

Executive Summary

Multi-Cloud Management Dashboard

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The Multi-Cloud Challenge

In today's technological landscape, large-scale enterprises increasingly adopt multi-cloud strategies to leverage the diverse benefits offered by leading cloud service providers, such as Amazon Web Services, Microsoft Azure, and Google Cloud. However, this approach introduces significant complexities, notably a lack of centralized visibility. With the dispersion of services and resources across multiple platforms, enterprises face challenges in efficiently monitoring, managing, and optimizing their cloud infrastructure. This fragmentation leads to increased costs, underutilized resources, and heightens security vulnerabilities, thereby undermining the intended strategic benefits of multi-cloud infrastructure.

Solution: Multi-Cloud Management Dashboard

In response to these complex challenges, is the development of a unified Multi-Cloud Management Dashboard. This platform is engineered not just to aggregate data from the leading cloud service providers (AWS, Azure, and Google Cloud) into a unified, intuitive interface, but also to offer a suite of advanced features designed to address the demands of managing a multi-cloud environment.

Key functionalities of this dashboard include:

- **Advanced Analytics:** Using data analytics to provide deep insights into cloud usage, resource allocation, and operational efficiencies across all cloud environments.
- **Comprehensive Resource Management:** Offering granular control over cloud resources, from computing instances to storage allocations, ensuring they are utilized to their fullest potential.
- **Integrated IAM User Management:** Providing a centralized console for managing IAM users across all cloud platforms, enhancing security and compliance by ensuring only authorized users have access to sensitive resources.
- **Predictive Cost Optimization:** Using machine learning algorithms to forecast cloud spending and recommend cost-saving strategies, ensuring financial resources are allocated optimally.
- **Cloud Commitment Management:** Equipping organizations with the tools to manage and optimize their financial commitments to cloud services, ensuring that investments in reserved instances, savings plans, and other financial instruments are fully leveraged.

By consolidating these functionalities into a single unified management dashboard, it empowers enterprises to navigate the complexities of a multi-cloud architecture smoothly. It ensures that businesses can not only monitor and manage their cloud infrastructures effectively but also make informed strategic decisions to optimize their operations and secure their assets in the cloud.

Additionally

- Misconfigured (Identity Access Management) IAM permissions is one of the leading causes in cloud breaches along with unused resources being forgotten about and falling behind in security measures.
- According to Gartner, 92% of enterprises use a multi-cloud strategy

Development

Directory Architecture

react-admin/

```

├─ node_modules/
├─ public/
├─ src/
|   ├─ components/
|   |   └─ Header.jsx
|   ├─ data/
|   |   └─ mockData.js
|   ├─ scenes/
|   |   └─ global/
|   |       └─ Topbar.jsx
|   |       └─ Sidebar.jsx
|   └─ amazonwebservices/

```

```

| | | └─ index.jsx
| | └─ APIintegration/
| | | └─ index.jsx
| | └─ dashboard/
| | | └─ index.jsx
| | └─ documentation/
| | | └─ index.jsx
| | └─ googlecloud/
| | | └─ index.jsx
| | └─ managecommitments/
| | | └─ index.jsx
| | └─ manageiam/
| | | └─ index.jsx
| | └─ microsoftazure/
| | | └─ index.jsx
| | └─ resources/
| | | └─ index.jsx
| | └─ spending/
| |   └─ index.jsx
| └─ services/
| └─ App.js
| └─ index.css
| └─ index.js
| └─ theme.js
└─ ...

```

API business logic in services.

Front end in scenes.

Architecture for combining data

react-admin/

```

├─ src/
|   ├─ services/
|   |   ├─ awsService.js      # AWS specific API calls
|   |   ├─ azureService.js    # Azure specific API calls
|   |   ├─ googleCloudService.js # Google Cloud specific API calls
|   |   └─ cloudServices.js    # New file for combined data fetching logic
|   ├─ scenes/
|   |   └─ manageiam/
|   |       └─ ManagelamPage.jsx # Component for the IAM management page
|   ├─ components/            # Reusable components
|   ├─ utils/                  # Utility functions (optional)
|   └─ App.js
|   └─ ...

```