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IBM **Developer**

Securely customize your user experience using App ID

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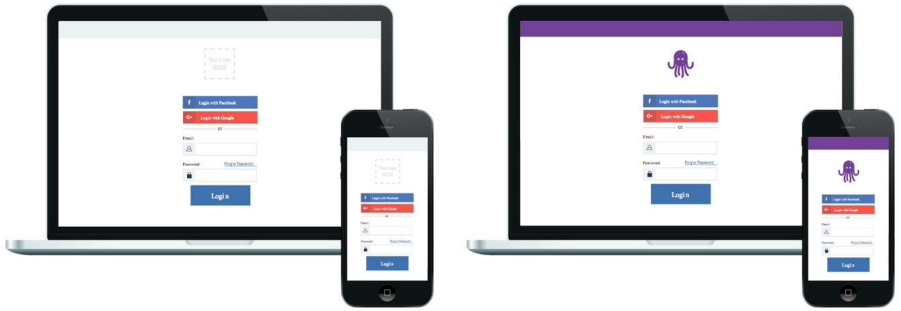
IBM Cloud

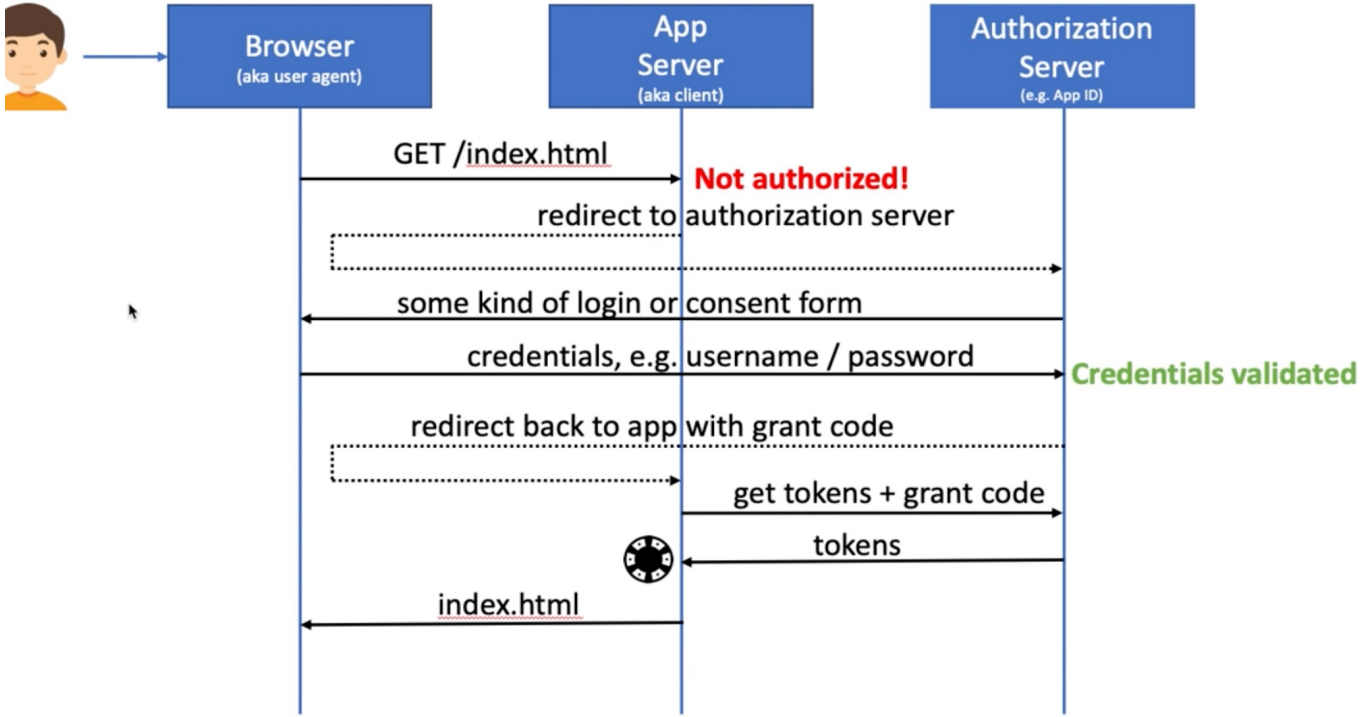
App ID

Use App ID to add authentication to your mobile and web apps and protect your APIs and back-ends running anywhere.

No code change or redeploy is required for your containerized apps.



Application Auth Workflow



IBM Cloud

App ID

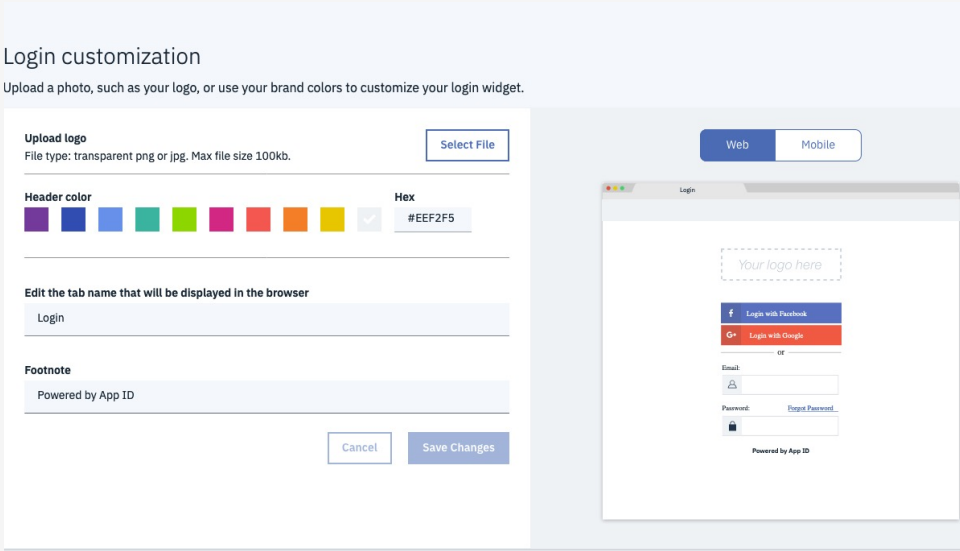
Features

1. **Authentication**

Use any identity provider, including enterprise, social, proprietary, or App ID’s Cloud Directory with multi-factor authentication (MFA).

You can also authenticate apps rather than users.

OAuth2 and OIDC compliant.



IBM Cloud

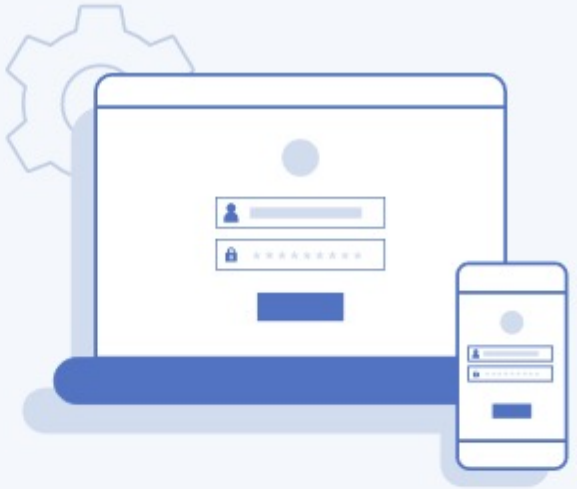
App ID

Features

2. **Profiles**

Build custom app experiences for your users.

Use profiles to store and access user data that you need to build engaging experiences, such as user app preferences.



IBM Cloud

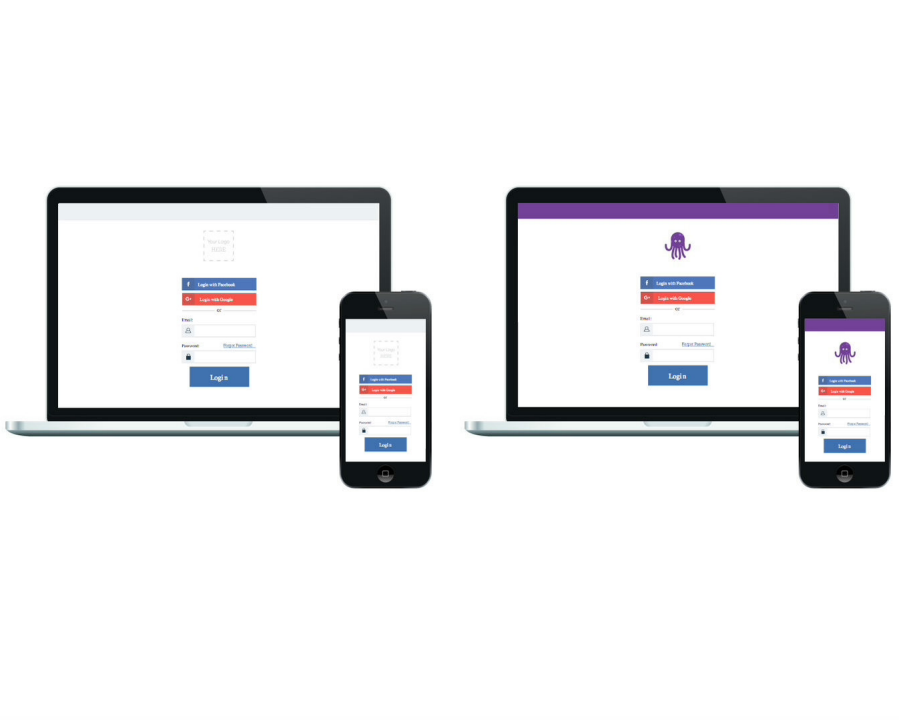
App ID

Features

3. **User Management**

Leverage a scalable user registry for your apps so users can sign-up and sign-in with an email and password.

Users can manage their own accounts through self-service flows like reset password and forgot password.



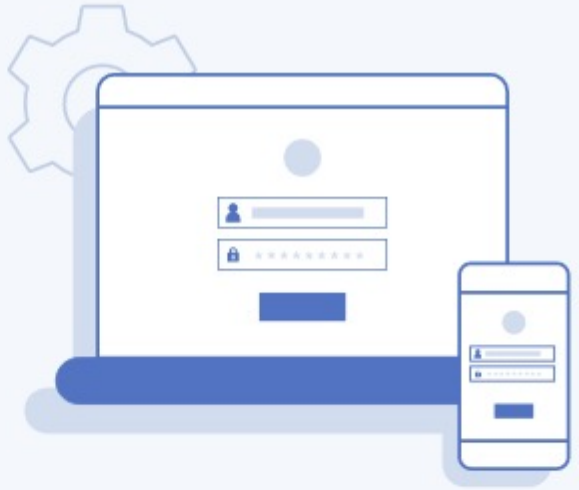
App ID

Features

4. **Identity as a managed service**

With App ID you don’t have to worry about setting up infrastructure for identity, ensuring geo-availability, compliance, availability etc.

App ID is also integrated with IBM Cloud e.g. with IBM Cloud Kubernetes Service, Cloud Functions, Activity Tracker and more so you can seamlessly embed identity into your apps.



IBM Cloud

Cloud Foundry

Platform-as-a-Service (PaaS), that ensures the fastest, easiest, and most reliable deployment of cloud-native applications.

Cloud Foundry ensures that the build and deploy aspects of coding remain carefully coordinated with any attached services — resulting in quick, consistent and reliable iterating of applications.

IBM Cloud

Cloud Foundry

Benefits of Cloud Foundry

1. Choose your own language
2. Fault tolerant
3. Extend apps with services – eg toolchains
4. Access control
5. Automatic placement

Cloud Foundry

Benefits of Cloud Foundry (Contd)

1. Automatic health management
2. Automatic routing
3. High availability
4. Automatic deployment scaling

Cloud Native

The cloud native approach to development and deployment of applications is one that takes full advantage of the characteristics of the cloud computing environment.

It’s a journey that not only requires changes to the processes and workflows, but also requires a modern cloud platform built with the technology and tools to support this new approach

Cloud Native

Cloud native has four core pillars:

1. Microservices architecture
2. Containerization
3. Automating with DevOps
4. Agile transformation

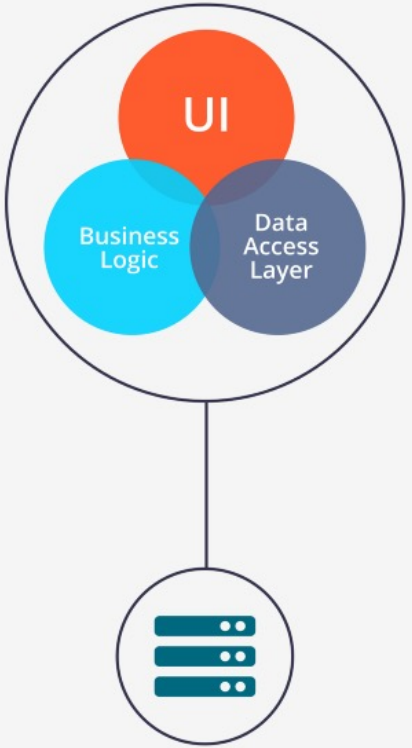
Monolithic Architecture

Traditional approach to development characterised by a single code base with multiple modules. Modules are divided into business features or technical features.

Monolithic applications have:

– a single build system, which builds the entire application and/or dependencies

– a single executable or deployable binary

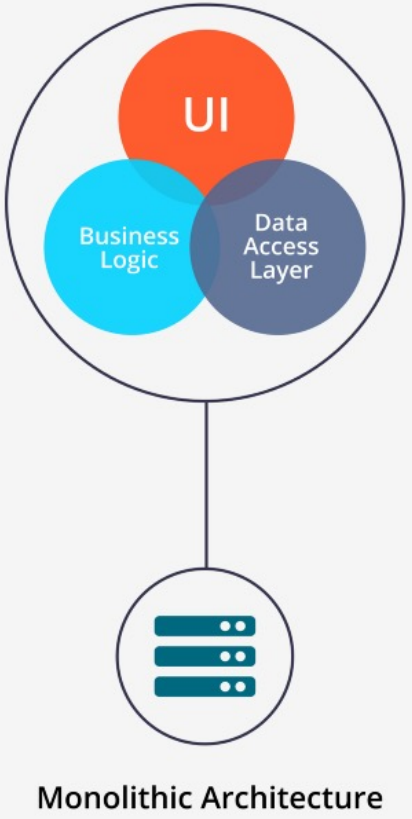


Monolithic Architecture

Problems with the Monolith

Some of the problems with the monolithic approach to development are:

- Large single code base
- Tightly coupled and interdependent
- Scaling becomes challenging
- CI/CD becomes complex



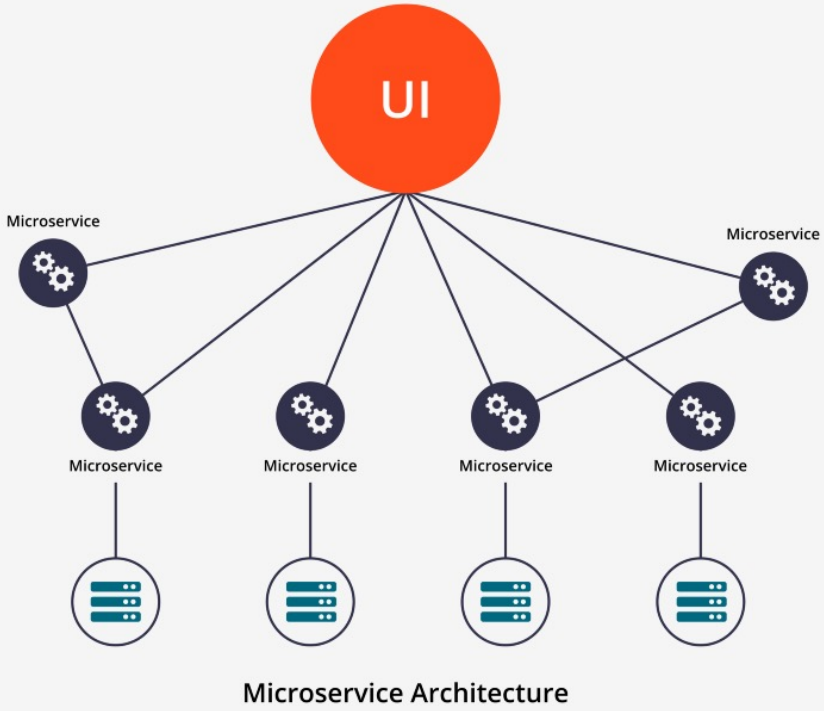
Monolithic Architecture

Microservices

An architectural style that structures an application as a collection of services.

Each microservice:

- Is organized around a business capability
- Has a defined interface to communicate with other services
- Can support a different technology stack
- Can support a separate team of developers

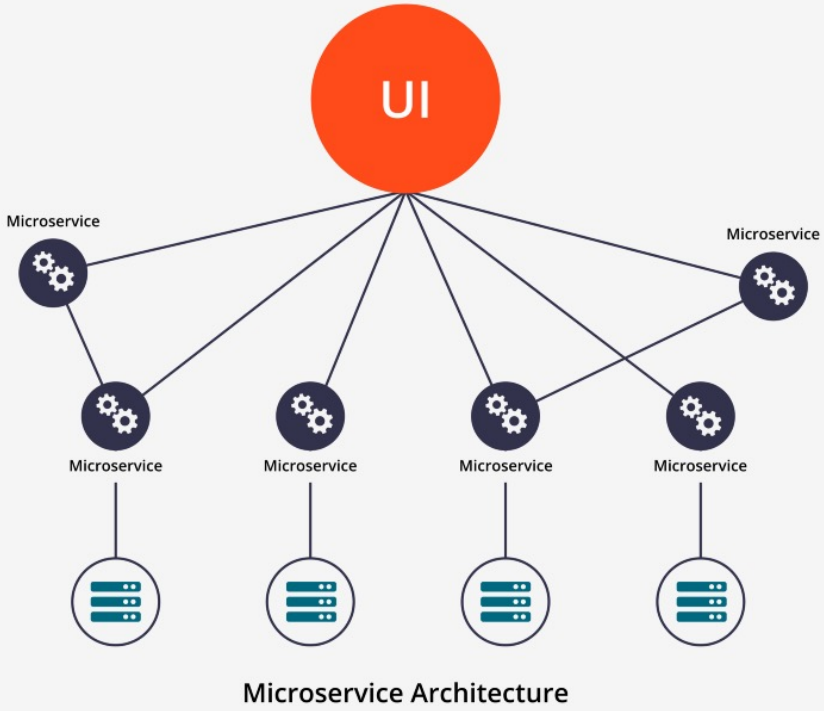


Microservice Architecture

Microservices vs Monolithic

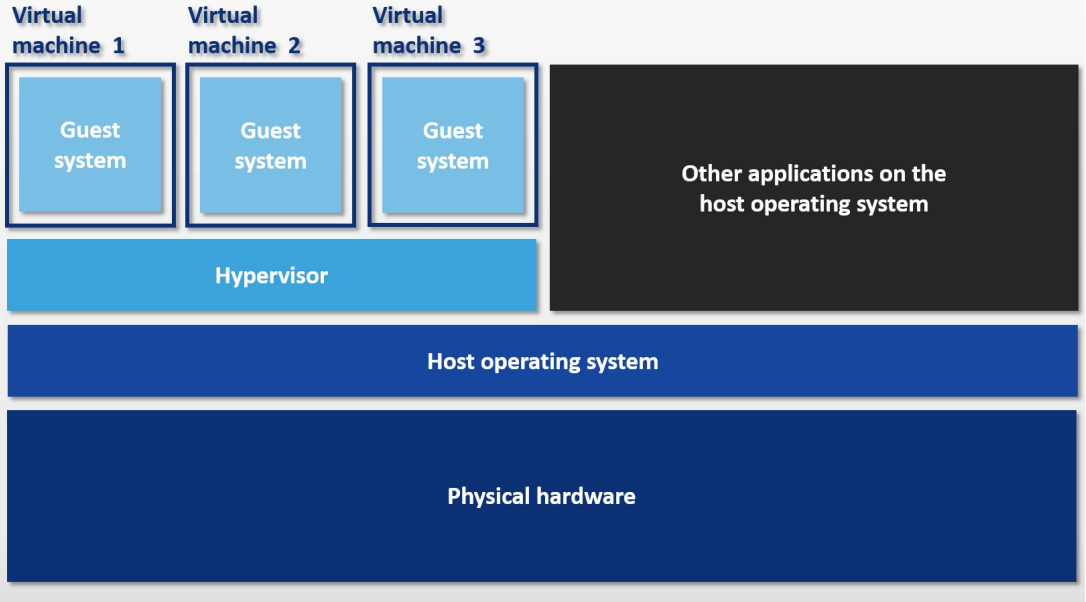
Some of the challenges of monolithic applications can be solved with microservices, which are:

- Highly maintainable and testable
- Loosely coupled
- Independently deployable



Virtual Machines

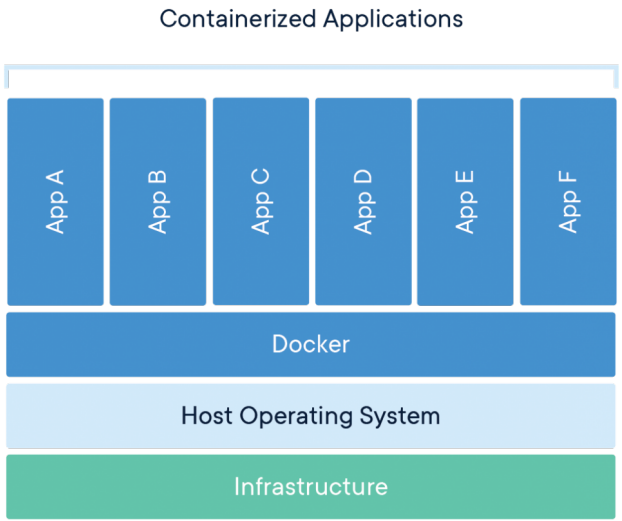
An emulated computer system, created within a computing environment.



- Run on a Hypervisor(VMM)
- One “host” runs multiple VMs
- Hypervisor enables virtualization
- VMs are independent of each other and are not encrypted
- VM tools must be updated manually

Containers

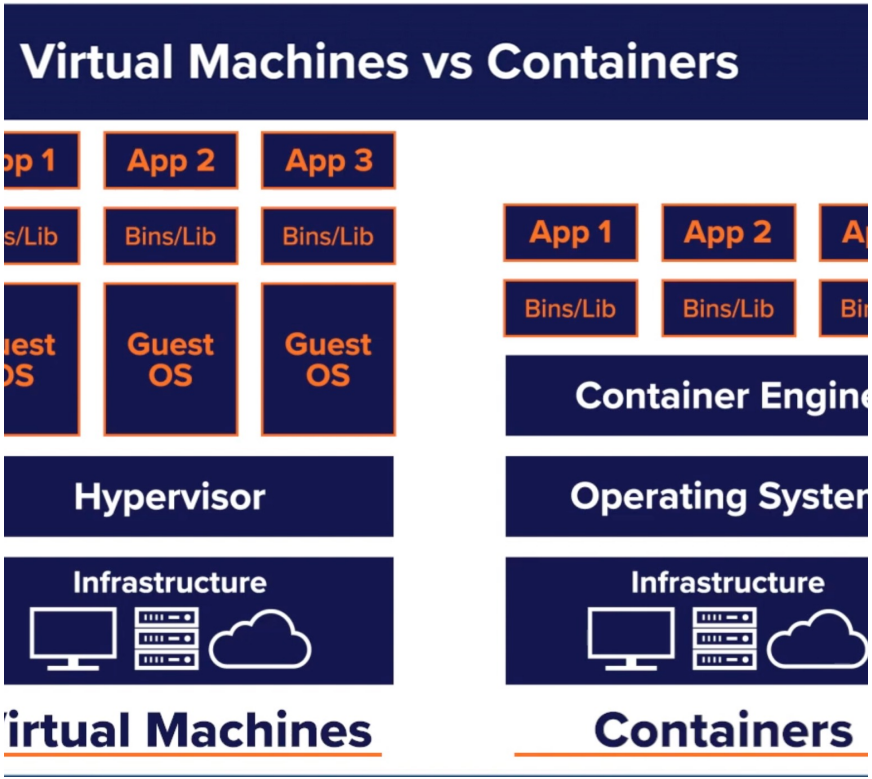
A standardized unit of software - containers provide isolation similar to VMs

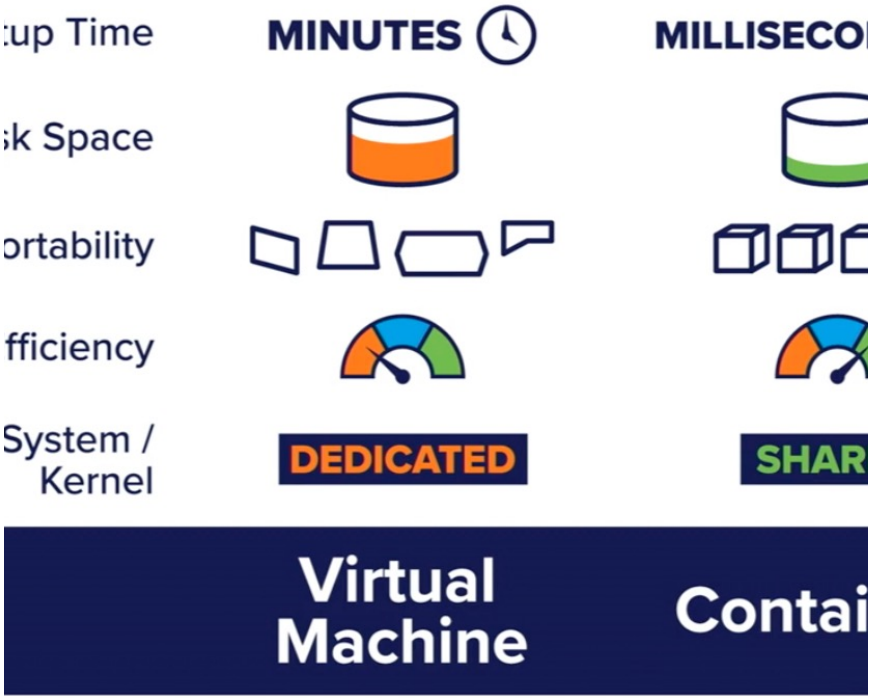


The isolation on Linux is provided by a feature called 'namespaces’.

PID - process IDs
USER - user and group IDs
UTS - hostname and domain name
NS - mount points
NET - network devices, stacks, and ports
CGROUPS - control limits and monitoring of resources

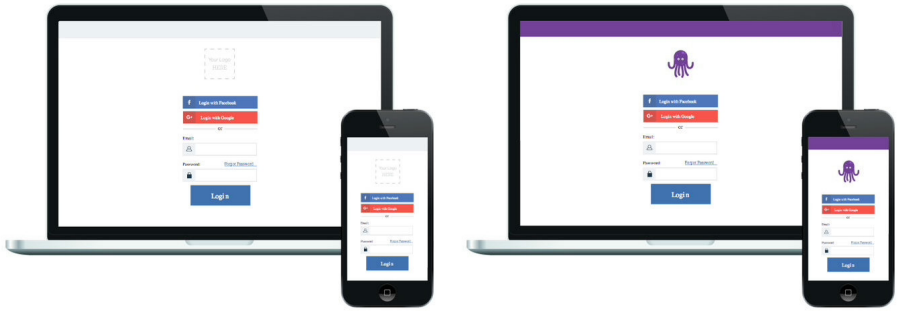
Virtual Machines Vs Containers





Use Case

Securely customize your user experience using App ID



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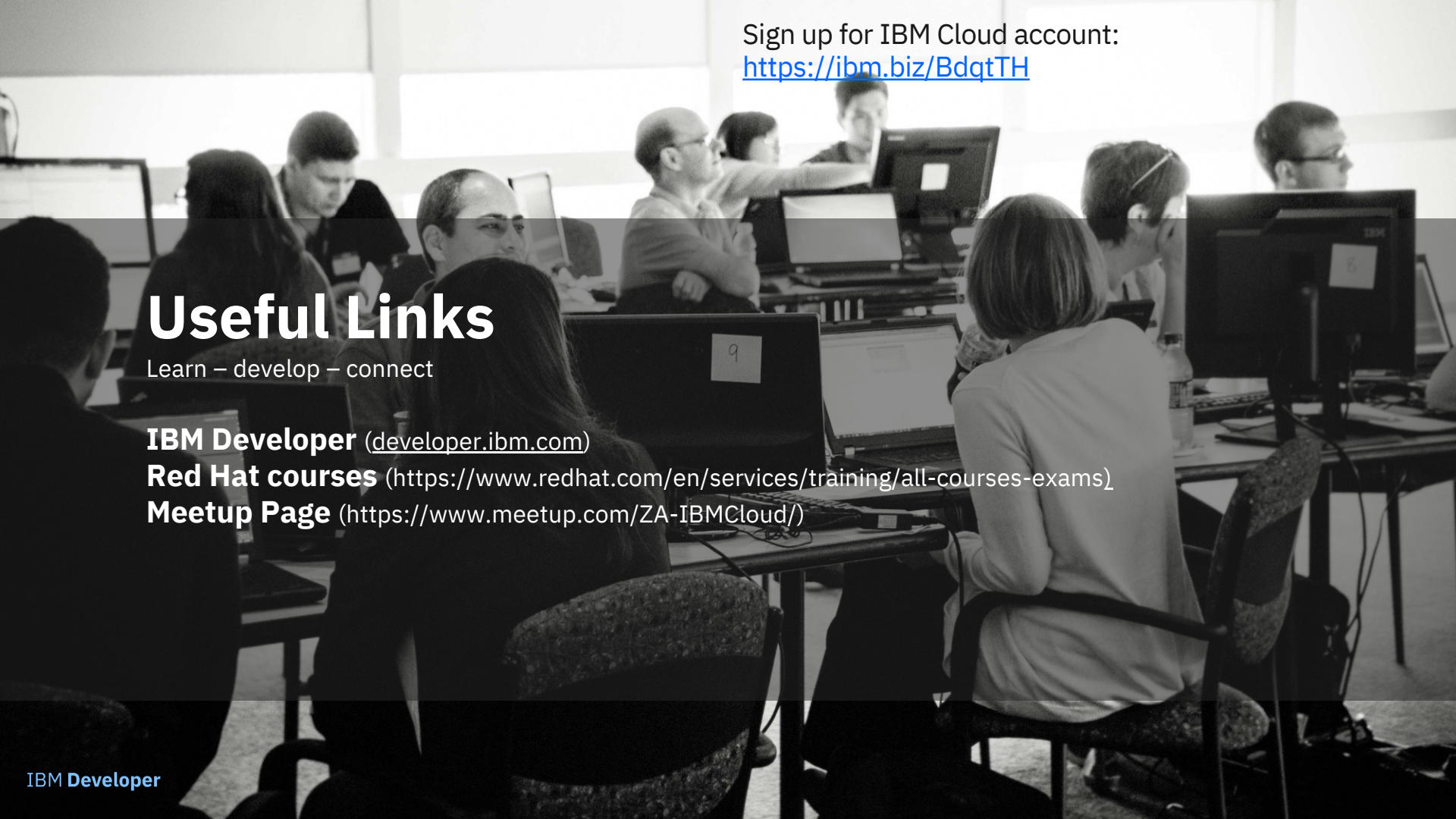

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