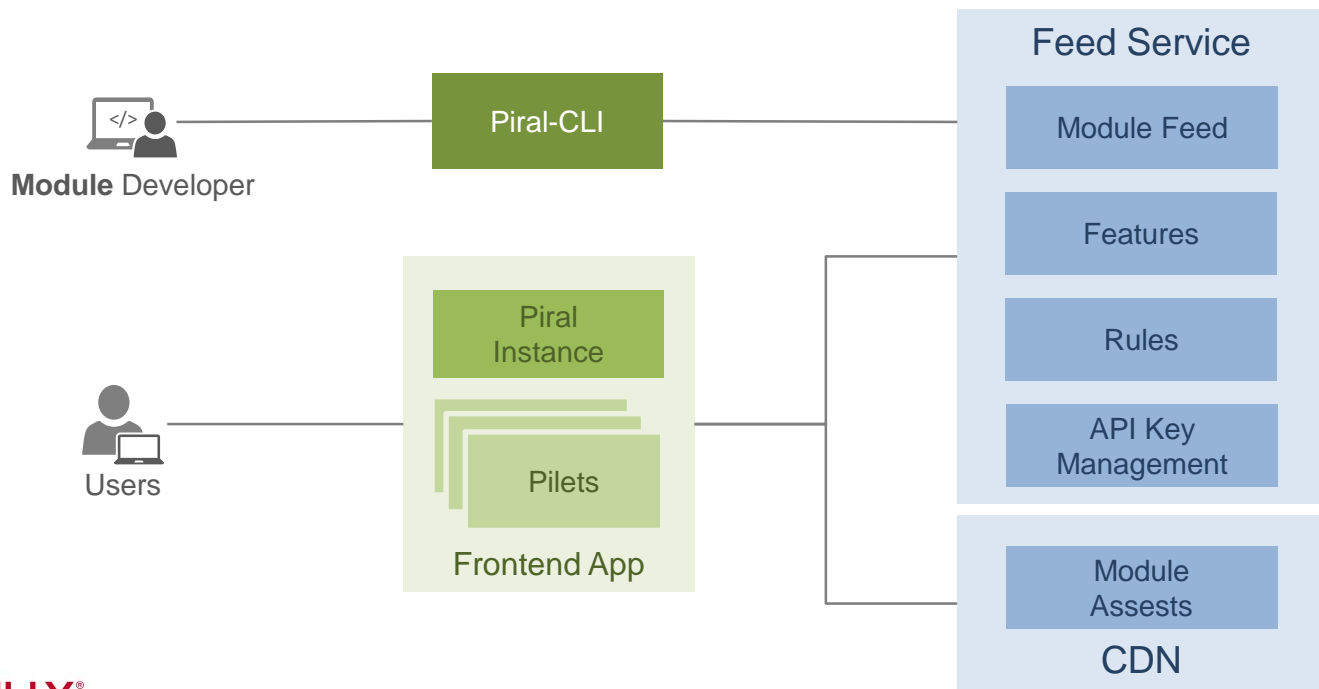
A framework for modular Microfrontends



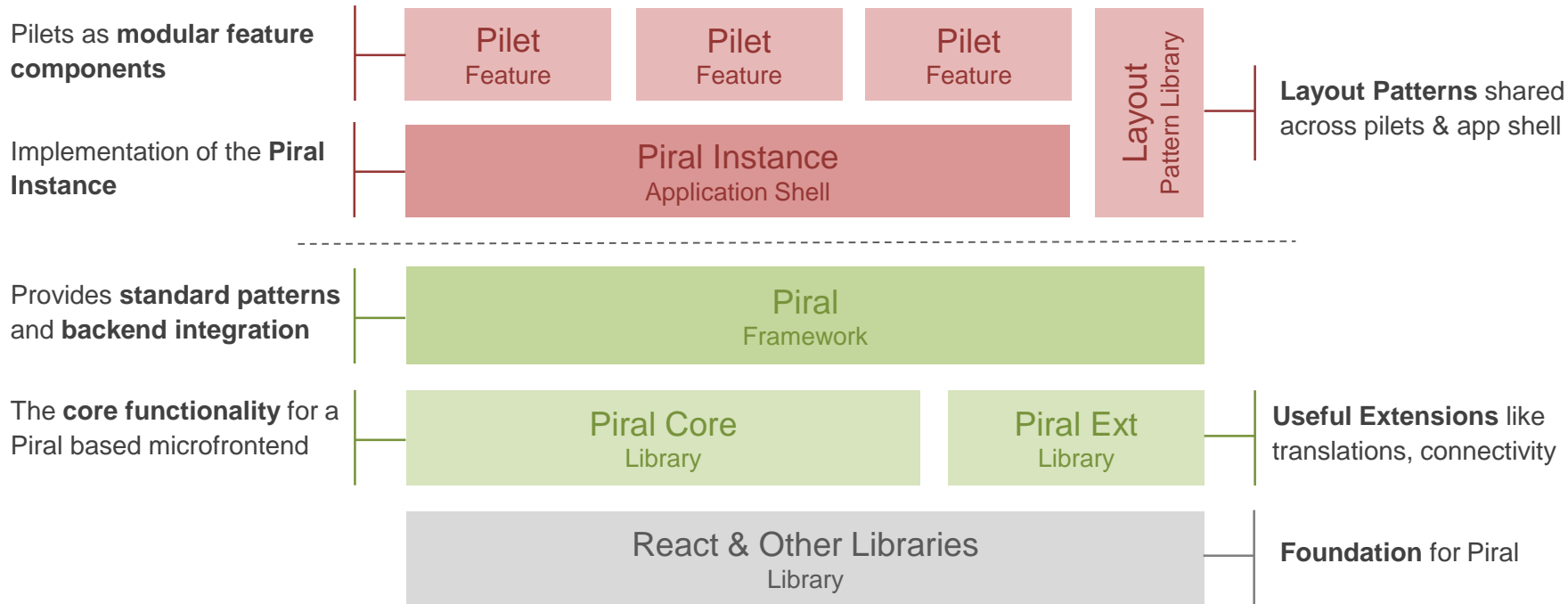
<https://piral.io>

<https://docs.piral.io>

High Level Architecture with Piral



Components of a Piral Frontend

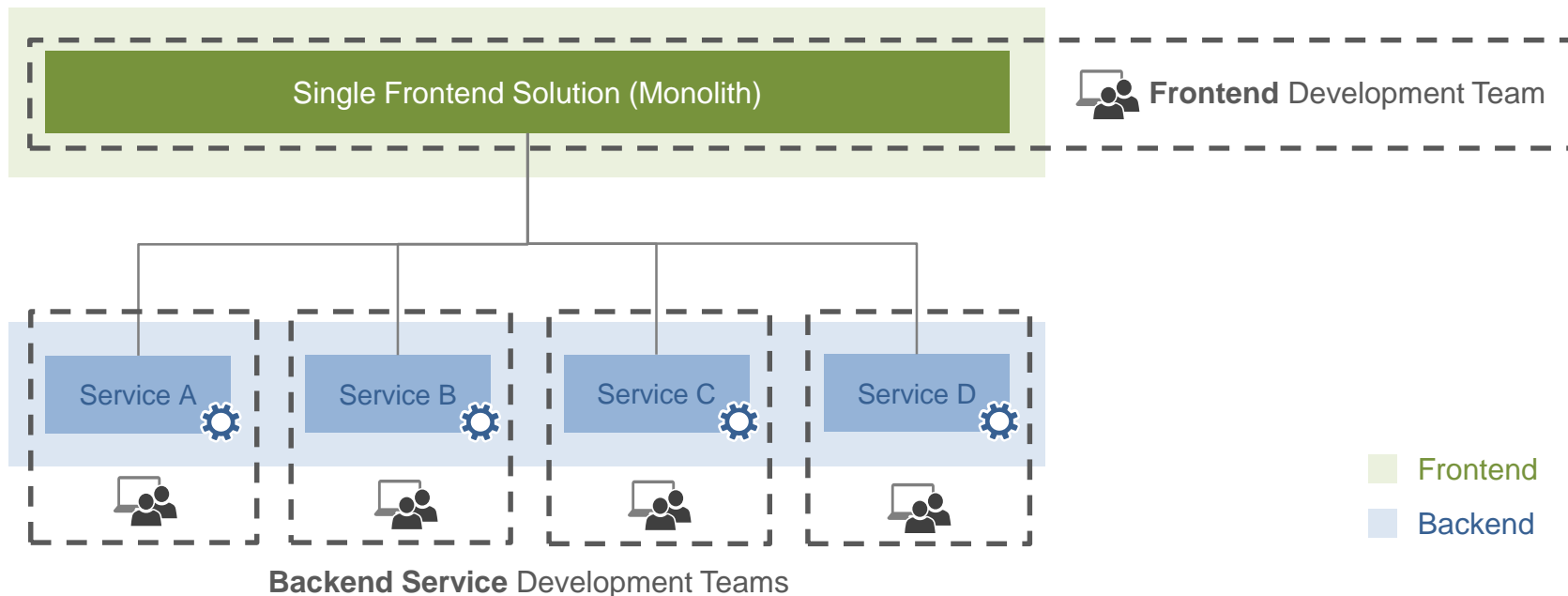


Demo

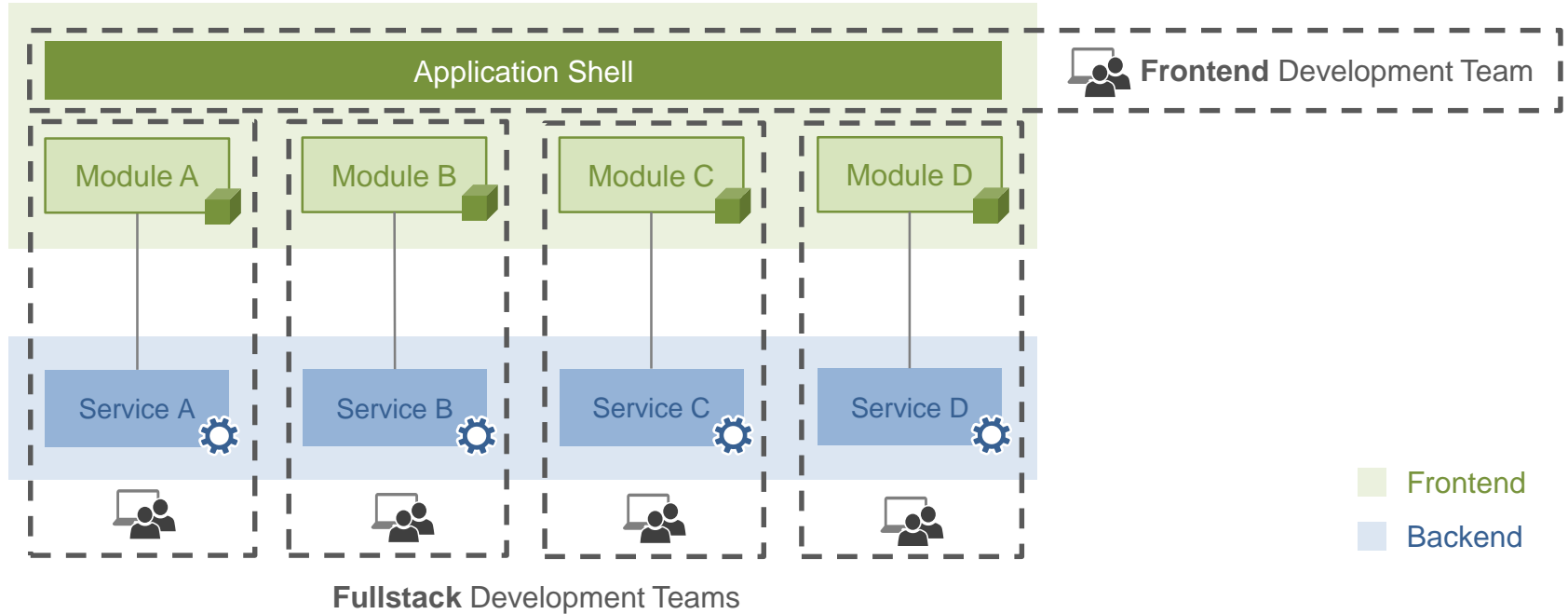
Piral Samples

<https://docs.piral.io/samples>

Development Approach



Development Approach

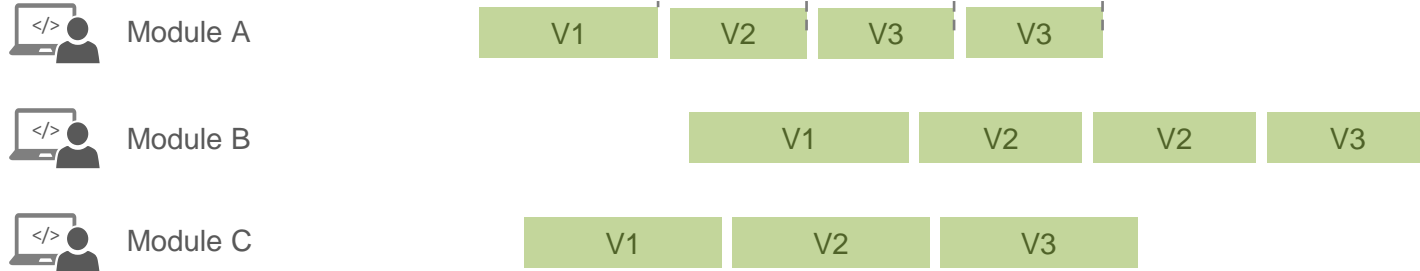


Development Lifecycles

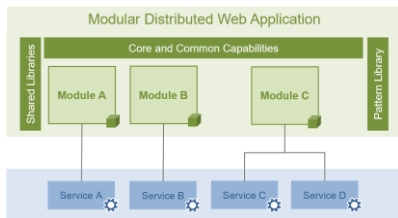
App Shell Development



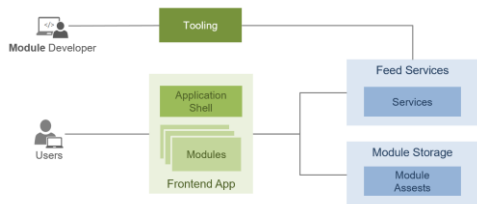
Module Development



Conclusion



Modular
Frontend
Architecture



Architecture for modular
Web Applications



Framework for
modular Web Apps

Rate today's session

Cyberconflict: A new era of war, sabotage, and fear

See passes & pricing

David Sanger (The New York Times)
9:55am-10:10am Wednesday, March 27, 2019
Location: Ballroom
Secondary topics: Security and Privacy

 Add to Your Schedule
 Add Comment or Question

Rate This Session

We're living in a new era of constant sabotage, misinformation, and fear, in which everyone is a target, and you're often the collateral damage in a growing conflict among states. From crippling infrastructure to sowing discord and doubt, cyber is now the weapon of choice for democracies, dictators, and terrorists.

David Sanger explains how the rise of cyberweapons has transformed geopolitics like nothing since the invention of the atomic bomb. Moving from the White House Situation Room to the dens of Chinese, Russian, North Korean, and Iranian hackers to the boardrooms of Silicon Valley, David reveals a world coming face-to-face with the perils of technological revolution—a conflict that the United States helped start when it began using cyberweapons against Iranian nuclear plants and North Korean missile launches. But now we find ourselves in a conflict we're uncertain how to control, as our adversaries exploit vulnerabilities in our hyperconnected nation and we struggle to figure out how to deter these complex, short-of-war attacks.

David Sanger
The New York Times

David E. Sanger is the national security correspondent for the *New York Times* as well as a national security and political contributor for CNN and a frequent guest on *CBS This Morning*, *Face the Nation*, and many PBS shows.



Session page on conference website

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Cyberconflict: A new era of war, sabotage, and fear

9:55 AM - 10:10 AM, Wed, Mar 27, 2019


Speakers

 **David Sanger**
National Security Correspondent
The New York Times

📍 Ballroom

Keynotes

David Sanger explains how the rise of cyberweapons has transformed geopolitics like nothing since the invention of the atomic bomb. From crippling infrastructure to sowing discord and doubt, cyber is now the weapon of choice for democracies, dictators, and terrorists.

 SESSION EVALUATION

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Thank You!



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More information about Piral:

<https://piral.io>

<https://docs.piral.io>